EIGHTH EDITION

Innovative Teaching Strategies in Nursing

and Related Health Professions

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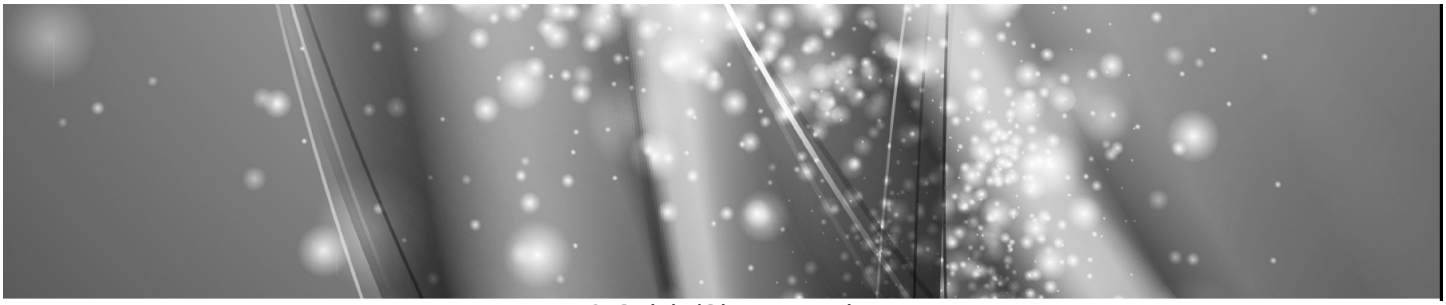
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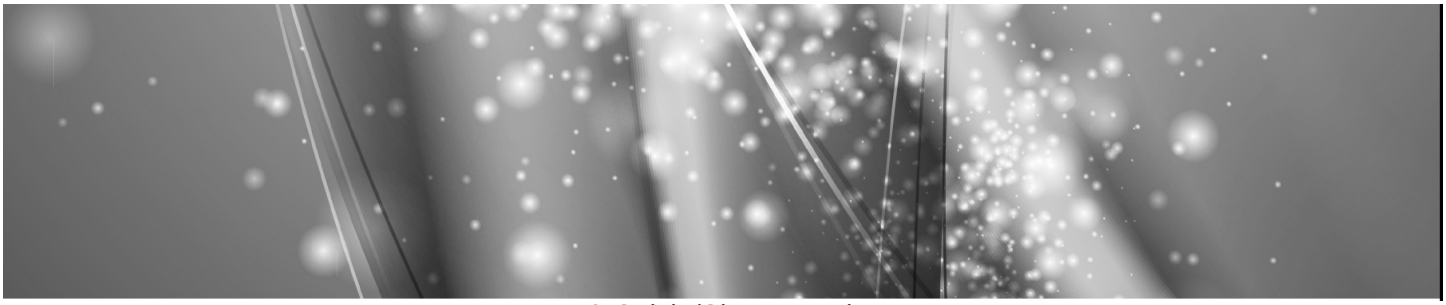
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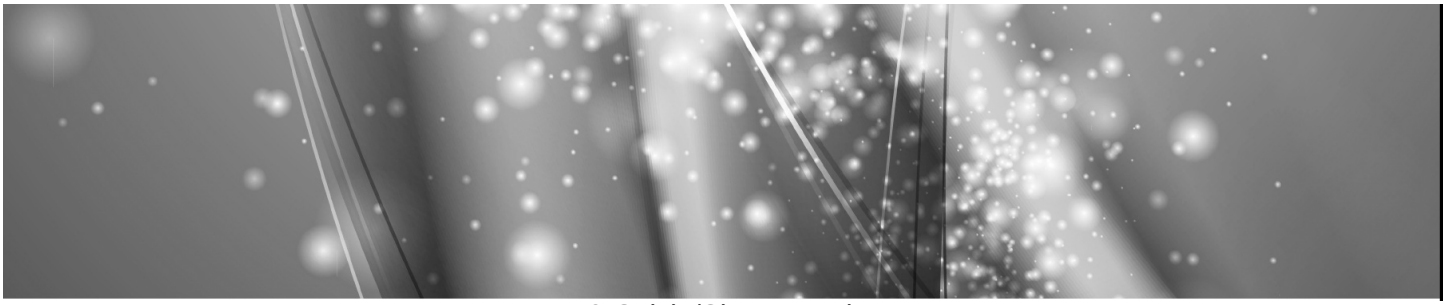
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Foreword

Some of us in education were fortunate enough to become academically prepared to teach, design learning experiences and curricula, and evaluate learners' achievements and programmatic effectiveness. We are in the minority. Many people, even today, enter into an educator role armed with great experiences, a degree in a specialty field (such as nursing, medicine, pharmacy, or physical therapy), and a desire to help others learn. The proverbial "toolkit" to teach has relatively few tools in it. As a result, some of us struggle through by the familiar, all-too-common, and unnecessary approach of trial and error. Some of us are fortunate enough to be paired with master teachers who vest their knowledge and abilities in us so that we can learn a new role. Or, we find a reference (or several) that helps us figure out what this new field of endeavor is.

Along comes the latest edition of *Innovative Teaching Strategies in Nursing and Related Health Professions*. The eighth edition, as those before it, is packed with information that is useful to two diverse audiences:

1. The new-to-education people (described previously), and
2. The seasoned educators (who want/need validation, a handy reference, or a review of what is new).

The first group obviously benefits from such a book. For example, if we had never really taught before (providing a presentation occasionally at a continuing education event is helpful, but those learners are typically very different from those seeking formal degrees), wouldn't we want to know if the people we are serving (our learners) were learning effectively? Understanding how students learn helps us figure out quickly that the lecture format, while useful, cannot be our primary strategy to help others learn, especially in practice-based disciplines.

When learners were homogenous (mostly men in medicine and women in nursing, as an example; almost always white and young), we didn't seem to worry so

much about cultural considerations. Then we realized that if we wanted to be effective as providers of health care, we needed to understand how people different from us view the world and health care. And that idea carried over to the desire to incorporate an array of people known as physicians, nurses, pharmacists, therapists, and so forth. Once we committed (or remain in the phase of committing) to a broader perspective of who could be a healthcare provider, we had to look at what and how we were teaching them about their profession and how to care for people who were different from them. Those are just some of the examples of what new-to-education people are grappling with.

Although we might think the second group needs little help, we know that is incorrect because knowledge and strategies are changing all the time. So, even though some of us are seasoned, we can hardly keep up with the numerous changes that affect what we teach and how we teach it, let alone emerging frameworks for learning and evaluation. Moving from the idea of critical thinking to one of clinical thinking or reasoning is one such example. Seasoned faculty have had the majority of their experience in teaching in a formal classroom setting, so when online education emerged, we had a lot of people scrambling to learn how best to take on this new approach, whether it was the solo modality or part of a hybrid approach. And no matter how quickly we adapted, the advent of social media presented a major challenge. What was once one or two approaches to learn has mushroomed to the point that we have to determine which of the many options we will incorporate to communicate with learners and engage them as active learners. I personally love that the book addresses humor in the classroom because a lot of people have gotten that all wrong!

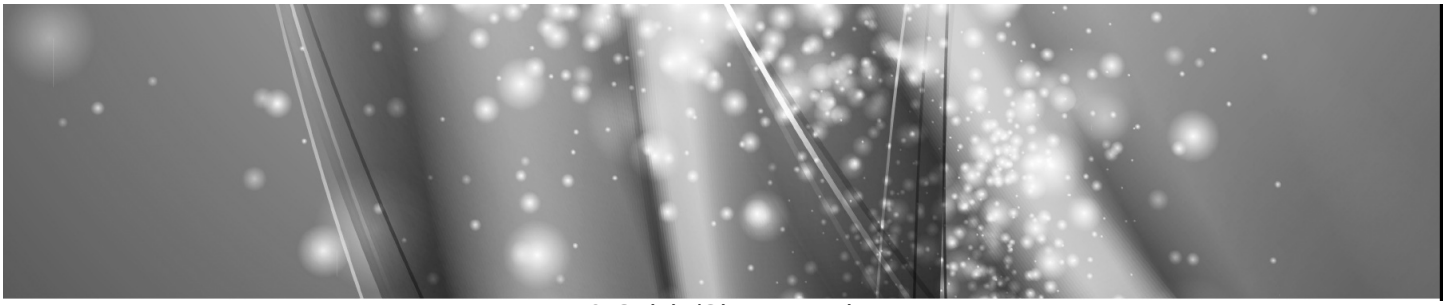
Because developing skills remains such a critical part of many roles, finding chapters on what to do with the skills of teaching is useful. Whether those skills are a part of a basic skills lab or a part of high-fidelity simulation, they take knowledge and practice to be effective. Then, we have the all-important actual clinical experiences. No aspect of teaching seems to be omitted in this book, which is a good thing based on the flexibility we must embrace to create memorable and sustainable learning opportunities.

Two more recent foci of educational changes have been the need to think globally (or, my favorite version of it—glocally) and to be engaged in interprofessional learning to enhance interprofessional practice. These two concepts are also addressed.

From learning to understand the students to learning to understand what students learned, this book takes us through the various aspects so that we can either learn the information we don’t have or enhance the information we do have. Being able to find information in one place that enhances our ability to work with learners is a gift. Enjoy the present.

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Preface

This edition of *Innovative Teaching Strategies in Nursing and Related Health Professions* continues the theme of interdisciplinary collaboration in health professions education. The need to capitalize on the contributions of numerous healthcare professionals is increasingly important in light of the current, complex healthcare system. Education has a knowledge base that crosses over disciplinary lines and is one we need to understand in order to be effective in our work. The strategies presented are timely, used by seasoned educators, and consider both teachers and learners. You can use these strategies in structured (classroom or online) settings, clinical practice lab settings, and patient care clinical practice settings (unstructured).

This text incorporates educational principles and techniques to encourage and advance learning for students in all higher education settings, at the graduate and undergraduate levels. Learning is the focus, and educators can choose strategies that best address the learning needs of students in their professions. This book also includes strategies for recognizing and working with a diverse student population.

It is not possible to present all methods and versions of technology that are available, but we present effective ways to utilize current and future technology to enhance learning. Technology is a means, not an end, to enhance teaching effectiveness. It is the individual teacher who uses evidence and best practices to make decisions about which strategy or form of technology to use to meet learning goals.

This edition contains a new chapter addressing essential behaviors, which all students entering the health professions need to know and apply. Underlying values and principles are presented and methods are provided to socialize students and teach them professional behaviors in face-to-face, online, and clinical settings.

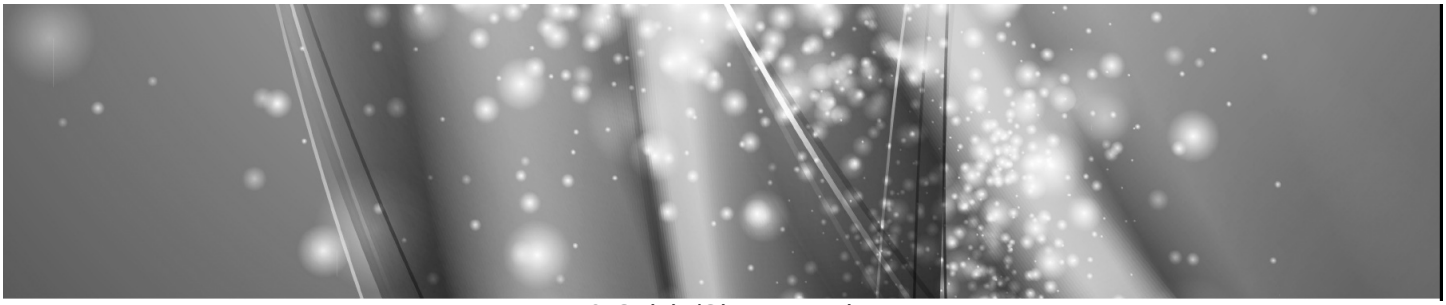
Where interprofessional education (IPE) often began as a novelty experience tacked on to health professions programs, it has become a key thread in most health

professional curricula. Chapters on the clinical skills lab and educational simulation reflect the increasing integration of IPE into health professions programs.

It is our intent that this book will be a useful resource for current and future educators in all health professions to utilize strategies which encourage students to enhance and deepen their learning.

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The editors wish to acknowledge our wonderful chapter authors. These contributors have so generously shared their knowledge and expertise as a lasting gift to their fellow educators, students, and future patients.



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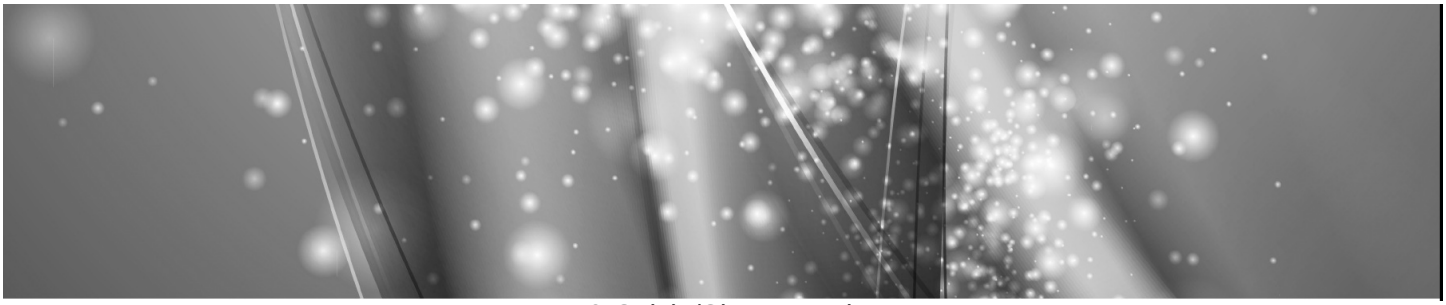
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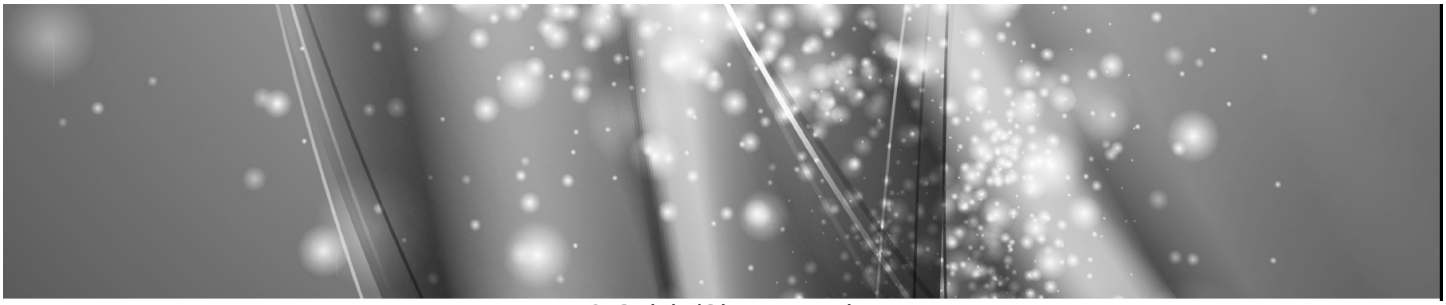
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SECTION I

Introduction

Creating an effective learning environment is not an easy task in today's world, and it is even more complex in education programs for the health professions. Students entering the fields of health care are extremely diverse, both in age ranges and life experiences. Traditional undergraduates, entering college directly from high school, interact with a large variety of nontraditional students returning to school after experiences in the workplace and/or having completed previous college degrees. Educators are challenged to recognize different learning needs and respect and utilize the knowledge and experiences that students bring to the learning settings. The teaching strategies and examples throughout this text may be adapted for use in a variety of situations, at undergraduate and graduate levels, taking into account the diversity of learning needs.

The chapters in Section I provide a foundation for understanding, selecting, and adapting specific teaching strategies to the educator's setting and student body. The contributors provide a theory base for learning and applied clinical reasoning, and also bring in various dimensions of effective learning that include creativity, humor, and exploration of varying, sometimes juxtaposed, viewpoints and ways of processing information.



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CHAPTER 1

Effective Learning: What Teachers Need to Know

Martha J. Bradshaw and Beth L. Hultquist

Knowing is a process, not a product.

— **Jerome Bruner** (1966)[1]

What brings about effective learning in health professions students? Is it insight on the part of the student? A powerful clinical experience? Perhaps it is the dynamic, creative manner in which the educator presents information or structures the learning experience. Effective learning likely is the culmination of all these factors, in addition to others. In this chapter, dimensions of effective learning are explored as a foundation for use of the innovative teaching strategies presented in subsequent chapters. The monumental growth in the use of technology has definitely changed the teaching–learning environment. Learners also have changed regarding how they access and use information and their expectations regarding feedback. The field of health professions education is experiencing a difference in learners, yet how individuals learn is essentially unchanged.

Theories of Learning

We approach learning individually, based largely on cognitive style (awareness of and means of taking in relevant information) and preferred approaches to learning, or learning style. Some students are aware of their style and preference, some gain insight into these patterns as they become more sophisticated learners, and some students have never been guided to determine how they learn best.

Theoretical underpinnings classify learning as behavioristic or cognitive. Behavioristic learning was the earliest pattern identified through research. Psychologists such as Skinner and Thorndike described learning as a change in behavior and used stimulus response actions as an example. Subsequent theorists have described more complex forms of behaviorist learning. Bandura's (1977) theory of social learning describes human learning as coming from others through observation, imitation, and reinforcement. We learn from society, and we learn to be social. This type of learning is evident when we describe the need to socialize students to the health professions.

Robert Gagne (1968) formulated suggestions for sequencing of instruction, conditions by which learning takes place, and outcomes of learning, or categories in which human learning occurs. These learning categories are based on a hierarchical arrangement of learning theories, moving from simple to complex learning, and include intellectual and motor skills, verbal information, cognitive strategies, and attitudes. For example, within the category of intellectual skills are the following stages:

- *Discrimination learning:* Distinguishing differences, so as to respond appropriately
- *Concept learning:* Detecting similarities, so as to understand common characteristics
- *Rule learning:* Combination of two or more concepts, as a basis for action in new situations

Cognitive theories address the perceptual aspect of learning. Cognitive learning results in the development of perceptions and insight—also called *gestalt*—that bring about a change in thought patterns (causing one to think, *Aha*) and related actions. Jerome Bruner (1966) described cognitive learning as processes of conceptualization and categorization. He contended that intellectual development includes awareness of one's own thinking, the ability to recognize and deal with several alternatives and sequences, and the ability to prioritize. Bruner also saw the benefit of discovery learning to bring about insights. Ausubel's (1968) assimilation theory focuses on meaningful learning, in which the individual develops a more complex cognitive structure by associating new meanings with old ones that already exist within the learner's frame of reference. Ausubel's theory relies heavily on the acquisition of previous knowledge. These principles are useful for introducing the

new student to the healthcare environment by relating information to what the student knows about health and illness. The same principles are fundamental to curriculum development, based on transition from simple to complex situations. Having a good grasp of what is known is extremely helpful as learners move into new or unknown patient situations. This is seen in the chapters on problem-based learning, clinical reasoning, and concept mapping.

Gardner's theory of multiple intelligences recognizes cognition as more than knowledge acquisition. Based on his definition of *intelligence* as "the ability to solve problems or fashion products that are valued in more than one setting" (Gardner & Hatch, 1990, p. 5), Gardner and Hatch have described the following seven forms of intelligence:

1. *Linguistic:* Related to written and spoken words and language, and the use and meaning of language(s)
2. *Musical/Rhythmic:* Based on sensitivity to rhythm and beat, recognition of tonal patterns and pitch, and appreciation of musical expression
3. *Logical/Mathematical:* Related to inductive and deductive reasoning, abstractions, and discernment of numerical patterns
4. *Visual/Spatial:* Ability to visualize an object or to create internal (mental) images, and thus to transform or re-create the image
5. *Bodily kinesthetic:* The taking in and processing of knowledge through use of bodily sensations; learning is accomplished through physical movement or use of body language
6. *Interpersonal:* Emphasizes communication and interpersonal relationships, recognition of mood, temperament, and other behaviors
7. *Intrapersonal:* Related to inner thought processes, such as reflection and metacognition; includes spiritual awareness and self-knowledge (Modified from Gardner & Hatch, 1990)

Some educational programs use assessment tools based on the work of Gardner and Hatch or similar assessments to guide incoming students on their approaches to learning and to better direct study skills. Faculty can benefit from this information as well and will find that student performance, as a group, is enhanced when a variety of teaching strategies are used. Young and Seibenhener (2018) researched which teaching strategies students preferred and found a wide range of preferences: "each of the identified teaching strategies used in the study was chosen as a preferred strategy at some level. This finding supports previous research recommending the use of multiple teaching strategies in the classroom" (p. 44). A behavior pattern that can be associated with success in professional education is categorized as executive functions. *Executive functions* are broadly defined as a set of abilities that an individual uses for the purpose of achieving a goal. Executive functions are a strong predictor of academic achievement (Georgiou & Das, 2018). In their research

on the role of executive functions in reading comprehension, Georgiou and Das (2018) describe these functions as comprised of the ability to suppress dominant responses and switch attention to specific tasks or strategies. Executive functions help the student focus on important information or assignments. Effective use of executive functions also enable the learner to revise and monitor representations in working memory, which aids in retaining basic information. Good comprehenders should be able to retain important information about the text while inhibiting irrelevant information. These functions lead the individual to problem-solving ability and flexibility. Consequently, use of executive functions promotes better study skills and enhances the ability to apply content knowledge to purposeful, professional actions.

Approaches to Learning

In addition to cognitive style and learning style, an additional perspective regarding how one learns is through reflection. When associated with learning, reflection was described as early as 1916 by John Dewey as being a process of inquiry (Miller & Babcock, 1996). To reflect on a situation, experience, or collection of information is to absorb, consider, weigh, speculate, contemplate, and deliberate. Such reflection serves either as a basis for reasoned action or to gain understanding or attach meaning to an experience. The most notable descriptions of reflection, especially as related to nursing, have been presented by Schön (1983). In his work, Schön related reflection to problem solving—and traditional means of teaching and learning result in structured problem solving where the ends are clear and fixed. In the reality of health care, such ends are not always so concrete or discernable. Reflective individuals identify and carefully consider alternatives before making a decision or choice.

Schön also believed that professionals in practice demonstrate a unique proficiency of thinking, and he has described the following three aspects of this thinking: (1) knowing-in-action (use of a personally constructed knowledge base), (2) reflection-in-action (conscious thinking about what one is doing, awareness of knowledge use), and (3) reflection-on-action (a retrospective look at thoughts and actions, to conduct self-evaluation and make decisions for future events). Reflection results in synthesis. This outcome is evident when the individual carries over thoughts, feelings, and conclusions to other situations. Teaching includes reflection-in-action, in which the teacher spontaneously adapts to learner reactions. Thus, reflection is the foundation for growth through experience. Reflection, as a form of thinking and learning, can be cultivated. Critically reflecting on the practice of teaching is an essential assumption in Stephen D. Brookfield's seminal work, *The Skillful Teacher*. He advocates for a critically reflective stance, constant evaluation/reflection on what is working and not working in his classroom. "The point of teaching is to help students learn. Doing this well means we have to take informed pedagogic actions; in other words, to use methods, activities, and exercises that will foster the learning we wish to see happen" (Brookfield, 2015, pp. 19–20). Reflective practice in teaching is a valuable skill and one that needs to be practiced and honed. Legare and Armstrong (2017) studied novice educators and encouraged faculty to practice reflection "if they are to develop their role as educators when they are instructing and evaluating the students they teach" (p. 314). One of the best-known descriptions of learning styles is Kolb's, which emerged from Dewey's seminal theory on experiential learning (Kolb, 1984). Dewey pioneered educational thinking regarding the relationship between learning and experiences. Using these ideas, Kolb went on to describe learning as occurring in the following stages: concrete experiences, observation and reflection on the experience, conceptualization and

generalization, then theoretical testing in new and more complex situations. Learning is cyclical, with new learning coming from new experiences. Consequently, learning occurs in a comprehensive manner, beginning with performance (concrete experience) and ending with educational growth. Kolb further explained that individuals go about this learning along the following two basic dimensions: grasping experiences (prehension), with abstract–concrete poles; and transforming, with action–reflection poles (Kelly & Young, 1996). Applying his experiential learning theory to his dimensions, Kolb identified these four basic learning styles:

1. *Convergers:* Prefer abstract conceptualization and active experimentation. These individuals are detached and work better with objects than people. They are problem solvers and apply ideas in a practical manner.
2. *Divergers:* Prefer concrete experience and reflective observation. Individuals with this tendency are good at generating ideas and displaying emotionalism and interest in others. Divergers are imaginative and can see the big picture.
3. *Assimilators:* Prefer abstract conceptualization and reflective observation. Assimilators easily bring together diverse items into an integrated entity, sometimes overlooking practical aspects or input from others. Theoreticians likely are assimilators.
4. *Accommodators:* Prefer concrete experience and active experimentation. These individuals, while intuitive, are risk takers and engage in trial-and-error problem solving. Accommodators are willing to carry out plans, and they like and adapt to new circumstances (Modified from Miller & Babcock, 1996).

Kolb’s framework is commonly used in healthcare education literature when creating experiences in the clinical or simulation areas. It is helpful, when creating learning experiences, to remember Kolb’s four learning styles. Fewster-Thuente and Batteson (2018) used Kolb’s framework to design interprofessional education experiences, and found it was “an excellent theoretical foundation on which to base IPE [interprofessional education]” (p. 7).

Use of Learning Styles and Preferences

Theoretical foundations regarding learning and descriptive studies of cognitive and learning styles provide insight and understanding of self. It would be difficult to address research on all modes of learning in this one chapter. To understand one's own learning styles helps to understand one's own thinking, to be aware of a fit between style and strategies for learning, and thus to select the most effective and efficient means to go about learning. Some students are aware of how they learn best and gravitate toward that strategy. Instructors see this process in students who choose to sit in the front row of the class, take many notes, and feel involved with the topic; or students who prefer online learning, choose not to come to class but instead read course material, watch Internet clips or videos, and acquire information as it pertains to a clinical assignment. Some students adhere to tradition-bound forms of learning, such as lecture and reading, yet do not maximize their learning. This result explains why these students benefit more from direct clinical experiences. Many students find learning to be more powerful when they experience something new or significant in a clinical environment, then explore information and reflect on the experience. Learning experiences can be adapted to the environment and are influenced by the environment in which they occur. Awareness and comprehension of a person's style of learning enables a person to tailor the learning environment for optimal outcomes. A simple test to guide the student in discovering his or her learning style(s) is presented in the Teaching Example at the end of this chapter.

Feedback from an observer, such as the instructor, can heighten awareness of personal styles. The knowledgeable educator also can guide the student in enhancing predominant styles or in beginning to cultivate additional dimensions of thinking and responding. For example, a student who is predominantly impulsive in decision making should be guided to explore outcomes of decisions and encouraged to increase reflection time as appropriate. Conversely, the student who is highly reflective may need to explore reasons that bring about hesitancy or prolonged deliberation and the outcomes of such behaviors.

Effective Teaching for Effective Learning

A knowledgeable and insightful educator is the key to effective learning in many situations. Consequently, the educator should call upon a knowledge base in learning and teaching as well as an extensive repertoire of useful strategies to reach learning goals. Faculty in health professions education are challenged to be clear and detailed in their teaching, addressing measurable learning outcomes that are directly linked to professional standards. This is juxtaposed with the importance of freeing the student from linear thinking and encouraging broader approaches to learning that are accomplished through dialogue, expression, and attribution of meaning. Instructors must determine the best use of time, both for themselves and for students. So, difficult decisions must be made regarding what to leave in and what to omit from teaching episodes. In the health professions, faculty have to choose between teaching for practical judgment or for disciplinary knowledge. Specialized knowledge from within the discipline can clarify issues involved in practical situations, but knowledge alone cannot bring about clinical reasoning, which is essential for the patient care setting. This is where the role of the instructor, as a seasoned practitioner, is indispensable.

In their research to discover attributes of successful teachers at the rank of full professor, Rossetti and Fox (2009) developed these four categories for teaching success:

1. *Presence of the teacher:* Being there or available for the students, becoming acquainted with students, and cultivating mutual respect and trust
2. *Promotion of learning:* Interest in students' learning and finding meaning in their education
3. *Teachers as learners:* Staying current in the discipline and teaching strategies, and continually updating and refreshing courses
4. *Enthusiasm:* Conveying an interest in the subject and passion for the work

Regardless of setting, whether it be a traditional classroom, clinical care, synchronous or asynchronous electronic instruction, these principles of teaching success are applicable.

As students advance in their education, their established, comfortable ways of knowing, thinking, and reflection are challenged. This is especially true in the health professions, where students explore value systems that differ from their own and identify ethical dilemmas in practice or circumstances in which there is more than one right answer or no clear choice. Robb (2013) researched millennials and their perception of effective teaching methods. Millennials, in Robb's study, discussed the value of hands-on learning, real-world examples, and a need to know mentality. These strategies were valuable in creating, "an environment that promotes engagement, illustrates how classroom material relates to the clinical environment,

encourages student reflection, and promotes the development of reasoning skills" (Robb, 2013, p. 305).

The instructor needs to be patently aware of his or her own teaching style and how to amend that style for the circumstances. Regarding the teaching strategies presented in this text, each strategy will have different effects on the attainment of learning outcomes in each student, based on the attributes and use of the strategy, in addition to learning and cognitive styles and learning preferences. Here are some broad suggestions for applying information about learning in teaching situations. The specific strategies addressed in subsequent chapters provide detailed information to enable faculty to use each method in an optimal way.

Underlying assumptions regarding the nature of professional education are derived in part from principles of adult learning, as formulated by Knowles (1978). Key principles include assuming responsibility for one's own learning and recognition of meaning or usefulness of information to be learned. Students in health professions are career oriented and need to see practical value in their educational endeavors. As consumers, adult students need to believe they are receiving the maximum benefit from learning experiences. Furthermore, taking charge of one's own learning is empowering. Students who gain a sense of self-responsibility can feel empowered in other areas of their lives, such as professional practice. Faculty, in turn, have the responsibility to cultivate empowerment and to affect learning outcomes.

The teaching–learning experience, whether it is in a classroom environment or online, should be fresh and challenging each time the class convenes. Faculty should endeavor to provide variety in the manner in which they teach, rather than the same, predictable, albeit comfortable method of telling rather than teaching. As providers of information, instructors need to remember that learning is best brought about by a combination of motivation and stimulation. The effective instructor should be the facilitator of learning in the students. In professional education, motivation is gained when the relationship to the well-being of the client is pointed out. The value of faculty experience is evident when the practitioner-teacher shares from his or her own professional experiences and uses these anecdotes as examples of client outcomes. Students and faculty agree that nontraditional strategies such as collaborative or cooperative learning, active involvement, and participation in the learning experience are desirable for effective learning. Opportunities to choose or structure learning experiences should be used frequently by the teacher, not only to promote active learning but also to instill in students a sense of empowerment, which is an important attribute for the clinical setting. Technology-based learning activities direct the student to engage in independent learning, research, and use of visual cues, such as video, to enhance comprehension.

As one can see from the information on learning styles, students are more likely to remember information with which they can agree or relate and if they can attach

meaning to the item or information. Disagreement or disharmony should be explored in an objective fashion. Viewpoints then can be strengthened or altered. Questioning and discussion should be based on the diversity that exists among the students. An instructor who is able to establish a sense of trust and confidence with the students can promote the expression of different perspectives likely to be found in the group. Professional educators should support students who are at various levels of cognitive growth, looking at students from a criterion framework rather than a normative one. Faculty should show that various viewpoints are welcome, legitimate, and worthy of discussion.

Effective educators guide students to see how their thought processes occur. They ask, “What do you know about ____?” or “How did you arrive at that answer/conclusion?” Teachers cultivate further development in the individual learners by demonstrating how to critique a theory, develop a rationale, or work through the steps of problem solving and clinical reasoning. Delivery of information should be based on instructional theory in addition to content expertise. Using Ausubel’s (1968) principles of advanced organizer, the teacher can develop inductive discovery by which students can build on previously acquired, simplistic knowledge to develop new or broader concepts. Effective learning experiences emerging from identified styles should be developed and used in both class and clinical settings. Information from Kolb’s four dimensions serves as an excellent example. Students who are convergers readily become bored with straight lecture, especially with topics that are abstract in nature. These individuals work better by themselves, so they are less likely to participate well in group projects. Learners with the diverger style learn from case studies and will actively participate in discussion, but they may have difficulty detaching personal values from the issue. These students often are visionary group leaders. Individuals with the assimilator style manipulate ideas well, so they will participate well in discussion or write comprehensive papers; however, these students may be less practical and have difficulty with some of the realism of clinical practice. Accommodators usually enjoy case studies, new or unusual teaching strategies, skills labs, and tinkering with new equipment. These learners will be most responsive to a challenging, complex client. With the multitude of learning opportunities available through electronic resources and patient simulation, teachers can readily craft a learning experience that meets most learning styles and preferences.

The health professions must face the challenges of incorporating core competencies, use of emerging technologies, and practice in informatics-intensive healthcare environments. In the clinical setting, the instructor may wish to provide introductory motivation through discovery learning. One way to accomplish this goal is to have each student observe or follow an individual in the clinical setting to gain exposure to the myriad tasks and responsibilities of a professional healthcare provider. Whereas students may have some rudimentary ideas of what healthcare

providers do, they discover the depth and demands required in day-to-day work by observing actual practice. This strategy should broaden their perspectives and set the stage for meaningful learning, which includes increased retention of material and greater inquiry.

As students develop clinical written summaries about their clients, instructors should be flexible with the type of written work submitted. Additional methods of client summary or analysis should be introduced, and students should be encouraged to try each method. In doing so, students may broaden their ways of seeing clients and nursing problems, thus setting the stage for increased insight, analysis, and confidence. For example, use of the concept map is a way in which a student can envision the client or care situation in a holistic manner. Concept maps provide a fluidity that enhances the ability to determine relationships and make connections. Therefore, this strategy likely will be used positively by students who demonstrate Gardner's categories of visual/spatial or interpersonal intelligence. Concept mapping should be effective for learners with all of Kolb's styles, but for different reasons and with different outcomes.

Guided reflection, especially reflection-on-action, helps the student bring closure to the clinical experience, as well as conduct self-evaluation and gain from the experience. Journal writing is one of the most effective means by which the student can capture thoughts and responses and preserve these ideas in writing for subsequent consideration. This strategy is particularly useful as a means by which students can identify and modify impulsive-reflective tendencies. Journal writing will have the best results with divergers and assimilators, and some students may benefit from open discussion about the experiences entered into their journals. Again, feedback from the faculty is crucial and should be as thoughtful as the entries provided by the student. Faculty who are reading these journals should guide the students in growth of insight and patterns of reflection. Rossetti and Fox (2009), in their research of outstanding faculty, found "Teachers as Learners" integral to the successful teacher and emphasized the importance of ongoing learning on the part of the teacher. In addition, enthusiasm for the subject matter as well as enthusiasm for the craft of teaching were important components of success. Their research indicated that, whereas there was a wide variety of subjects taught, the teachers shared an overwhelming enthusiasm and love for their subject matter. One of the greatest challenges for faculty is in developing a blend of strategies to bring about effective learning in all students. Part of the challenge is the fit between the faculty's styles and learning preferences and the styles and preferences of each of the learners. Faculty especially should be on guard against favoritism to students who possess the same attributes as the instructor. Conversely, the congruency between styles of the teacher and of the student may enhance a relationship that is especially meaningful and may evolve into professional mentoring.

Future Considerations

From this chapter, many ideas that are worthy of more detailed scrutiny emerge. The majority of research on cognitive styles, learning styles, and learning preferences was conducted in the 1970s and 1980s. This was before the widespread accepted use of electronic technology. Use of technology in teaching and learning may be influenced by learning preferences, such as in visual and kinesthetic learners. Have some students learned to modify their preferences to become more comfortable with technology? Online education is widely accepted, and the role of the instructor is changing. The extent to which learners continue to value the presence of the instructor for spontaneous teaching is worthy of investigation. Currently, there is a shift in education toward student-centered, active learning for the development of critical thinking, coupled with generations of students who are used to immediate feedback and a variety of stimulation types. Educators must determine if selected strategies are useful for genuine learning or, if not used properly, merely providing entertainment.

Conclusion

Effective learning is more than merely the result of good teaching. It is enhanced by a learning environment that includes active interactions among faculty, students, and student peers. Effective learning is achieved through the use of creative strategies designed not to entertain but to inform and stimulate. The best ways faculty can bring about effective learning are by recognizing students as individuals, with unique, personal ways of knowing and learning; by creating learning situations that recognize diversity; and by providing empowering experiences in which students are challenged to think.

TEACHING EXAMPLE

How Do I Learn Best?

This instrument typically takes 4 to 6 minutes to complete and can be self-scored. The style categories are visual, aural, read/write, and kinesthetic, which correspond with categories found in Gardner's multiple forms of intelligence. Students are directed to answer the brief questions, then are shown the learning modalities that best fit predominant styles.

How Do I Learn Best?

This test is to find out something about your preferred learning method. Research on left-brain/right-brain differences and on learning and personality differences suggests that each person has preferred ways to receive and communicate information. Choose the answer that best explains your preference and put the key letter in the box. If a single answer does not match your perception, please enter two or more choices in the box. Leave blank any question that does not apply. Once you have completed the test, find the totals for each of the letters (*V*, *A*, *R*, *K*) that correspond with a learning preference. Then look at the table of learning modalities (**TABLE 1-1**) to see which strategies best support your learning preference.

TABLE 1-1 Learning Modalities

	In Class	When Studying	For Exams
Visual	Underline Use different colors Use symbols, charts, arrangements on a page	Recall visual aspects of presentation Reconstruct images in different ways Redraw pages from memory Replace words with symbols and initials	Recall the pictures on the pages Draw, use diagrams where appropriate Practice turning visuals back into words
Aural	Attend lectures and listen Discuss topics with students Use a tape recorder Discuss overheads, pictures, and other visual aids Leave space in notes for later recall	May take poor notes because of preference for voices Expand notes by talking out ideas Explain new ideas to another student Read assignments out loud	Speak the answers/ tutorials Practice writing answers to an old exam Read questions to yourself or have someone read them to you
Reading/ Writing	Use lists, headings Write out lists and definitions Use handouts and textbooks	Write out the words Reread notes silently Rewrite ideas in other words Use lecture notes/ read	Practice with multiple-choice questions Write paragraphs, beginnings, endings Organize diagrams into statements
Kines-thetic: Use all the senses	May take notes poorly because topics do not seem relevant Go to lab, take field trips Use trial-and-error method Listen to real-life examples	Put examples in note summaries Talk about notes, especially with another kinesthetic person Use pictures and photos to illustrate	Write practice answers Role-play the exam situation in one's head

Data from Gardner, H., & Hatch, T. (1990). *Multiple intelligences go to school: Educational implications of the theory of multiple intelligences* (Technical Report No. 4). New York, NY: Center for Technology in Education.

1. You are about to give directions to a person. She is staying in a hotel in town and wants to visit your house. She has a rental car. Would you:
   V) draw a map on paper?
   A) tell her the directions?
   R) write down the directions (without a map)?
   K) collect her from the hotel in your car?
2. You are staying in a hotel and have a rental car. You would like to visit a friend whose address/location you do not know. Would you like them to:
   V) draw you a map on paper?
   A) tell you the directions by phone?
   R) write down the directions (without a map)?
   K) collect you from the hotel in their car?
3. You have just received a copy of your itinerary for a world trip. This is of interest to a friend. Would you:
   A) ring her immediately and tell her about it?
   R) send her a copy of the printed itinerary?
   V) show her on a map of the world?
4. You are going to cook a dessert as a special treat for your family. Do you:
   K) cook something familiar without need for instructions?
   V) thumb through the cookbook looking for ideas from the pictures?
   R) refer to a specific cookbook where there is a good recipe?
   A) ask for advice from others?
5. A group of tourists have been assigned to you to find out about national parks. Would you:
   K) drive them to a national park?
   V) show them slides and photographs?
   R) give them a book on national parks?
   A) give them a talk on national parks?
6. You are about to purchase a new stereo. Other than price, what would most influence your decision?
   A) A friend talking about it
   R) Reading the details about it
   K) Listening to it
   V) It looks really upmarket
7. Recall a time in your life when you learned how to do something, like playing a new board game. Try to avoid choosing a very physical skill (e.g., riding a bike). How did you learn best? By:
   V) visual clues—pictures, diagrams, charts?
   R) written instructions?
   A) listening to somebody explaining it?
   K) doing it?
8. Which of these games do you prefer?
   V) Pictionary
   R) Scrabble
   K) Charades
9. You are about to learn to use a new program on a computer. Would you:
   K) ask a friend to show you?
   R) read the manual which comes with the program?
   A) telephone a friend and ask questions about it?
10. You are not sure whether a word should be spelled *dependent* or *dependant*.Do you:
    R) look it up in the dictionary?
    V) see the word in your mind and choose the best way it looks?
    A) sound it out in your mind?
    K) write both versions down?
11. Apart from price, what would most influence your decision to buy a particular textbook?

K) Using a friend's copy
A) A friend talking about it
R) Skim reading of parts of it
V) It looks OK

12. A new movie has arrived in town. What would most influence your decision to go (or not go)?
    A) Friends talked about it.
    R) You read a review about it.
    V) You saw a preview of it.
13. Do you prefer a lecturer/teacher who likes to use:
    R) handouts and/or a textbook?
    V) flow diagrams, charts, slides?
    K) field trips, labs, practical sessions?
    A) discussion, guest speakers?

Reproduced from Fleming, N. D., & Mills, C. (1992). Not another inventory, rather a catalyst for reflection. *To Improve the Academy, 11, 137–155*. For more information, go to www.vark-learn.com.

Discussion Questions

1. Reflect on the learning theorists mentioned in the chapter (Bandura, Skinner Thorndike, Bruner, Ausubel, Gardner). Which theorist informs your own learning? Describe how this theorist influences your classroom or clinical teaching.
2. Reflect and identify how you learn and how this affects your teaching, positively and negatively. How has the growth of technology influenced your teaching?
3. If you are currently teaching, identify one concept in your classroom or clinical and develop a strategy to meet all learners: visual, auditory, reading, and kinesthetic. Use VARK as a guide.

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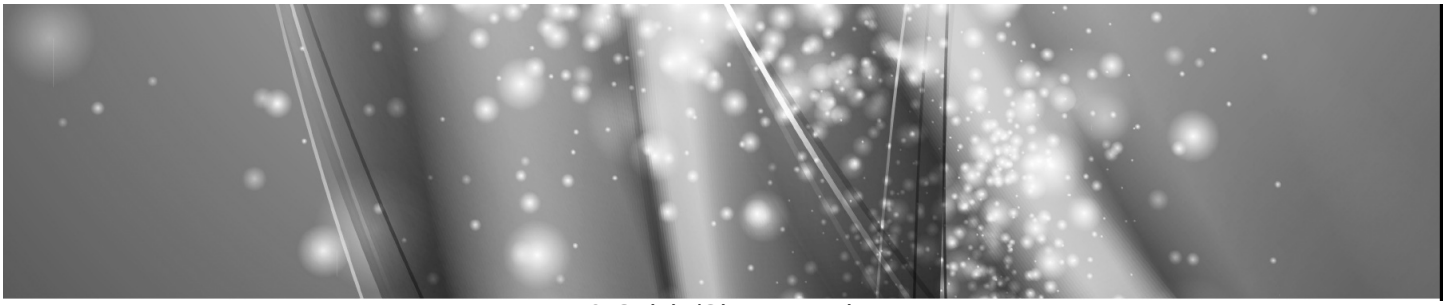
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1 Bruner, J. S. (1966). *Toward a theory of instruction*. Cambridge, MA: The Belknap Press of Harvard University Press. Copyright © 1966 by the President and Fellows of Harvard College.



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CHAPTER 2

Culture and Diversity in the Classroom

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Introduction

Today’s classrooms are very different from those in the past. Immigration, both forced and voluntary, has shaped the face of the United States. Each new wave of immigrants adds to the mosaic which is the United States. A mosaic is made up of many pieces, each different in size and shape; some may be brightly colored and others pale, transparent, or with no color added. Each piece may not mean much by itself, but when put together, the pieces change, forming new designs and an overall effect very different from the mosaic’s component pieces taken singly. The strength of the mosaic is the ability to capitalize on new and different ideas. Its weakness is the clash between cultures, which feeds prejudice and discriminatory behaviors. Health professions educators and leaders have recognized this change, and cultural competence of practitioners is now being stressed in both education and service. By using the strengths and originality of diverse students, the final classroom product can be much stronger than the product of an assimilated, cookie-cutter culture.

A new emphasis on civil rights, feminism, sexuality, and morality issues in the late 1960s and 1970s brought about drastic changes in what had been considered accepted societal behavior. Those changes shaped the move toward increased diversity of both patients and the student body in our world today and provided new and different opportunities and challenges from those of the past. Change continues as you read this, and classrooms in the future may look very different. Educators need to be flexible, aware of trends and patterns, and responsive to continuing challenges. This chapter presents a brief glimpse of some of the diversity issues in the past and present day, and it discusses some of the issues and strategies involved in working with a diverse classroom population.

The Past

In the 1950s, healthcare professional education was almost nonexistent for African Americans, other multicultural students, and persons with disabilities. Men went into medicine, while women became nurses. Other health professions may have had some of each gender, but women were often in the majority in nursing (Moffat, 2003). Educational facilities were often segregated culturally and religiously, not only in the South, which had a history of legal segregation at the time, but in the North as well (Carnegie, 1991, 2005). Catholic and Jewish hospitals often had their own schools of nursing, and there were religious and ethnic student quotas in many colleges and universities. This meant most classes were homogenized, with a large majority of Caucasian (White) and Protestant students in all but the religion-sponsored or minority-established programs, and those were few and far between. Very few Hispanic, Asian, or Muslim students were admitted to the schools. For the multicultural students who were admitted, retention rates were often low (Carnegie, 1991).

Nursing education was founded in hospital diploma programs using the apprentice system of education. From the early days in the late 1800s through the 1950s, there were very few graduate nurses in hospitals. Most graduate nurses moved into private duty after graduation, with some going into public health and a few staying on primarily in managerial or teaching positions. Student nurses were the major providers of care for hospital patients. Very ill patients on the hospital wards were most often assigned a private-duty nurse to care for them, usually paid for by the patients and their families, although hospitals absorbed the cost in some instances.

In 1946, shortly after World War II, the Hill-Burton Act was passed in Congress and signed into law. It provided funds to hospitals for renovation, expansion, capital projects, and new hospital buildings. As hospitals expanded, more nurses and other healthcare professionals were needed. Another trend was the development of intensive care units in the mid-1950s, and skilled nurses were needed for those areas as well. The nursing students and nurses in the labor pool during those years were still primarily Caucasian and Protestant, with few minorities.

During that time, although it seems hard to believe in today's world, very few nursing schools admitted married students. Female students were dismissed from the program if they chose to get married; if school authorities found out about the secret marriages that did occur, the students would be expelled, even if they were almost ready to graduate. In the few schools where married students were permitted, pregnant women were excluded, and pregnancy out of wedlock was an unforgivable sin for health professions education.

Nursing was viewed as a woman's profession, and few men were permitted in. Those men who were nurses had severe restrictions in clinical experiences such as

obstetrics and gynecology, but they could be welcomed in psychiatric facilities because it was thought they were stronger and could work better with distraught and violent patients. It was generally considered students with disabilities would not be able to participate in providing all aspects of care, so they were not admitted to programs. No allowances were made. In Augusta, Georgia, from the early 1900s through the early 1960s, University Hospital had two schools of nursing, the Lamar school for Blacks and the Barrett school for Whites (Lowenstein, 1990, 1994). The two schools joined together in 1965, after the passage of civil rights legislation. The Barrett school accepted more nursing students and had a higher graduation rate than the Lamar school. One year, three Asian students applied and were admitted to the Barrett school, but only one graduated. In Augusta, as in most of the South, and often in the North (although no one talked about that), Black students were assigned to the units with Black patients, and White students to those with White patients. Supervisors, administrators, and teachers were almost always White.

The late 1960s and early 1970s brought revolutionary change, which has continued to expand since that time. The civil rights movement sparked a feminist movement, and those movements opened previously closed doors in education. Women had more opportunities to be admitted to healthcare professions, which had theretofore been male dominated. A few men were admitted into programs that had only female students, although the numbers were still small and discrimination still prevalent, especially due to the belief that male nurses were homosexual. The sexual revolution of those years also brought a change in thinking about sexual orientation, although many attitudes of the past persist today, and discrimination still occurs. In nursing, the rules against marriage were dropped, and women could attend school while pregnant. Although the changes have been gradual, the face of the classroom is continuing its transformation.

During this period of time, the community college movement began, which provided more access to multicultural students, to those who could not afford private college tuition, and to students who needed educational facilities closer to their homes. This was a boon to older women, including women of color, and those with families, who could now attend less expensive schools closer to home. Part-time attendance was possible in some programs, and nursing students no longer needed to live at the hospitals. Graduates of associate degree programs in nursing were eligible for licensure as registered nurses and took less time to graduate than the typical 3-year diploma program students. Many hospital diploma schools began to close, although it was a prolonged fight. During those years, nursing leaders recognized the discrimination against women in college and university admissions. They were pleased nursing education had moved out of the hospital program, but they were not satisfied. In an effort to raise the status of women in the profession, they began a move toward baccalaureate education for all nurses by 1984, which also speeded the demise of hospital programs. However, for many reasons, the

baccalaureate goal was not achieved.

The physical therapy profession and its professional organization, the American Physical Therapy Association (APTA), were begun by women, but men were recognized in the profession by the 1920s. However, even with the feminist movements of the 1960s and 1970s, it took until the early 1990s for the APTA to feel it important enough to address women's issues and the inequities in the profession as they pertained to the disparities in the professional and economic status of women. The board of directors appointed the first Committee on Women in Physical Therapy, and in 1994 the Office of Women's Issues was created at APTA headquarters in Alexandria, Virginia. The Office of Minority Affairs also became an integral part of the APTA headquarters at this time, as the profession tried to recruit more minorities (Moffat, 2003). Those years also saw the beginning of affirmative action, and an increased number of multicultural students began to be admitted to colleges, although the numbers were still small. The end of the Vietnam War began an Asian migration to the United States, and we have seen other migrations since that time, creating increased Latino/Hispanic, Muslim, Indian, and Russian-Jewish populations in the United States, among others. Those migrations have meant more diverse students accepted into health professions programs.

In 1990, the Americans with Disabilities Act (ADA) was passed by Congress and signed into law. The Americans with Disability Act Amendments Act of 2008 (ADAA) further clarified disabilities as well as expanded the protections to a broad definition of life activities (Walker, 2017). The ADA and subsequent ADAA educators thought differently about what could and should be done to provide access and retention for disabled persons who could work in some, if not all, aspects of their chosen health profession and thereby provide a valuable service for the profession and its patients.

The Present

So where has this history led us in the classroom in today's world? The health professions classroom is more diverse than ever before. However, diversity no longer means ethnic background alone. The age range may be wide and gender ratios may have changed, although nursing still has a minority of male students (MacWilliams, Schmidt, & Bleich, 2013). In medicine it worked the other way around, and more women have gone into medicine than ever before. There is diversity in sexual orientation, although discrimination on this basis still exists. Clear health disparities are noted in the LGBTQ community with calls for improved cultural competency toward these groups (NLN, 2016).

There are diverse social and family issues in the classroom. Many divorced and single parents have gone back to school, but often have great responsibility in raising their children alone, which may interfere with the amount of time that can be allotted to schoolwork. Kalman, Wells, and Gavan (2009) research found managing competing roles was cited as a significant theme by students returning to school. Tab (2016) described the value of mentors with economically disadvantaged students in Georgia. Students, especially older ones, may have caretaker responsibilities for their parents or other relatives, including children with disabilities. Those in the "sandwich generation" may have caretaker responsibilities for both their parents and their children. We also have wealthy students, for whom textbook purchases and other expenses are not a problem. However, need-based scholarship students and other students have real concerns about the financial issues affecting their ability to complete their programs. Tuition increases and the specter of repayment of student loans may create additional stress. Financially secure students may not have strictly financial concerns, but they may have other family and social problems affect them and their classroom abilities.

The number of disabled students, with both physical and learning disabilities, has increased. Due to technological advances and better awareness, educational institutions are now able to provide more accommodations for students with disabilities. These may include policy modifications, equipment, and physical changes to increase handicap access. Students with disabilities often have concerns about how they are being perceived by others and worry other students and faculty are expecting them to fail. Sadly, Shpigelman, Zlotnick, and Brand (2016) found nursing students held negative perceptions of fellow students with disabilities. They advocate "nurse educators should expand the interpretation and implementation of cultural competence in the nursing curricula in a way that includes students from various backgrounds, including students with disabilities" (Shpigelman, Zlotnick, & Brand, 2016, p. 447). However, creative problem solving and faculty support can be developed for students with disabilities, and health professions education programs can be enriched by their presence (Luckowski, 2016). Colleges and universities are

being encouraged to promote diversity both in hiring faculty and in student recruitment and admissions, although success rates are still low (Murray, Pole, Ciarla, & Holmes, 2016; NLN, 2016; Tab, 2016). Even though affirmative action has been under fire, it is recognized there is still a need to make higher education more accessible for both minorities and students with disabilities.

Although diversity in admissions and hiring may be strongly encouraged, retaining diverse students and faculty is often difficult. However, Splenser and his colleagues (2003), in a study of physical therapy educational programs, found when schools provided special retention efforts, they were effective in increasing the numbers of graduating multicultural students. They also found a positive correlation between increased applications from diverse students and the presence of multicultural faculty in a program. Similar results also were found in a small study involving mentoring high school students (Murray et al., 2016). The study found it difficult to follow the high school students through college graduation; however, the researchers found the “proactive sustainable retention program for students from underrepresented or disadvantaged backgrounds . . . help bolster the first time pass rates of students who were at risk for NCLEX-RN failure” (p. 143). These types of proactive programs can have a significant impact on student success.

Other researchers have found many multicultural students experience significant culture shock when entering the collegiate world, which may be very different from their previous life experiences. In schools or programs with low numbers of diverse students and faculty, the recruited multicultural students often feel excluded in an educational system where their values, knowledge, and practices are largely ignored. Because African Americans are frequently in the minority in such a classroom, feelings of isolation, alienation, and loneliness, as well as perceived racism, can cause academic difficulties. Inadequate academic preparation for the rigor of college, family conflicts, and lack of financial resources can contribute to failure. In the programs developed and tested by both Murray et al. (2016) and Tab (2016), scholarship assistance was key to the success of the programs. Diverse students may lack the financial support necessary for success. “These challenges can obstruct nursing students’ success by causing early dropout, poor academic performance and by having a negative impact on their educational experiences” (Tab, 2016, p. 61). These feelings can be compounded by impersonal, and sometimes hostile, treatment from faculty, who are still predominately White. Multicultural faculty also face these feelings; in turn, this often leads to students dropping out of school and faculty leaving educational positions (Bleich, MacWilliams, & Schmidt, 2015).

The Importance of Culture in Education

Language, ethnicity, religion, class, lifestyle, gender, and power shape culture. A person's cultural relevance is confirmed through values, beliefs, and traditions. Other cultural influences include ways of thinking and being. These characteristics are shared and identifiable in groups of people with a common geography, history, and communication system (Sieffert, 2006).

One of the main challenges of education is creating a learning environment that preserves cultural integrity for all students while enhancing their educational achievement. Many educational institutions attempt to acknowledge cultures by offering a course in multicultural education, which is expected to address a breadth and depth of cultural diversity. Educators are expected to overcome years of deep-rooted societal beliefs, question or challenge cultural hegemony, and adopt transformational curricula of social justice. However, there is a need for educators to recognize culture is central to who we are. Attempts to dismiss it or mandate complete acculturation may have injurious effects on the ability of multicultural students to experience positive learning outcomes. Teachers who have been successful with diverse students have set up situations where positive expectations are verbalized and integrated into the classroom and clinical settings (Luckowski, 2016).

Researchers have confirmed the benefits of creating a learning environment which is relevant to, and reflective of, student realities, customs, and beliefs. Encouraging cultural and ethnic identity in the classroom diminishes negative experiences, increases self-confidence and self-esteem, and promotes resiliency in multicultural students (Kana'iaupuni, Ledward, & Jensen, 2010). Culturally inclusive pedagogical approaches are associated with the survival of ethnicity, tradition, and language. Culture also is vital to the functioning of social and family networks and support systems that may contribute to the sustainability of diverse ethnic groups in the classroom (Kana'iaupuni et al., 2010). Hancock (2007) described the convergence of numerous aspects of social identity and memberships in marginalized multicultural communities as *intersectionality*. These inequities create a multiplicity of barriers and add important implications to our consideration of cultural differences in education (Hancock, 2007). Think about the term *minority*. This term is often used to describe multicultural and diverse students. What does that label mean to students? The connotation is they are out of the mainstream, not as good as the majority students, and often expected to fail. Gardner (2005) delineated barriers to success in nursing programs. One theme, "Desiring Support from Teachers" described the feelings of minority students struggling to find a supportive teacher, and yet another theme, "Coping with Insensitivity and Discrimination" detailed feelings of inadequacy and specific experiences of racism. "Whenever appropriate, minority students should be encouraged and supported in their attempts to express

their cultural attributes in the classroom" (Gardner, 2005, p. 161). Minority students' lived experiences need to be celebrated in the classroom and clinical environment.

Culture and Educational Theories

The definition of *culture* depends on whether the author's viewpoint is sociological or anthropological. In the sociological view, education socializes people into society's mainstream. Thus, education focuses on forming an organized social structure by bringing people together from multifarious backgrounds and Americanizing them (Sieffert, 2006). Early researchers in sociological education sought to explain racial deficits in learning and achievements as both biological and cultural. In the 1970s, educational sociologists began to argue multicultural children were not deficient in their cognitive and social orientations, but rather were different from mainstream society in their learning styles. Sociologists then began to develop new conceptual models to better understand cultural differences and to explore ways to design pedagogical approaches and classroom environments to support culturally diverse children (Nasir & Hand, 2006).

Educational anthropologists define *culture* as a complex whole including knowledge, beliefs, morals, customs, and a social heritage which are transmitted and shared from one generation to another. The anthropological approach to education reduces ethnocentrism by instilling an appreciation for other cultures and contributes to the understanding of other human beings (Nasir & Hand, 2006). The anthropological theory of education takes into consideration the many aspects of culture and is concerned with cultural transmission. Cultural transmission involves both enculturation and acculturation, or the movement of cultural beliefs across traditional educational lines (Sieffert, 2006). Three major influences of the anthropological view contribute to our understanding of how culturally diverse students learn. First, there is the belief culturally diverse students are no less capable than members of the majority population; their variances in learning are attributed to language, culture, life experiences, and learning styles. Second, educational anthropology looks beyond exam scores and takes into account the entire schooling experience. Third, educational anthropologists view education as a process in which all participants contribute in shaping the outcomes.

Many theorists have attempted to rationalize the gaps in student performance. Most have focused on home, environment, communication styles, language, and cultural mismatch as the major problems with culture and learning (Bleich, MacWilliams, & Schmidt, 2015; Tab, 2016). Oppositional theorists have cited societal inequities and experiences with discrimination as participatory causes explaining why many students of minority cultures have difficulty learning (Kana'iaupuni et al., 2010). Although both sociological and anthropological education theories have their advantages, current researchers have demonstrated that understanding the cultures

of the populations we serve in our classroom makes a positive difference in learning outcomes. Anthropologists highlight the roles of communication styles, social interaction, and cultural norms, with a focus on ethnographic process-based descriptions of teaching and learning. The fundamental idea of educational anthropology is learning occurs as teachers negotiate complex social interactions that are often formed by a set of cultural differences in customs and resolutions (Nasir & Hand, 2006).

Pedagogy and Cultural Influences

All educational systems and institutions of learning are ingrained in a particular cultural worldview. The issue of culture as a strong influence on pedagogy and learning has not improved to date. Education is affected by culture, and the role of culture is germane to instructional design. Culture affects not only what students learn, but also how they learn. Cultural values and beliefs provide a basis for how a person interacts when learning and how a person perceives learning. Thus, culture and learning are intertwined and intricate. Pedagogy does not begin and end in the classroom. It should also reflect the practices of the community that it serves, locally, nationally, and internationally (Dale, 2009). Pedagogical strategies which include multicultural education, cultural competence, and cultural inclusivity must have an increased representation in curricula (Nasir & Hand, 2006). Approaches to learning should be modified to include learning styles from different cultural backgrounds, because cultural diversity contributes to innovation and creativity within an educational environment (Sieffert, 2006).

Learning Styles and Cultural Implications

In most traditional classrooms, the pedagogical process functions according to mainstream assumptions about culture, which empowers some voices more than others. Some Asian Americans come from cultures where eye contact and active participation are not normal experiences and may be uncomfortable for them. Hu (2011), in her exploration of leadership roles among minorities, noted the Asian American's deference to authority out of respect can be at odds with traditional leadership attributes, "thus, Asian American students may perceive themselves and be perceived by others as less competent for leadership roles" (p. 515). They also tend to remain silent out of consideration for others and do not interrupt other class members. This can manifest as minimal participation in class discussion, and they may sit back and not offer comments in class, even when they have a good understanding of the material and have information which would be helpful to the class, or when they need clarification and additional help with a concept (Fiume, 2005). In their research on first-generation college students, Longwell-Grice and colleagues point out that whereas the family supports the idea of their member

attending college, the family may not understand the environment and course material (Longwell-Grice, Adsitt, Mullins, & Serrata, 2016). Consequently, opportunities to discuss coursework at home are limited. This in turn may hinder the student's ability to participate in class discussion, due to a lack of practice that classmates may have.

Tachine, Cabrera, and Bird (2017) studied Native American students in their first year of college. As a culture, Native Americans are closely tied to their family and extended tribe. This study found student success was correlated with a sense of belonging and institutional as well as classroom support. In Guillory (2009), student retention was affected by inadequate K–12 education on reservations. To bridge the divide with connectedness to each other and academic struggles, "institutions need to build confidence by providing academic assistance for these students" (p. 19) through strong peer mentoring and formal academic mentoring. Other researchers have indicated students of African descent and Latinos are also more group oriented, cooperative, and less competitive than those of European descent. The cultural values of European Americans thrive on collaboration and discussion and getting their opinions heard. Class discussion is more acceptable because it is what they are used to and offers an opportunity to show off their knowledge base. They also tend to be more individualistic and often competitive (Fiume, 2005). Students raised in the American culture can also be shy or nonparticipating, especially in large classes, and small-group discussions can be helpful for them as well. In higher education, the phenomenon of group assessment, collaboration, and cooperative learning is becoming a positive trend.

Learning Styles and Pedagogical Strategies

Researchers have suggested no single instructional method will be effective in a culturally diverse classroom. Therefore, more attention must be given to helping educators develop a repertoire of instructional and assessment methods which include cultural differences and address various learning styles. Classroom teaching practices grounded in anthropological and constructivist education theory may be able to meet the challenges presented by culturally diverse classrooms. One of the primary beliefs of constructivist pedagogy is knowledge comes about through the efforts of people interacting with each other and crossing various diverse social borders (Fiume, 2005). Intentional teaching modalities which build on previously held knowledge help health profession students gain experience in culturally competent care. Faculty use a variety of methods ranging from study abroad, local mission work, as well as integrated or focused learning activities in the classroom and/or clinical experiences to strengthen students' cultural competence. Educators benefit by developing curricula to include various classroom assessment tools to disseminate the information across the spectrum of learning styles (Jeffreys &

Dogan, 2012; Long, 2012; Stiles, Schuessler, & James, 2018).

Teaching methods should be determined by distinct learning objectives adapted for variables such as goals to be attained and the learning styles of individual students. Some of the more well-known learning styles presented in the literature include Howard Gardner's seven distinct learning intelligences, Anthony Gregorc's learning styles models, Alice Kolb's four learning modes, Myers and Briggs's learning types preferences, and Carol Kanar's visual, auditory, and kinesthetic learning styles, which are related to physiological factors. Although most educators agree different learning styles do exist and have a substantial effect on the learning process, this wealth of available information can sometimes be confusing because there is no real consensus on acceptable criteria for practice (Long, 2012; Vincent & Ross, 2001). For more information on learning styles, see Chapter 1.

The diversity of cultures and learning styles in their classroom inspired Green and Stortz (2006) to search for a common culture which was accessible to everyone regardless of race, ethnicity, or culture. Their first goal was to understand their students' learning styles. They were able to accomplish this by asking students about their own preferred modes of learning and their prior experiences. Second, they wanted to help the students better understand their own learning styles. Third, they wanted the students to learn to appreciate the diversity in the classroom and see it as a resource rather than an obstacle. According to Fiume (2005), active discussion is one instructional method which blends the many social borders that come together in culturally diverse classrooms. Other pedagogical practices which are addressed elsewhere in this book and enhance learning include small-group work, debates on specific topics, case studies, dialogue, role play/simulation, and opportunities for open responses and language immersion. Online learning, discussed in detail elsewhere in this book, also has the potential to build stronger cultural experiences in classrooms. There is unlimited access to cultural experiences, videos, and languages, which can be intentionally and thoughtfully used in a face-to-face classroom or in the online environment. Online education also has the benefit of asynchronous, thoughtful responses to cultural situations. As in every class, it is important for the students' voices to be heard; an instructor can do this by relating their personal experiences to scholarship and by promoting these experiences as an essential pedagogical tool. When students feel comfortable contributing to discussion in the classroom, they are not only empowered, but also function as agents in construction of their own knowledge (Fiume, 2005). Classroom social interactions which cross age, gender, and cultural barriers, including cooperative learning, can help students make connections with other cultures and develop a community of learners. Student-taught classrooms require that each person act as an expert in an assigned subject. The students are then required to work collaboratively and teach one another. The use of this pedagogical tool will promote higher success for the entire class, rather than certain individuals (Ladson-

Billings, 2008). Immediate assessment tools, called *feedback loops*, using free writing or specific questions, can help to evaluate whether the students are learning. The goal of culturally inclusive pedagogy is to combine cognitive and experiential learning strategies which allow exploration of individual learning styles and facilitate learning. Discovering their learning style will allow students to apply those strategies to actual interpersonal and cross-cultural situations, with an emphasis on personal growth and development (Reggy-Mamo, 2008). As educators, our role is to facilitate learning by setting a positive climate for learning. A better knowledge and understanding of learning styles allows the educator to teach in a multifarious fashion that both reaches the greatest number of students and challenges all students to grow as learners (Gilakjani, 2011).

Working with a Diverse Student Body

Diversity can have a positive impact on teaching and learning. When encouraged by faculty, recognition and understanding of differences and an introduction to other cultures can broaden viewpoints and stimulate discussion and ideas (Pierce, 2017). However, it is important to point out that although this chapter covers some cultural traits, there is a wide range of cultural responses and traits within a single culture. Members of a racial or cultural group may or may not adhere to some of the traditions of their background culture and ethnic group, and they may not even identify as a member of that group. Although it is important to understand the learning styles of individuals in different cultures, overgeneralizing can also be harmful (Pierce, 2017). Faculty members must remember people are individuals who react differently and must be treated individually. A student who is a member of a particular cultural group cannot be expected to be a spokesperson for that group. There are too many variations within the groups themselves, and what is appropriate for one sect or subgroup within a group may not be acceptable to another sect in the group.

Discrimination is always a difficult issue, and faculty, staff, administrators, and patients are not immune from it. We all have our likes, dislikes, and moral beliefs. Because of their previous experiences, many multicultural students will see discrimination where others do not. This perception must be respected, and cannot be brushed off or dismissed, but sometimes it also must be faced, corrected, or worked with. The major thrust here should be concentration on providing appropriate learning opportunities and meeting learning objectives. Seeking ways to help students learn about each other can be a positive force in changing discriminatory attitudes. Many myths underlying prejudice and discrimination can be dismantled and dismissed when students who have led sheltered lives begin to know those who are different from them and understand that although there are cultural differences, there are also many similarities.

However, conflict between cultural groups does occur in the classroom. There can be other sources for conflict which have nothing to do with ethnicity, as well as conflicts that are based on ethnicity and values. In some instances, mediation may be helpful to define limits and focus the groups back on the learning tasks at hand. Separation may work for other groups, but this is usually a temporary situation until the strong feelings subside. Encouraging groups to learn about each other is a strategy which can be used to defuse potential conflict, but this strategy must be carefully managed, and the instructor needs to observe group dynamics and be on the alert for peer-influenced negative ideas and peer pressure to adopt those ideas. Pierce (2017) assigns intentional group work early in her multicultural courses to encourage students of all cultures to work with each other in a safe environment. Baumgartner and Johnson-Bailey (2008) note that traditionally we, as teachers, work

to avoid emotions in working with diversity, with negative emotions to be avoided and strong emotions to be kept under control. Engaged students oftentimes will display strong emotions. Baumgartner and Johnson-Bailey (2008) stress while it is important not to get mired in emotions when discussing challenging issues, there is also an opportunity for a good teaching moment to explore.

> When a student expresses a strong emotion, it is a good time to take an intellectual breather and say, “Do you mind if we explore that?” or “How about we step back from this emotional terrain and deconstruct this premise.” Take advantage of the energy learners bring to your classroom even when it means departing from the syllabus. These rare challenging teachable moments should be embraced as opportunities to knock down walls (p. 52).

Developing a welcoming and supportive environment is essential, not only for multicultural students, but also for the other groups which are part of the diverse classroom, including single parents, disabled students, and those with age and gender disparities. Faculty availability and interest are critical elements in developing a positive environment. First-generation college students need support and encouragement, and teachers need to be aware of opportunities for mentoring and coaching (Blackwell & Pinder, 2014; Longwell-Grice et al., 2016). Awareness of potential issues, knowing their students, and demonstrating interest in students and their success in the program are important roles for instructors to embrace. The importance of cultural and linguistic role models (e.g., community health professionals of color and/or those from minority-based professional organizations, including those who speak a similar language) cannot be overemphasized, because role modeling has a universal effect on overcoming obstacles and achieving academic success for students of color and other diverse students (Bleich, MacWilliams, & Schmidt, 2015; Mills-Wisneski, 2005). Mentoring has been successful, whether it comes from outside the school or from an advanced student of one’s own ethnic or cultural origin, especially when there are no faculty members of color. Those same principles apply to gender-based multicultural students, who may also feel isolated or unwelcome in the profession.

Age Range

Older students will have a sense of history during their lifetime that is very different from the 18-year-olds, and they have learned how to deal with many situations the 18-year-olds have not yet faced, which can be valuable when there are opportunities for sharing. However, depending on their success or frustration levels in working with those situations, older students can also hold an entrenched cynical or ingrained view, which must be worked with and mediated at times. Older students may not value the young lifestyle and find younger students immature. Building on some of

the strengths of the younger groups growing up in the technology age can be helpful to older students who are not comfortable with the technology.

Young students can be bored by the older students' experiences, tired of listening to them, or not relate those experiences to their own, or they can be interested in and learn from them. Younger students may relate to older students as parental figures—which can be good or bad—viewing them as caring or the extreme of dictatorial or authoritarian, which is often based on their prior experiences with older adults.

The most important task is getting students in different age groups to respect and learn from each other. Small-group work can create diverse working groups. Monitoring group work is important to identify conflict areas. However, when students in different age levels get to know each other better and have success in working together toward a common goal of meeting learning objectives, negative perceptions can change, and the students can be a positive support for each other. (Also see the chapter on generational perspectives.)

Communication

Communication between minority cultural and ethnic groups and the majority group can be problematic. The learning goals and objectives must be clearly understood by both students and the teacher in a diverse classroom. Communication is often an issue, and at the same time, is the key to understanding and acceptance of those goals. A diverse group of students may have their own individual goals and objectives based on their interests and learning experiences, and may or may not be willing to share them with the instructor. An instructor needs to be open to listen to and encourage ideas which may differ from the ones he or she planned for the class, and allow appropriate analytic, creative, and practical knowledge to be utilized. It may be easier for English as a second language (ESL) students to read English than it is to understand English conversation, so written instructions or handouts may be helpful and allow students more time to clarify concepts. Instructors need to speak slowly and clearly in classroom presentations, and conversational pauses may have to be longer so students can be encouraged to speak up, but also to allow them to catch up with what is being said and with note taking.

Students and faculty may have a difference in perception, especially if English is not the primary language. Ideas may not translate well. One of the authors had the experience of presenting a lecture in Taiwan and working with a Taiwanese nurse who spoke English well and was responsible for translating comments to the audience into their native language. The author and translator met and went over the lecture notes. While the translator wrote her translations, things seemed to be going very well, until she asked the author, "What is custodial care?" The author immediately realized she had assumed the translator understood everything which

was being discussed—but that was not necessarily the case. The pair went over the speech again until the author was comfortable the translator understood the concepts and would be able to translate them appropriately.

American ideals and values may be different from what some students are used to. One of the most important aspects in working with all students, but especially with multicultural and ESL students, is what the authors call “know your PVCs.” This is not the cardiac term familiar to health professions educators, but instead stands for *perception*, *validation*, and *clarification*. Each person perceives an event differently. An inquiry to see if there are any questions or areas they do not understand must have more depth than just asking if the students understand, and expecting and getting a *yes* answer. Students need to be encouraged to articulate what they think was said, and differences in understanding explored. When an instructor feels a student lacks understanding of the materials, it is important to question the *perception* with the student; *validate* what was meant to be communicated is in reality what the student understood to be communicated; and, when there is a difference, *clarify*. Students who are not proficient in English may smile and seem to understand, but often they do not, and they may not want to ask for clarification or for statements to be repeated in front of the whole class. It is important for faculty to be aware of this possibility, and follow-through outside of the classroom environment may be necessary.

Accommodation

The passage of the ADA in 1990 has made a major difference in today’s classroom. Instructors need to adjust to required accommodations. Think about the following: If a health professional is injured or comes down with a debilitating illness or has to use a wheelchair, can accommodations be made so he or she can continue working? In most cases employees can and will be accommodated in various jobs within the profession, even those employees who become deaf or legally blind. These jobs may not be those involving the usual clinical care, but they are still jobs a health professional must perform and are essential for quality care. Think about jobs that a disabled person could perform in your specialty—those that may be possible, despite the fact that some jobs will not be performed at all or as completely. Assistive devices can often be used to allow the employee to perform safely and appropriately in limited activities if he or she has the appropriate clinical knowledge required for the specific position. This being the case, why does the door to the profession have to be closed to these people, and applicants with disabilities turned away? Think about ways in which a disabled student could be prepared to work in those jobs within the profession, and the types of clinical experiences a disabled student can carry out which will provide appropriate experiences for a future job. The technology field is expanding rapidly, and assistive devices are improving and becoming more

cost-effective and available.

Faculty must be well aware of the disability regulations and student support services colleges have set up because of those regulations. Faculties need to develop an awareness of the barriers and regulations which are present for disabled students and must be addressed, and where resources can be found to help both faculty members and students. One issue that must be worked out in a positive manner is making sure these accommodations are fair to the nondisabled students. What does *fair* mean? Disabilities—in particular, learning disabilities or certain physical disabilities such as back problems—may not be visible to others. Rules of privacy do not allow faculty members to discuss a disabled student's condition, but they can encourage the student to discuss this issue with others and provide support as necessary.

For many years, teachers were authoritarians in the classrooms, with rigid standards and rules and regulations. Things are different today, but some questions must be asked. How much compromise is possible, and how do we work within regulated issues? A very positive part of students' rights has been forcing faculties to look at what they were doing and assess whether they were working by ritual or providing real learning opportunities. Such faculties have learned to work successfully with students who, in the past, would not have had the opportunities available to them today.

Luckowski (2016) studied the lived experience of nursing students with disabilities in the clinical setting, but her findings have merit in the classroom setting as well. Specifically, students with disabilities are reluctant to disclose a disability and others found anxiety when forced to disclose. In addition, the feelings of discrimination were significant barriers to learning. Luckowski calls for cultural diversity training to include mental and physical disabilities. Clear communication is essential in assisting these students, and "students with disabilities also need a clear understanding of their rights and capability of managing their disability" (Luckowski, 2016, p. 261).

Making accommodations is also an important concept for those with heavy personal responsibilities. Older students may be faced with family issues, such as caring for children and/or elderly parents. They and single parents may have responsibilities which interfere with their ability to meet deadlines or come to class. Rigid attendance policies are often more ritualistic than real: the focus should be on what is necessary for the learning experience. Sitting in a class does not guarantee a student is attentive and learning. Teachers are well aware students daydream, have conversations with their classmates, and even fall asleep, and they will forget a good portion of what was presented, even though we as teachers believe every word we say is valuable. It may be more important for a student to attend a small seminar-type class, because the learning is more dependent on participation in discussion than it is when sitting in a large lecture session. The important, determining issue is

what the goals and objectives are for the course, and whether there are other ways to meet them without perfect attendance. That may sound heretical, but there are other ways for conscientious and motivated students to meet learning objectives and set priorities. Use of the Internet, library services, and out-of-class assignments can afford some flexibility if needed. Attendance at clinical experiences may be more problematic because of the need for scheduling and faculty availability, but there are ways to design a program with a student that may afford some flexibility for specific instances. Again, it is important to keep the learning goal of the experience or class in mind and consider creative and flexible ways to work with students to plan for what they feel they can accomplish.

Financially challenged students may not be able to participate in some activities because they have to work in addition to their school responsibilities. They may have difficulty in buying books and special or technological equipment or participating in outside learning opportunities, such as conferences or lectures that have a fee attached. These students may not be able to spend hours in the library because of their work and family schedules, and finding study time may be difficult. Anxiety and worry over finances can seriously detract from their learning experience.

There is no easy solution to these issues, but again, student services can often be an ally. Student's lives outside the classroom have to be respected, but the responsibility for learning is theirs, not yours. Students and faculty can work together to assess what is needed to achieve the objectives of the learning experiences and to facilitate their learning. Are there alternative ways of achieving those objectives which do not run up against the question, Is it fair to others? It is important for instructors to meet with student services to find out what they do and how they do it. Student services can help students set up workable schedules, tutorial services, and study and testing guidance. They can also counsel students on student life issues and refer students to outside resources when needed. Faculty should also be familiar with financial aid issues and regulations, which can be quite complicated because of differences in governmental and private sources, and be able to provide students with outside services for referrals when appropriate.

Academic Issues

Students with academic problems need to be identified early and encouraged to discuss the issue with faculty without the specter of punishment or embarrassment. It is important to discover patterns of negative behavior, discuss them directly with the students involved, and develop a plan the students and faculty agree to and believe can be implemented and carried out.

Students with learning disabilities and ESL students may have problems with timed tests. ESL students may need more time to read and digest test questions because they may be translating the questions into their primary language, and

some words and phrases do not translate well. Students with learning disabilities are supported in the need for additional time by the ADA regulations, but that is not true for ESL students. To evaluate and accurately grade the level of knowledge, faculty can provide opportunities for various types of testing other than timed tests (take-home tests being one example). There may be a limit to this, however, when students need to improve in timed testing because of national licensing exams. Again, students with a learning disability may have additional time because the regulations support them, but ESL students can fail in timed tests, and those students may need practice and/or tutorial assistance to become more proficient in testing to pass a licensing exam and enter the profession.

Faculty Diversity

The discussion of student diversity, including cultures and disabilities is an important conversation for anyone in higher education today. It is imperative the academy identifies, nurtures, and encourages diverse educators to rise among the ranks of educators in health profession schools. The NLN (2016) in *Achieving Diversity and Meaningful Inclusion in Nursing Education* implores faculty, deans and directors, and national professional bodies to “develop a plan to actively recruit and retain faculty, staff, and students from diverse backgrounds” (p. 9). Bleich, MacWilliams, and Schmidt (2015) offer six strategies to improve diversity in health education. Improve admission processes, improve minority inclusion on committees, create a community of support, ensure balanced promotion structures, eliminate exclusion, and stand against tokenism. “A diverse faculty offers multiple perspectives on ways to approach patients and families, multiple ways of problem solving that is patient centric, and space for each student to express their strengths as individuals rather than as conformists” (Bleich, MacWilliams, & Schmidt, 2015, p. 93). The Robert Wood Johnson Foundation when selecting candidates used an intentional process to increase diversity among its scholars. “The overwhelming literature on racial/ethnic disparities in health and health care supports the need for nursing faculty to have a strategic focus on diversity” (Adams, Campbell, & Deming, 2017, pp. 267–276). The next generation of nurses deserves to see diversity reflected in their faculty.

Conclusion

Although working with diverse students can be challenging, it can also be stimulating and exciting. As healthcare professionals, learning about new cultures and disabilities will be translated into increased cultural competence when working with patients.

Remember that although the responsibility for learning lies with the learner, feelings of anxiety and isolation can cause stress which negatively affects the learning process and may affect graduation rates and successful entrance into the profession. Family responsibilities can also interfere with a student's ability to carry out the required work. Faculty members need to learn to develop sensitivity to and awareness of issues which impact the learning process and work with students to meet the learning goals. They need to develop their knowledge of available services and resources that can be utilized by students. A culturally inclusive pedagogy also incorporates various learning styles, allowing the teacher to reach the greatest number of students. Flexibility, patience, and creativity are needed to develop a supportive environment which enhances learning. A major role of faculty is offering support, guidance, and referrals as appropriate and developing a community of students who view diversity as a strength which provides an opportunity to learn from each other as well as from their teachers. It is painful but necessary to understand this will not work for all students; however, it will be appreciated by and benefit many students. Our reward for the efforts expended is we can rightly celebrate and be proud of the successful students whom we have helped enter the profession and who are now providing a valuable service to their patients, communities, and profession.

Discussion Questions

1. Think about the difficult concept of death and dying in a culturally diverse health professions class. Which strategies will you, as the instructor, deploy to enrich this classroom discussion in your diverse classroom? Why did you choose these strategies?
2. Consider the cultural and educational theories as well as the learning styles and cultural implications discussed in this chapter. List three teaching modalities currently used in your classroom. What type of learner will benefit from these modalities, and which learners will be hindered? Reflect and describe strategies to enhance each learner’s experience.
3. Consider a student with a learning disability in your classroom. How can you comply with ADA mandates and meet the learning needs of all your students?

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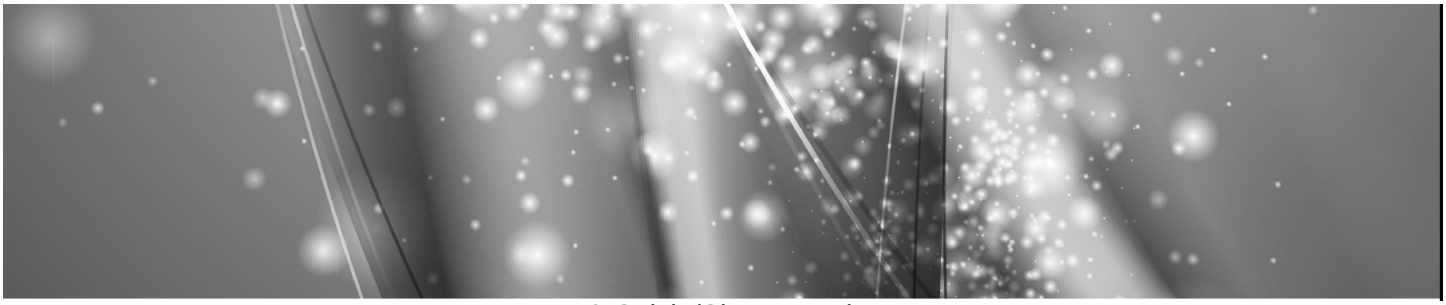
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CHAPTER 3

The Teaching–Learning Experience from a Generational Perspective

Cheryl A. Tucker

Each generation sees farther than the generation that preceded it because it stands on the shoulders of that generation. You're going to have opportunities beyond anything that we've ever known.

—**Public Papers of the Presidents of the United States: Ronald Reagan,**, 1981

Introduction

Much has been written in pedagogical and business literature about the learning differences among generations. Each generation is shaped in part by the cultural, technological, and political events that have transpired during the members' formative years. Therefore, each generation carries its own unique imprint from specific generational influences. Most of the college classrooms today are filled by Generation X and Y (Xers and Yers) students, and soon will be joined by Generation Z students.

Projection data for 2016–2026 from the U.S. Bureau of Labor Statistics (BLS) indicate that job growth is expected in all areas of healthcare occupations, and health care will generate more than 5.7 million new wage and salaried positions. There are currently almost 3 million registered nurses in the United States. By 2026, the need is estimated to grow by 15% (BLS, 2018). Universities, colleges, and training centers that prepare people for health occupations may find several challenges in recruiting, admitting, and retaining a workforce prepared to meet the demand. Tension may arise between learners and educators of differing generations who may have conflicting expectations of each other.

Generational Perspectives of Faculty and Students

Several generations are bound together for the transference of essential knowledge, skills, and attitudes for the health professions. Faculty typically consist of three generations: the baby boom generation (boomers), who were born between 1946 and 1964; Generation X (Xers), who were born between 1964 and 1981, and an emerging number of Generation Y (Yers), who were born between 1982 and 1996. There is some overlap of years for each generation, depending on the source. Many healthcare programs, especially nursing, attract a wide group of students, including the traditional student who enters college after high school graduation, the slightly older student who has worked after high school or perhaps has a young family, and the seasoned individual who decides to pursue a healthcare career after raising a family or deciding to change professions. To help meet predicted needs for healthcare professions, recruitment efforts will remain focused on appealing to a younger demographic, fostering the idea throughout secondary educational settings that health care is an attractive career choice with both intrinsic and extrinsic values (Wu, Low, Tan, Lopez, & Liaw, 2015).

The Baby Boomers

Cultural Setting

During the baby boomer era, the middle class was growing along with the economy. Growth meant more resources to purchase goods. Advances in medicine and health care meant that people lived longer. Boomers were born prior to the growth of digital technology and often are referred to as *digital immigrants,* phrases first used by Marc Prensky in 2001. Predigital education placed an emphasis on punctuation, writing, spelling, drills, rules, and memorization. Learners were taught in a highly structured, teacher-centered educational system that called for obedience to the rules. In the educational setting, challenging a teacher or parent was not usual or tolerated. Early television was not created as an educational tool but for entertainment. Boomers used telephones to communicate when face-to-face encounters were not possible. Major political events that shaped the attitudes of the boomers were the Vietnam War, the civil rights movement, and the feminist movement. Consequently, the boomers arrived at college age during a historical period when individuals wanted to right the wrongs of an unjust world.

Characteristics/Work Ethics/Learning Styles

It is interesting that, as working adults, the boomers became known as the

generation that put in long and hard hours—often at the expense of their families. Often referred to as the “me” generation, boomers sought individual accomplishment over the group good (American Management Association [AMA], 2019). They often equate work with self-worth. In general, boomers crave positive acknowledgment for work performed and thrive on praise for their efforts. The healthcare profession continues to have optimistic growth potential, and many baby boomers dispossessed from another industry, job, or profession may find changing to health care both an attractive and challenging alternative. Boomers are known to be committed, lifelong learners who tend to solve problems by action.

Generation X

Cultural Setting

Xers comprise a much smaller group than the boomers and the Yers. Many Generation X children were not raised near extended family or even by both parents. Xers became acclimated to learning on personal computers at school and during after-school hours. Often, Xers were left at home after school, without adult supervision because both parents worked. They entertained themselves with television shows, computer games, and videos. The Internet was introduced during this time. Consequently, Xer children were exposed to a higher level of violence in movies, music, and video games. Xers grew up amidst both unprecedented economic prosperity and severe downturns in the economy. Key social and political events included increased awareness of homelessness, focus on the environment, and the decline of communism.

Characteristics/Work Ethics/Learning Styles

Many conflicting characteristics are attributed to Xers. Generally they feel comfortable working alone and are considered independent. Due to their upbringing and isolation, it has been said that Xers have learned that they can only rely on themselves. They readily identify friends as extended family. As a learning group, Xers receive instant gratification related to technological advances and from obtaining information at the click of a button. From a learning perspective, Xers jealously guard their time; they prefer the bullet-point version of subjects. They want to know precisely what they need to know to pass and get good grades in the shortest way possible. They enjoy the presentation of specific information through e-mail, blogs, and instant messaging. They tend to see themselves as consumers of education, and tend to mistrust authority figures, which may include faculty. Xers become bored in meetings where there is much discussion prior to making decisions (Outten, 2012).

Leisure and time off to enjoy other interests are particularly critical to Xers. Unlike

their parents who worked long hours, only to lose out on what their children consider to be the fun of living, Xers jealously guard their free time and view requests to work overtime as intrusions. Work–life balance is a fundamental value in this next generation. Therefore, they are not necessarily interested in a lifelong commitment to the demands of certain careers (Candela, Gutierrez, & Keating, 2013). However, because of the importance they place on personal time over the needs of their employers, Xers have been viewed as undependable. They highly value their individuality, but, as a group, widely adopted bizarre hairstyles, tattoos, and body piercings as a sign of independence from the norm. This generation witnessed companies increasingly grow in international markets, thereby supplanting the local American worker for cheaper labor overseas. They realized that the years of loyalty their grandparents and parents gave in return for job security and a guaranteed pension no longer existed and, as a result, view government programs with skepticism and do not believe that social programs like Social Security will be available for them when they retire. Xers are described as cynical, ironic, clever, pragmatic, and resourceful (Johnson & Romanello, 2005). If there is a collective mantra that sums up the attitude of work versus leisure among Xers, it is “Work to live, not live to work.”

Generation Y

Cultural Setting

The U.S. birth rate continued to decline in the era in which Yers were born. Also called millennials, most children born in this generation were planned and wanted. As a benefit of caring and involved parents, most millennials are secure and value family relationships. Culturally, Yers have been influenced by acts of terrorism and mass shootings. Parents who become too involved in every aspect of their child’s life are known as *helicopter parents* because of their hovering tendencies—they are ready to swoop down to supply any need or rescue their progeny from any threat (Much, Wagener, Breitkreutz, & Hellenbrand, 2014).

Characteristics/Work Ethics/Learning Styles

Yers are thought to be more sociable than Xers. While boomers are referred to as digital immigrants because they were not exposed to the digital world until adulthood, Xers and Yers are comfortable with new technologies and are considered as digital natives (Prensky, 2001). Yers have never known a time before the age of digital technology. Many attributes have been assigned to Yers, including a high comfort level with computers and an insistence on being connected to family and friends technologically. The Yer prefers immediate feedback and instructors who are available beyond the classroom schedule. Parents of Yers have been known to

involve their children in a multitude of activities—sports, music, private tutoring, and group activities. Therefore, Yers often have multiple and diverse talents. Generation Yers generally are considered more optimistic than Xers. They have lived structured, scheduled lives and generally are much closer to their parents and feel more comfortable in a structured environment than their earlier Xer counterparts. Most millennials were encouraged early in life to express and voice their opinions (Piper, 2012). They are known to be deeply committed to causes of justice, environmentalism, and volunteerism for the greater good. Compared to other generations, they are the most ethnically and racially diverse generation and not only readily accept those who are different, but also celebrate and prize diversity. Yers consider themselves to be global citizens (Johnson & Romanello, 2005).

Yers are comfortable in group settings yet feel isolated when unable to have instant access to friends through communication devices. They are more likely to treat technological innovations as integral to their lives, much like an appendage (Taylor & Keeter, 2010). It has been suggested that millennials may not have the verbal communication skills of their predecessors because they favor the use of digital communication media (Prensky, 2001).

Generation Z

Cultural Setting

The oldest members of this generation were born in 1997. Thus, Generation Z or post-millennials are just now entering college. The Pew Research Center provides much information about this generation that has bearing on them as students and emerging health professionals. It is to be expected that faculty will have little experience and understanding of this generation's perspectives on life, work, and learning (Parker, Graf, & Igielnik, 2019). Generation Zers are similar to Yers in their views on political issues, racial equality, and climate change. Diversity is more open and accepted. Conversely, this generation is more conservative in their personal character. Levels of teenage drug use, alcohol consumption, smoking, and pregnancy are at the lowest in decades. Post-millennial's perspectives on home and family life are influenced by observing their parents' experiences related to catastrophic events in America such as 9-11, the financial crisis of 2008, and a general recession that resulted in the loss of homes and jobs. Zers also believe that child care and financial responsibilities should be shared by both parents. Work–life balance is a priority, and this generation is comfortable with job hopping in order to see the best financial security. Contrary to Yers, Gen Zers will readily break tradition and test authority. Gen Zers view technology—instant connectivity, communication, and knowledge acquisition—as a normal part of life because it has always been a part of their lives. Social interaction is predominately through social media sites or smartphones, and trends are indicating that Zers prefer more private means to

communicate such as Snapchat, Whisper, FaceTime, or Skype. Thus, this generation prefers to meet electronically rather than in-person.

Characteristics/Work Ethics/Learning Styles

Based on their lifelong interaction with technology, post-millennials learn best through active engagement in the learning process. They are comfortable with online learning. Faculty will find the face-to-face classroom environment more challenging for this generation. These students are inclined to be visual and/or kinesthetic learners, and for this generation this means information should be provided digitally rather than in print. Zers respond and benefit best from those face-to-face classroom experiences that call for their involvement in short teaching episodes (for an example, please see the chapter on the flipped classroom). They embrace learning assignments that include multifaceted projects and freedom to accomplish them at their own pace.

There are similarities and differences among each of the generations. Although each generation is comprised of individuals with unique characteristics, it is helpful to list some common characteristics that have been attributed to each generational cohort. Understandably, the literature provides more current information about the Xers and Yers than the Zers. **TABLE 3-1** summarizes characteristics associated with each generation.

TABLE 3-1 Generational Characteristics

Boomers, 1946–1964	Xers, 1964–1981	Yers, 1982–1996	Zers, 1997–Present
Attributes/Characteristics/Interpersonal Relationships/Communication Style			
■ Self-seeking behaviors; "me" generation ■ Inconsistent love-hate relationship with authority ■ Ambitious; challenge status quo; informal; casual; like fewer rules; idealistic ■ Early wave accused of sacrificing family for work obligations ■ Prefer face-to-face communication; adapt to technology as a necessity	■ Confident; direct; assertive; fearless; adaptable; diverse; impatient; informal; independent; pragmatic; outcome oriented ■ Challenge authority ■ See friends as extensions of family ■ Hesitant to commit to marriage and long-term relationships ■ Prefer technology-enabled communication over face-to-face	■ Instant access to desires; technology integrated into life ■ Assertive; ethnically diverse; optimistic; self-confident in most areas; embrace diversity; civic minded; consumer oriented; self-reliant; enthusiastic; easily bored; idealistic; patriotic; desire respect; friendly; cooperative; open-minded; collegial ■ More respectful of rules and authority than Xers and boomers ■ Closer to parents than predecessors ■ Enjoy face-to-face communication; crave social connections via technology ■ Informal but schedule driven; being smart is cool; team players/collaborative	■ Serious minded, competitive; independent; multitaskers ■ Digital natives; more cautious and more private in use of social media ■ Politically liberal and conservative in personal character ■ Entrepreneurial and driven for success; motivated by financial and job security ■ Demand truth and authenticity ■ Have a heart for justice and are purpose driven; support charitable organizations ■ Embrace diversity and multiculturalism; pragmatic

Learning/Work Styles			
■ Prefer text over graphics; linear thinking; process oriented; step by step ■ Like contact with faculty ■ Lifelong learning commitment; tie learning with life experiences; value rewards for work done; enjoy titles and accolades for achievements; willing to work long hours to get job done ■ Seek secure retirement; loyal to employer ■ Technology reluctant ■ Do not enjoy games or being put on the spot	■ Education upbringing was in student-centered settings; process quickly; multitask; enjoy fast pace; focused ■ Prefer to work alone; experiential; embrace technology ■ Little tolerance for extraneous information; dislike assignments—do not view them as learning enhancements; discount contact with faculty as important ■ Desire work and school flexibility; seek instant results for efforts; self-directed; entrepreneurial ■ Value free time over work hours; little loyalty to employer; want success and ambition on their terms; may overestimate contributions to an organization; want rapid advancement without expending long work hours	■ Multitask; process quickly; prefer graphics over text; like to work in groups; curious; experiential; thrive on discovery; short attention spans ■ Enjoy interactive learning and games with immediate response; demand 24/7 access to learning/faculty; learn best by trial and error; prefer more structure than Xers ■ Like creatively presented learning materials; enjoy entertainment aspect of learning; no tolerance for delays in class beginning and endings ■ Have expressed concerns regarding academic abilities; enjoy mentoring relationships from experienced leaders; like stories that are relevant to content; eager to learn new requirements for work/school ■ Prefer audio/visuals over reading	■ Views personal devices as an extension of themselves ■ Prefers assignments and content published digitally instead of printed handouts; include more information graphically and easily digestible; use charts, graphics, different media, and different text font ■ Short attention span due to multitasking; faculty must break up class into small bites to keep class moving and maintain interest; offer more frequent rewards ■ Prefer personalized and relevant learning with project goals and the freedom to accomplish assignments at their own pace ■ Communicate through texting; expect responses in seconds not hours; email is considered formal ■ Would rather have office hours online or via Skype or FaceTime; value in-person communication. just would like it electronically

Generational Considerations for Educators

Changes in behavior, and thus learning, take place more readily when the student is fully engaged and can actively participate in the learning process. Faculty should plan teaching experiences carefully to achieve successful outcomes. With generational considerations in mind, an educator might ask the following questions:

Which factors influence each generation involved in educational settings? What are the typical characteristics for each generation?

How do my generational preferences and characteristics merge with or differ from those of the newer generations?

What are the best teaching strategies to engage each generation of learners? How do generational differences affect communication?

Could generational differences simply be maturity issues? How does technology affect the new learner?

Who among the students are digital natives and who are digital immigrants? Do digital natives think differently than other learners?

Will current teaching strategies engage the new generation of learners?

Educational Expectations of Teachers

The traditional teacher-centered lecture has given way to a more student-centered approach especially with Gen Y (Hills, Levett-Jones, & Lapkin, 2017). The challenges of a 21st-century acute care environment, with shortened lengths of stays while maintaining a high degree of safe, ethical, skillful, and efficient care, are emphasized. In 2010 there were calls to reform nursing education into a model that espouses teaching in action, and this continues to be emphasized (Benner, Sutphen, Leonard, & Day, 2010). A comprehensive study by the Institute of Medicine (IOM) recommended that nursing curricula be reexamined, updated, and adaptive enough to change with the changing needs of society and technological advances (IOM, 2011).

A well-prepared professional must be educated and equipped to manage the complexities of the system, or he or she will become overwhelmed by role performance demands. Faculty, armed with the knowledge and experience of the profession, challenge students through high ethical standards, self-discipline, professional development, and rigorous program curricula. Students who arrive late or do not attend class, communicate poorly, or appear to be inattentive in class are viewed with a certain amount of negativity. Students who text-message, shop online,

do not keep appointments, talk in class, or use a disrespectful tone of voice are seen as uncivil by most faculty. To maintain a positive rapport between faculty and students of different generations, the faculty member must clearly define behaviors that are acceptable in the classroom and clinical areas. This is discussed in the chapter “Socializing Students to Professional Behaviors.”

Educational Expectations of Students

Radical changes have occurred in primary, secondary, and postsecondary education for both parents and students in the past several decades. Advances in technology, the view that education is a commodity, developing maturity, tight schedules, previous life experiences, values, and cultural backgrounds have influenced learners’ attitudes. Education is no longer seen as a revered institution incapable of being criticized, but rather as a product—the result of a consumer-oriented culture. Whereas boomers appreciate a mentoring relationship with faculty, Xers believe they can teach themselves if given the right tools, while Yers view experienced faculty with admiration but not awe. Generation Y students, sheltered by doting parents, are said to be more grade conscious than their earlier counterparts. They are confident and not fearful of challenging faculty over a grade disagreement. They will quite readily voice dissent and demand their consumer rights. Younger students demand respect and to be listened to when their opinions are expressed. They prefer an egalitarian approach in the learning environment (Hills et al., 2017). Students want faculty who are not only experts in the field but also have recent relevant clinical practice in the subjects that are taught (Collier, 2018). Students in today’s environment want clear connections and rationales as to why subject matter is to be learned. This coincides with adult learning theory and is not a foreign concept to experienced educators. Students today like personal attention and immediate constructive criticism for their performance, expecting a high grade for the amount of effort they gave to an assignment.

Students seek a connection with and support from faculty. As an example, Gen X and Y students value faculty knowing their names (Hills et al., 2017). Younger generations seek 24/7 access to their instructors (American Association of State Colleges and Universities [AASCU], 2004). Many faculty may not welcome these invasions into their private time after work hours. Today, schools, colleges, and universities are striving to keep pace with these demands by putting the required technological infrastructures in place to support online access for students and faculty. Communication networks supported by colleges and universities enable communication methods to support the desire for increased learning activities or faculty support outside of the classroom.

Both the X and Y generations will adapt to a variety of teaching methods, with Xers being more comfortable with computer, online, and distance learning and self-

paced modules. Experiential learning is preferred by both of these generations. Yers have a special penchant for hearing stories from work experiences to illustrate points (e.g., analogies, humor, and wit) and seek an entertainment quality in teaching sessions. Lecture and explanations are preferred for difficult content topics rather than group work. Gen X prefers to read about the subject first, followed by an expert's lecture, while Gen Y prefers attending a lecture first and then reading (Hills et al., 2017). Experiential learning fits easily within all three cognitive domains of nursing and is a valued methodology among all generations. Younger-generation learners have been reported to prefer to perform the skill first under the direction of the faculty and then independently, rather than hear a lecture on the material (Hills et al., 2017).

Potential Issues in the Teaching–Learning Experience

Education in a health professions program is challenging, especially for the incoming students. The sheer amount of reading and material can intimidate even the most scholarly student, yet it is clear that, to be successful in the program, a student must be able to comprehend, analyze, and write well (Hawks et al., 2016). Typical Yers and Zers will have difficulty reading and studying for long periods of time. Multitasking is second nature to both of these generations, but sitting and reading for long periods of time is difficult due to a short attention span (Chun et al., 2016).

Teaching methods used in many health professions programs may be outdated for digital natives. Curricula include a large demand for reading and sequencing and an emphasis on step-by-step processes to achieve learning outcomes. These methods do not lend themselves to the cultivation of clinical reasoning and application to practice settings. Gen Z prefers learning strategies that encourage exploration, discovery, and trial and error (Chun et al., 2016). Unfortunately, trial-and-error problem solving takes time and resources. It is not ideal in patient care where the ultimate goal is to protect the patient's safety and comfort within limited time constraints. However, simulation experiences allow the student to use clinical reasoning and also learn from trial and error.

Over a decade ago, the American Association of Colleges of Nursing (AACN) and the National League for Nursing (NLN) published position papers calling for major changes in curricula to incorporate technology (NLN, 2008). More schools are offering online courses to meet the demand from students for increasing class schedule flexibility. It is estimated that online, synchronous, and asynchronous programs will continue to rise and remain a viable option for many. Despite the plethora of options for students today, recent studies indicate all generations prefer a blended course with face-to-face and online learning formats over exclusively online (Hills et al., 2017).

Strategies for Teaching Among the Generations

As faculty create teaching learning strategies for the generations in their courses, it is important for the individual teacher to understand their personal perspectives, learning styles, and preferred methods of teaching. The methods used to teach students are changing due to generational expectations, technological advances, and increased access to information. Adult learning theory rests on the accepted principle that learners will retain and retrieve information when meaning is associated with it. Another important principle of adult learning theory is the idea that adults want to learn what is applicable to them at the moment (Knowles, 1973). Knowledge of the technological advances in a digital age and methods to employ them in the classroom, lab, or clinical site are essential. To say that it would be a necessity to engage the students would be an understatement. Foreknowledge of general attributes of the digitally engaged student is useful for educators who are products of a different generation. For any generation, faculty creativity, an open and honest dialogue, and availability help create a positive environment for students to thrive.

The use of classroom polling systems such as personal response system (PRS) technology is a method to enhance classroom participation and may appeal to all generations within the classroom. They allow anonymous responses to classroom activities and provide immediate feedback to problems (Waltz, Jenkins, & Han, 2014). High-fidelity simulation (HFS) labs that use standardized patients and human-like computerized mannequins to mimic real patient clinical situations are essential in health professions education programs. This teaching methodology correlates with the preferences of the youngest generation to learn in an immersive and experiential approach that encourages important linkages between didactic content and clinical practice. HFS fulfills the requirement to meet learning outcomes, perform important skills, and develop clinical reasoning skills. Debriefing by faculty facilitators encourages students to analyze specific decisions and actions and reflect for future actions.

There are countless ways of involving and engaging students in experiential methods, with or without technological enhancements. Virtual clinical experiences and lab practice are becoming more affordable, reliable, and evidence based. They blend well with the traditional methods to assist the learner in gaining psychomotor skills. The power of multisensory experiences embedded in curricular teaching strategies cannot be overestimated, because it increases the long-term memory retention and retrieval of the material for the learner.

Computer-based video games have been part of entertainment and primary education for many years. Students are exposed to simulation experiences at increasingly younger ages. They become experts at manipulating objects in spatial environments repetitively throughout their childhoods. Applying trial-and-error methods in this type of an environment allows the participant to practice necessary

skills until perfection is achieved. There should be alternatives to gaming if the class consists of multiple generations.

Conclusion

Faculty must be aware of the reality that not all students in one course are the same. Each student brings their own perspective and abilities to the learning environment, which guides the faculty to be inclusive of all generational learning styles when developing class sessions. It will become increasingly requisite for healthcare curricula to change, modify, and adapt to strategies that coincide with technological advances and the societal expectations of new generations. The timeless determinant for true educational success will most likely remain the connections from teacher to learner and from learner to teacher that transcend generational differences.

Discussion Questions

1. Discuss strategies you would use to meet the learning styles and educational expectations of a multigenerational classroom.
2. From a literature search, summarize the effectiveness of cutting-edge technology when utilized with multigenerational students.
3. You are planning group activities for your class. Each group has four students. Should each group have representatives from only one generation, or should each group contain all four generations?

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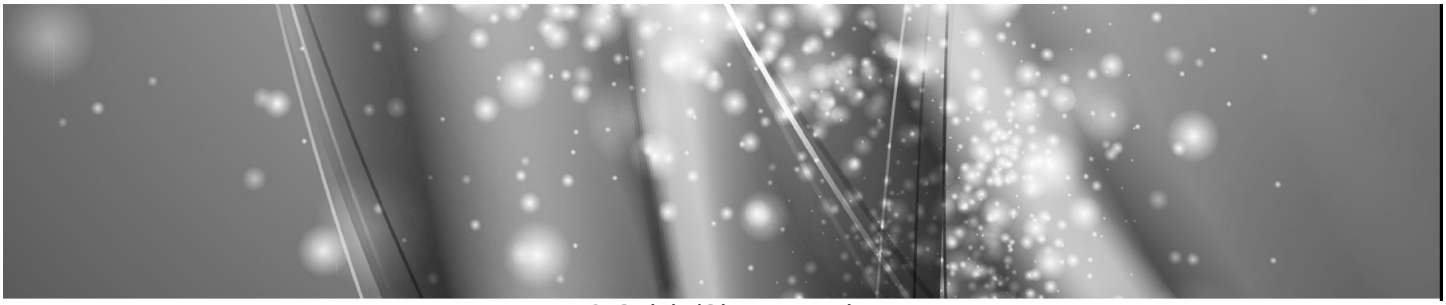
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CHAPTER 4

Socializing Students to Professional Behaviors

Stephanie S. Allen, Lyn S. Prater, and Martha J. Bradshaw

Cultivation of Professional Behaviors

Values, ethics, standards, and skill sets provide the foundation for health professionals. All members have the duty to manifest these qualities as caregivers to individuals, families, and communities. The recipients of this care expect and trust that their caregivers will consistently meet both quality and safety standards. To achieve the best possible patient outcomes, the complex and vital professional behaviors must be taught upon entry in professional education and developed continuously throughout the individual's career.

Professional behaviors begin with an underpinning of core attributes. From their analysis on the concept of moral courage, Numminen, Repo, and Leino-Kilpi (2017, p. 878) identified seven core attributes:

- True presence
- Moral integrity
- Responsibility
- Honesty
- Advocacy
- Commitment and perseverance
- Personal risk

The following examples are manifestations of moral courage in nursing:

True presence: Staying by the patient's side

Moral integrity: Speaking out about unethical behavior

Responsibility: Remaining calm in uncertain circumstances

Honesty: Speaking up and reporting unsafe practices

Advocacy: Verbalizing the patient's or family member's wishes

Commitment and perseverance: Exhibiting professional confidence

Personal risk: Admitting your vulnerability

A major role for faculty who teach students entering a profession is socializing them to the culture of their chosen field. Socialization into the profession is a process of transforming a novice to a professional where the newcomer adopts ethical standards, the social group's mission, organizational goals and knowledge, learning technology, and language, ultimately integrating the professional role into their identity (Dimitriadou, Pizirtzidou, & Lavdaniti, 2013).

Socialization entails teaching civility, professionalism, and the components of

ethical practice (Clark, 2017). When socialization is lacking or not embraced by the novice professional, there is a high likelihood that this will impinge upon the health professional's ability to provide safe and quality care (Thomas, Jinks, & Jack, 2015).

Faculty begin this socialization by laying down the foundation for success on the first day of class. This is done by role modelling professional behaviors, clearly articulating class expectations, providing examples of consequences when expectations are not met, and focusing on the final outcome of their professional education, which is licensure or certification. A strategy for helping students be successful is the creation of a comprehensive syllabus with clear class goals reflective of professional behaviors (see **BOX 4-1**). Demonstrating professional behaviors in the classroom sets a precedent of a respectful and healthy learning environment for the entire semester. Beginning and ending class on time, grading and returning assignments in a timely manner, adhering to school policies for testing and grading as well as using affirming and encouraging language and behavior in class demonstrates to the students that they are respected. Throughout the course of the semester, the faculty member must take every opportunity to acknowledge directly to students when they are exhibiting professional behaviors. In addition, the faculty must provide timely feedback regarding unprofessional behaviors to allow for student insight and self-correction.

BOX 4-1 Clear Class Goals

1. Assume positive regard for others.
2. Respect differences and be open to other points of view.
3. Electronic and media devices are limited to class use only.
4. Respect the group process regarding timeliness and contributions.

Clark, 2017, p. 123

Course materials that address components of the profession including the required skill set, standards set by professional organizations, professional ethics, risk management, and legal issues ensure that students have the necessary foundational requisites to be successful. See **BOXES 4-2** and **4-3** for examples of information to include in the course syllabus.

BOX 4-2 Expectations for Classroom Behaviors

As professional leaders it is expected that your behavior as a graduate student at Baylor University reflects respect for the faculty, your fellow students, and yourself. As such, effective communication is imperative in all aspects of your graduate study.

The classroom (both on-line and in seat) is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights

of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop an understanding of the community in which they live. Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class.

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BOX 4-3 Guidelines for Behaviors in an Online Class

Netiquette Guidelines

Netiquette is a set of rules for behaving properly online. Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Working as a community of learners, we can build a polite and respectful course community.

The following netiquette tips will enhance the learning experience for everyone in the course:

- Do not dominate any discussion.
- Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation.
- Never make fun of someone's ability to read or write.
- Share tips with other students.
- Think and edit before you push the Send button.
- Do not hesitate to ask for feedback.
- Using humor is acceptable.

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Connection between Bullying and Unsafe Behaviors

It is imperative for faculty to instill professional behaviors with a focus on civility for students entering and continuing in health profession programs. Acts of incivility include rudeness, inconsiderate behaviors, demeaning comments, gossiping, nonverbal behaviors (i.e., eye-rolling), and refusal to help a coworker. Other forms of incivility are public criticism, intimidating others, withholding information, and the use of a condescending tone or behavior (The Joint Commission, 2016; Thompson, 2016; American Nurses Association [ANA], 2015b). The differences between incivility and bullying are incivility is often a one-time or irregular occurrence; bullying is repeated and harmful behaviors targeted at an individual or a group of people (Thompson, 2016). Rainford and colleagues (2015) point out that workplace bullying toward an individual (i.e., peer) is called *lateral violence*. When lateral violence occurs, acts of incivility are intended to humiliate, diminish, and marginalize the victim, resulting in psychological abuse, exclusion, and physical stress that can result in the victim causing harm to the patient. Incivility and bullying are often precursors to harassment, which is targeting an individual based on age, race, gender, ethnicity, religion, or disability (see **BOX 4-4**; Americans with Disabilities Act of 1990; Age Discrimination and Employment Act of 1967; Title VII of the Civil Rights Act of 1964;).

BOX 4-4 If I Am a Bully

"If I'm a bully, I'm mean to a target or a group.
If I'm being uncivil, I'm mean to everyone.
If I'm harassing someone, I'm mean to this person(s) because of their gender, race, age, religion, etc."

Thompson, 2016, para. 11.

The problem of incivility is well documented and has worsened over time (Porath, 2016). Unfortunately, incivility occurs in other workplace settings in addition to health care. It is known that incivility is disruptive to team effectiveness, impacting members' psychological safety (Porath, 2017; Riskin et al., 2015). Research across various industries revealed the deleterious effects of bullying on the employee, including decreased work effort and quality, lost work time avoiding the offender, loss of commitment to the organization, and reacting negatively toward customers or patients. Additionally, in healthcare settings, bullying and incivility lead to errors, underreporting of safety concerns, and increases in cost, infections, and harm. When patients and families witness bullying, trust in healthcare providers is affected

and the organization’s reputation may be compromised (The Joint Commission, 2016).

Moral Distress

Healthcare professionals experience moral distress nationwide. In their root cause analysis, Whitehead, Herbertson, Hamric, Epstein, and Fisher (2015) utilized the Moral Distress Scale-Revised (MDS-R) and found the following situations that contributed to moral distress.

- Watching patients suffer
- Witnessing diminished care and poor communication among team members
- Practice settings such as pediatrics and intensive care units
- Working with incompetent individuals

When students encounter these situations in a clinical setting, it is incumbent upon the clinical instructor to provide a debriefing session to help the students process and vocalize their emotions about these distressing events.

Nursing instructors should utilize the ANA *Code of Ethics for Nurses with Interpretive Statements* (2015a) to remind students of the ethical obligations in their practice.

Coping Strategies for Students

The classroom is a safe environment for exploring approaches to confront incivility. Planned learning activities such as role-playing, cognitive rehearsal, and practicing effective communication skills for conflict resolution are ways to acquire safe practice skills (Clark, 2015). Codes of conduct for inclusion help to address lateral violence, bullying, and incivility in all practice settings. A professional organization establishes a code of conduct to identify behaviors representative of the profession. As an example, a code of conduct may include the following statements: “Educate colleagues to respond appropriately to violence; report unethical or illegal behavior of colleagues through appropriate channels, refrain from disruptive or passive-aggressive or lateral or vertical violence” (Schmidt, MacWilliams, & Neal-Boylan, 2016, p. 105). It is recommended that the code of conduct be introduced in the first semester of the program. It should also be introduced to all new faculty teaching in the academic classroom and clinical setting (Schmidt, MacWilliams, & Neal-Boylan, 2016).

To prepare students for recognizing and confronting incivility and bullying in the practice arena, the Teaching Examples describe several learning activities. It is suggested that each semester of a student’s program should include these types of learning activities either in structured classroom settings or clinical seminar/simulation labs. Given the nature of the verbal and behavioral components of acts of incivility, students require spoken communication interaction. For online programs, these scenarios should be conducted through a synchronous video format to fully engage the students in verbal interactions with peers (see the scenarios at the end of this chapter).

In the clinical setting, faculty should use every opportunity to guide students regarding professional behaviors. If students witness healthcare professionals behaving in an uncivil manner, the faculty member must use this as a teachable moment. One approach is to say to the student, “I noticed you witnessed a distressing situation, and I want to assure you that we will discuss this at post conference.” This expands the opportunity for all students to discuss coping behaviors if they are involved in a similar situation.

Students need frequent opportunities to practice communication with authority figures, especially as part of their professional development in the workplace setting. Instructors can advocate for their students to be engaged in direct communication and should discuss in detail what should be included in the message prior to initiating the conversation. With more practice, students will feel more confident and less intimidated. The Teaching Examples provide these types of practice experiences.

Looking in the Mirror: Self-Reflection for Teaching Faculty

There are documented cases of uncivil behavior among nursing faculty (Aul, 2017). Using the Negative Acts Questionnaire, Revised (NAQR), Beckmann, Cannella, and Wantland (2013) found that among 473 faculty members 36% reported experiences of bullying, and of these respondents 65% were junior faculty. The top three uncivil behaviors described by faculty members were physical abuse, verbal abuse, and devaluing. This is a pervasive problem that can negatively impact the educational process. Faculty must always be aware of their behaviors, especially in locations that students can access. Witnessing uncivil behavior can have the same negative effects on the bystander as if one were directly involved (Keller, 2016). Once students have witnessed these behaviors, it may affect future relationships with the faculty members and the faculty member's reputation may be damaged, especially if the behavior witnessed is shared with others. Faculty members also must be mindful that they are considered role models, and actions and conversations should meet professional standards.

Students experiencing stress related to both course and clinical learning may exhibit behaviors that are uncivil toward their faculty. These behaviors may include making disparaging comments, apathy toward learning, cheating on tests, inattention (such as using electronic devices during class), or demanding special considerations regarding assignments or grades (Aul, 2017). It is incumbent upon faculty members to recognize when their teaching is ineffective and make necessary ongoing improvements as well as maintain open and timely dialogue with students. Faculty members must point out to disruptive students why their behaviors are unacceptable and discuss strategies for change. Unfortunately, there are reports in the literature that investigate faculty bullying of students. According to Seibel (2014), contributing factors related to the system, faculty, and lack of knowledge/preparation contribute to this unprofessional behavior.

Conclusion

Socializing students to professional behaviors can be both challenging and rewarding. Faculty have many opportunities to lay the groundwork for helping students navigate issues in the healthcare arena. Self-awareness and self-control contribute to maintaining a healthy individual and work environment. By pointing out to a colleague that their behavior was unacceptable, you can interrupt the cycle of violence and initiate an opportunity for change. This can lead to a more effective and productive healthcare provider.

TEACHING EXAMPLE

The purpose of these scenarios is for students to role-play behaviors they will likely encounter in the workplace setting. By applying the civility didactic content, students will engage in role-play to navigate a difficult situation. The instructor divides students into small groups (four to five in a group), assigns roles, and directs students on the amount of time to resolve the situation. An evidence-based article is paired with each scenario and is provided for group discussion. Once the scenario is completed, the instructor uses the key (italicized statements) to discuss techniques used and provide feedback regarding successful strategies and missed opportunities.

Scenario One: Beginning-Level Student

Instructions: Read the scenario, act it out in your group, and answer the questions together utilizing the evidence-based article provided, with one member designated as the recorder. Complete this group work in 10 minutes. Pick a spokesperson who is willing to share your group's work during the discussion.

Behaviors: gossip, belligerence, passive-aggressive response, staff tolerance of uncivil behavior

Staff involved: Clinical staff and student

Scenario: The day shift nurse and student are receiving handoff in the patient's room at the bedside. The nurse (Jenny) leaves the room to go to another patient's room, and the student (Sandy) starts taking the patient's vital signs. The cardiac monitor's alarm sounds. The student remains at the bedside and calls out over the intercom for help. Because the night shift had received five admissions back to back, the staff seem to be behind on their documentation and hand-off process. After 5 minutes, Jenny has not come to the room to assess the patient and turn off the alarm. The student calls the front desk and asks to have Jenny paged overhead. Jenny does not hear the overhead page. The student finally calls out from the room, "I need help in here now." Samantha, RN, struts in the room and silences the alarm. The student asks her what had caused the alarm in the first place. Samantha responds, "That's Jenny's problem, not mine!" and struts out of the room. Later, as the nursing student is charting in the electronic health record, she overhears Samantha say to Jenny, "Are they just letting anyone into nursing school these days? Your nursing student did not even have the first clue about how to reset your patient's cardiac alarm."

Group Discussion Questions

1. What behaviors are troubling in the scenario?
2. Who is exhibiting them?
3. If this type of behavior directly affected you (you are the receiver of behavior), what should you do to handle the situation?
4. How do you know if you are involved in gossip?
5. If you were a bystander, what should you do in this situation?
6. According to Schmidt, MacWilliams, and Neal-Boylan (2016), what are some examples to attain or maintain professional integrity for professionals?

Key Scenario One: Beginning-Level Student

Behaviors: *gossip, belligerence, passive-aggressive response, staff tolerance of uncivil behavior*

Scenario: The day shift nurse and student are receiving handoff in the patient's room at the bedside. The nurse (Jenny) leaves the room to go to another patient's room and the student (Sandy) starts taking the patient's vital signs. The cardiac monitor's alarm sounds. The student remains at the bedside and calls out over the intercom for help. Because the night shift had received five admissions back to back, the staff seem to be behind on their documentation and hand-off process. After five minutes, Jenny has not come to the room to assess the patient and turn off the alarm. The student calls the front desk and asks to have Jenny paged overhead. Jenny does not hear the overhead page. The student finally calls out from the room, "I need help in here now." Samantha, RN, struts in the room and silences the alarm. The student asks her what had caused the alarm in the first place. Samantha responds, "That's Jenny's problem, not mine!" and struts out of the room. Later, as the nursing student is charting in the electronic health record, she overhears Samantha say to Jenny, "Are they just letting anyone into nursing school these days? Your nursing student did not even have the first clue about how to reset your patient's cardiac alarm."

Group Discussion Questions

1. **What behaviors are troubling in the scenario?**
   Gossip, belligerence toward Sandy, passive-aggressive response toward Sandy from Samantha (ignoring her calls for help), and staff tolerance of negative behaviors.
2. **Who is exhibiting them?**
   Samantha and bystanders.
3. **If this type of behavior directly affected you (you are the receiver of behavior), what should you do to handle the situation?**
   Add conversation.
   Jenny should discuss what happened with the instructor and ask how to respond to Samantha, who was talking uncivilly about her to others.
4. **How do you know if you are involved in gossip?**
   Does it create a negative emotional charge in the workplace?
   Does it create a rift among staff?
   Is it hurtful or damaging to others?
   Does it perpetuate conflict?
   Is it something you would say in front of that person?
5. **If you were a bystander, what should you do in this situation?**
   Become an upstander.
6. **According to Schmidt, MacWilliams, and Neal-Boylan (2016), what are some examples of behavior or behaviors that indicate inclusion of colleagues (p. 105).**

Scenario Two: Incivility

Staff involved: All clinical staff

Instructions: Read the scenario, act it out in your group, and answer the questions together utilizing the evidence-based article provided, with one member designated as the recorder. Complete this group work in 10 minutes. Pick a spokesperson who is willing to share your group's work during the discussion.

Behaviors: Verbal intimidation, passive-aggression, rudeness

Staff involved: All clinical staff

Scenario: This morning as Louise, the labor and delivery nurse, was setting up her cesarean section room, she notices supplies were missing and has to restock. This makes her very upset. Then she remembers that Lorena, also a labor and delivery nurse, had been assigned to that room yesterday and was getting an admission that needed to be completed before she left her shift. It took her until the end of her shift and she had to rush out to take her husband to the airport on time. Later, several staff members are in the lounge at lunch seated in two different groups, because this unit seems to have several cliques that always eat together. One group has Louise; Laura, a labor and delivery tech; and Libby, a neonatal admission nurse. In the other group is Lottie, a nurse midwife; Lorena; and Linda, a surgical tech. Lorena is an outgoing, outspoken staff member, but some staff view her as a bully. Louise is a quiet, private person who does not like confrontation but also has a history of going to the lounge when her work is

done before offering to help others. In Lorena's group they are complaining about their day and Lorena says in a loud voice, "It sure would be nice if everyone did what they were supposed to and not leave work for others to pick up," as she turns and looks toward Louise's group. The others in Lorena's group roll their eyes and say, "Yeah, I know what you mean." Lorena's group continues to talk about staff who don't do their work and how they believe certain staff get away with it. Lorena then looks directly at Louise and says, "Must be nice Lucky Louise! Ha ha ha! I'm just kidding" (as she rolls her eyes). Louise hears everything and sort of laughs along but is upset. She had forgotten that she did not restock her room until she heard Lorena complaining. Louise gets up from the table and heads straight to the restroom. Libby follows Louise and notices Louise has tears in her eyes. Libby says, "Just ignore her—that's just her." Louise says, "I know," and then goes back to labor and delivery. A family who is in the hallway at the drink kiosk has overhead much of this conversation and noticed Louise is upset when she leaves the lounge.

Group Discussion Questions

1. What behaviors are troubling in the scenario? Who is exhibiting them? Consider a time you have witnessed a situation like this or one that has happened to you, and share this with the group.
2. If this type of behavior directly affected you (you are the receiver of the behavior), what should you do to handle the situation?
3. If you were a bystander, what should you do in this situation?
4. According to Embree and White (2010), what other specific behaviors can you list that will help you recognize lateral violence when it is occurring?

Key Scenario Two: Incivility

Behaviors: *Verbal intimidation, passive-aggression, rudeness*

Scenario: This morning as Louise, the labor and delivery nurse, was setting up her cesarean section room, she notices supplies were missing and has to restock. This makes her very upset. Then she remembers that Lorena, also a labor and delivery nurse, had been assigned to that room yesterday and was getting an admission that needed to be completed before she left her shift. It took her until the end of her shift and she had to rush out to take her husband to the airport on time. Later, several staff members are in the lounge at lunch seated in two different groups, because this unit seems to have several cliques that always eat together. One group has Louise; Laura, a labor and delivery tech; and Libby, a neonatal admission nurse. In the other group is Lottie, a nurse midwife; Lorena; and Linda, a surgical tech. Lorena is an outgoing, outspoken staff member, but some staff view her as a bully. Louise is a quiet, private person who does not like confrontation but also has a history of going to the lounge when her work is done before offering to help others. In Lorena's group they are complaining about their day and Lorena says in a loud voice, "It sure would be nice if everyone did what they were supposed to and not leave work for others to pick up," as she turns and looks toward Louise's group. The others in Lorena's group roll their eyes and say, "Yeah, I know what you mean." Lorena's group continues to talk about staff who don't do their work and how they believe certain staff get away with it. Lorena then looks directly at Louise and says, "Must be nice Lucky Louise! Ha ha ha! I'm just kidding" (as she rolls her eyes). Louise hears everything and sort of laughs along but is upset. She had forgotten that she did not restock her room until she heard Lorena complaining. Louise gets up from the table and heads straight to the restroom. Libby follows Louise and notices Louise has tears in her eyes. Libby says, "Just ignore her—that's just her." Louise says, "I know," and then goes back to labor and delivery. A family who is in the hallway at the drink kiosk has overhead much of this conversation and noticed Louise is upset when she leaves the lounge.

Group Discussion Questions

1. **What behaviors are troubling in the scenario? Who is exhibiting them? Consider a time you have witnessed a situation like this or one that has happened to you, and share this with the group.**
   Lorena: rude by complaining in front of a group, passive-aggressive by indirect comments about Louise, verbal intimidation by looking at Louise and making a comment and name-calling.
   Others in Lorena's group: by agreeing—adding fuel to the fire.
   Libby—minimizing Lorena's behavior and comments.
   The family members are experiencing moral distress and are questioning the staff's ability to take care

of their loved one.

2. **If this type of behavior directly affected you (you are the receiver of the behavior), what should you do to handle the situation?**
   Try to diffuse the situation by apologizing and explaining what had happened. Offer to help stock if needed. Then, follow up with a private conversation requesting next time she approach her in private and refrain from name-calling.
3. **If you were a bystander, what should you do in this situation?**
   Discuss the need to learn facts first and not assume people are intentionally not doing their job. Mention how some people may find their conversation/comments offensive and they need to be positive. Offer Louise assistance.
4. **According to Embree and White (2010), what other specific behaviors can you list that will help you recognize lateral violence when it is occurring.**
   - *Reluctance/refusal to answer questions*
   - *Physical contact*
   - *Unfair assignments*
   - *Sarcasm*
   - *Ignoring*
   - *Making faces behind someone's back*
   - *Refusing to help*
   - *Sighing*
   - *Whining*
   - *Refusing to work with someone*
   - *Sabotaging others*
   - *Isolation*
   - *Exclusion*
   - *Fabrication*

Scenario Three: Graduate Student

Instructions: Read the scenario, act it out in your group, and answer the questions together utilizing the evidence-based article provided, with one member designated as the recorder. Complete this group work in 10 minutes. Pick a spokesperson who is willing to share your group's work during the discussion.

Behaviors: withholding information, gossiping

Staff involved: Clinical staff, manager, and graduate student

Scenario: Nancy, an RN, comes bursting into the office of Sally, the nurse manager, complaining about how Sam from the night shift has been withholding information during handoff. A graduate student is in clinical with Sally and overhears the complaint from Nancy. Sally asks Nancy if she has tried to resolve this with Sam directly. Nancy says, "No, Sam won't listen to me, and I have heard him talking about me with other staff behind my back." The manager calmly asks Nancy to talk to Sam directly about her concerns and share the outcome with her before she will intervene and discuss this concern with Sam directly.

Group Discussion Questions

1. What behaviors are troubling in the scenario? Who is exhibiting them? Consider a time you have witnessed a situation like this or one that has happened to you and be willing to share this with the group.
2. If this type of behavior directly affected you (you are the receiver of the behavior), what should you do to handle the situation?
3. Is this situation gender related? Why or why not?
4. Why did Sally direct Nancy to talk to Sam about her concerns before she (Sally) met with Sam about this situation? How can Sally explain her decision to the graduate student?
5. According to Kaiser (2017), what leadership style is associated with a civil environment and culture?

Key Scenario Three: Graduate Student

Behaviors: *withholding information, gossiping*

Scenario: Nancy, an RN, comes bursting into the office of Sally, the nurse manager, complaining about how

Sam from the night shift has been withholding information during handoff. A graduate student is in clinical with Sally and overhears the complaint from Nancy. Sally asks Nancy if she has tried to resolve this with Sam directly. Nancy says, “No, Sam won’t listen to me, and I have heard him talking about me with other staff behind my back.” The manager calmly asks Nancy to talk to Sam directly about her concerns and share the outcome with her before she will intervene and discuss this concern with Sam directly.

Group Discussion Questions

1. **What behaviors are troubling in the scenario? Who is exhibiting them? Consider a time you have witnessed a situation like this or one that has happened to you, and share this with the group.**
   Withholding information, gossiping, Nancy is blaming Sam, behaviors not witnessed by the manager.
2. **If this type of behavior directly affected you (you are the receiver of the behavior), what should you do to handle the situation?**
   Take on the role of an upstander; if ineffective, escalate to leadership.
3. **Is this situation gender related?**
   Difficult to ascertain from the small amount of data shared by Nancy with her manager.
4. **Why did Sally direct Nancy to talk directly to Sam about her concerns before she would discuss Nancy’s concern with Sam directly?**
   Sally is trying to prevent triangulation from occurring. She wants her staff to learn how to problem solve directly with one another. Sally can explain to her graduate student that timely and direct feedback between two colleagues is much more effective as long as it is delivered in a civil manner.
5. **According to Kaiser (2017), what leadership style is associated with a civil environment and culture?**
   Transformational leadership, which involves identifying a need for change, creating and instilling a vision in the group, and assisting followers to exceed their abilities to attain the vision. Leaders have a vested, personal interest in helping.

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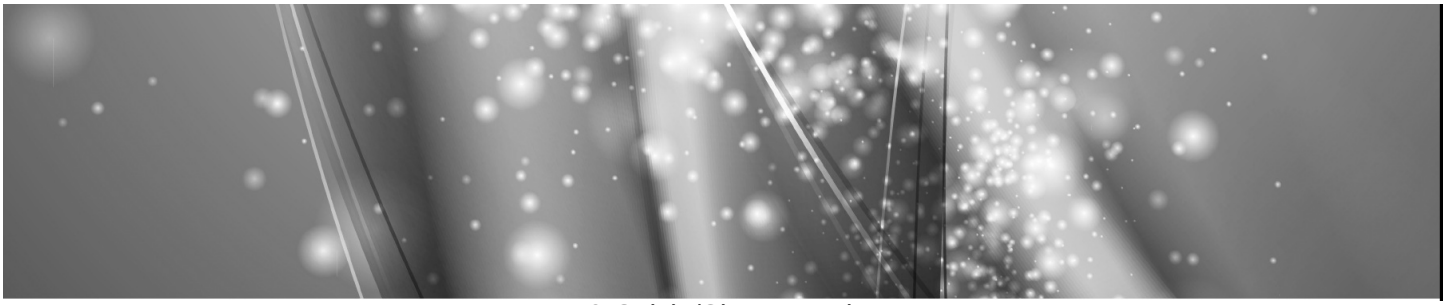
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CHAPTER 5

Strategies for Innovation

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Introduction

Think back to a favorite teacher or any strongly remembered class. Why does that memory stand out? What made that experience unique? A major factor may have been that the teacher's actions or educational activities seemed very different. The teachers and learning experiences we remember often stand apart from others by only one or two details, yet we remember the novelty of the experience. Your students may remember the experience of learning through an innovative strategy for decades after they graduate and begin working as healthcare professionals.

Widespread social and environmental changes as well as emerging trends, technologies, and resources are a challenge and opportunity for health professions educators. The emphasis in education is moving rapidly from helping students master a specific domain of content to promoting self-directed student learning and flexible problem-solving skills. Individuals who are supported to become self-directed learners as students can be responsive to rapid healthcare system changes when they have left the school setting and entered professional practice.

Healthcare educators translate the complex field of healthcare practice for students who are beginning their health careers or transitioning between healthcare roles. What future healthcare practitioners learn, as well as how they are taught, must keep pace with the changing healthcare milieu. Meanwhile, the field of education has changed through many of the same forces that have affected healthcare practices. Healthcare educators need to be knowledgeable about changes in practice and technology for both fields. Advances in health technology and therapeutics can be compared to a new understanding of learning theories and mediated teaching methods in education. Electronic medical records and online courses are in the mainstream. Health professions and academic classrooms are more culturally diverse than ever before.

New information about health is exploding out of journals, textbooks, websites, and professional conferences. How do we keep up, and how do we teach more and more information to our students without overwhelming them? Clearly, we can't just add on more of the same. How do we maintain the threads of patient-centered, holistic, and compassionate care within the complex scientific information our students must master? In this text, we hope to provide health professions educators with inspiration for trying new ways to support students in becoming self-directed learners and competent health professionals.

The Themes of Innovation

Innovation is a word that we hear every day. But is everything we hear described that way really an example of innovation? A group of leaders in health care and education have provided a helpful definition. “Innovation involves creating a solution to something when a solution or evidence does not exist (emergent), or modifying an existing solution to make an improvement (incremental or process)” (Ackerman et al., 2018, p. 159). A definition specific to innovation in health care offers an important clarification. “Innovation is something new, or perceived as new by the population experiencing the innovation, that has the potential to drive change . . .” (Weberg, 2009, p. 236). So, perhaps anything new in a particular health education setting that adds value is an innovation, at least to those of us who are experiencing it for the first time.

Porter O’Grady and Malloch (2017a) have identified the following themes for successful innovation in health systems.

- Innovation is tied to mission.
- Innovation must advance the success of the organization and the individual.
- Innovation is best directed from the point of service.
- Innovation requires recognition.
- Innovation is a team activity. No innovation is successful if unilaterally controlled.
- Innovation is a disciplined process and must be structured into the organization’s way of doing business.
- Failure is a fundamental element of all innovation; it must be accepted, accommodated, and even celebrated.
- Innovation leaders must become comfortable with risk takers, brokers, contrarians, out-of-the-box thinkers, actors, and creative noise.
- A system of just-in-time communication, decision making, and movement accompanies the innovation process and requires an immediate response and quick turnaround from leaders and stakeholders.

These themes, which portray innovation as an integrated process rather than an off-the-cuff action, may be useful for health professions educators to consider as well. Laying the groundwork for innovation through careful consideration of the organizational mission, culture, team members, and risk preferences allows for nimble just-in-time responses to emerging needs and opportunities.

Developing Innovative Strategies

Innovation can occur at all levels of an educational organization. Innovative teaching strategies can range from simple to complex. Innovations can be developed for an exercise within a course or for the method by which the entire course is taught. Teaching innovations can be developed for whole programs or even entire schools, colleges, or universities. They can be developed by one faculty member or by groups of faculty members. Support for innovation in education may begin at the top of the organization or be developed and implemented at the program or individual class session level. Success is enhanced when administrators and faculty members work side by side to plan strategically and implement changes to improve the educational milieu.

The Innovation Process

Successful innovation does not come easily; it requires creativity, planning, and evaluation. **BOX 5-1** describes an organized process for educators to think through in developing innovative teaching strategies. Just as health care calls for patient assessments and evaluation of patient outcomes, the educational process calls for learning assessments and program evaluations.

BOX 5-1 The Process of Innovation

Assessment

What are the learning outcomes or objectives? How are student learning needs being met? What is working and what is not? Could similar outcomes be reached in other ways? What is the main purpose of making a change here?

Defining Options

How else can I look at this situation? Does the literature provide evidence or creative suggestions that would address the identified needs? Are there best practices or higher-level evidence that address the situation? Do students or other faculty members have suggestions?

Planning

How will I measure the learning outcome? How will I plan to evaluate the effectiveness of this innovation? How can I best use change theory in this planning? Who are the stakeholders to consider? Will change be facilitated by working with a curriculum committee, collaborating with other faculty members, or trying this out on my own? Do I need additional technological knowledge or expert consultation to carry out this change? If human participants or their data are involved, do I need to seek institutional board review and approval? How and where will I meet resistance? How will I develop support?

Gaining Support for the Innovation

Which resources are required and what other resources would be helpful? How can I acquire and fund resources? What level of administrative support is required and available? Which strategies will I use to gain additional support if needed?

Preparing Faculty Members for the Innovation

If other faculty members are involved, do they need additional education? How will that be carried out? Is everyone in agreement as to how the strategy will be implemented? Is rehearsal time needed?

Preparing Students for the Innovation

What will students need to make this change? Do I need to provide explanations, written student instructions, tutorials? Have I provided a mechanism for troubleshooting, and do students know how to address any problems?

Implementing the Innovation

How can I assess the process as it unfolds? How much flexibility is available if the intervention is not going well? Will I need to follow up?

Evaluating the Outcome

How did it turn out? Were learning outcomes met? How have students reacted to the strategy, and can they provide input for change or improvement? If other faculty members are involved, can a consensus be reached about the direction for more changes and/or support for continuation?

Sharing the Outcome

Who should know about the results? How will I share the outcomes with project team members, faculty members, administrators, and professional colleagues? Are there audiences in the local workplace, at professional conferences, or as journal readers who could use what was learned from this project?

Assessment of a course requires a look at current strengths and issues. How can the strengths be enhanced? What should be changed? Educators must focus on what the expected learning outcome ought to be, with awareness of learning theory and student learning styles and needs. Specific content requirements change often in health care, as new techniques, technologies, and research bring new knowledge needs. With the overwhelming amount of information available in today's healthcare world, it will not be possible to include everything students need. They will need to have appropriate resources to supplement classroom or clinical learning. The instructor must decide which and how much content will be needed—a decision that is often difficult. While addressing the content to be learned, it is also important to consider student learning needs. An understanding of the diversity in learning needs provides a foundation for the development of effective strategies.

To *define options*, search the literature for research findings, best practices, suggestions, or techniques that address the identified needs. Asking students or other faculty members for suggestions can also be helpful. This is the place where creativity reigns. It is important to look at many different ways to address the learning objective before selecting one. Asking the question, "How else can I look at this situation?" can be enjoyable and lead to identifying additional options.

Once a strategy has been selected, *planning* is all-important. This is the time to decide what outcome should be evaluated and how that evaluation should take place. This phase may include how the strategy will be used in student grading and evaluating learning outcomes for the class, and should allow for student and faculty input. This phase can also be the time to develop an educational scholarship or research project around the innovation, if appropriate. Educational research and publication of your results are extremely important activities, as they can assist all of us in understanding and applying effective educational processes.

Knowing who the stakeholders are and what their investments are in the status quo or in supporting change can be helpful in planning strategies to bring them on board. Some stakeholders, including students, embrace change while others will resist new approaches. Using change theory can assist in planning to demonstrate need and provide information that can make resisters more amenable to change. Some strategies will require curricular change, which is a complicated process and

one that must be started early to avoid implementation delays. It is important to take enough time to develop support for the strategy. If this is a simple change within a course, then the instructor will need only the support of students to participate effectively and avoid sabotaging the effort. In more complex strategies, it may be important to collaborate with other faculty members and administrators.

Some strategies will require the help of technical specialists, who may be able to offer support and/or instruction for using the techniques or equipment. Allot time for faculty development to enable faculty members to reach a level of comfort. Most importantly, technical staff must be available to help solve problems, which are bound to occur. Planning strategies for troubleshooting and providing access for problem solving—for both faculty members and students—must be thought out in advance of implementation.

What if your project leads to important learning about a new way to teach, or ways not to teach? Later, you may want to present the findings outside your department at professional conferences or write the findings to submit for publication in a professional journal. A specific resource to consider during the planning phase is the organization's institutional review board (IRB) members and staff. Many journal editors require evidence of project IRB approval to consider an educational study manuscript for publication. Taking the time to consult in advance about how to protect vulnerable student and faculty participants and determine whether approval is needed for data collection may allow for being able to present and publish the outcomes later. If in doubt about whether data collection in your project requires approval, check with the IRB staff.

Gaining support for the innovation is the next step. Some strategies require few or no resources to implement, while others require significant physical and/or financial resources. If resources are needed, then gaining support for acquisition of those resources is essential. Looking at alternative sources of funding is helpful. Grants can provide a good funding source, but they require time and effort to secure and may last for only a limited time. Administrative approval may be required, and administrators may also be an excellent resource to tap regarding potential funding or acquiring resources. Once the project has been developed, it is important to validate the support of stakeholders.

Faculty members may also need preparation for the innovation. For some strategies, rehearsal time or additional faculty development may be required. Planning sufficient time for those activities will increase everyone's comfort level with the process. This is the time to be sure everyone agrees about how the strategy will be run. Use of *perception, validation*, and *clarification* can be valuable here. People interpret statements and plans differently. Checking that everyone has the same perceptions (validating) and clarifying differences can provide unity in approach to students and reduce problems of students playing one instructor against another.

Preparing students for the innovation is an important step. Student instructions

should be clear and specific. This is the time for motivating students to want to try a new process, and for gaining their support. Students need to know how to address problems, especially when technology is involved. Students need to feel comfortable that they will not be punished for mistakes, but rather will benefit from those attempts as part of the learning process. Evaluation methods or grading must be made clear.

The best part of the process is *implementing the innovation* because it makes the innovation real. Formative assessment as the project is unfolding can provide information for keeping the project on track. Flexibility may be needed if problems arise. Sometimes, unintended consequences, such as identification of other gaps or surfacing of emotional issues, can occur. Instructors should be alert to the need for follow-up or referral.

Evaluating the outcome is part of the process to assess and reflect on the results, and judge how the results compare to the intended outcomes. Remember that learning can continue long after implementation of the educational strategy. It may be relatively easy to measure short-term attainment of learning outcomes, but it also may be possible to explore longer-term effects. For strategies that were developed as a foundation for other learning experiences, you could plan to assess students at the end of the academic program. Students and faculty members should be asked to provide input for future development and use of the strategy.

Sharing the outcome is the final step in the process. A strong evaluation process provides an opportunity to participate in educational scholarship or research. Even if a strategy is not suitable for research, it still may be appropriate for publication as a creative strategy. Sharing teaching strategies presents the opportunity to improve the educational process. A catchword in health care today is *evidence-based practice*. We also need evidence-based practice in healthcare education.

Challenges to Innovation

Jean Giddens (2015), a well-known innovator in nursing education, describes three aspects of the innovation paradox. First, innovation is typically met with conflict and criticism from those who do not welcome a possible change. Second, although health professions scholars expect new interventions to be based on credible evidence, initially, there may not be evidence available to support the change. And third, educational innovation involves risk, including the possibility of negative evaluations when teachers try something new.

Practice habits, traditions, and routines can be hard to change. As educators, we can be so busy that it feels comfortable to keep things just as they are. The idea of change, or even the idea of thinking through the evidence for change, can seem overwhelming. Malloch and Porter-O'Grady (2017) explain the role of dogma in preventing innovation. Dogma, similar to an assumption, is an unconsidered devotion to a particular belief. In the absence of our effort to evaluate the evidence,

dogma keeps us doing the same thing. Dogma prevents us from letting go of the routines that do not add value to our work. Innovation often involves letting go of some processes or practices to embrace other practices that have potential to improve outcomes. Even getting rid of dreadful and inefficient processes may involve a sense of grief and loss for some stakeholders.

Often, even a careful search for educational evidence turns up very little useful information. Malloch and Porter-O'Grady (2017) describe innovation-based practice as the point at which what is already known (the evidence) intersects with what is needed or desired (the gap or opportunity). Innovation-based practice fills the gap. When there is inadequate evidence to answer an educational question, the teacher can make choices and decisions by verifying what is known, and employing a spirit of inquiry to test new ideas.

A common lament in both health care and education is a lack of organizational resources to support innovation. Yet health professionals and teachers are endlessly creative, repurposing items and changing models of practice or developing workarounds to assure that their patients/clients/students can reach good outcomes. Well-known artists, musicians, writers, and designers have addressed how the presence of one or more constraints, such as the absence of a particular color of paint, can inspire innovation (Stokes, 2006). Artists limited to a few colors or a particular use of light and musicians intentionally avoiding the use of a particular chord progression take risks and generate new ways of expressing their arts.

As a teacher, I have sometimes thought that there was only one way to teach a particular topic, or that some content areas could only be taught in face-to-face classes. Yet when downed electric power lines after a monsoon storm meant that a classroom building was off-limits, or a bad influenza season kept many students off campus, I found different ways to teach and to help students learn. Often, these creative new options turned out to be more effective than my long-established strategies. However, I might not have risked the changes if the previous resources (such as live classroom time) were not constrained. It was not always easy to get me to change from what I thought already worked well, but under constraints, I developed new learning activities and assignments that aligned with the objectives and often worked much better.

An important resource that is often in short supply is organizational support for risk taking. As you develop new ideas to try in your teaching, consider how your organizational leaders assess and respond to risk. It is wise to know how much latitude you have, because the organizational perspective on risk and failure can vary widely. While some organizations see failure as negative, wasteful, and destructive, other organizations see failure more as objective information that influences future planning and decisions (Porter-O'Grady & Malloch, 2017b). If you bring your school leaders into discussions during the planning phase, you will likely know how open or supportive they are likely to be of the risks. At times of crisis,

there may be more organizational willingness to entertain risk in innovation, or there may be even more opposition to change.

Despite the innovation paradox, Giddens (2015) expresses faith in the innate optimism of innovators and suggests the following strategies for supporting innovation:

- Maintain a culture of openness to diverse ideas and strategies
- Present a well thought-out idea with a clear message and a clear process
- Introduce innovations strategically with an appreciation for colleagues growing tired of too much rapid change
- Remain focused without being distracted by too many options cluttering up the process
- Participate in evaluating innovation based on an unbiased objective process for outcome
- Reward innovation, regardless of success, through metrics used for faculty evaluation

Becoming an Innovation Leader

Innovation is not for the faint of heart. Weberg (2017) describes how particular attributes or qualities of the leaders and team help move organizations toward adapting to changing conditions. See **BOX 5-2** for examples of skills that innovation leaders may wish to develop for facilitating change.

BOX 5-2 Skills for Innovation Leaders

Boundary spanning: making connections to outside groups
Risk taking: trying out new ideas
Visioning: collaborating for planning and strategy
Leveraging opportunity: recognizing resources and gateways
Adaptation: changing based on frequent reassessment of need
Coordination of information flow: sharing relevant data
Facilitation: fostering interaction and providing support

Data from Weberg, D. Innovation leadership behaviors: Starting the complexity journey. In Davidson, S., Weberg, D., Porter-O'Grady, T. & Malloch, K. (2017). *Leadership for evidence-based innovation in nursing and health professions*. Jones & Bartlett.

The Costs and Benefits of Change

A study in Finland examined 46 teachers' motivational experiences and challenges with educational innovation. The process of developing new educational collaborations promoted motivation through enthusiasm and interest, yet involved challenges in obtaining organizational support and resources. Changes in the educational environment provided openings for teachers to learn and develop, sustaining their engagement. When collaborations were possible, the networking and interactions supported teachers' feelings of relatedness, competence, and autonomy (Kunnari & Ilomaki, 2016).

The changes that go along with innovation can be invigorating and exciting or exhausting and unrelenting. There has not been much work produced on the personal costs of innovation and response to change in health care and higher education. Change fatigue is an "overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the workplace" (Brown, Wey, & Foland, 2018, p. 312). Not surprisingly, hospital staff nurses report a negative relationship between change fatigue and job satisfaction (Brown, Wey, & Foland, 2018). That experience of change fatigue in the clinical setting is important to note because our students will practice in health settings of constant change, the staff who precept and interact with our students are working in the context of frequent change, and, as health professions educators, we will need to keep up with the changes in both the clinical settings and the academic settings.

Conclusion

Developing effective teaching strategies requires effort and persistence, but can also be exceedingly rewarding and fun. Innovative teaching strategies should support learning objectives and student learning needs. Sharing those strategies with others benefits students and faculty alike. We hope you will take advantage of the strategies presented in this book and go on to develop, implement, and share your own innovative strategies.

TEACHING EXAMPLES

Innovation Occurs on Many Levels

To avoid being overwhelmed, educators can practice their innovation leadership skills by starting with small projects. The following example illustrates an innovation that began in one course.

I teach a graduate-level class about learning and teaching in academic and clinical settings. The course is required for students in some of the graduate nursing tracks and is taken as an elective by other health professions students. Because these students are learning to teach, I have often assigned them to teach one another through presentations and demonstrations. I found myself very busy during those presentations, judging the content and presentation style, timing the session, taking notes, thinking about feedback to provide, and noticing what the other students in the room were doing.

The innovation in my graduate class came about after I spent a day volunteering in my child's elementary school. I observed a third grade class where each child gave a very brief—about five sentences—presentation about an animal. The presentations were adorable, but what surprised me was the behavior of the student audience. These third graders sat relatively still and appeared to be attentive to the presentations, writing brief notes, drawing pictures, asking pertinent questions, and applauding enthusiastically.

Later, I asked the teacher for that elementary class what the children had been assigned to do. She had appointed each child to a role during classmates' presentations. Some children were to take notes, some were assigned to make eye contact with the presenter, one operated the timer, and one was assigned to ask a question that was not stated in the presentation. (For example, if the presenter said that cardinal birds were red, the questioner could not ask about the color of cardinals.) The children rotated assigned roles so that they had the experience of enacting each role.

For the innovation in my graduate-level university course, I shamelessly borrowed ideas from the third grade class. I assigned each graduate student rotating roles, with a focus on supporting their classmates through peer coaching. For example, common roles that I assigned included these:

- Presenter
- Timekeeper
- Moderator for post-presentation discussion
- Learners (to role-play the intended audience members)
- Providers of supportive feedback
- Providers of feedback for further development

Depending on the number of students scheduled to present during a session, some roles were held by multiple students during the same presentation.

I engaged the students in making ground rules for the session. For example:

- We are all here to support one another.
- We can be respectful and kind while helping each other learn and improve.
- Each of us should leave today knowing how to do an even better presentation than we did today.

Students tell me the most difficult role is providing feedback for improvement, and they would prefer not to

take that role. But because that is an assigned role, students approach it seriously and thoughtfully.

We stop to discuss each presentation directly after the presentation, and have a longer reflection and debriefing session after the final presentation. Students tell me the presentations are different than other presentations they have experienced. They report feeling like they are part of the process rather than a member of a passive audience. They also reflect on insights into their future roles as teachers.

I'm grateful to the elementary school teacher who provided such great role modelling for an innovation in my graduate-level course. However, an innovation does not last forever in its original state. The year after I introduced this small-scale innovation, I needed to modify and innovate regarding the presentation process again. Changes in how the academic program courses were scheduled meant that not all students would be on site in the classroom for the day of the presentations. So, I developed options for students. They could choose to provide a live classroom presentation and participate in peer coaching as already described, or to videotape their presentations and participate in peer coaching online using a web-based platform that allowed for peer feedback. Students have responded very positively about having this choice. But I have to admit that if I had not run into the constraint of scheduling live classroom time, I probably would not have thought of providing that option to record the presentations and facilitate peer feedback online. Once again, a constraint limitation on face-to-face class scheduling led me to modifications and innovation.

Seeing an innovation often inspires other innovators. Although this project took place initially within one course, other faculty members were facing similar challenges with scheduling classes and transitioning to hybrid or online teaching. My colleagues quickly improved on the ideas that I shared as they integrated variations of the process and technologies in their own courses. I appreciated their improvements and made additional changes to my course as well.

Discussion Questions

Reflect on a classroom innovation—perhaps a change to incorporate concept-based teaching, or using active learning strategies in the classroom, or another innovative change. Using the process outlined in Box 5-1, answer the following questions:

1. What assessment and planning steps are needed for this innovation?
2. How will you gain support and prepare the students and faculty for the innovation?
3. What problems do you anticipate?
4. How will you evaluate and share the innovation?

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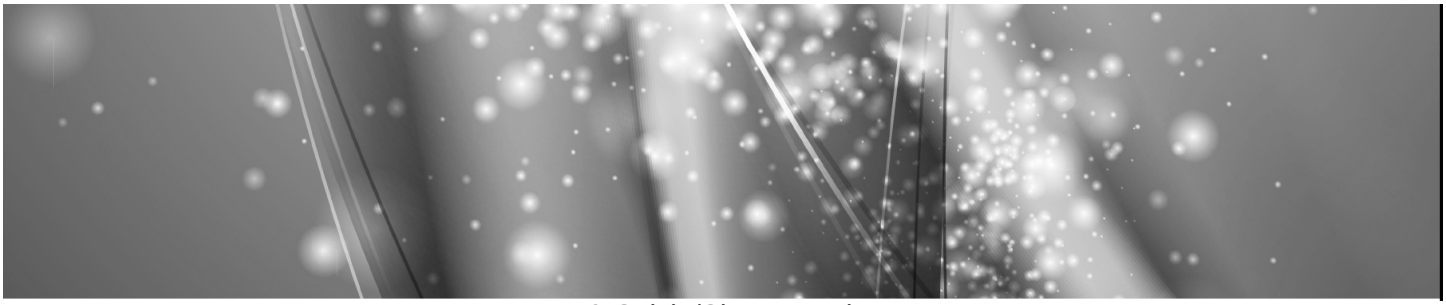
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CHAPTER 6

Clinical Reasoning: Action-Focused Thinking

Cheryl A. Tucker

Introduction

Instructors in the health professions, who also are practitioners in their fields, are compelled to assist students in developing their clinical reasoning skills as beginners in the health professions and as novice thinkers. Sound reasoning is essential in preserving the standards of the profession and promoting quality patient outcomes. In the past, health professions literature addressed this process as *critical thinking*. However, the critical-thinking model is limited in that it does not move learners to the level of thinking about their thinking. Current literature addresses this awareness and the need to move to a deeper level of thinking. This process is *clinical reasoning*. Within the various health professions, many terms and models exist. With the call to interdisciplinary education and collaborative patient care, healthcare professionals need a shared model of clinical reasoning. This chapter provides an overview of what clinical reasoning is and why it should be taught in a purposeful way, and presents a model that can be implemented across the healthcare disciplines.

Clinical Reasoning Framework

In 2003, the Institute of Medicine (IOM) published its report *Health Professions Education: A Bridge to Quality,* which examined the need to transform health professions education. The IOM's vision for the education of health professionals is articulated in its core competencies, which assert, "All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics" (IOM, 2003, p. 3). *The Future of Nursing: Leading Change, Advancing Health* (IOM, 2011) further addresses these core competencies and explores the necessity of transforming professional nursing education. The American Association of Colleges of Nursing (AACN) supports these core competencies as delineated in the *Essentials of Baccalaureate Education for Professional Nursing Practice,* which highlights such areas as "patient-centered care, interprofessional teams, evidence-based practice, quality improvement, patient safety, informatics, clinical reasoning/critical thinking, genetics and genomics, cultural sensitivity, professionalism, practice across the lifespan, and end-of-life care" (AACN, 2008, p. 35).

Various professional organizations use *critical thinking*, *clinical judgment*, and *clinical reasoning* interchangeably. Tanner defined *clinical judgment* as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (Tanner, 2006, p. 204). Tanner acknowledged that *problem solving, critical thinking, decision making*, and *clinical judgment* are often used in the literature to mean the same thing. Cappelletti, Engel, and Prentice (2014) conducted a systematic review of clinical judgment to examine the findings on clinical judgment and reasoning in nursing that have emerged since Tanner's review in 2006. The findings of the systematic review generally support Tanner's original model, although the role of experience in clinical reasoning and judgment is still not well understood or fully established. "Sound clinical judgment depends on recognizing key aspects of a situation (noticing), correctly understanding the meaning of the symptom (interpreting), taking appropriate action to achieve desired outcomes (responding), and thinking about the process (reflecting)" (Ashley & Stamp, 2014, p. 523).

Clinical reasoning is the ability of the health professions student to use critical-thinking skills in the practice environment. It should include the "context and concerns of the patient and family" (Benner, Sutphen, Leonard, & Day, 2010, p. 85). Clinical imagination and reflection are also part of clinical reasoning (Benner et al., 2010; Bristol, 2018). The thought is that critical thinking is a snapshot in time, whereas clinical reasoning can accommodate the changing nature of the clinical settings. In varying degrees, all students need guidance with transfer or application

of knowledge to specific patient situations. As the teacher builds clinical reasoning abilities in the student, the individual student learns (or should learn) to recognize the meaning of knowledge (information) and then grasp how to use (apply) this knowledge. Transfer of knowledge is essential for success in the healthcare arena.

The IOM (2003) report *Health Professions Education: A Bridge to Quality* articulates the need for healthcare professionals to be amply prepared to address the healthcare needs of an ever-changing patient population. The IOM report calls for healthcare providers to collaborate on delivering individualized, yet comprehensive health care. This requires purposeful, thoughtful, and analytical processing of information as well as deliberate communication of this process to other healthcare professionals. For this to happen, the educational approach must be transformed into one that cultivates clinical reasoning.

What role does the health professions teacher play in the development of clinical reasoning in his or her students? Health professions teachers have been utilizing different tools in promoting clinical reasoning in their students. A few examples of various tools utilized include professional nursing's nursing process (assessment, nursing diagnosis, planning, implementation, and evaluation), medical education's SNAPPS (summarize, narrow, analyze, probe, plan, and select; Nixon et al., 2014), and physical therapy's International Classification of Functioning, Disability and Health (ICF). These tools promote the student's thinking through various steps of the clinical reasoning process. When health professions students collaborate on patient care problems, the professionals must speak the same language as they develop their clinical reasoning skills. To develop those skills in an interdisciplinary manner, the students collectively should use a decision-making tree, based on the scientific method, as a clinical reasoning tool. Utilizing the clinical reasoning tool, students acknowledge the clinical problem and gather data; analyze the information, develop solutions or a plan, and make a decision; implement the decision(s); and evaluate the decision(s).

The scientific method of thinking, which uses problem definition, analysis, decision making, implementation, and evaluation, has long been used by healthcare providers. Every profession uses this method in some way, although each uses different nomenclature for the steps of the process. A proposed model for clinical reasoning incorporates all the analytical methods used by educators in the various health professions (see **TABLE 6-1**). The categories are similar in content, are sequential, and serve as a means for novices to understand their thinking as they move through the process.

TABLE 6-1 Clinical Reasoning Model for Healthcare Professions

Healthcare Professions	Scientific Method[a]	Nursing[a]	Medicine[b]	Physical Therapy[c]
Clinical reasoning model	Scientific process	Nursing process	SNAPPS	The physical therapy clinical reasoning and reflection tool (PT-CRT)
Recognition				
Identify the clinical situation and collect relevant data	Define the problem; gather information (data)	Assessment (data collection): History taking, physical assessment, results of diagnostic tests	Summarize briefly the history and findings	Initial data gathering/ interview
Appraisal				
Analyze findings and formulate conclusions	Analyze the information (data)	Nursing diagnostics: Consider assessment database and identify problems; choose nursing diagnosis	Narrow the differential to two or three relevant possibilities	Generate initial hypothesis
Formulate Actions				
Develop interdisciplinary strategies to resolve clinical situation	Develop solutions; make a decision	Planning: Determine desired outcomes; choose interventions to achieve those outcomes	Analyze the differential by comparing and contrasting the possibilities Probe the preceptor by asking questions about uncertainties, difficulties, or alternative approaches	Examine/evaluate/plan of care
Implement Actions				
Accomplish strategies using interdisciplinary collaboration	Implement the decision	Implementation: Carry out the interventions	Plan management for the patient's medical issues	Interventions
Clinical Judgment				
Evaluate decisions and outcomes and revise strategies as needed	Evaluate the decision	Evaluation: Assess the result of the interventions; determine if outcomes have been achieved; revise the plan if outcomes are not being met; terminate interventions no longer needed	Select a case-related issue for self-directed learning	Reexamination/ outcomes

Description Description

[a]Data from deWit, S. C., & O'Neill, P. A. (2014). *Fundamental concepts and skills for nursing* (4th ed.). St. Louis, MO: W.B. Saunders.

[b]Data from Nixon, J., Wolpaw, T., Schwartz, A., Duffy, B., Menk, J., & Bordage, G. (2014). SNAPPS-plus: An educational prescription for students to facilitate formulating and answering clinical questions. *Academic Medicine, 89*(8), 1174–1179; Wolpaw, T., Papp, K. K., & Bordaage, G. (2009). Using SNAPPS to facilitate the expression of clinical reasoning and uncertainties: A randomized comparison group trial. *Academic Medicine, 84,* 517–524.

[c]Data from Atkinson, H. L., & Nixon-Cave, K. (2011). A tool for clinical reasoning and reflection using the International Classification of Functioning, Disability and Health (ICF) framework and patient management model. *Physical Therapy, 91,* 416–430.

Health care continues to grow more complex, and health professionals must be better prepared to utilize their clinical reasoning skills. Teaching clinical reasoning is difficult; it must be purposeful and can be both planned and spontaneous. In the IOM report (2011), McNelis and Ironside (2009) state, "Faculty report spending most of

their time supervising students in hands-on procedures, leaving little time focused on fostering the development of clinical reasoning skills" (p. 189). It is essential that classroom and clinical experiences be interwoven with real-life clinical experiences. Health professions teachers assist the students in making connections between gaining and applying knowledge, so that students stitch a strong tapestry of clinical reasoning skills for the diverse and complex healthcare environment (Benner et al., 2010).

Types of Learners

Teaching clinical reasoning to the student will vary in style and depth depending on where the student is in the health professions program. Beginning students need a foundation based on the essential coursework such as basic sciences, psychology, and sociology. Furthermore, a fundamental condition for learning and practice in all health professions students is the ability to obtain and manipulate information from a variety of sources, organizing it in a meaningful way to bring about purposeful decision making. Students come to the learning environment with different learning styles and preferences. When faced with new knowledge, students gravitate to their dominant learning style and successfully assimilate new information when the teaching strategies utilized are in harmony with their preferred style. (Learning styles are discussed more thoroughly elsewhere in this text.)

Clinical practitioners also need the physical abilities to provide safe and competent care. To assist educators, the Americans with Disabilities Act (ADA) has defined core competencies, with the intent of clarifying minimal expectations for entry-level applicants (ADA, 1990). Each health profession then can develop specific criteria as appropriate for the benchmark of that profession. Examples of typical core competencies and the ways they are defined in nursing are displayed in **TABLE 6-2**.

TABLE 6-2 Example Core Performance Standards

Requirements	Standards	Examples
Critical Thinking	Critical thinking ability for effective clinical reasoning and clinical judgment consistent with level of education preparation	Identification of cause/effect relationships in clinical situations Use of scientific method in the development of patient care plans Evaluation of the effectiveness of nursing interventions
Professional Relationships	Interpersonal skills sufficient for professional interactions with a diverse population of individuals, families, and groups	Establishment of rapport with patients/clients and colleagues Capacity to engage in successful conflict resolution Peer accountability
Communication	Communication adeptness sufficient for verbal and written professional interactions	Explanation of treatment procedures, initiation of health teaching Documentation and interpretation of nursing actions and patient/client responses

Mobility	Physical abilities sufficient for movement from room to room and in small spaces	Movement about patient's room, work spaces, and treatment areas Administration of rescue procedures such as cardiopulmonary resuscitation
Motor Skills	Gross and fine motor abilities sufficient for providing safe, effective nursing care	Calibration and use of equipment Therapeutic positioning of patients
Hearing	Auditory ability sufficient for monitoring and assessing health needs	Ability to hear monitoring device alarm and other emergency signals Ability to discern auscultatory sounds and cries for help
Visual Ability	Visual ability sufficient for observation and assessment necessary in patient care	Ability to observe patient's condition and responses to treatments
Tactile Sense	Tactile ability sufficient for physical assessment	Ability to palpate in physical examinations and various therapeutic interventions

Reproduced from Sample Core Performance Standards table of the Americans with Disabilities Act, Implications for Nursing Education Web page, © Southern Regional Education Board. Used with permission.

Prerequisite courses and core competencies assist beginning health professions students as they progress to clinical courses where their thinking about patient problems is transformed into clinical reasoning. There also are essential attributes of learners that will contribute to the development of clinical reasoning. These attributes are:

- *Motivation:* A willing learner who desires to become a health professional
- *Attention to details:* Recognize and use vital information to promote safe patient outcomes
- *Ability to formulate questions:* For the purposes of clarifying, acquiring, and processing information
- *Awareness of knowledge gaps:* Based on known information, can identify what is not known and can identify resources for narrowing the knowledge gap
- *Awareness of own thinking:* Attention to own strategies for thinking through a problem and recognition of hindrances to effective problem solving
- *Ability to draw analogies:* Taking known information and applying it to new situations such as a challenging patient example

As learners gain more exposure in the clinical setting, they have more

experiences and knowledge to draw on for their clinical reasoning. Individual students develop their own success strategies for developing clinical reasoning. Verbal learners, who process and absorb new knowledge through logic and sequence, are typically left-brain thinkers. These left-brain thinkers will learn clinical reasoning best through a linear process as exemplified by nursing process care plans. Students who have a learning tendency toward right-brain thinking processes absorb information visually, holistically, and often intuitively. Right-brain thinkers prefer a more global approach, such as the use of concept maps (Worden, Hinton, & Fischer, 2011).

Conditions for Learning

Effective Teaching for Clinical Reasoning

To cultivate clinical reasoning in the health professions student, the instructor should possess a comprehensive command of the subject and must facilitate thinking by the student rather than merely presenting information. Current practice knowledge is imperative and should include professional standards, guidelines, practice recommendations, and research evidence. The instructor's clinical practice background is beneficial in providing clinical scenarios that are realistic and promote retention of concepts that are useful in clinical practice. Furthermore, the instructor must possess the same attributes of the learner as listed in the previous section. Thus, the ideal teacher is one who can articulate and bring about clinical reasoning in his or her own self and in students.

A teaching style that incorporates Socratic questioning is ideal for developing clinical reasoning in the student. The questioning format stimulates clinical curiosity ("What would we expect in the patient when we see ____?"), and the process leads students to start thinking in the form of questions ("Why did this happen?"). The Socratic method also allows faculty and students to listen to each other's thinking processes and decision making (Oyler & Romanelli, 2014). When using Socratic questioning, the faculty member constructs questions purposefully to lead the student down a particular path of thinking. The process of moving through a scenario brings the student to outcomes the faculty wishes to reach. As the guide in this process, the faculty member redirects the student's thinking when needed, explores potential outcomes of the situation, challenges the student's clinical reasoning abilities by exploring options, and then discusses alternative actions.

As you can see in the example in **BOX 6-1**, the student's clinical reasoning is not enhanced when the faculty member assumes control of the situation. Promoting clinical reasoning includes assessment, often through questioning, of the student's knowledge and potential knowledge gaps or misunderstandings. The instructor then can correct the student's thinking to bring about more accurate reasoning. Due to the nature of the clinical setting, the instructor, at times, may need to be more directive in the approach with the student. In another illustration, in the teaching example at the end of this chapter, it would be easier for the faculty member to take action to correct the problem, but this does not promote the development of independent thinking and the student's clinical reasoning skills. Again, the role of faculty in developing clinical reasoning is to cultivate clinical reasoning in others.

BOX 6-1 Case Example: Guiding a Student in Clinical Reasoning

On a routine clinical day, it was time for the student to give his patient an insulin injection. The student and the instructor met in the medication room to review pertinent information prior to preparing the injection. The student had all the correct information and began to prepare the insulin injection. During the process of drawing up the medication, the student drew up the wrong dose of insulin—50 units of insulin instead of 5 units. The instructor remained calm and thought about how to point out the medication error to the student in such a way that the student could learn from the experience, accept constructive criticism, and not lose self-confidence.

The instructor gave the student the opportunity to recheck each step in the process, in hopes that the student would identify the medication error. Unfortunately, the student did not realize that he had prepared an incorrect dose. Using the Socratic method, the instructor began to ask the student questions concerning the medication in an effort to determine if a knowledge gap could be identified. If so, the instructor could provide additional direction and provide time for further review. Although the student knew the drug information, it became apparent that the student could not accurately read calibrations on a syringe. It was now time for the instructor to intervene. So, the instructor asked the student to identify where on the syringe the 5-unit mark was for the correct dose. The student pointed to the 50-unit mark. The instructor directed the student to the correct calibration on the syringe. The student immediately realized his mistake and corrected the medication dosage. The instructor discussed with the student the potential outcome if he had administered the wrong dosage. Working through the steps of the clinical reasoning model, this situation became an opportunity for the student to explore the potential negative consequences to the patient. He then administered the insulin injection correctly.

As a follow-up, the instructor referred the student to the clinical skills lab for remediation.

Reflective practice serves as a basis for future action or as a guide in gaining understanding about an experience. Effective teachers can benefit from self-analysis through reflection prior to the teaching experience by asking such questions as “Where do I want them to demonstrate progress today?” “What are the clinical goals for the day?” “How can I promote clinical curiosity in my students?” “Is there anything about my teaching style that impedes the students?” Such self-reflection by teachers will lead to beneficial effects in students, in the form of development and enhancement of clinical reasoning.

Student Considerations That Promote Clinical Reasoning

An important condition that must be considered is that of student self-concept, which includes self-confidence. Learners who begin a program with limited self-concept or weak self-confidence lack the ability to trust their own judgment and feel good about their clinical decisions. Low self-confidence in a student often hinders initiation of care or suggests to the patient and family a lack of competency. Thus, the patient may develop a lack of trust in the care provider, which jeopardizes the patient–care provider relationship. To guide the student in overcoming a lack of confidence, the instructor approaches the learning situation in progressive steps. A first step can be to identify a simplistic hurdle that can easily be overcome. An example is talking a student through improving a psychomotor skill such as sterile procedure. Often, students need reassurance that they have the knowledge and skill to perform safely

in the clinical environment. To assist the student in developing confidence, the clinical instructor can talk through the steps with the student prior to entering the patient room. Also, the instructor can role-play the patient situation with the student, anticipating questions the patient may have while care is being provided.

The goal of the educational program is to create a student who thinks like a health professional. In the skills practice lab, students prepare for clinical practicums, yet once in the patient care setting do not see themselves as the legitimate care providers. They do see themselves as students in an academic setting; therefore, the faculty member must elevate the student's concept of self as a health professional. Research by Etheridge (2007) addressed experiences students identified as beneficial in both their clinical nursing judgment and their role in making these judgments. Students stated that multiple clinical experiences helped them to increase self-confidence and learn responsibility for decisions and care outcomes. Also, students stated that having the opportunity to discuss clinical care experiences with their peers was helpful in validating decisions and gaining further insight. Active discussion assisted the students in learning to trust themselves and their thinking while developing collaborative care. Furthermore, students expressed personal growth through the support of the clinical instructor and through interactions with supportive professional staff. This evidence points to the value of the personal presence of the clinical teacher during student patient care experiences. The Teaching Example at the end of this chapter explains how the instructor guides the student through clinical reasoning to solve a clinical problem.

Potential Issues

To develop clinical reasoning abilities, the student must be motivated to learn and apply information in the academic and clinical arenas. Preparation such as reading and completion of other assignments is fundamental for knowledge application, and is essential in both the classroom and clinical settings. College students often do not read prior to class, but wait to see what important content is covered in class, and then read that information (Kerr & Frese, 2017). However, the basis for clinical reasoning is core knowledge essential to the professional field. In the ideal learning environment, where Socratic questioning, active discussion, and case scenarios are used, it is assumed that at the time of class the student possesses preliminary information related to the topic of the day. Based on this assumption, learning outcomes are achieved and the student is equipped to use the information as a foundation for clinical decisions and actions. Without this fundamental information, the student cannot provide the appropriate level of care. Even though the faculty emphasizes the value of class preparation, the student may not appreciate this importance until after the first graded assignment. For those students who seek counseling after a failing grade, the instructor should explore time management and study strategies. If the student has been reading, the instructor can provide suggestions for more efficient reading. If the student has not been reading, the instructor can reiterate the benefit of reading and preparation.

In the clinical setting, the student who does not possess the fundamental information and skills will struggle with reasoned decisions necessary for safe and appropriate care. As you can see in the example in Box 6-1, the unprepared student is not able to move through the thought processes to arrive at the correct conclusions. A student who is unable to process the information and display clinical reasoning has the potential to jeopardize patient care and his or her own success in the clinical course. As the student gains more knowledge and skill and increases in confidence, she or he should increase in independence. If this is not occurring, the student will not employ clinical reasoning and the instructor will need to have a conference with the student to determine the obstacle(s) and develop a remediation plan.

Many students are successful in the didactic portions of their academic programs but are unable to demonstrate transfer of knowledge and concepts into the practice setting. Benner and colleagues (2010) indicate that this may be due to the type of teaching strategies employed. These strategies may be unidirectional, didactic, content-driven teacher-talk, with no opportunity for the students to manipulate and fully understand the information presented, much less apply it. By improving ways to teach the development of these processes in both students and practitioners, healthcare providers can learn to balance insightful and evidence-based thinking to make effective clinical decisions (Cappelletti, Engel, & Prentice, 2014). Benner et al.

(2010) further recommend that educators in health professions programs use strategies focused on the patient and care activities. Examples that can be found in this text include human patient simulation, case studies, and problem-based learning.

Educational programs must employ a continuous strategy that assesses a student's ability to transfer theoretical knowledge to the clinical practice. Part of this strategy should examine the learner's ability to overcome ethnocentrism and stereotypical thinking, because these limit being open to clinical reasoning that is unbiased and patient centered. In a similar fashion, some students enter their professional program with a work-related background that influences their thinking. A typical example is a student who has been a paramedic and enters medical school. This student likely has preconceived notions about his or her chosen field of study and his or her personal abilities related to the practice. Likely this is a misdirected self-concept, in that the student sees himself or herself as competent and qualified to perform in the new clinical setting. The student may be competent in the previous field, yet not display clinical reasoning and skills appropriate in the new field. This can lead to overconfidence on the part of the student, which then leads to safety risks. It is the duty of the instructor to bring these erroneous notions to the student's attention and redirect his or her thinking.

TEACHING EXAMPLE

Clinical Reasoning in Practice

It was the first day of clinical practice for first-semester nursing students. The students were prepared with care plans in nervous hands. A hundred thoughts raced through their heads: *Is my care plan good enough? Will my patient like me? I just have to get through this first day safely!* In preconference, the instructor discussed the student assignment for the day, which was to assist their patients with activities of daily living (including bathing, toileting, and nutritional needs), as well as assessment of vital signs. As a part of the assignment, the instructor went with the students to each patient's room to validate the students' assessment of the vital signs.

In one instance, as they entered the room, the instructor scanned the room and quickly noted two safety issues. First, the IV pump was blocking easy access to the bathroom for the patient. Second, the bedside table holding the patient's water, cell phone, and call light was across the room and out of the patient's reach. Furthermore, the head of the hospital bed was pressed up against the wall, preventing easy access to the sphygmomanometer (blood pressure cuff) attached to the wall above the headboard.

The instructor knew she needed to guide the student in recognizing and correcting these safety issues. The first step was for the instructor to ask the student to take a mental snapshot of everything in the room; the instructor patiently waited while the student complied. Then the instructor asked, "What is wrong with this picture?" The student accurately identified the two safety issues and rectified them immediately.

Then she proceeded with her assessment of the vital signs, which was her next priority. During this time, the instructor wondered how this particular student would reach the blood pressure cuff. It was challenging in this situation because this student had dwarfism and had abnormally short arms and legs for her age. The student successfully measured the patient's temperature, radial and apical pulse, and respirations. Then it was time to take the blood pressure. The student moved to reach the blood pressure cuff and was unable to reach the equipment. The student asked the instructor to please get the blood pressure cuff for her.

The instructor paused and thought about a correct response. The instructor recognized the unique

teachable moment of this opportunity and acknowledged that the greatest benefit would be for the student to use clinical reasoning to solve the problem rather than seek assistance. The instructor said to the student, “As you move through your nursing career, you will have many challenges. You will need to solve this problem on your own without my assistance.” The student received this response positively and proceeded to discuss a solution with the instructor. The student’s first action was to find a step stool. Using the stool, the student still could not reach over the patient to retrieve the cuff. She then reasoned that she needed to move the bed. After having done so, she realized she could reach the cuff without the step stool. She then proceeded with the rest of her assessments and completed her clinical assignment.

In this actual scenario, the student approached the problem using a familiar method (step stool) that did not solve the problem in this new setting. Therefore, the student recognized that she needed to approach a challenge with a new way of thinking, which is the first step in clinical reasoning.

This student had success in this and subsequent clinical courses and graduated from the program.

Conclusion

Educators in the health professions are recognizing that successful patient outcomes call for more than critical thinking. Positive effects of patient care demand more than intellectual manipulation of content and critical analysis. The proficient healthcare provider fuses critical analysis with thoughtful, rational, and reflective deliberations. The healthcare professional faced with a clinical challenge must engage in clinical reasoning to process data from multiple sources, quickly synthesize the information to draw conclusions, and take action to bring about quality care. Teaching clinical reasoning calls for awareness of how students learn and think, and thus necessitates the use of a variety of teaching strategies. Effective teachers engage in self-reflection about their own teaching style, are willing to be flexible with students to accomplish learning on an individual basis, and are able to recognize and address barriers in the student that hinder clinical reasoning.

Discussion Questions

1. Discuss key strategies for application of the clinical reasoning model for the healthcare professional to your profession's designated decision-making tool.
2. Describe a personal clinical teaching experience that enhanced a student's clinical reasoning skills. Obtain feedback concerning your teaching experience with this student.
3. Give examples of how an instructor would utilize the Socratic method in developing clinical reasoning skills in learners.

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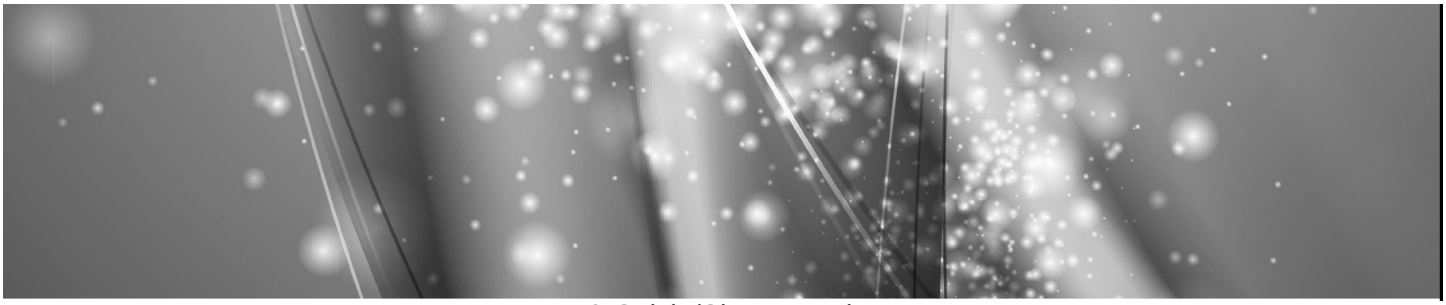
SECTION II

Educational Use of Technology

Educational technology continues to grow by leaps and bounds and has changed the complexion of the education world. The technology can be as simple as communicating by e-mail or as complex as presenting full degree-granting programs by distance learning. Classroom teaching is utilizing more and more technology, from PowerPoint presentations and student- and faculty-made videos to blended learning, a combination of in-class and asynchronous discussions. Online courses are now using learning management systems (LMSs), which allow both synchronous and asynchronous technologies. Social media include blogs, wikis, Twitter, and YouTube. Libraries have become accessible to distance learners by the use of technology, and full-text articles are now available online. The Internet has opened a new and extensive world of information not previously available, and both faculty and students need to learn not only how to take advantage of the wealth of information, but also how to use it discriminately. Students are increasingly involved in social technology, where they communicate with wide audiences. Teaching in a technological world requires faculty collaboration with academic information technology specialists, a specialty field in itself, to learn how to use the ever-changing systems, as well as to keep abreast of new resources as they become available and provide technological support for students.

The discussion in these chapters provides a look at different ways of utilizing available technologies and discusses strengths of the systems and problems which may occur. As technology has grown in the past few years, the technology discussion in this edition has increased as well. Chapter 7 explores the use of multimedia strategies in a blended classroom environment. Chapter 8, “Teaching in the Online Environment,” details specific learning theories and strategies available for success in an online classroom. Social media are included in teaching strategies, as discussed in Chapter 9, “Social Media as a Context for Connected Learning.” Distance learning techniques have moved into the classroom in blended or hybrid classes, and faculty need to learn to incorporate these strategies as a way to better achieve their learning objectives. Distance learning can be *asynchronous*, meaning that students can access the material and discussions anytime; or *synchronous*, meaning that students are online together regardless of their location.

Technology may be used to assist learning, but it does not replace the instructor. Teaching methods require adaptation to be effective in this new environment and should be evaluated for effectiveness. The amount of Internet information may be overwhelming, and it is critical for faculty and students to begin to cull the material to a reasonable amount and validate its accuracy. The use of educational technologies may require extra time and effort from faculty but can be very effective in enhancing learning and can be rewarding for students and faculty alike.



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CHAPTER 7

Using Multimedia in the Blended Classroom

Karen H. Teeley

I know originally I was called a "digital immigrant" although by now I hope I have earned my natural citizenship.

—**Karen H. Teeley**

Educators have new roles to fill in an era of increasing technology. *Multimedia* has grown from simple AV (audiovisual) to an ever-growing list of technological opportunities. The challenge for the instructor is not just to master new complicated technology but instead to find meaningful ways to engage the students. Expectations are higher with each succeeding generation as students are exposed to technology at earlier ages. Today's students have grown up with technology, and they expect educators to be adept with the current technology and its applications (Prensky, 2001). How can instructors use technology to reach and engage students and create opportunities for students to apply what they learn? This chapter will look at multimedia and multi-delivery formats including online and blended formats designed to create meaningful learning experiences.

Definition and Purposes

Garrison and Vaughan (2008) define *blended learning* as “a coherent design approach that openly assesses and integrates the strengths of face-to-face and online learning to address worthwhile educational goals” (p. x). They note that it is a thoughtful fusion of classroom teaching and online learning experiences. *Thoughtful* is the key word here because the learning opportunities and experiences are crucial, and the course must be specifically designed to allow students to discover and work with those opportunities. Blended learning requires a restructuring of class contact hours with the goals of engaging students in the learning process and extending access to learning opportunities that may be found on the Internet (Garrison & Vaughan, 2008).

Online teaching can be *synchronous*, where students will be online at the same time (e.g., chat rooms, teleconferences, and online synchronous class sessions with programs such as Adobe Connect), or *asynchronous*, where students can access the course and post responses at any time, day or night, in different time zones. Blended learning, also known as *hybrid* or *mixed mode*, is a combination of online plus face-to-face (f2f) classroom sessions. Blended learning may utilize less f2f class time, but adds asynchronous learning time and could even include some synchronous class sessions, although it is not required. A blended course may be designed with 50% onsite classroom and 50% online time, or 70% and 30%, or other percentages. The ratio will vary depending on the course and needed content. The method chosen and class design depend on the learning objectives and the technology available.

Theoretical Foundations

In the 1990s, Badrul H. Khan (2007) was concerned with what it takes “to provide the best and most meaningful flexible learning environments for learners worldwide” (p. 321). His answer to this question was developed into a framework for online learning, and this model is used internationally. He understood that e-learning did not include just teaching but required a combination of factors to be effective. His framework (**FIGURE 7-1**) consists of eight elements, the first being *institutional*, which discusses administrative elements and the need for administration understanding and support. *Pedagogical* refers to the learning goals and design, and the need for adaptation to the expansion of opportunities available through online learning.

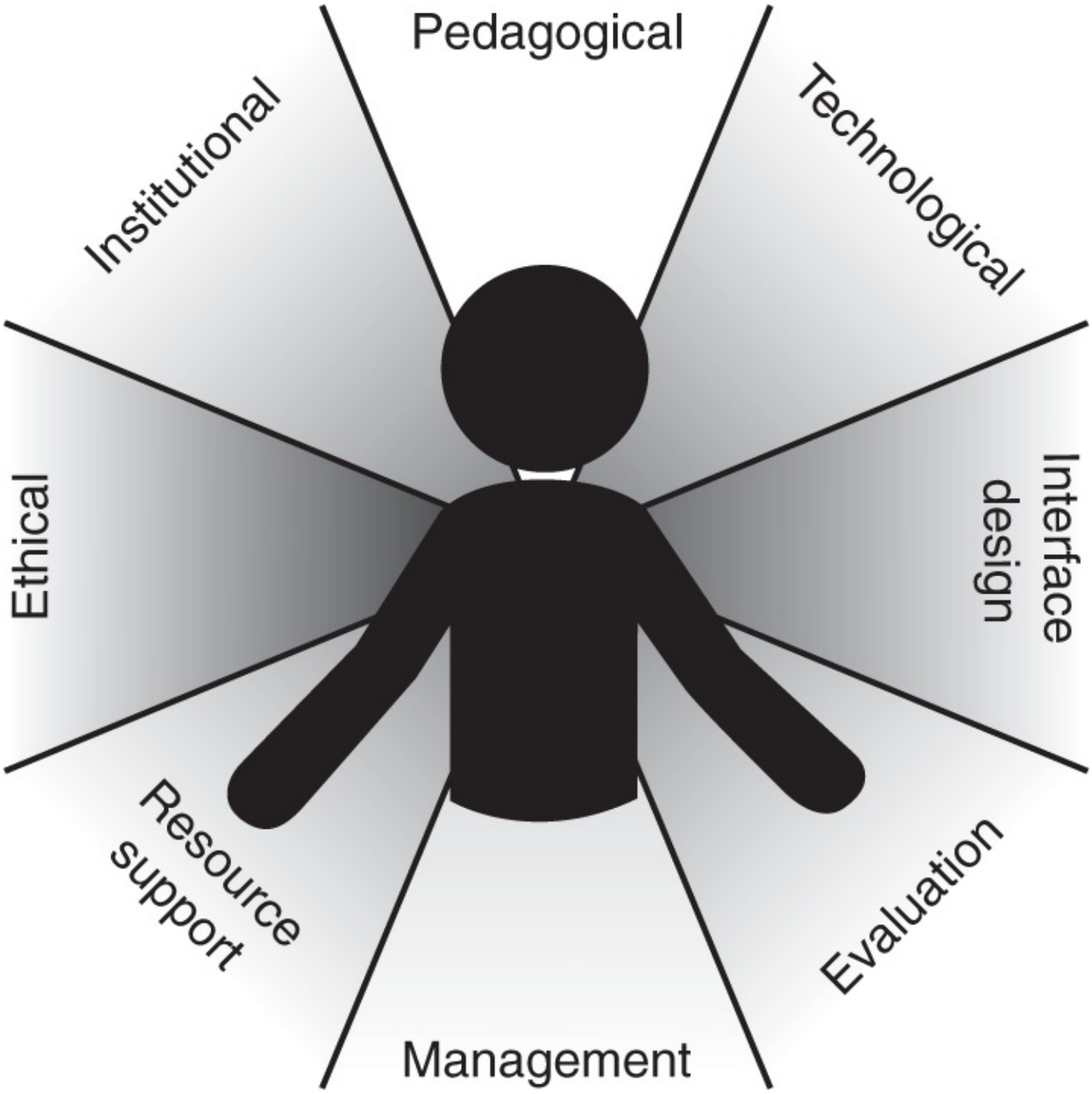


FIGURE 7-1 A framework for e-learning.

Reproduced from Khan, B. H. (2009). *E-learning framework*. Retrieved from http://www.badrulkhan.com

The *technological* section refers to the infrastructure available to produce effective online teaching, avoiding the frustration that can occur with poor technology. This goes along with the *interface*, which discusses how the user gains access, through the technology, to those learning opportunities. *Evaluation* of both learners and content is critical to understand the problems and seek solutions to improve learning. The *management* section refers to management of the learning environment, who is responsible and how it is done; and the *resource support* refers to required resources other than the nontutorial components. The *ethical* portion is

related to diversity issues and ethical concerns in e-learning.

Alaattin Parlakkilic (2018) adapted Khan's framework to serve as a guide to planning, developing, delivering, managing, and evaluating blended learning programs. He noted blended learning includes several forms of learning tools and mixes various event-based activities, including f2f and e-learning, which can include both synchronous and asynchronous learning activities along with self-paced learning. Parlakkilic's studies found blending provides various benefits over using any single learning delivery medium alone. He recognizes learning is not a onetime event, but rather a continuous process. The concepts in the Khan framework demonstrate the need for a broad base of support, as well as the instructional or pedagogical elements, to implement and carry out blended learning offerings. Parlakkilic has looked at each piece of Khan's framework in relation to how it can be developed to establish effective blended learning.

Tseng and Walsh, Jr. (2016) explored instructional features most important to adult learners in blended classes. She found most adults in her study valued course designs which contained options, personalization, self-direction, variety, and a learning community. They enjoyed and highly valued two-way communication with their classmates and instructor, and felt they benefited from frequent announcements and reminders from their instructors. However, she also found that in online instruction, as in more traditional environments, learners with different learning styles and characteristics prefer and benefit from varied instructional features and goals, depending on their previous experiences or learning style. Their preferences were not all the same.

Means, Toyama, Murphy, and Baki (2013) carried out a meta-analysis of 45 studies contrasting fully or partially online (blended) with fully f2f instructional conditions. Most courses lasted more than one month. Results showed on average, students in online learning conditions performed modestly better than those receiving all f2f instruction, but there was a significant advantage over f2f instruction for students in blended learning conditions. Active and self-paced learning established in blended learning can relate effectively to different learning styles and student preferences. Studies designed with blended learning tended to involve additional learning time, instructional resources, and course elements that encouraged interactions among learners (Means et al., 2013).

Faculty development is key to a successful blended program (Myers, Mixer, Wyatt, Paulus, & Lee, 2011). Faculty need to become comfortable with the technology and the movement between classroom and online. When attending a faculty development program about blended learning, faculty are required to shift their role from teacher to student. This shift can enrich their learning about teaching (Myers et al., 2011).

Understanding the Blended Course Environment

A learning management system (LMS) is used to allow students to access course information. Common systems include Blackboard, Moodle, and Sakai, among others. Depending on the school's procedures, students can log in with a user name and password at any time, beginning a few days before the first day of class. Access to class materials after the course ends is determined by school policies. The course syllabus and other posted classroom materials, including PowerPoint or other forms of presentation tools, videos, or other lecture materials, such as podcasts/audio lectures and interactive teaching modules, allow students to review materials and refresh their memories if they so choose. Announcements and communication methods, such as e-mailing the students, group discussion boards, blogs, Twitter, and wikis, may also be available. Use of social media is becoming more common in the classroom and can be used with blended learning as appropriate (McEwan, 2012; Moran, Seaman, & Tinit-Kane, 2011; Steer, 2012).

The instructor can post materials anytime during the course, so lecture materials may be posted before the class during which the lecture is given—to encourage preparation—or after the lecture has taken place—to allow the students to review for exams or assignments. However, a blended learning environment can enable the "flipping" of the classroom—where learners ingest the course materials for a lesson (readings, video lectures, podcasts) *outside* the classroom before a session (Berrett, 2012; Brunsell & Horejsi, 2011; Sams & Bergmann, 2013). This allows valuable class time to be used for discussion of the material and active learning, rather than passive listening to a lecture.

Blended learning and other forms of web-based instruction require educators to adapt to the ever-growing list of technological opportunities. The challenge for the instructor is not just to master new and complicated technology but instead to find more meaningful ways to engage the students. Expectations are higher with each succeeding generation as students are exposed to technology at earlier ages. Today's students have grown up with technology; they have been raised on the Internet, Google for information, have thrived in online communities, and are connected 24/7. John Sener addresses the "cyberization" of education as now being mainstream and unlikely to change in the future (Sener, 2012). Students expect educators to be adept with the current technology and its applications (Roehl, Reddy, & Shannon, 2013).

Discussion Posts

Discussion posts may be assigned at varying times during the blended course, or weekly, again depending on class design. Students need clear instructions as to what is expected in the posts, the length of the post for assigned discussions, and what is expected for responses to classmates. A good discussion between students develops a learning community, where students learn from each other as well as

from the instructor (and, especially when students are encouraged to use the literature to develop their discussions, the instructor can also learn from the students). One example is for the instructor to develop specific discussion questions based on course objectives, materials which have been presented online, and readings, but ask for more evidence than was given, such as finding a new reading on the question or a broader question. This type of question can help the student develop a higher level of critical thinking (Palloff & Pratt, 2005). Along with scholarly work, students can be asked to discuss appropriate experiences they have had or know about, which illustrate some of the issues within the questions. Student responses to their classmates' threaded discussion postings and faculty comments help set up the learning community dialogue to the benefit of all.

Assignments

Scholarly papers and group and individual projects can be assigned along with specific assignments, such as searching for additional resources and websites to share through the postings. Assignments may be posted and graded online or turned in on class days, depending on teacher preference. Antiplagiarism software (e.g., TurnItIn and SafeAssign) may be used to help cut down on cheating and plagiarism. Quizzes and exams may be given online or in class.

Types of Learners

Students enter the health professions in different stages in their lives. While some are traditional college students, most students have very busy lives with jobs and children and other family obligations. With the added expense of college tuition, it is a rare student who does not have to work in addition to attending school and fulfilling clinical placements. This changing profile of the learner suggests most students fulfill the pedagogical description of the adult learner (Jairath & Stair, 2004). The more flexible and self-paced the course delivery is, the more likely the students will be able to fit it into their schedules and be successful.

Web-based courses using a learning management system such as Blackboard or Moodle require a comprehensive orientation to the format. Students must quickly become proficient in navigating the tools, troubleshooting common problems such as disabling pop-up blockers, and mastering e-mail and attachment functions. Most importantly, students need to know how to access help.

Students in higher education in the first decade of the 21st century fall into the generation called “millennials.” These are students born between the years 1982 and 2002. They are global, connected, and interactive. Although they grew up in a media age, they will undoubtedly have varying levels of proficiency, which will require access to support functions.

Marc Prensky (2010) differentiates *digital natives* from *digital immigrants*. He describes digital natives as the students today who are native speakers of the digital language of computers, video games, and the Internet. Those who are not native to the digital language (most instructors) are said to be *digital immigrants*. Immigrants have to learn a new language and adapt to a new environment. “Digital natives are used to receiving information really fast. They like to parallel process and multi-task . . . They function best when networked” (Prensky, 2001, p. 3). He suggests it is unlikely digital natives are going to learn the immigrant’s language, so to reach these students, immigrant instructors must learn to communicate in the student’s language style.

Conditions for Learning

Know Your Learners

It is important to understand who your learners are. What is the size of the class? Small classes should be treated differently than larger classes and will necessitate different teaching methodologies. What background do students have prior to entering this course? Have they taken courses which provide the background material for the current course? Can you assess, or can students tell you, what their preferred learning style is? Today's students may be very diverse. What are the forms of diversity in the class? Do you have students with specific learning disabilities? If so, how can they be supported in their learning activities? Cultural and ethnic diversities can enrich all students by fostering cultural understanding and learning, but monitoring may be necessary to avoid stereotyping and negative feelings and communications. Students with English as a second language may need assistance or specific programs to assist them in writing assignments. Some of these questions can be answered in the introduction to the course, either in class or online with an introductory exercise in which students introduce themselves to faculty and classmates.

Resources

Faculty need to consult with instructional technology to learn the LMS and keep up to date with changing technology. It is critically important for you to have a good understanding of what the LMS offers and how to work with it *before* designing your course. It is very helpful to have a connection with the technology resources in your institution so you know whom to contact for support when technology glitches occur—but also to help you avoid those glitches. Success in online teaching requires close collaboration with those in the school's instructional technology department. Understand how to contact them, and make them your best friends if possible. It is very helpful to have a specific contact person. Technology changes rapidly, with some older technological teaching strategies becoming outdated and new ones coming in. Technology personnel can help keep you up-to-date on new technological teaching strategies which have been developed, and can let you know if there are financial obligations for the use of those technologies.

Technologies such as wikis (excellent for group projects because students can access and edit a group paper, rather than using e-mail), blogs, voice-over Power Points, podcasts, and other technologies can be incorporated within the course, but too many different technologies can be overwhelming to students. It is critical to meet technology deadlines in preparing your classes, so the course template can be set up on time.

Search out faculty technology orientation programs or workshops which can improve your knowledge of specific technological offerings. Encourage students to attend technology orientations and to contact the student technology support system with computer issues. Orientation to a course may include a scavenger hunt for students within the e-learning environment, which may allow students to download certain files, take practice quizzes, send an e-mail, and so on, and enter the results, information from the documents, or a special word from a mail message to guarantee they can successfully access all the e-learning tools required for the course.

Using the Method

Planning and Modifying

In online and blended learning courses, good planning is critical to a successful course. Planning out and posting the course prior to implementation makes teaching easier. Adjustments can be made as needed, but the course will be well organized and the instructor is freed up to focus on the discussions and other online activities, rather than taking time to prepare a weekly class. A schedule of in-class and online or out-of-class activities should be set up for each week. This allows the students to know what is required in class (readings or other assignments to bring to class) and what will be required out of class (such as discussion posts, podcasts, quizzes, or other online teaching methodologies).

Planning is also very important in developing a coherent course with clear expectations for a student workload, which is necessary but not excessive for the topic. It is very important not to overload students with work for the course. When students feel the work is achievable, this perception can encourage student motivation in self-directed learning (Johnson, 2014). The Simmons University Technology Department presented a workshop for instructors interested in establishing a blended learning course, and participants were asked specific questions to think about as they worked on their course plans (see **BOX 7-1**). Planning takes time and must be carried out well before the classes begin. The online portion must be completely developed and posted prior to the beginning of the course (see **BOX 7-2**). The last-minute preparation that may occur with traditional classroom lectures must be avoided, although modifications, such as adding more information and resources or correcting information, can be made during the course with appropriate notification to students.

BOX 7-1 Questions to Think About for Blended Course Design

What do you want students to know when they have finished taking your blended course?

As you think about learning objectives, which would be better achieved online and which would be best achieved face to face?

Blended teaching is not just a matter of transferring a portion of your traditional course to the web. Instead, it involves developing challenging and engaging online learning activities that complement your face-to-face activities. Which types of learning activities do you think you will be using for the online portion of your course?

Online asynchronous discussion is often an important part of blended courses. Which new learning opportunities will arise as a result of using asynchronous discussion? Which challenges do you anticipate in using online discussions? How would you address these?

Can synchronous online sessions be incorporated into the course? Is a synchronous program available, and what would the purpose of using it be? How much time can be allotted to those sessions? Would students have access to a synchronous online class from the technology and time perspectives?

How will the face-to-face and time-out-of-class components be integrated into a single course? In other words, how will the work done in each component feed back into and support the other component?
When working online, students frequently have problems scheduling their work and managing their time, as well as understanding the implications of the blended course module as related to learning. What do you plan to do to help your students address these issues?
How will you divide the percentage of time between the face-to-face portion and the online portion of your course? How will you schedule the percentage of time between the face-to-face and online portions of your course (e.g., one 2-hour face-to-face session followed by one 2-hour online session each week)?
How will you divide the course grading scheme between face-to-face and online activities? Which means will you use to assess student work in each of these two components?
Students sometimes have difficulty acclimating to the course website and to other instructional technologies you may be using for face-to-face and online activities. Which specific technologies will you use for the online and face-to-face portions of your course? Which proactive steps can you take to assist students to become familiar with your course's e-learning and those instructional technologies? If students need help with technology later in the course, how will you provide support?
There is a tendency for faculty to require students to do more work in a blended course than they normally would complete in a purely traditional course. What are you going to do to ensure that you have not created a course and a half? How will you evaluate the student workload as compared to that of a traditional class?

Courtesy of Blended Learning Institute, School for Health Studies. (2008). *Academic technology.* Boston, MA: Simmons University.

BOX 7-2 Blended Learning Preparation

Define course objectives
Carry out a literature review of articles and websites
Develop a detailed lesson plan for each class that includes each area of the f2f and online course environments, and note quizzes, exams, and other learning assessment strategies as appropriate
Write discussion questions and assignments for each week of the course
Prepare quizzes and exams
Develop a grading rubric and clear expectations for discussions and other assignments
Prepare the course syllabus to be posted on the Internet platform
Prepare a welcome letter
Post materials for student access prior to the first day of class (although access dates may be controlled)

Developing the Learning Community

It is important to develop a discussion learning community where students feel safe to talk to each other with little interference, except for guidance and nurturing from the instructor. Trust takes time to build, and the instructor needs to support students in this, so they do not keep quiet or hold back in the discussion because of fear of criticism. Students need to be given guidelines for discussion posts. For example, students should be instructed about *netiquette;* derogatory personal comments or attacks must be avoided. Instructor responses must demonstrate mistakes are expected in a learning environment, and students need not be embarrassed, punished, or ashamed of those mistakes—because they will learn from them. Instructors can provide constructive critiques via e-mail to ensure privacy and avoid

embarrassment for individual students as needed. Discussion boards can be more informal than required papers; however, students using traditional Internet speak may need to define those abbreviations for new computer users, and the smiley face can be used to provide emotion:-). Encouraging students to ask questions when unsure of the lecture material or e-learning environment is valuable; be sure they know not to hold back even if they may feel the question is a “silly” one. There are no silly questions! One student’s question may also be in the mind of other students who were afraid to ask because they felt it was “dumb,” or “they should have known” and did not want to receive criticism from the instructor and/or classmates or be embarrassed. It can be helpful to have a separate discussion board where students can ask the instructor questions, and the instructor’s response is then available to all students. Depending on the technology available, it may be possible to allow a student to post a question anonymously. Personal questions or comments can be handled by e-mail.

Discussions should promote evidence-based practice and encourage students to apply the research they are reading to their clinical environments. Asking students to apply the readings to case studies, to their clinical practices, and to their personal experiences promotes critical thinking and spurs interest by making the material come alive and become relevant, thereby enhancing the lecture material. While classroom discussions are limited in the numbers of students who can be active, online discussions involve everyone. In large classes, small discussion groups can be established, and it can be exciting to see the different impressions and experiences that students talk about among themselves.

Instructors need to stay in the background during the discussions, allowing the students to create a dialog among themselves—the “guide on the side,” rather than the “sage on the stage” (Morrison, 2014). However, it is important students recognize the instructor’s contacts and presence in the online portion of the course. Instructors can correct or add information to the discussions when specific points require attention, but the discussion should be student centered. Avoid a constant student-to-instructor and back again conversation and encourage students to discuss with each other instead. The student who provides a main post should be instructed to return to the thread and answer classmates’ response posts, challenges, and questions. Students should also be instructed to avoid “cheerleading”—a one-line post which says nothing more than “that was a good post” or “great post.” Instead, they should say why it was a great post, but also constructively challenge and ask questions, and express their own experiences which relate to the thread under discussion. As you monitor the discussions, you will get to know your students well and learn from them as they learn from you.

Begin planning a blended course by defining course objectives (see Box 7-2). Meeting objectives is a prime responsibility in designing a course lesson plan. The next step is to carry out a literature review of articles and websites to be used for

course readings, which can be assigned to students to supplement the textbook and used for post-assignment discussions. During the course, asking students to research and post appropriate articles and websites expands their learning opportunities.

Develop a detailed lesson plan for each class which includes each area of the f2f and online course environments, and note quizzes, exams, and other learning assessment strategies as appropriate (see **BOX 7-3**). This is the "thoughtful" portion of the class, designing the course around the objectives and determining appropriate learning activities. Objectives and learning activities should be determined for each week of the course. It is important to develop a grading rubric and clear expectations for discussions and other assignments (**TABLE 7-1**). Writing discussion questions and assignments for each week of the course comes next. Discussion questions should relate to both the weekly class objectives and the overall course objectives. Students can also be asked to research articles or other materials and present them in the discussion board for that week, so the other students can see and develop a conversation about them. The next step is to prepare quizzes, exams, and guidelines for assignments. Exams may be offered in class or online. The instructional technologist should be able to help faculty with learning how to create, utilize, and post online quizzes.

TABLE 7-1 Grading Rubric for Discussions

A Grade	B Grade	C Grade
Utilizes knowledge of adult learning theory in discussions and responses; meets objectives most of the time with minimal guidance and/or shows growth in learning from guidance and other student responses. Usually keeps up-to-date in responses.	Utilizes knowledge of adult learning theory in discussions and responses; meets objectives most of the time with consistent guidance. Responds late some of the time.	Content is usually satisfactory, but is late in responding much of the time.
Discussion submissions meet course objectives with minimal guidance and/or demonstrates growth in learning from guidance and other student responses. Usually keeps up-to-date in responses.	Discussion submissions meet course objectives in discussions and responses most of the time with consistent guidance. Responds late some of the time.	Content is usually minimally satisfactory, but may lack thoroughness much of the time. Is often late in responding.

BOX 7-3 Lesson Plan Template

Course Title: NUR 390 Theory and Research, Integration and Synthesis for Professional Nursing Practice

Course Developer: Arlene Lowenstein

Course Objectives

Upon completion of the course, the student will:

Address the historical influences in health care, nursing research, and the nursing profession and their influences on the nursing profession today.

Explore the application of theories within the discipline of nursing and other disciplines and consider their use in practice and research.

Identify and explore the various research methods utilized to advance nursing science.

Recognize the responsibilities of the professional nurse to advance nursing through research critique and utilization.

Consider the role of the nurse in formulating research questions and contributing to conduct and dissemination of research findings.

Apply principles of evidence-based practice and research utilization as related to clinical practice issues.

Goals for Learning	As Evidenced By	Experiences	Online	Face-to-Face	Blend
(what graduates will know, understand, be able to do)	***(products of student work that correlate with the goal)***	***(course experiences that will generate this evidence)***	***(experiences most suited to online learning [OL])***	***(experiences most suited to f2f)***	***(integration/synergy between OL and f2f)***
Become aware of historical influences in the areas of health care, nursing research, and the nursing profession that have influenced the current-day nursing profession	Discussion posts relate readings that discuss historical issues to their nursing practice	View movie *Sentimental Nurses Need Not Apply* Lecture/discussion on historical issues—timeline		*Week 1* Viewing movie Classroom lecture/ discussion	
Explore the application of a theory from nursing and one other discipline and explain how they can be used in nursing practice and research	Following guidance from the instructor, select one nursing theorist and one theory from another discipline and search the literature for two to three articles and an appropriate website for each theory that include use in practice and research. Post the resources to the discussion board with a short explanation of key points and how they have been used.	Theory and theorist lecture will introduce students to basic areas to explore	Nursing theory podcast	*Part 2 of Week 1* Lecture introducing nursing theory and theories from other disciplines Classroom discussion	*Week 2 Online* Assignment to find website and articles for one nursing theorist and one additional theorist
Understand basic elements of quantitative and qualitative research design	Submit two 6- to 8-page papers, one critiquing a qualitative research article and one critiquing a quantitative research article; papers will follow guidelines that include analyzing the basic elements of the research design	Textbook readings Research examples	Discussion posts	*Week 3 Session 1* Quantitative research concepts *Week 3 Session 2* Qualitative research concepts Classroom discussion	*Prior to Week 3 Online* View "Reading a Research Article" PowerPoint and paper; select one research article and compare each section with each section of the PowerPoint and paper Discussion posts in week 3 following the class session
Recognize the responsibilities of the professional nurse to advance nursing through research critique and utilization	Critiques of quantitative and qualitative research studies Select two articles and disseminate to the class	Textbook readings and lecture regarding critiquing	Exploring web and articles online	*Week 3 Concepts of Critiquing* Classroom discussion	Posting resources online *Week 4* Quantitative paper due *Week 5* Qualitative paper due
Consider the role of the nurse in formulating research questions and contributing to conduct and dissemination of research findings	Discussion posts show evidence of dissemination of research findings	Textbook readings Evidence-based practice examples	Online literature search	*Weeks 4 and 5* None	Discussion posts
Apply principles of evidence-based practice and research utilization as related to clinical practice issues	Presentation identifying evidence-based practice with references and recommendations for practice	Textbook examples and literature review Course wrap-up	Online literature search Develop PowerPoint presentation	Student presentations and discussion Course wrap-up and evaluation	None

Description Description

Note: This 6-week course was taught in the summer for 12 undergraduate RN to BSN students. Because of

the accelerated nature of the course, a discussion board was used each week.

Once the instructor has compiled the information and learning activities that will go into the course, it is time to prepare the course syllabus. The syllabus places the lesson plan information into a document explaining what will be expected from students for the course, includes the grading rubric, and contains a schedule of the dates and time students are expected to be in class or posting on the discussion board, with deadlines for the posting process. Instructors can provide individual feedback by e-mailing students when needed instead of using the discussion board, but students need to know when they should or should not utilize e-mail rather than the discussion board. E-mail is usually used for personal or grading issues, to allow for and protect student privacy. It is helpful to prepare a welcoming letter clearly explaining your teaching methodology and expectations for student participation, and listing whom students should contact for technical issues and help. Materials for student access should be posted prior to the first day of class, although access dates may be controlled (see **BOX 7-4**).

BOX 7-4 Course Development Workflow Checklist

Outline the course into teaching modules
Identify online and f2f segments
Define learning objectives for each module
Outline module content
Define feedback and assessment strategies
Identify an integration link each week between online and classroom
Identify resources for content support
Websites, books, articles
Other
Determine teaching/learning activities to address course content and objectives
Determine assessment tasks
Quizzes/tests
Develop test questions based on objectives
Provide rationale for answers
Discussion board questions/case studies
Develop questions based on module objectives
Clearly define instructions for posting and responding, including length and deadlines (visual chart)
Provide rubric
Design method for weekly faculty communication with course coordinator
Other written assignments
Develop grade plan based on the preceding assessment tasks
Communicate all the preceding elements in the course syllabus
Include time management expectation for students (e.g., 3 hours prep per hour class)
Include help desk resources and academic technology support
Communicate all the preceding to additional faculty in a faculty orientation/training session
Develop faculty training materials

Course evaluations may be carried out in class on the last day of class, or online if the last class is a scheduled online class. As with quizzes and exams, evaluations can also be developed in an online format. Online capabilities also allow the instructor to keep statistics, such as how often students access the course online, to assist in course evaluation (Dziuban & Moskal, 2011). Steps should be taken to see that course instructors do not have access to the evaluation posted online that includes identifying information from the student. Students need to be sure that their online posting is anonymous from their instructor, and this may be a technical issue to be resolved.

Potential Issues

Student Self-Direction

Successful students are self-disciplined in completing assignments and discussion posts on time. Patterns of late or missed discussions must be recognized and challenged using a positive and nonpunishment-oriented approach, especially early in the course as students are getting used to the process. Avoid criticizing students on the discussion board for everyone to see. Instead, use e-mail or conferences to discuss the problems individually with students. There will be some students who are exceptional in their postings, and others who will barely meet the minimum requirement. It is helpful to provide feedback to both types of students. It is important to remember life can interfere with a student’s ability to participate at times. Events such as illness, family celebrations, or a death of someone close have to be recognized and students supported as much as possible. Students need to understand they must notify the instructor of such occurrences as soon as possible and make arrangements to make up missed work if possible.

Plagiarism

Plagiarism policies must be clearly spelled out. Many online platforms use or provide programs to examine papers for evidence of plagiarism. Instructors need to emphasize the importance of citing references.

Conclusion

Students entering the health professions in the 21st century are different learners than their instructors. Internet access to new information and the convergence of technology is a way of life and must be an integral part of the classroom if the goal is to be meaningful engagement and lifelong learning. Instructors need to learn to reach students in ways that encourage them to use the material and foster a love of learning. A successful student is one who knows learning will not end with graduation; rather, she or he will graduate with the necessary tools and skills to make lifelong contributions to the profession.

Comparison of Blended and F2F Courses

Blended Course Advantages

Blended courses encourage active learning and student responsibility for their own learning. Increased student participation can increase retention of learning.

Students learn from each other as well as the instructor, as experiences and resources are shared among them.

Required on-site classroom time may be reduced, and students are able to work on their own time to avoid conflicts with family and work schedules.

The online and in-class interactions allow faculty to get to know their students well, if not better than in the traditional classroom, through constant individual communications via the discussion board.

Blended Course Disadvantages

Students require knowledge of working with computers. This can be more difficult for digital immigrants, usually older students, than for digital natives, younger students who have grown up with computers, although both groups may need strong support.

Technical glitches can be frustrating and time-consuming.

Some students have difficulty with being self-directed and taking responsibility for their learning. This approach may be new to them if they have been used to lectures where all they had to do was sit in class. Change can be difficult. Patience, encouragement, and support may be needed until they become accustomed to the process.

I have also learned an inordinate amount of new information from students, which is a great benefit to me and has added to my reference and resource lists. I found that I was able to have students learn as much or more in a shorter period of time than in the traditional 12- or 14-week semester. The Teaching Example demonstrated that idea to me, as this was a 6-week summer session, whereas the usual fall semester was 14 weeks long. I found I was able to include all the information from the longer semester, and students were able to retain the material. However, adjusting to a new format definitely takes some getting used to, for both students and faculty. Faculty may need to experiment to see what teaching strategies work best at which time. All in all, I have found the rewards much greater than any problems that have surfaced, and so have my students.

TEACHING EXAMPLE

The following example is from a nursing research course I taught for RN to BSN students. The course was held in the hospital in which the students were working. This was a summer course for 13 students, taught in a 6-week time frame rather than the traditional 12- to 14-week format used in the fall and spring courses. The traditional format for this four-credit summer course would have had two lecture sessions each week, but that would have been difficult for the students, who were all working as RNs, and for the hospital in which they were employed. Although I had taught fully online courses prior to this course, I had no experience with a blended format, but knew about that possibility. I decided to try that for this semester. I spoke with our academic technology department for advice, and was invited to a blended learning workshop for other faculty members who were interested in blended learning, and I was welcome to attend to begin to develop and plan the course. That workshop was extremely valuable to me as I looked at the differences between a strictly online course and a strictly classroom course and worked on the blended model of including both modalities. The course description and objectives were based on the traditional course description and objectives as follows.

Course Description

The course is an upper-level course designed to assist the senior-level student in the continued integration and application of research and theory in nursing practice. Theoretical and historical perspectives will be discussed and integrated within the research process. A spirit of inquiry will also be fostered, as many clinical questions remain that require a nursing perspective for future study. Principles of nursing research, critique, and utilization in clinical practice will be highlighted, and students will be given the opportunity to develop a research-based project. Independent learning, self-direction, and understanding of group interaction in the teaching–learning process are also stressed. Intellectual integrity, creativity, and open communication are fostered in an environment of cooperative learning.

Course Objectives

Upon completion of the course, the student will:

Address the historical influences in health care, nursing research, and the nursing profession and their influences on the nursing profession today.
Explore the application of theories within the discipline of nursing and other disciplines and consider their use in practice and research.
Identify and explore the various research methods utilized to advance nursing science.
Recognize the responsibilities of the professional nurse to advance nursing through research critique and utilization.

Consider the role of the nurse in formulating research questions and contributing to conduct and dissemination of research findings.
Apply principles of evidence-based practice and research utilization as related to clinical practice issues.

Based on the course objectives, developing the course lecture plan (see Box 7-3) was the first step, followed by the discussion board rubrics (see **TABLE 7-1**). The rubrics were developed on the basis of achieving the course objectives, and each rubric dealt with one or more of those objectives. However, in some instances I found the rubric to be too subjective, and may do some revision of it for future classes, but it serves as an example of the process. The course was implemented very successfully. Here are some of the undergraduate RN to BSN student comments to their classmates about the research hybrid course:

"Thanks to all my classmates, I think the term 'learning community' really summed up the experience very well. I do like the format and flexibility of online discussion. I think it allows a more considered participation than that of just classroom; often I will think about a discussion or response and have a question or comment later on. I think we did cover a really good amount of material in a relatively short time—and acquired some great skills to bring forward."

"First of all I want you all to know that I cannot believe how much I learned in this course. Although I felt at times to be in an ocean without a life jacket, you were all there to help. Thank you for letting me whine. I really appreciate all of the support you ladies have given."

"I liked the idea of online classes. This was my first one and I liked it."

"Hi Susi, thanks for another great post. I enjoy reading other people's interpretation of something I have read and getting their perception."

"Hi all, I just learned not to hit enter after the subject box or else it gets posted. And second thing I learned was if you save your thoughts as a draft, you have to remember to go back and actually post it."

Discussion Questions

1. Reflect on current students in higher education (use Chapter 3). Describe how blended learning strategies would engage this new generation of students.
2. Consider blended learning in relation to the nontraditional, older student. How can you, as the instructor, bridge the gap between blended learning strategies and a learner who may prefer more traditional teaching methods?
3. Read the comparison and Teaching Example. Discuss the points made, techniques suggested, and other information supplied based on the instructor's experience.

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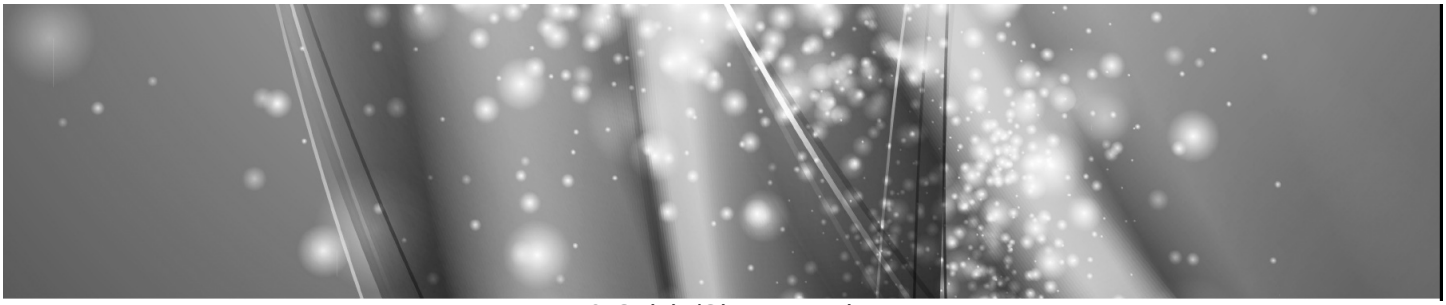
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CHAPTER 8

Teaching in the Online Environment

Karen H. Teeley

I will be sad when I won't have this class anymore. I am not sure I have ever said that before!!!

—**Student of Karen H. Teeley**

Introduction

Rapid changes in technology continue to open more doors to students seeking online educational opportunities. Recent advances in audio and video capabilities enable more live or synchronous—sometimes called “virtual” classroom options—where the teacher and the student are online at the same time and the teaching is “in person” with a real-time instructor presence. One of the biggest drawbacks of asynchronous learning—where the teacher and the student are *not* online at the same time—has been that the online class can feel impersonal, often missing the connection with or online presence of the instructor (Delahunty, Verenikina, & Jones, 2014).

This chapter looks at teaching online in general and specifically at teaching in a synchronous environment. Synchronous classrooms which utilize proven pedagogical strategies can be the best of both worlds: the best of online learning for convenience and accessibility of teaching tools plus the best of instructor-led learning.

From the instructor’s perspective, this can be an ideal model for small classes. Often the instructor can interact with the students by audio, but ideally this is done by both audio and video. This model can be “flipped learning” at its best. The content is developed and posted online for the students to access asynchronously, and a “live” class time is regularly scheduled, much like a campus-based class, but held via the Internet. Because the students have already had access to the content, they come to class prepared and the live class time is spent reinforcing content through learning activities which are designed to produce the desired learning outcomes and provide students interaction with the instructor for real-time feedback and support.

Definitions and Purpose

Good online design is essential for student success. Clear learning outcomes, whether in the classroom, blended, or online, are dependent on a methodical and strategic design process based on evidence-based best practice. If faculty are not trained as instructional designers, they should work with experienced instructional designers to ensure meaningful content transformation to the online platform. Designing for online learning, if done correctly, can take anywhere from six months to a year, depending on the length of the course.

Content transformation for online learning does not mean recording lectures and posting them online, nor does it mean posting long PowerPoint lectures. Good online learning design means chunking the salient points from the identified content and presenting the information in different ways, including learning activities, multimedia, audio and video, animations, and discussion boards, to name just a few style options. The content must be meaningful and associated with the learning outcomes. The role of the faculty changes from the oft-quoted “sage on the stage” to being a “guide on the side.” Faculty become facilitators and mentors, and the relationship with students changes to more of a partnership and less of an expert–novice dyad.

Theoretical Foundation

The creation of online learning environments has roots in our knowledge of adult learning. Components of adult learning are described by Malcolm Knowles (1990), who emphasizes adults are self-directed, are interested in topics which are relevant to their lives, and like to be actively involved in the learning process and have control over where and how they learn so they can learn at their own pace. Knowles's theory of andragogy makes the following assumptions about the design of learning:

- Adults need to know why they need to learn something.
- Adults need to learn experientially.
- Adults approach learning as problem solving.
- Adults learn best when the topic is of immediate value (Knowles, 1990).

It is important for the instructor to know the learners' needs and design learning activities relevant to those needs. The student should be actively involved in learning, with the instructor acting as a facilitator or guide. The instructor who recognizes adults have different learning needs can tailor his or her instruction design to the characteristic ways adults prefer to learn.

Adult learning theory is important in online instructional design for several reasons: First, it is important to tailor the content specifically to the learner's level, or it will not be effective (Robinson, Kilgore, & Warren, 2017). Second, learner goals and objectives must utilize a variety of learning activities if adults are to be engaged in the learning (Laiken, Milland, & Wager, 2014). Last, by engaging in meaningful activity, students feel as if they are making significant, sustainable contributions (Teeley, Lowe, Beal, & Knapp, 2006). Additionally, students need to connect with one another. Bornstein and Bruner (2014) point out that "development is intrinsically bound up with interactions" (p. 13); this research built upon Bruner's earlier work on reciprocity as the "deep human need to respond to others and to operate jointly with them towards an objective" (Bruner, 1966).

Problem-based learning (PBL) is based on interaction and meaningful learning. Learners work together in small teams to solve problems. Throughout this process, learners can "develop intellectual curiosity, confidence and engagement that will lead to lifelong learning" (Watson, 2004, p. 21). Interaction is a key theme and central to learning online. For collaborative acquisition of knowledge, one must build learning activities which require student interaction and encourage a sharing of ideas that will promote a deeper level of thought (Conrad & Donaldson, 2011, p. 5). Successful learning occurs when the online course design is centered on the learners and their interactions, and not on just a lecture-focused, instructor-centered approach.

The role of the instructor in an online class is to ensure a high degree of interactivity and participation (Ma, Han, Yang, & Cheng, 2015). This means designing and conducting learning activities which result in engagement with the

subject matter and with fellow students. Engaged learning does not just happen; it requires a conscious effort and purposeful design by the instructor. Well-planned learning activities connect the students to the content and to each other and will motivate learners to participate in knowledge building.

Types of Learners

Students who perform best in an online environment are students who are self-directed and are cognitively ready for participatory learning. Most students in today's classroom are digital natives. Although they are often connected 24/7 to a device (and to each other), they may not all be suited for the self-directed, active learning environment of the online classroom (Ryberg, Dirckinck-Holmfeld, & Jones, 2011). Some of today's students still claim to prefer a passive learning, predominantly lecture-based classroom. However, once exposed to a well-designed, active online classroom, they become engaged and ready to learn online.

It is important to set clear expectations from the outset so students can assess their own readiness for online learning. Students in an online environment must be comfortable and skilled with technology.

Conditions for Learning

Online learning, along with the technology tools available, offers students active engagement, the opportunity to participate in groups, frequent interaction and feedback, and connections to real-world contexts (Roschelle, Pea, Hoadley, Gordin, & Means, 2000). Technology also expands what students can learn by providing them with access to an ever-expanding store of information. Researchers Roschelle et al. (2000) also emphasize that merely making computers available does not automatically lead to learning gains. They describe technology integration as only one element in "what must be a coordinated approach to improving curriculum, pedagogy, assessment, teacher development, and other aspects of school structure" (Roschelle et al., 2000, p. 78).

According to learning-science experts, the increasingly interactive nature of technology, exemplified by available interactive tools, creates new opportunities for students to learn by allowing them to do a task, receive feedback on it, and then build new knowledge. In *How People Learn: Brain, Mind, Experience, and School*, authors Bransford, Brown, and Cocking (1999, p. 207) explain that technology can be used to advance learning by:

Bringing exciting curricula based on real-world problems into the classroom

Providing scaffolds and tools to enhance learning, such as modeling programs and visualization tools

Giving students and teachers more opportunities for feedback, reflection, and revision

Building local and global communities that include teachers, administrators,

students, parents, practicing scientists, and other interested people

Expanding opportunities for teacher learning

Online learning, with its abundance and availability of technology tools, empowers students to take more control of their learning and makes the classroom student centered, rather than instructor or lecture centered. This creates both new opportunities and new challenges for the teacher and learner.

In his book *What the Best College Teachers Do* (2011), Bain emphasizes students are more likely to learn about what they are interested in. The challenge for the teacher is to create interesting and engaging learning experiences. Of course, this is true for campus-based instructor-led courses as well!

Synchronous Versus Asynchronous

Different teaching methodologies are utilized if the online class is designed to be asynchronous (when students log in at different times) rather than synchronous (when students are logged in at the same time as the instructor and a “live” class takes place).

Most online learning environments, including massive open online courses (MOOCs), are asynchronous. The main method of student–student and student–instructor interaction is on discussion boards. Discussion boards employ higher-order constructivist learning and contribute to the development of a learning community (Levine, 2007). When a discussion board is used, students post responses to the instructor’s assignments and to each other. This strategy provides the maximum flexibility and convenience for online learning and is widely utilized.

The main benefit of asynchronous learning is students and teachers do not have to be online at the same time. This makes access to the course materials much more convenient for learning on a variable schedule. In addition, students have time to prepare thoughtful discussion posts and responses, unlike in the classroom and the synchronous classroom, where the required discussion response is more immediate. Instructor presence is nevertheless an important consideration in asynchronous discussions; research shows the level of instructor presence preferred depends on the desired learning outcomes (Loncar, Barrett, & Liu, 2014). Mazzolini and Maddison (2003) found the instructor role of “sage, guide or ghost” depends on what the instructor wants to accomplish. Not enough instructor presence can leave the students feeling not connected, yet too much can interfere with student–student interaction. According to Palloff and Pratt (2003), the instructor should only intervene to keep the discussion on track or to take on a cheerleading role. The instructor should spend his or her time preparing carefully thought-out questions and topics that relate to the learning objectives (Andresen, 2009).

Although there is little research on the limits of asynchronous discussion forums (Andresen, 2009), several studies have emerged to show that problem-based learning can be difficult in an asynchronous format. Kortemeyer (2006) reported actual problem solving in physics was difficult, and Hong, Lai, and Holton (2003) reported similar results for a statistics class. Aside from practical scientific problem solving, however, asynchronous discussions are the mainstay of online learning. With technology advancements in audio and video capabilities, there are more and more opportunities to bring instructors and students together in real time. This is often referred to as a synchronous class, a “live” class, or a “virtual” class. These can include chat rooms with just text on up to video, teleconferencing, and even virtual environments such as Second Life (Skiba, 2009).

Synchronous classes usually take place by teleconferencing (phone only) or audio and video conferencing where students and instructors appear on web

cameras. Synchronous environments are usually smaller classes (25 or less), more social, and therefore have the potential to support learners in the development of learning communities (Sun & Chen, 2016). Learners benefit from having the instructors be able to answer questions in real time, and instructors benefit from the smaller classes and more personal interactions with students. When cameras are present, body language adds to the richness (or not!) of the communication. Online synchronous classes allow students to connect and collaborate.

Synchronous classes present their own set of challenges. There are several things to watch for when considering synchronous classes:

1. Scheduling: Students and instructors must be able to come together at the same time.
2. Technology: Although technology is constantly improving, both students and instructors need to be technologically savvy. Technology interruptions must be expected, and solutions have to be in place for when interruptions occur.
3. Personality and learning styles: Live classes favor extroverts. Some students do their best work alone and need time to carefully craft a response, rather than shout it out in the moment (Modified from Fuster, 2015).

Resources and Methods

Skilled Faculty

The most essential resource for a successful online course is the availability of experienced faculty to facilitate the online learning. Faculty must be trained in online teaching. Many colleges and universities require online teaching certification or, at the very least, for the faculty member to have taken an online class as a student before teaching online for the first time. Even skilled faculty teaching on a new platform should become totally familiar with the technology tools beforehand, and avail themselves of refresher sessions with faculty support if available. Platforms and tools vary widely across programs.

Technology

Students and faculty need access to Internet-enabled devices, web cams, and audio. Some audio is provided through the computer as Voice over Internet Protocol (VoIP) or through the telephone. Either way, for the best classroom experience, headsets with built-in microphones are recommended. Although laptops or desktop computers are preferred for teaching, many courses now are accessible for students through mobile devices and tablets.

Faculty must be proficient in the use of the online technology. This includes the tools available in the online platform that enhance learning. Some examples include the use of polls, whiteboards, and breakout rooms. Lecture-based classes online are just as boring as lecture-based classes in the physical campus classrooms. Faculty must learn to use the available tools, which are designed to engage students and enhance learning. The benefit of the online platforms is the tools are usually built into the software and do not require a different setup. Tools abound for creating engaging and meaningful online classroom learning activities.

Faculty Development

If the educational setting offers training for faculty, all faculty are advised to take advantage of the opportunity to learn the basics of online teaching, as well as to keep up with new and emerging educational technology. Nothing seems to diminish the important role of the faculty quicker than stumbling through the technology in front of savvy students.

Using the Method

There are numerous how-to texts and guides available for designing online courses; many of these resources are listed in the “Recommended Reading” section at the end of this chapter. This section looks specifically at developing the synchronous component, aimed at engaging the student during the live or virtual setting.

Planning

Just like any class, good execution requires a good plan. The synchronous session is the ultimate “flipped classroom,” as the students have prepared the asynchronous materials (usually videos, texts, e-learning modules) on their own time and come to the live sessions prepared. With a smaller number of students, participants quickly realize they are more accountable for the preparation work and consequently are more likely to come to class prepared. Of course this varies, but through peer pressure alone, students usually learn to come to class prepared, as they are likely to be called upon in the active and engaged live session. Additionally, faculty need to be well prepared for the live session. It is recommended to create a “Live Class Guide,” which details the desired learning outcomes, the sequence of the learning activities, and the time allotted to each (see **BOX 8-1**). A clear plan will increase the probability of a smooth class flow.

BOX 8-1 Synchronous Class Plan Workflow Checklist

1. Decide how much time will be allotted to the synchronous session.
2. Review the specific lesson objectives and determine the desired learning outcomes for the synchronous session.
3. Include the learning outcomes in your class plan.
4. Decide how the learning outcomes can be met with the (technology) tools available.
5. Design active learning exercises that meet the desired learning outcomes.
6. If possible, set up your synchronous classroom ahead of the class time, building in the activities using the available tools (e.g., set up poll questions, build breakout rooms, etc.).
7. Craft a detailed “Live Class Guide” so everyone can play a role in helping the class run smoothly.
8. Keep log-in and emergency numbers handy, just in case of a technology mishap.
9. Always have a Class Plan B!

Feedback and Assessment

Clearly articulating how and when the students will receive feedback, and how they will be assessed and graded, ensures success and prevents unwelcome feedback. Detailed participation rubrics are helpful to assure uniform grading criteria. In some programs, students take tests during their live sessions and are monitored while on

camera. To ensure academic integrity during the online test, additional software can be employed, such as Proctortrack, an automated remote proctoring product that verifies the student's identity.

Expectations

Setting student expectations in advance can help ensure a successful learning experience. The student's role, the faculty's role, and assignment expectations must be clear and easily accessed. Policies concerning student behavior (such as the use of social media and protection of intellectual property) must be specifically spelled out, otherwise, you may find your test answers posted on Facebook! The beginning of the course is an ideal time to set the expectations and start the class off on the right note. A welcoming and friendly setting will go a long way in soothing nervous students and sending a warm message. If it is helpful, post a list of frequently asked questions and add to it as the course progresses.

Orientation

Student orientation to the live classroom environment should be just as thorough as the faculty's orientation, especially if this is a new way of learning. In addition to a program-sponsored orientation to the learning management system, the first live class should be spent going over course requirements, necessary technology skills, and live class behavior expectations. Additionally, it is important to set the stage for the formation of an engaged and collaborative learning community for successful live sessions for the remainder of the term.

Conclusion

Students entering the health professions in the 21st century are more technologically savvy than previous generations and are ready to take their learning online. New tools and learning research support rigorous and successful online learning. Student engagement through thoughtful use of available technologies contributes to a successful online experience for both students and teachers.

TEACHING EXAMPLE: COMMUNITY HEALTH NURSING—CONVERTING TO A FULLY ONLINE CLASS

Although this Community Health Nursing course had been previously developed by the instructor as a blended model (Bradshaw & Lowenstein, 2014, p. 291), there were new programmatic opportunities to reach larger audiences. A plan was developed to convert the undergraduate, senior-level community health class to an entirely online offering for a new RN to MSN program.

The nursing program was fortunate in having a technology partner, 2U, which worked closely with the faculty to strategize the content transformation and filming production. It took a 7-month process of collaborative work between the production team from 2U and the faculty and instructional design team from the college to format and film the lecture content into small 10-minute chunks, include interactive features and discussions, and build out the course into the LMS. The course as designed has a 3- to 5-year “shelf life,” needing only minor semester updates; re-filming was reserved for major course revisions about every 5 years (depending on the content).

The hallmark feature of each course is the weekly required synchronous live session. Students register for the live sessions as they would register for any class, but with a class capacity of no more than 15 students. Students receive training and guidance on technology needed, such as a web cam, a telephone headset, and a computer configured with the necessary plug-ins and downloads. Faculty also receive the same comprehensive training prior to their first class in this program. 2U provides extensive student and faculty support for technology issues that may arise and is available for live support whenever classes are running.

With the didactic content available to the student asynchronously, the faculty, called “section instructors,” each manage a 15-student section and bring the students together for a live active learning session based on that week’s learning objectives. The live session for Community Health meets weekly for 2 hours using Adobe Connect. Adobe Connect offers numerous interactive tools that make the learning engaging and participatory. A valuable feature is the Breakout Room, which allows multiple small groups to work together simultaneously. In each Breakout Room, the students’ audio and cameras connect only to each other, and they can work together for a set period of time. At the end of the breakout session, the small groups rejoin the larger group and share their findings. The Breakout Rooms are a powerful learning feature, which enables student-directed activities that are collaborative and engaging.

To illustrate a just a few examples from the Community Health class, **TABLE 8-1** shows the expected active learning outcome, the Adobe Connect tool used, and a description of the learning activity.

TABLE 8-1 Examples of Outcome, Tool, and Learning Activity Coordination

Learning Outcome	Adobe Connect Tool	Learning Activity
Pool knowledge about	Breakout	Students are grouped in Breakout

resources available in the community	Rooms	Rooms by state or region to share local resources. Students benefit from sharing in small groups and then reporting their findings to the larger group.
Demonstrate knowledge from asynchronous readings	Polls	Students answer poll questions, set up by the instructor, designed to elicit baseline knowledge of weekly readings.
Demonstrate understanding or further clarification of presented content	Status icons	Students can use status icons to agree or disagree with the instructor, allowing the instructor to ascertain immediately whether a concept needs further explanation.
Generate new ideas	Whiteboard	Students use a whiteboard as they would a classroom whiteboard or flipchart to record ideas generated in a brainstorming session.
Capture stream-of-consciousness ideas as those ideas relate to the current topic	Chat	Students can use the chat feature (at the discretion of the faculty) to record ideas to share with their classmates.

These classroom activities were easily adapted from the campus-based class design. The interactivity is actually much easier to administer online than on campus, as the tools are readily available. The Breakout Rooms replace small-group activities without having to move chairs, and the polls replace the aggravation of classroom clickers. Status icons are easier and less intimidating than raising hands, and the digital whiteboards replace the cumbersome flipcharts. The chat tool replaces talking in the classroom or a back channel. Like the campus classroom, the instructor can use discretion on how much or how little to allow background chat. A benefit to the online chat tool is it can be saved and e-mailed for later perusal. Admittedly, there is an initial learning curve to master the technology tools within the Adobe Connect classroom—but once mastered, those tools offer endless possibilities for integrating active learning in the classroom.

Student feedback from the live sessions has been quite positive. Some comments include:

"This is such an interesting online classroom. I love the different pods with either surveys or notes; I really feel like you want us to be involved."

"This layout is my favorite—lots of interaction between the students and the professor."

"I really appreciate how this class is organized; it's engaging and interactive."

"This is such a fun class! I love seeing how the theories apply in real life."

Discussion Questions

1. Reflect on your own learning styles. As an instructor, do you prefer to engage in synchronous or asynchronous teaching? How do you build a sense of community with each type of online learning?
2. Evaluate your current teaching. What concepts or activities could you transition to online learning? How can online teaching strategies improve your in-class teaching?

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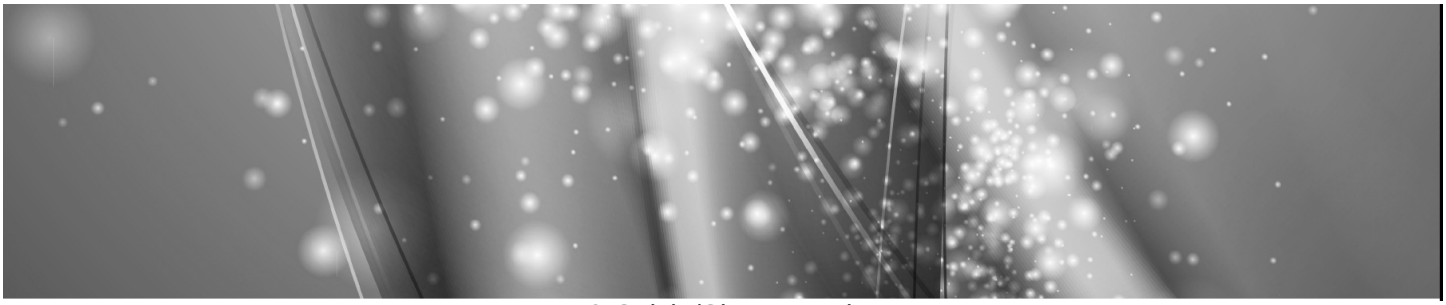
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CHAPTER 9

Social Media as a Context for Connected Learning

Steven R. Crawford

Introduction

Educators who have used technology for more than a decade will remember the early days when e-mail and listservs were considered cutting-edge technology. E-mail was useful for one-on-one communication, while listservs supported one-to-many discussion. The first iterations of these tools were clunky and unforgiving. Over time these technologies improved. Listservs still serve a purpose, and e-mail is still central to our daily work in higher education.

In the early 1990s, the increasing popularity of the World Wide Web gave rise to learning management systems (LMSs). *Web Course in a Box*, one of the first LMSs to be used widely in higher education, provided faculty and students with a suite of password-protected tools especially designed for learning contexts: a syllabus builder, threaded discussions, web-based quizzes, assignment submission tool, and a class roster that could include student-written biographies with photos. The invention of the LMS was important because it signaled a shift from technology as a discrete tool (i.e., software, hardware) to technology as an online *place* where learning could happen. The LMS provided us with a virtual classroom that could accommodate many modes of learning and the development of coherent learning communities: asynchronous and live, self-paced and group-based, text-based, and audio/video.

As the LMS became more commonly used by faculty, other tools that became known collectively as *Web 2.0* were also becoming more commonly used. One common tool which was part of Web 2.0 and found in the LMS, was the discussion board; however, that is where most of the commonalities ended for many years. One of the earliest references to Web 2.0 was made by DiNucci in 1999 where she identified that we were transitioning from static screenfuls of information toward a portal of interactivity.

The rise of social media tools and platforms represented a radical departure because those tools did not try to be the best or most sophisticated. They embodied Web 2.0's "read-write" ethos, which made Internet multimedia authoring possible for the rest of us. Web 1.0 tools helped online authors connect things (hyperlinked documents, embedded images and videos within documents). Web 2.0's social media tools helped people connect with other people. These technologies felt like a breath of fresh air in the increasingly stodgy context of technology in higher education. They opened up a host of possibilities for learning to engage all types of students in active and collaborative work.

First, social media tools and platforms often have a strong visual component, making it possible for students to represent their developing understanding through a combination of text and images (and often audio/video). They help learners make their thinking visible to their peers and teachers (Ritchhart, Church, & Morrison, 2011). These multisensory artifacts of learning can also be used to assess progress

and set goals for improvement and can be revised to reflect the current state of understanding.

Second, these tools and platforms are designed to support networking among users, a process that can be leveraged to achieve social learning through social pedagogy. According to Holland and Judge,

> By its very nature, and in the right hands, Web 2.0 technology has the capacity to transform existing pedagogic practices in higher education by creating a teaching and learning environment that supports participation, interactivity, communication and the development of learning communities where students can share and co-construct knowledge with each other and their instructors. (2013, p. 18)

Learning management systems are designed to support teacher-directed, course-centric learning. Students submit assignments and post messages, embedding their work within a course which disappears after the semester's close or graduation. Social media tools allow students to create work within personal accounts that can be networked, tagged, and commented on, supporting a process of connected learning during which students pool originally produced media, compare differing perspectives, look for commonalities, analyze observations to discern meaning, and create an enduring record of learning. Learners both own and share their understanding.

For example, students enrolled in Michael Wesch's fall 2007 Cultural Anthropology course at Kansas State University (KSU) conducted primary research, created a polished 5-minute video about their findings, and posted the video, titled "A Vision of Students Today," for public viewing on YouTube. This is not necessarily a novel assignment—students have been making "digital stories" for years. In 1994, Dana Atchley and Joe Lambert developed the first workshop on digital storytelling, and Lambert went on to found the Center for Digital Storytelling in 1998 (Lambert, n.d.). What is striking is that by September 2009, the video had been viewed more than 3,340,000 times, and as of September 2018 it had received 5,311,607 views (Wesch, n.d.). In the words of social media, the video "went viral." The work of these students has extended beyond the duration of the class, beyond the KSU campus, and even after 10 years the video continues to serve as a catalyst for intellectual discussion that spans continents. Viewers are still using YouTube's commenting tool to post their thoughts about the video in the discussion area located directly below the piece.

Imagine the sense of accomplishment that Wesch's students must feel. No LMS-based assignment could claim this level of engagement and impact on society as a whole. According to George Siemens,

> Including technology and connection making as learning activities begins to

> move learning theories into a digital age. We can no longer personally experience and acquire learning that we need to act. We derive our competence from forming connections . . . (2004, para. 14)
>
> Personal knowledge is comprised of a network, which feeds into organizations and institutions, which in turn feed back into the network, and then continue to provide learning to individuals. This cycle of knowledge development (personal to network to organization) allows learners to remain current in their field through the connections they have formed. (2004, para. 27)

When used appropriately, social media can be a powerful conduit for helping students connect life and learning. Social media can introduce students to content experts and practitioners beyond the classroom, allowing students to have a better connection to what they are learning in their course. This broader perspective can assist students in better connecting to the subject matter and provides a path for learning beyond the boundaries of the course.

Using Social Media Tools Within a Course

Given that technological options appear and disappear on a daily basis, how can educators avail themselves of emerging technologies without sacrificing precious learning time with their students? All too often, teachers who want to experiment with technology begin by selecting the tool and then determining its educational use. This strategy is both *inefficient*, because it forces educators to learn about all technologies regardless of their relevance to a particular learning scenario, and pedagogically *ineffective*, because it takes the focus off the most important drivers: learning goals, desired outcomes, and evidence of learning.

Ruben Puentedura's SAMR (substitution, augmentation, modification, and redefinition) model (see **FIGURE 9-1**) for evaluating the impact of educational technology on learning focuses on transformational pedagogy (2012). For example, online video lectures serve as a *substitute* for in-person class lectures. E-mail is an *augmentation* of written messages because it includes additional features such as the ability to attach files and distribute messages to hundreds of people simultaneously through the use of lists. Wikis *modify* the concept of authorship, turning what used to be a solitary, defined process into a crowdsourced endeavor in which the formation of knowledge is distributed and infinite. Student-produced digital stories and multimodal online case studies *redefine* the communication of ideas because learners have an opportunity to integrate sounds, images, words, and video into a multisensory, multidimensional experience that conveys more than text alone.

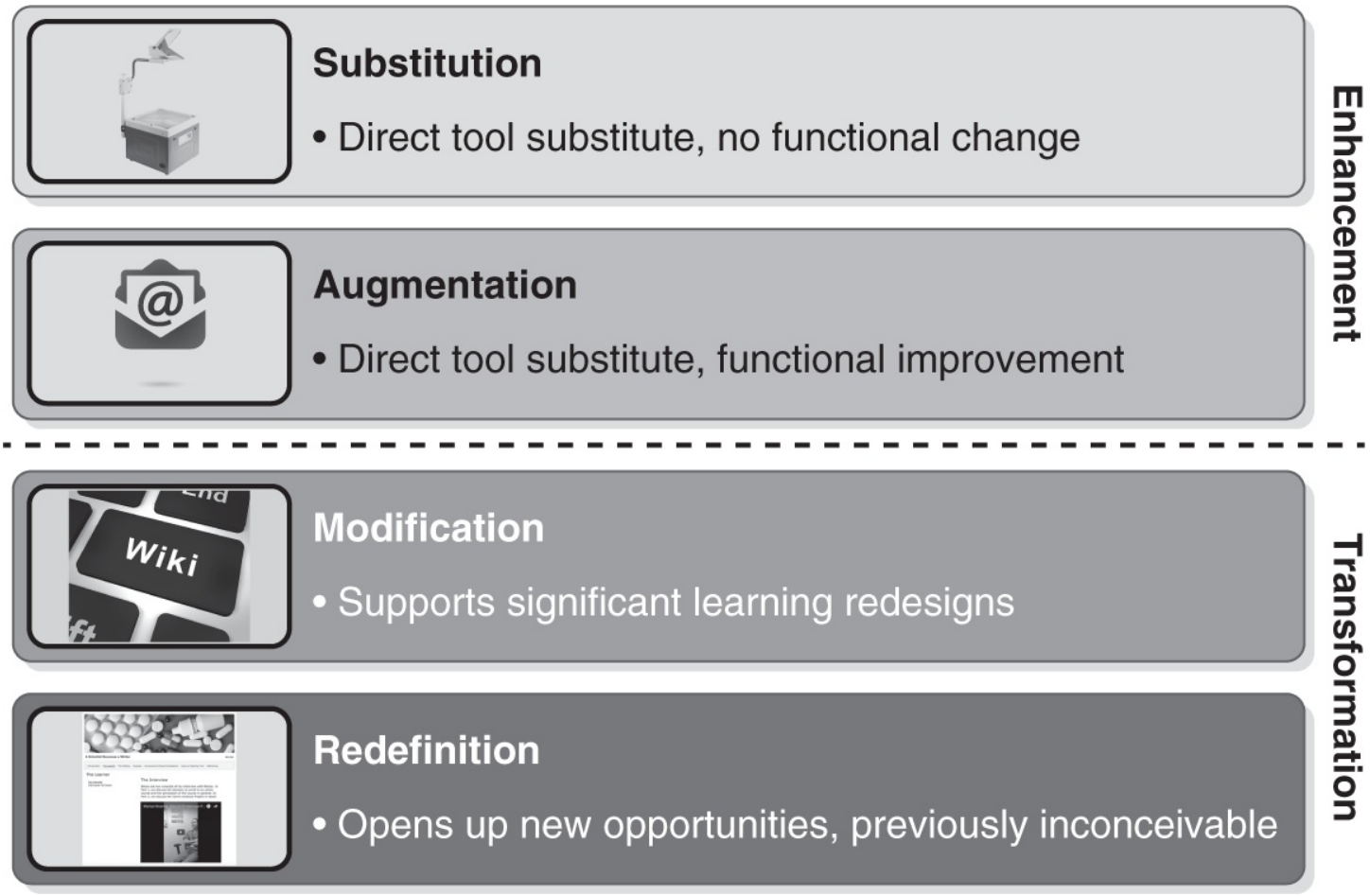


FIGURE 9-1 Reuben Puentedura's SAMR model.

Modified from Puentedura, R. (2014). *Learning, technology, and the SAMR model: Goals, processes, and practice*. Retrieved from http://www.hippasus.com/rrpweblog/archives/2014/06/29/LearningTechnologySAMRModel.pdf. Projector © chungking/Shutterstock, email icon © Artco/Shutterstock, Wiki key © Stuart Miles/Shutterstock.

Description

Puentedura observes that new technologies can replace previous tools (enhancement), or they can support a rethinking of how teaching and learning take place (transformation). Transformational pedagogy is not inherent to the tool; it is the intersection between innovative learning design and the new capabilities made possible by the technology. If we evaluate the use of social media from the perspective of SAMR, then sending classroom updates through Twitter is an *augmented* use of the tool, whereas using Twitter as a platform for book discussions between students from different institutions is transformational (Matthews-DeNatale & Bullock, 2014).

Tanya Joosten's pathbreaking work *Social Media for Educators* (2012) encourages educators to focus on forms of engagement which enhance learning, such as building cooperation and feedback through dialogue. Social media evolves at a quick pace, and many of the technologies referenced in her book are not as popular as when it was written (e.g., Second Life), yet the strategies and best

practices she recommends are applicable to most forms of social media.

Lee Shulman, president emeritus of the Carnegie Foundation for the Advancement of Teaching, describes five dimensions that are central to effective teaching: vision, design, interactions, outcomes, and analysis (1998). A good course functions as a coherent whole: discrete assignments are engaging and often creative in design, yet the pieces are interconnected and create a synergistic learning experience. Likewise, good teaching is responsive to learners, differentiated to address a variety of capabilities, while also tailored to meet the needs of specific populations enrolled in the course. Georgetown University's Randy Bass describes this process of learning design as identifying "the problem":

> I realized I didn't know really if the better students in a course who demonstrated a real understanding of the material by the end of the semester were actually acquiring that understanding in my course, or were merely the percentage of students who entered the course with a high level of background and aptitude. Similarly, I realized I didn't really know if the students who I watched "improve" from their early work to later work were really understanding the material and the paradigm from which I was operating, or merely learning to perform their knowledge in ways that had adapted to my expectations. (1999, p. 4)

In response to these uncertainties, Bass and other proponents of the "scholarship of teaching and learning" advocate focusing on "the relationship between student prior understanding and their capacity to acquire new understanding" to investigate how students' "self-awareness of learning might help them develop a deeper understanding of certain disciplinary principles more quickly and meaningfully" (Bass, 1999, p. 6). With this approach, courses and assignments are developed in response to, and as an investigation of, students' learning needs and developing abilities.

In the article "Disrupting Ourselves: The Problem of Learning in Higher Education," Bass describes this approach to teaching and learning as a "porous" blurring of boundaries, a process that creates "not only promising changes in learning but also disruptive moments in teaching." He goes on to explain

> By "disruptive moments," I'm not referring to students on Facebook in classrooms. I mean "disruption" in the way Clayton Christensen uses the term. Christensen coined the phrase *disruptive innovation* to refer to a process "by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors." . . .
>
> I am asserting that one key source of disruption in higher education is coming not from the outside but from our own practices, from the growing

> body of experiential modes of learning, moving from margin to center, and proving to be critical and powerful in the overall quality and meaning of the undergraduate experience. (Bass, 2012, p. 24)

This problem-based approach helps faculty select emerging technologies which disrupt or transcend the confines of course-based learning in a way that is both meaningful and productive, realizing the full potential technology holds for transforming higher education. The disruptive use of emerging technology in education is grounded in a vision for learning that is *responsive* to learners' intellectual and social needs; *fosters connections* between the course at hand and students' life experiences (e.g., friends, family, regional, ethnic, and cultural affinity groups); *creates a bridge* between the course and students' larger learning contexts (e.g., other courses, internships, service learning, and co-ops); *taps into diverse preferences and perspectives,* allowing students to play to their strengths as they grapple with course concepts; and helps students *achieve deeper conceptual understanding* and *develop core capabilities* in relationship to the course topic or discipline.

Expanded Approaches to Learning

Historically, higher education has best served students who learn through reading, listening to lectures, taking notes, and doing sequential problem solving such as mathematical calculation. Educational theorists have developed a host of models designed to help teachers consider how to leverage the strengths and preferences found among learners in a heterogeneous classroom (Butler, 1986; Kolb, 1984; Felder & Soloman, n.d.). The four-part model put forth by Felder and Soloman is particularly useful in exploring the relevance of social media for higher education:

- Reflective and Active
  - Reflective involves learning by thinking.
  - Active involves learning by doing.
- Sensing and Intuitive
  - Sensing involves learning by facts and verifiable experience.
  - Intuitive involves learning through innovation and possibility thinking.
- Verbal and Visual
  - Verbal involves learning through the written and spoken word.
  - Visual involves learning through images, diagrams, and timelines.
- Sequential and Global
  - Sequential involves drawing on details and facts to construct a larger understanding.
  - Global involves starting with the "big picture" and then analyzing the whole to understand the sum of its parts.

Note that these pairs are continuums of learning preference, not dichotomies. All learners exhibit these eight capabilities in greater or lesser degrees. In addition, research indicates teaching to an individual's specific preference does not improve learning (Riener & Willingham, 2010). It is more effective to identify the most promising ways to learn a given topic or skill, design a learning experience that emphasizes the modality best aligned with the task, and also augment the plan with additional modalities to provide opportunities for differentiated engagement. For example, students need to engage in kinesthetic interaction (driving) if they want to learn how to drive a car. It would be absurd for a student to demand all driving lessons be taught through writing because he or she is a "verbal" learner. The most pedagogically effective method is to provide multiple opportunities for engagement through written materials, videos, live presentations, off-road simulations, and quizzes modeled on the DMV test, yet focus the majority of instruction on the kinesthetic experience of practice driving.

Social media are particularly adept at supporting differentiated instruction through active, intuitive, visual, and global learning. **TABLE 9-1** maps selected social media tools to Felder and Soloman's framework of learning preferences.

TABLE 9-1 Learning Preferences and Emerging Technologies

Preference	Social Media Example
Active (learning by doing)	Students pool lab work or field-gathered data into a wiki, authoring a collaborative analysis of their primary data.
Intuitive (innovation and possibility thinking)	Students browse the TED Talks video site to identify thought leaders who can provide a "big-picture" analysis of a given topic (e.g., epidemiology students access a talk on pandemics given by Larry Brilliant).
Visual (images, diagrams, timelines)	Students identify stories of previous experiences that relate to a given topic, then create and share "digital stories" using VoiceThread (3- to 5-minute videos that combine images and words). Classmates use VoiceThread's annotation tool to comment on each other's stories.
Global (big-picture thinking)	Students use Bubbl.us to create mind maps that provide a holistic picture of a topic or concept, then use a blog or Twitter aggregator to compile an overview of all recent posts written about that topic.

In recent years educators have increasingly focused on the role interpersonal interaction plays in learning, a concept that is often referred to as "social pedagogy." This concept is not new. According to Judha Hämäläinen, in 1889 theorist and philosopher Paul Natorp "claimed that all pedagogy should be social, that is, that in the philosophy of education the interaction of educational processes and society

must be taken into consideration" (2003, p. 73). It stands to reason that social media are particularly good at supporting the social dimension of learning.

The online environment also has the potential to transform social pedagogy because it supports the development of intricate and geographically dispersed learning networks, which are not possible in face-to-face settings. Bonnie Stewart observes, "prior to the digital era, scholarly knowledge was traditionally organized around the premise that knowledge is scarce and its artifacts materially vulnerable," and the Internet "marks a shift from an era of knowledge scarcity to an era of knowledge abundance" (2015, para. 4). Stewart goes on to describe what she calls Networked Participatory Scholarship (NPS), an approach that "fosters extensive crossdisciplinary and public ties for scholars, and encourages scholars to be teacher-learners who engage and speak back in the midst of multiplicity and abundance" (2015, para. 51). When students are encouraged to access and create knowledge through online social networking, social media offers them the opportunity to experience the transformative richness of NPS firsthand. This is the power of connected learning.

Using the Method

When technology developers set out to create a new product, they begin by surveying their users' needs. The next step is to develop a *spec,* a specification document which describes all the things the product will have to be able to do. In integrating emerging technologies into teaching, a similar process is useful. Begin with these questions:

> What should my students know and understand by the end of the course (or assignment or module)?
>
> What skills or capabilities, academic or disciplinary, are essential to achieving the goals for learning?
>
> What is the "problem" (à la Randy Bass) that I am trying to solve—which of the goals for learning have been difficult for learners to achieve when I taught this course in the past?
>
> What do I want for myself and for my students? For example, the teacher may want to obtain a clearer picture of students' thought processes, or he or she may want the students to connect course concepts to everyday life.
>
> By the end of the learning sequence, what evidence will my students and I need to be confident learning goals have been achieved? Along the way, what evidence would help me and my students identify trouble spots to address areas of concern and make adjustments as necessary?

What modes of learning are particularly relevant to the topic or learning goals? For example, epidemiology may lend itself to mapping clinical decision making to visual and other data analysis, and cultural competence or medical ethics to multimedia storytelling.

The answers to these questions provide a *spec* you can use to seek out emerging technologies that best align with the learning scenario. This preliminary work, often called *learning design,* also saves time because the faculty member only needs to investigate technologies which will meet specific criteria for learning.

In evaluating emerging technologies, faculty need not be alone. EDUCAUSE, the national organization dedicated to technology in higher education, publishes a series entitled *7 Things You Should Know About* (EDUCAUSE Learning Initiative, n.d.). Each brief focuses on a single technology or practice, describing what it is, how it works, and why it matters to teaching and learning. As of August 2018, there were over 180 briefs in the series, with approximately 12 publications added to the collection each year. EDUCAUSE also produces the *NMC Horizon Report* (EDUCAUSE, 2018), an annual digest of technologies that are likely to have a significant impact on teaching and learning in the near future, along with examples of those technologies at use in higher education. An online self-paced workshop, *23 Things* (n.d.), developed by the Public Library of Charlotte and Mecklenburg County as part of its “Learn 2.0” initiative, was also designed to provide a guided introduction to social media. Allan Carrington’s regularly updated “Padagogy” wheel is a particularly useful tool for identifying educational uses for social media because he maps technologies to the SAMR framework (Carrington, 2016).

In addition, most colleges and universities have instructional designers who are current with recent developments in technology, eager to share their knowledge, and equipped to provide consultation on the use of technology for learning. These professionals are usually located within centers for teaching and learning, or centers for teaching and learning with technology. Whether consulting with an instructional designer or browsing *7 Things* briefs, the result will be more satisfactory and efficient if the faculty member first uses “the method” to create a spec which identifies desired learning goals, processes, and outcomes.

Potential Problems

Despite social networking’s capacity to increase student engagement, metacognition, and connected learning, educators have also found these tools can be confusing, somewhat intimidating, and even scary. The associated terminology can sound like something penned by Lewis Carroll: *Twas pinterest and the slithy blogs did tweet and wiki in the wabe!* Sometimes social media tools are *too* easy to use, with the consequence that embarrassing and inappropriate youthful dalliances are posted online for enduring public scrutiny. These horror stories might make some

educators leery of incorporating social media into their work with students.

The accelerated pace of change is also dizzying: Each week dozens of new resources arrive on the scene while others are either acquired or go out of business altogether. As soon as the public became accustomed to the term *Web 2.0,* technologists began speaking about a Web 3.0 featuring mobile technologies (e.g., GPS-enabled iPhones, iPads, Kindles, and Android devices), which are location-aware and context-tailored (e.g., tracking interests and setting to offer only pertinent resources and information). The use of version numbers (e.g., 2.0, 3.0, and beyond) quickly became as problematic as the hackneyed phrase *21st-century learning*.

Emerging technologies are a grand adventure that can add a new dimension to learning, but there is a price for teaching "outside the box" of institutionally supported learning management systems. Educational institutions are careful to make regular backups of courses in their LMSs; they cannot risk losing credit-bearing discussion posts or test results. In contrast, emerging technologies come with no guarantee of backups, security, or even ongoing existence. An assignment which previously worked well using a given technology may have to be adapted in response to new versions, acquisition by another company, or even the disappearance of a much-loved tool.

Unlike learning management systems, social media tools come unbundled and are rarely supported by technicians at the institutional level, therefore, placing the onus for technical orientation and support on the teacher. Because the tools are selected à la carte, it is the educator's responsibility to weave technologies together into a coherent learning environment. Students can become frustrated when a course includes too many different technologies. When using an LMS, the student experiences it as *one* software application, even though the learning system can do many things. When using emerging technologies, students experience each one as a different tool: a different "place" to go to do coursework, a different interface to learn, a different log-in, and a unique application which has its own technology troubleshooting challenges. One strategy is to use the LMS as a portal or door through which students can access all other tools used in the class. This can be accomplished by inserting links to all technologies on a course page or as needed within course modules. Another strategy is to integrate emerging technologies thoughtfully and sparingly: no more than two or three tools unless the course is about technology itself.

When taking the leap into emerging technologies, it is important to realize this is uncharted territory. Students take their cues from their teachers, and these technologies require a pioneering spirit—so plan accordingly and encourage your students to take an adventurous approach as well.

Using Social Media to Connect Beyond the Course

Bass (1999) highlighted that technology use can blur the boundaries of a course. The use of technology can assist in creating a learning environment which extends beyond the walls and timeframe of the course, and may include more than just the students registered in the course. Through the use of social media tools, a student can be guided in creating a personal learning network (PLN).

Wenger describes a community of practice (CoP) as a group of people who further their learning and knowledge through multiple perspectives of the group members (1998). As technology has evolved and social media has gained popularity, the PLN has become a way to create connections to other professionals without regular participation in a group. A PLN is constructed through the use of various social media platforms to create a network that individuals can use to direct their own learning goals (EDUCAUSE, 2009). Camiel, Goldman-Levine, Kostka-Rokosz, and McCloskey (2014) explain, “The use of PLNs in education expands course content, exposing students to outside experts and concepts/ideas not covered during a course.”

When creating a PLN, it is important to consider both the members of the network and the social media platforms they use to communicate because not everyone utilizes every platform. While Facebook may be among the most popular social media platforms (Smith & Anderson, 2018), the platform is not necessarily the most common platform used for professional interactions.

Currently, some of the most popular social media platforms for professional interactions are Twitter and LinkedIn. In a pharmacy course where students were asked to create a PLN, the students preferred Twitter as they found it easier to switch between a personal account and their professional one when using Twitter (Camiel et al., 2014). This is important as many students will want to separate their personal social media interactions from their professional interactions.

When students are creating a PLN, they may not be able to identify legitimate resources from those that are less reliable. Therefore, they should be guided by giving students a list of blogs, Twitter profiles, video channels, and so on of organizations, government agencies, and thought leaders in the field.

As the students become more familiar with the platforms and other participants in online conversations, they should be encouraged to also actively participate. A common way to do this is through the use of hashtags. A hashtag is often used to help organize conversations around specific topics, events such as conferences, or chat sessions. In the case of a Twitter chat, a session is often scheduled at a regular interval and all participating tweets contains a common hashtag such as #womeninmedicine, #MedEd, or #hcbiz. The moderator will begin the chat with a

discussion question and then ask questions at regular intervals during the chat. Some hosts of Twitter chats will summarize and archive the chat in a blog post after the session has ended.

Potential Problems

An area of concern when using social media is to protect the privacy of the students participating in the course and using social media. It is important to ensure the students are properly informed as to how they can protect their privacy. One common method is to create a new account the students use to separate their personal interactions from their professional ones. This will prevent vacation/party photos from being shared as a part of their professional identity. Also, if a student is concerned about sharing their name and information publicly via social media, they should be allowed to use a pseudonym to protect their identity.

Conclusion

Higher education and educational technology are in a period of disruption, creating new opportunities for learning with social media which are visually rich, socially connected, and extend formal learning beyond the confines of school into everyday life. Emerging technologies provide educators with a rich palette of opportunities for enhancing learning, but technology should not lead the decision making. Newer, unbundled technologies are intuitive, particularly suited to learning that is active, social, global, and multimodal. Even though emerging technologies can breathe new life into coursework, enrich communication, increase student engagement, and promote social learning, these technologies often evolve, and, therefore, it is wise to have a contingency plan in place. Rather than selecting a tool and then deciding what to do with it in an assignment, those who want to incorporate emerging technologies into their teaching are cautioned to focus on pedagogy first—to identify the *problem of practice* or change they wish to see in students' development—and then select tools that best meet these learning needs.

TEACHING EXAMPLE 1: USING SOCIAL MEDIA TOOLS WITHIN A COURSE

Linda Shah teaches a community health course and one of the major assignments of the course involves her students writing a report on the institution's community. The students typically utilize various databases and collect data from the field to write a report which is then turned in to Linda. Over the course of several semesters, Linda had grown tired of reading reports that contained the same basic data and varying quality of field research by her students and decided a more collaborative approach was needed. After speaking with an instructional designer at her institution, Linda decided to utilize a suite of social media tools to transform this report into a group project.

Linda decided the students in the course would work together to create one report using a wiki. She established basic ground rules for using the wiki by requiring all students to discuss their additions, deletions, and changes they make to a wiki page via the "talk" discussion board, which is a part of each page. Another ground rule was the students were required to cite their sources and use the Wikipedia Manual of Style so all pages had a consistent format.

During a class session, Linda introduced the tool and ensured all the students could log in and edit the wiki. Then, the students paired up and selected a particular topic area of the wiki to be responsible for developing. The pair was to work together in collecting data and editing each other's work, adding detail and clarity as appropriate.

The students then began curating content to add to the wiki page. As they found items that were related to other sections of the wiki, they would begin a conversation on the "talk" page for that section and described what they found, allowing those students responsible for that section to consider if and how to incorporate the information into their wiki page. As the students progressed, they began conducting fieldwork to supplement and verify the data they had previously collected. This fieldwork included not just a written summary, but photos and videos they created using their cell phones. For an example, one student compiled photos from various playgrounds throughout the community to show how few public recreation facilities were available to children and to document the conditions of these playgrounds.

At the conclusion of the semester, Linda now had a single artifact of the students' learning. The wiki assignment led to a deeper learning for the students as they were able to learn from each other while also exploring each area more in-depth than they would have on their own. In addition, Linda was able to provide guidance as the site was being built and to use the wiki's activity tracking tool to see which student

contributed to which parts of the site and when.

Linda found the site was a valuable resource that should be publicly shared, and with the students' permission she made the site visible to the community while limiting access to edit the site to only the students in the course. In following semesters, she decided to repeat the exercise for neighboring communities in the county and then in an online version of the course expanded to include the entire state.

TEACHING EXAMPLE 2: USING SOCIAL MEDIA TO CREATE A PLN

Ted Unger is teaching a government policy course and recognizes the content of the course changes quickly and sometimes those changes occur during the course itself. Previously, Ted has provided a list of websites to his students that contain the text of legislative action being considered at both the state and federal levels. However, those websites are not updated quickly enough during key times of the process. One day he discovered key members of various legislative committees were active on social media. As Ted reviewed the Twitter and Facebook pages of these individuals, he realized they provide a real-time view of the process and this might be a solution for helping his students stay up-to-date not just during the course, but even after graduation.

Ted decided for this first attempt at helping his students create a PLN, he would ask them to create a new Twitter account. He chose Twitter as he found most of the people he would want to identify were on this platform and that creating a second "professional" account was easy to do. Once the students created their accounts, he asked them to follow the account he created for the course so he could highlight items they may be interested in that were related to the course. Next, he provided the students a list of federal and local agencies that are responsible for creating or implementing various programs and a list of legislators who are key members of the committees overseeing the process of creating new laws related to the course.

As the semester progressed, the students were asked to write a reflection as to what they had observed on Twitter, including the hashtags being used to organize the conversation. Ted found a list of tweet chats and asked the students to participate in one which matched their area of interest. During an in-class discussion focused on an article that was required reading for the class, one of the students had mentioned they had contacted the author to ask them some questions about the article and then shared those responses with the class. The student had also suggested a video they had found where the author had talked in more detail on some parts of the article. Unbeknownst to Ted, the students had started to look to see if all the authors of the various articles used in the course had an online presence and had begun following some of them on Twitter and watching videos of them speaking at various conferences.

Several years later, Ted has been told by his former students how important the PLN was to them and how it shaped their work experience after graduation by ensuring they were constantly up-to-date on the key issues and able to participate in the conversations shaping policy.

Discussion Questions

1. In what ways do you use social media in your daily life? How do these experiences contribute to your informal and formal learning? What concerns do you have about integrating social media into your teaching? Conversely, what do you perceive to be opportunities?
2. What is your *problem of practice*? Identify a concept or skill that is particularly challenging for your students to learn. What makes it so difficult? What specific modality or modalities would provide your students with opportunities for working through those difficulties? What forms of social media are particularly good at engaging students in those modes of learning?
3. What forms of social media might support the “difficult” learning that you want your students to attain? How will your lesson/course plan and use of technology address the development of complex skills and knowledge through social learning?

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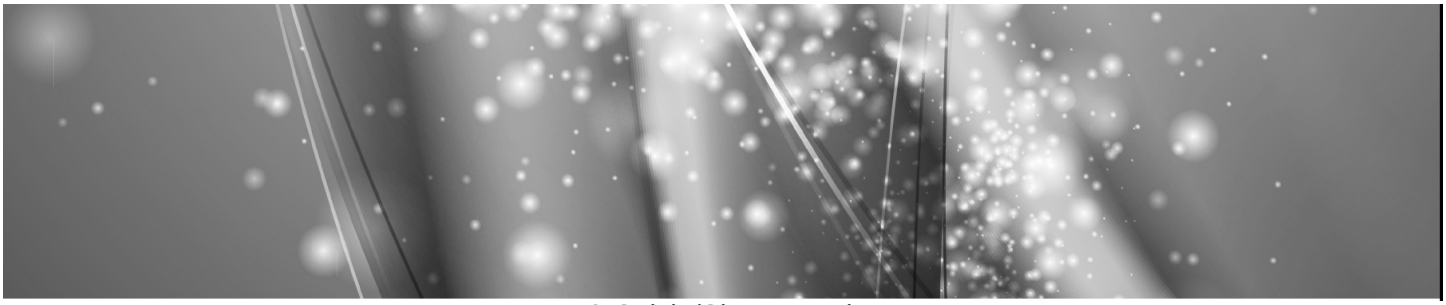
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SECTION III

Teaching in Structured Settings

This section focuses on teaching in structured (i.e., classroom) settings, which calls for focused planning and preparation on the part of the teacher. Concept-based topics which are applicable in a variety of teaching situations, regardless of the level of the learner, the topic, or the class size, are presented. Themes evident in each chapter include flexibility on the part of the teacher, a specific manner in which information is conveyed, and the importance of active student involvement and responsibility for one's own learning.

The principles introduced in the introductory section are used in the traditional classroom environments addressed in these chapters. Application of teaching and learning theories and use of planned activities enhance critical thinking in the learner and lead to clinical reasoning in practice settings. Educators can use creative innovations with time-honored strategies, such as lecture, to bring a fresh approach to teaching.



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CHAPTER 10

Using Lecture in Active Classrooms

Beth L. Hultquist

Introduction

Teaching in today's college classrooms is not for the faint of heart. The technology explosion has delivered overwhelming information in a plethora of mediums to our handheld devices. This constant stream of activity makes the thought of standing up in front of a classroom full of millennials a challenge. Stephen Brookfield (2015) writes, "Today's college classrooms are more diverse than ever before, and the explosion of online learning and social media has thrown traditional conceptions of college teaching out of the window" (p. 1). In this environment typically stands a teacher at a lectern, attempting to capture the minds of students and asking them to learn. "The lecture, somewhat modified over the years, continues to be a mainstay of higher education, particularly in large classes at large universities" (Kramer, 2017, p. 245). Health education is caught firmly in the crosshairs of teaching foundational principles and applying clinical reasoning to patient situations, all while attempting to be creative, and dare we say, fun in the classroom!

The authors of other chapters in this text provide valuable insight into creative and innovative teaching approaches which are currently used in higher education. The implementation and refinement of these strategies/methods during the last decade have often relegated lecture methodology to a lesser stature. Rather than revere what has previously been considered the educational gold standard, it became trendy to "lecture bash" (Woodring & Woodring, 2014)—that is, to describe colleagues who used lecture techniques as old-fashioned and out of step with educational trends. Many educators add the term *lecture* to their list of unspeakable, four-letter words. In the classical sense, a lecture consists of an academic in front of an "absent audience" (Sciullo, 2017, p. 237). Sciullo (2017) continues, "the lecture is a rhetorical form that, as commonly understood, ignores the audience, whoever it might be, and no matter the audience's differences" (pp. 237–238). It may be difficult to find faculty of health professions advocating for this type of inactive rhetorical exercise with an absent audience. Lecture can and should be an active strategy used to convey a great deal of information in a consistent manner, but "in order to serve students best, educators must approach teaching in a way that enables participation" (Sciullo, 2017, p. 238). Learning critical thinking, clinical reasoning, and problem solving are necessities in today's healthcare education landscape (Dehghanzadeh & Jafaraghaee, 2018; Kantar & Sailian, 2018; Park & Park, 2018; Zachry & Nash, 2017). In practice, the lecture format is alive and well and remains one of the most frequently utilized teaching methods in the repertoire of postsecondary educators. When the objective is to communicate basic facts, introduce initial concepts, or convey passion about a topic, a well-prepared lecture is very useful (Meyer & Hunt, 2017; Waldeck & Weimer, 2017; Wolff, Wagner, Poznanski, Schiller, & Santen, 2015). In this chapter, readers will find concrete ideas for building a better lecture and integrating active learning strategies within the

lecture environment.

Definition and Purposes

The lecture is one method of presenting information to an audience. To be effective, it should be a well-designed, instructor-led but interactive experience to engage students and support diverse styles of learning. Acceptance of this description indicates how far the educational process has come. Prior to the invention of the printing press, when only scholars had access to handwritten information sources, the lecture was the primary means of transmitting knowledge. Learners would gather around the master-teacher and take notes related to what was said. The lecture remained the common mode of disseminating information until printed resources and technological advancements became available and affordable.

It would appear that when students became able to purchase their own electronic textbooks, and then their own technology (e.g., PC, laptop, tablet), methods of presenting information would have changed, but change has occurred slowly. Today, with e-books and technology galore, the lecture remains a commonly used technique. There are two major reasons for this longevity: (1) most current educators learned via the lecture format, and it is well-known that individuals teach as they were taught unless they make a specific effort to alter their approaches; and (2) the lecture is the safest and easiest teaching method, allowing the teacher the most control within the classroom setting. Some of the common advantages and disadvantages of using the lecture method are listed in **TABLES 10-1** and **10-2.** Whatever rationale is used, positive outcomes can be achieved when both the lecture and the lecturer are well prepared.

TABLE 10-1 Advantages of Using Lectures as a Teaching Strategy

Advantages of a Lecture	Secondary Gain in Use of Lecture
Permits a larger control of the class.	May decrease teacher anxiety about unexpected questions (teacher sets the ground rules for when/if questions may be asked).
Creates minimal threats to students or teacher.	Lack of interaction or student participation may be desired and can be controlled by the teacher.
Clarifies and enlivens information that seems tedious in text, especially when the teacher is an effective lecturer.	Highlights enthusiasm/personality of teacher for topic.
Enables clarification of confusing/intricate points immediately.	May avoid frustration of time-delayed responses and clarification if teacher allows questions during the class time.
The teacher is confident in what has been presented.	Diminishes the “I never heard that before” comment

	by students.
Students are provided with a common core of content.	Continuity of information helps students prepare for testing.
Accommodates larger numbers of listeners at one setting.	High priority in weak economy and/or teacher shortage.
Can save time by reaching a larger audience.	Teacher can present key points in much less time than it takes to elicit the same points from text or an extensive list of references.
Provides a venue to become known as an expert in a specific topic.	Contributes to the scholarship of teaching.
Encourages and allows deductive reasoning.	Can support principles of critical analysis, especially when using active learning strategies.
Enthusiasm of teacher motivates students to participate and learn more.	Reinforces professional role modeling.
Allows the addition of the newest information on a moment's notice.	Can support concepts of evidence-based practice with just-in-time data.
Permits auditory learners to receive succinct information quickly.	Encourages higher-level learning, not rote memorization.
Enables integration of pro and con aspects of topic.	Encourages critical thinking and analysis.

TABLE 10-2 Disadvantages of Using Lectures as a Teaching Strategy

Disadvantages of Lecture	Suggested Remedy
Content overload: the teacher may attempt to cover too much material in abbreviated time frame.	Elicit questions at the conclusion of segments of time or content (e.g., every 15 minutes).
Less effective when not accompanied by another teaching strategy.	Include active learning strategies, audio and/or visual aid or interactive activity per hour.
Eighty percent of lecture information is forgotten 1 day later, and 80% of the remainder fades in 1 month.	Provide visual reinforcement or active learning. Ask reinforcing questions during the lecture.
Presumes that all students are auditory learners and learn at the same rate.	Add at least one handout, visual, or activity to support various learning styles. Encourage effective note taking.
Alone, the lecture is not suited to higher levels of thinking.	Intersperse scenarios or activities requiring problem-solving principles.

Not conducive to personalized instruction.	Call several students by name during each class. Encourage use of scheduled office hours for personal clarification and reviews.
Encourages passive learners.	Use clickers/automated response systems to encourage engagement of all class participants.
Provides little feedback to learners.	Encourage online/threaded discussion boards; use automated response clickers to allow immediate feedback.
Student attention wavers in 30 minutes or less.	Alter voice tone, classroom environment, teaching method (even turning off/on PowerPoint slides); change direction of students' attention. Walk around the classroom.
Consistent use inhibits development of inductive reasoning.	Be flexible; incorporate active teaching strategies described here and in other chapters.
Poorly delivered lecture acts as a disincentive for learning.	Practice before you present! Be a positive professional role model.
Viewed by students as a complete learning experience wherein the lecturer presents all they need to know.	Encourage outside research, reviews, and readings, and set aside time during each class to discuss them.

Theoretical Rationale

Few lecturers take time to contemplate the theoretical basis of their practice, but the lack of a theoretical or organizational framework may be one reason that learners perceive some lectures to be disorganized and/or difficult to follow. Foundational principles for a lecture presentation may be derived from a variety of philosophical and theoretical processes. Three common approaches flow from theories related to communication, cognitive learning, and pedagogical/andragogical approaches to teaching and learning. The theories supporting effective communications should be common knowledge to all healthcare providers; therefore, they are not discussed here. Healthcare educators should have an understanding of cognitive learning theory because it is the underpinning of developmental concepts found in most health-related courses. Pedagogical/andragogical approaches may not be as well understood and are addressed briefly.

Over the past few decades, graduate education for many health professionals has emphasized disciplinary skills. Nursing and physical therapy, for instance, have focused on advanced practice skills, resulting in clinical nurse specialist (CNS), nurse practitioner (NP), and professional doctorate degree (DPT/DNP) designations. This change resulted in limited numbers of newer faculty members who are prepared in the areas of curricular design and learning theory. *Pedagogy* is a portion of learning theory which loosely refers to educating the chronologically or experientially immature. In a pedagogical approach, someone external to the learner decides who, what, when, where, and how regarding the information to be taught; the learner becomes a passive recipient of knowledge. Historically, professional health-related content and practice have been taught from a framework based on the medical model. Within the pedagogical context, the lecture strategy establishes the teacher as the one in command, the authority. This approach may provide a rationale for lecturing being viewed as traditional and out of step with innovation and creativity in the academy. Over the years, both the age and the experiential backgrounds of traditional college students has shifted, causing scholars to question the appropriateness of the previously used pedagogical methods. In response, educators such as Knowles (1970), Kidd (1973), and Cross (1986) introduced and refined the concept of andragogy. The principles previously utilized in teaching the young (pedagogy) were adapted and applied to mature learners (andragogy).

Those educators who ascribe to andragogical theory treat the learner as a mature individual who brings a variety of rich, valuable experiences to every learning situation. The who, what, when, and where of learning emanate from within the learner. Each model has value, and the needs of the learner should determine the singular or blended approach utilized. **TABLE 10-3** compares andragogy and pedagogy within the educational process.

TABLE 10-3 Comparison of Characteristics: Andragogy versus Pedagogy

Characteristic	Pedagogy	Andragogy
Concept of learner	Dependent. Passive. The learner needs someone outside self to make decisions about what, when, and how to learn.	Independent/autonomous. Self-directed. The learner wants to participate in decisions related to his or her own learning.
Roles of learner's experiences	Narrow, focused interest. Focuses on imitation. Past experiences are given little attention.	Wide range of experience, not just in nursing, that impacts life/learning. Focus on originality. The learner has broad interests and likes to share previous experiences with others.
Readiness to learn	Determined by someone else (society, teachers). Focus on what is needed to survive and achieve. The learner tends to respond impulsively.	Learners are usually in the educational process because they have chosen to be. The learner wants to assist in setting the learning agenda. The learner tends to respond rationally.
Orientation of teaching/learning	Needs clarity/specificity. The learner looks to the teacher to identify what should be learned and to provide the information/process to learn. The learner focuses on particulars concerned with the superficial aspects of learning (grades, due dates). Evaluation of learning is done by the teacher or society (grades, certificates).	Teachers are facilitators, providing resources and support for self-directed learners. The learner likes challenging, independent assignments that are reality based. Evaluation is done jointly by the teacher, the learner, and/or peers. The learner tolerates ambiguity.

Types of Learners

The information included in Table 10-3 emphasizes the teacher must know as much as possible about both the learners and the topic before deciding on a specific theoretical approach/model and/or selecting the teaching strategy. The concept of “know thy student” has always been important; however, now it is not only important, it is critical. Classrooms are filled with students born after 2000 who have been raised in the wireless age, are accustomed to limitless resources available on the World Wide Web, and have varying attention spans. This may be in direct contrast with their faculty, which may be uncomfortable communicating electronically or using social media. To bridge this generational communication gap, the teacher must understand and acknowledge many learners have a very short attention span, have an arsenal of electronic devices at their fingertips (including in the classroom), are used to multitasking (answering text messages and listening to music/videos while reading about neuroanatomy), and are used to handling a rapid barrage of information. To address these different learning needs, the proficient teacher will accompany the lecture with adjuncts, such as electronic innovations like Second Life, video clips, electronic lecture retrieval (e.g., via MP3 players), lecture–discussion (addressed later in this chapter), realistic scenarios, questions/answers accompanied by automated audience response systems (clickers) with real-time feedback (Sternberger, 2012; Welch, 2013), and other strategies presented in this text.

A lecture can be used effectively with learners who represent a variety of developmental and cognitive levels. Adaptability is one of its most positive aspects. A teacher may, at a moment’s notice, alter the teaching style, depth, sophistication, and level of the material being presented. These alterations can be made based on the needs, interests, and/or responses of the learners; new scientific revelations; or breaking news from the media. It is assumed the lecturer has a sufficient command of the subject matter, as well as the presence of mind and the flexibility, to alter the content and teaching plan; however, these assumptions may not be accurate with novice educators or when material is being presented for the first time.

Combining the lecture with pedagogical approaches can be especially useful in basic and beginning courses in a sequence, as well as in orientation to new clinical areas or agencies. Novice learners of any age tend to prefer the structure of pedagogy, rather than the more flexible andragogical approach; however, the more mature and secure teachers and learners become, the more they enjoy the flexibility and challenge of integrating andragogical concepts into the lecture format.

Preparing Oneself to Lecture

When presenting a lecture, preparation must begin well in advance of the presentation date, even when the topic is familiar. Planning, organization, and written preparation are essential and time-consuming. If the lecture is one in a sequence (or within a course), the best time to add the finishing touches to the next lecture is at the completion of the preceding one. Significant ideas which need to be reemphasized are still fresh in the presenter's mind, as are the questions raised (or should have been raised) by the students. The lecturer can recall the presentation strategies that worked with a group of participants and those that did not. Changes to make the lecture more effective can be identified. Most lecturers, however, do not heed this advice, and lecture preparation is often relegated to a brief time immediately prior to the presentation.

Lectures are frequently used to deliver large amounts of information, typically to large groups of students. Unfortunately, the efficiency of this mode leads most educators to fail to use the lecture to stimulate thought, critical thinking, or problem solving. Mallin (2017) encourages lectures with active components because "the activities students engage in during interactive lectures help them to check their understanding of the subject matter and develop deeper understanding in which they apply, analyze, synthesize, and critique course material" (Mallin, 2017, p. 242). The challenge then becomes modifying the lecture format to engage students in active learning.

Robb (2013) studied millennial nursing students, asking them what experiences improved student learning in the classroom. The pedagogical approach was not mentioned. Instead, students valued real-world examples, straightforward or need-to-know information, and hands-on learning. These three valuable tools can be integrated into any lecture format. Pertinent real-life examples from the teacher or other students can help drive salient points home, however; be mindful not to get lost in stories which have no application to the concept being discussed. Learners also appreciate teachers who can provide efficient methods for note taking, active listening, or study guides. Hands-on learning can be a challenge in a large lecture hall, but challenge students to use their always connected devices to find a short video or explanation to a concept while in the classroom. Be creative! In health education classrooms it is possible to bring a variety of interesting objects used in clinical for students to touch and learn.

The author of this chapter uses questions interspersed within a lecture format, pausing to allow students to think and reflect within the small group surrounding them. I then randomly pick a student's name and ask for the answer. This strategy must be conveyed as a fun way to learn, and never become punitive (candy rewards help maintain a fun atmosphere). However, it also provides enough motivation for students to stay on task, listen to content being delivered, and work within small

groups to attain answers. Burgan (2006), in her defense of lecturing, cautions against forcing discussions onto students without some foundation of learning or experience. “Being clueless in a discussion class is much more embarrassing and destructive of a student’s self-confidence than struggling to understand . . . a lecture” (Burgan, 2006, p. 32). Meyer and Hunt (2017) add, “Lecture demonstrates how students might think through material critically, thus preparing them for future discussions” (p. 240). When questioning students within the lecture environment, you must take care to lay the groundwork for the concept and ask them to stretch their thinking, to encourage the learner to apply and/or synthesize knowledge.

Another effective use of questions is at the end of any lecture vignette or lecture class. Clark (2017) details numerous methods of assessing learning in a class. Students feel valued when their questions are answered completely, and teachers can convey caring and civility by asking for and responding to learners’ concerns. Handing out note cards at the beginning of class to each learner and making small talk is an effective way to make one-on-one connections with each student as they arrive, especially in a large class. The note card can then be used for numerous strategies, such as reflecting on what students learned today, a think-pair-share activity (Wolff, Wagner, Poznanski, Schiller, & Santen, 2015), or for submission of questions at the end of the class regarding the day’s material. The key to success is to gather all the “I do not understand” cards after class, review them, find themes, and address these questions in a follow-up e-mail. This strategy has been used effectively in many situations, from a beginner-level class where learners may be hesitant to raise questions in front of their peers, to a senior-level class where students may feel they are expected to know the content well and questions may be embarrassing. This strategy of addressing the class’s concerns quickly and completely is frequently noted on faculty evaluations as demonstrating caring from the teacher, when in fact, it is an excellent method to address misconceptions or missed concepts quickly and efficiently.

A current trend in today’s health professions education is the concept of a flipped classroom. Njie-Carr et al. (2016) defined a flipped classroom as assigning pre-class instruction, typically through technology and then using class time for interactive, active learning. Park and Park (2018) noted active learning strategies in a flipped classroom could include “discussion, debates, and problem solving” (p. 126). These strategies typically require students to prepare for the class by watching lecture vignettes, reading textbooks, researching concepts, and/or completing a quiz before arriving for active learning in the classroom. The flipped classroom has been widely used and studied; however, quantifying the effects has been elusive (Anolak, Coleman, & Sugden, 2018; Critz & Knight, 2013; El-Banna, Whitlow, & McNelis, 2017; Njie-Carr et al., 2016; Waltz, Jenkins, & Han, 2014). Flipping the classroom seems to be more effective with small class sizes and in a seminar format with a distinct plan, and best suited for learners with some foundational knowledge

(Barbour & Schuessler, 2019; El-Banna, Whitlow, & McNelis, 2017). Proponents of the change from delivering information in a strict lecture format to one of individual discovery is rooted in the laudable desire for knowledge to become active in the students' thinking and practice. Waldeck and Weimer (2017) discussed the dichotomy of a strict lecture "at its most extreme is all teacher talk with no verbal contribution from students. Active learning at its most extreme is student learning with no teacher interference" (p. 248). Mallin (2017) advocates for faculty autonomy in deciding on active teaching strategies: "One can be both a sage on a stage and a guide on the side, varying in emphasis within an individual class session and over the semester" (p. 243). Flipping an entire class or curriculum is not without its detractors. The reality of current healthcare education finds many teachers in the position of large lecture classes, especially in those foundational classes early in a student's education. Surely there is room on the continuum for active learning within the lecture environment which is prevalent, and arguably necessary, in healthcare education today.

In the case of an active lecture, learner preparation is essential. By providing students with an outline to complete, questions to answer, and/or concepts to understand prior to arriving to class, the instructor allows lecture time to be used for exploration of more in-depth concepts and enhances the development of critical thinking as previously learned material is applied to several situations. Be mindful of the amount of class preparation and available time for students to complete. El-Banna, Whitlow, and McNelis (2017) found students frustrated with the amount of pre-class preparation, especially in the accelerated BSN population. An outline also allows effective note taking for the learner. Meyer and Hunt (2017) advocate lecture is an effective method to improve student listening and note taking. I encourage the use of handwritten notes and provide a paper booklet with a rough outline, rudimentary drawings, and case studies. Computers and phones are accessible for use as a resource, PowerPoint is seldom used. Bui and McDaniel (2015) studied the use of outlines and diagrams to enhance learning and found the use of learning aids improved the methods by which students took and organized their notes. I have found students do not understand the value of handwritten notes, although the research is catching up to this old idea. Mueller and Oppenheimer (2014) found when students take notes on their laptops in class they "are inclined to take verbatim notes" (p. 1166). Students on laptops are concerned only with transcribing what the instructor is saying, instead of hearing, thinking, and then writing salient points in their notes. Students taking longhand notes are required to process the information, and the movement of hand and pencil can improve retention in the short term and long term (Bui, Myerson, & Hale, 2013; Mueller & Oppenheimer, 2014). "Handwriting enables more time for reflection and gives the memory a greater chance to store the information which it is writing down" (Pérez Alonso, 2015, p. 266). In an active lecture classroom, an outline with integrated case studies has been an effective

method to encourage active participation and learning.

Resources

The major resource needed to utilize the lecture techniques effectively is *you*, the well-prepared lecturer. Presenting an informative and interesting lecture is a craft and a learnable skill. Millennials “view the faculty member not as an expert, but as an individual with expertise” (Robb, 2013, p. 302). In this environment the teacher needs to be well prepared, deliberate in using active strategies within the lecture, and comfortable with student questions. Because the speaker is the crucial element for this strategy, some key points are identified in the following list to help polish your presentation skills, with additional suggestions summarized in **TABLE 10-4**.

TABLE 10-4 Sample Lecture Plan

Time Allowed	Teacher	Learner	Supports
Introduction			
5 minutes	Personal introduction Today's objectives Overview of class process/handouts	Listen Take notes Ask for clarification	*Visual No. 1:* Objectives *Handout:* Skeletal outline for note taking
Body			
15 minutes	Lecture part I	Look Listen Take notes	*Visuals No. 2, 3, 4*
5 minutes	Q&A	Q&A	
10 minutes	Ask two questions related to the topic	Divide into pairs; discuss, then share responses with the class	List common responses on the board
10 minutes	Lecture part II		*Visuals No. 5, 6, 7*
Conclusion			
5 minutes	State objectives achieved in the class Ask three questions related to the topic presented that day Ask two questions related to the evaluation of the lecture	Use clicker to respond Use clicker to respond	

- *Conveying enthusiasm is the key element in presenting an effective lecture.* Enthusiasm is contagious and is demonstrated by facial expressions, excitement in the voice, gestures, and body language. A lack of enthusiasm on the part of the speaker is interpreted by the listener as lack of self-confidence, lack of knowledge, disinterest in the learner, and/or disinterest in the topic. If you do not have an effusive personality, practice adding a smile and small hand gestures to each lecture. Once these movements are comfortable, add other interactive methods.
- *Know the content*. Even a written, formal lecture will not hide the insecurity of being unprepared or underprepared. Be certain you clearly explain key points in language understood by the audience; do not use jargon or attempt to impress with effusive speech.
- *Use notes*. The use of notes is generally the option of the speaker; however, to avoid the distress of losing your train of thought or incorrectly presenting complex information, the use of some type of handwritten or computer-based prompts is highly recommended. For ease of handling, record the notes on the computer or on pages/cards which are all the same size and sequentially numbered. If the instructor is using PowerPoint slides to accompany the lecture, an option is to operationalize the notation section and have lecture notes or the outline appear on the screen in front of the lecturer, with or without them being visible to the participants. The depth and content of lecture notes should fit the lecturer's comfort level. Notes should be prepared by leaving white space that is easy for the eye to follow. Major points should be highlighted so the eye can easily pick up a cue when scanning the page. Although the use of notes is perfectly acceptable, the verbatim reading of notes is *never* acceptable. Rehearse the presentation often enough to appear spontaneous and enthusiastic and to *complete it within the allotted time frame.*
- *Speak to an audience of 200 as if it were a single student*. Speak clearly and loudly enough to be heard in the back of the room. The use of a microphone may be necessary if presenting in a large room or auditorium. Always use the microphone if there is any doubt the speaker's voice will not be heard in the last row. It is sometimes helpful to have a friend sit in the back and signal if the voice is not being heard during the presentation, or task a student to let the speaker know if the voice wavers or is faint. A small clip-on microphone is preferable to a handheld or stationary microphone because it allows the speaker the flexibility to move away from the podium and frees the hands to handle notes and/or gesture. If a microphone is to be used, arrive in the assigned room early enough to try the equipment and to regulate microphone position and sound levels. If the lecture is being transmitted to multiple sites, as in distance/distributive education or videoconferencing settings, be certain to test the sound levels at all sites before

beginning the lecture.

- *Make eye contact*. Select a participant at each corner of the room with whom eye contact can be planned. Slowly scan the audience until each of the designated participants are seen. Smile at familiar faces. If needed, review information related to the process of group dynamics. If the lecture is being transmitted to multiple sites, be certain to make eye contact via the monitors with participants in the distant sites. The instructor may wish to make a concerted effort to look into each monitor or screen while visually scanning the lecture hall, and address participants at each site.
- *Use creative movement.* Movements of the speaker's head and hands in gesturing should appear natural, not forced. Be careful when standing behind a podium; do not grip the sides tightly with hands or lock (shaky?) knees. This action produces a circulatory response that could cause the speaker to faint. Occasionally step away from the podium and toward the listeners. This conveys an attitude of warmth and acceptance. Avoid distracting mannerisms such as pacing, wringing your hands, clearing the throat, or jamming hands into pockets and jingling pocket change/keys.
- *Avoid barriers.* The use of a stage or podium places an automatic barrier between the speaker and the listeners. This gulf should be bridged early and often during the lecture. Suggestions for bridging the gulf include the following:
  1. Use note cards rather than a manuscript because they are more portable and allow freedom to move away from the podium.
  2. Step out from behind the podium, especially if short in stature; the audience does not wish to see a talking head.
  3. Walk toward the listeners; this is interpreted as a sign of warmth and reaching out to the audience.
  4. Address the right half of the audience, the left half of the audience, and then the audience at each distant site (each monitor or screen), but do not turn your back to either side of the audience or to the transmitting cameras.
  5. Call on at least one participant in the audience and at each distant site by name. When students ask a question, ask them their name. It is a good technique to show students caring, it helps to learn names, and it gives the instructor a minute to catch a breath and compose an answer to the question.
  6. Use hand gestures to accentuate words, but be careful not to overdo this action (this is especially important if the lecture is being transmitted to multiple sites because large or exaggerated hand gestures are more distracting when seen on a monitor than when viewed live).
  7. If given the opportunity to be seated on a stage/platform, be aware of the eye level of the audience, especially if wearing a skirt/dress.
- *Create a change of pace.* An astute lecturer constantly assesses the audience and interprets participants' signals. Facial cues indicate agreement/disagreement

with what has been said and may express understanding/misunderstanding of content. Another signal is given when listeners begin having side conversations or squirm in their seats. These signals call for intervention, response, or a change of pace by the speaker. The change of pace can be as simple as turning off the computer/projector, shifting to a new slide, adding sound or animation to a visual, or changing the lighting—any of these actions will cause the listeners to refocus attention on the speaker or back on the visual. Shifting the focus from the speaker to a handout, using a humorous example, altering the tone or inflection of the voice, using automated interaction with feedback from participants, dividing into small groups for a brief discussion, or taking a "stand and stretch" break also can provide a needed change of pace. Keep this rule of thumb in mind: An individual's optimal attention span is roughly 1 minute per year of age up to the approximate age of 30 (e.g., a 5-year-old has a 5-minute attention span; a 25-year-old, 25 minutes), at which point it levels off. Therefore, plan a change of pace or break according to the average age of your audience. Bunce, Flens, and Neiles (2009) found that the attention of undergraduate chemistry students began to lapse within 30 seconds after the beginning of class but quickly returned, only to stray again within 9 minutes. These results cause one to question the necessity of more frequent breaks or changes of pace within class sessions and more specific research into the topic. At any rate, the adage "The mind can only absorb as much as the seat can endure" is a fairly valid and reasonable guideline. Know your audience.

- *Distribute a skeletal outline to help the learners identify key points*. Emphasize principles and concepts. Do not copy charts, graphs, and materials which are found in the learners' texts. Handout information should supplement the lecture. The lecture should not be a rehash of basic information from the learners' textbook. If handouts are used, they should be clear and contain a limited amount of information so the learner is not overwhelmed. Handouts printed on colored paper stand out and are more likely to be read than those printed on white paper. The reproduction or web posting of the PowerPoint slides or lecture notes can be a hindrance to class attendance. Some teachers prefer to post their notes so class time can be used in active learning, and others prefer students take notes by hand to improve comprehension. Be mindful of the volume of material and what works best for your class.

Several timely publications that may be of assistance in keeping the lecture process fresh are *The Teaching Professor*, *Change*, *Masie's Learning Trends*, *The National Teaching & Learning Forum*, *Teaching for Learning*, *The Skillful Teacher*, and the Survival Skills for Scholars series. In addition, websites maintained by most major universities offer guidance for teaching assistants and novice educators that are helpful.

Potential Issues

Factors That Contribute to a Successful Lecture

Nothing/no one is perfect. As with any method or technique, some problems exist when the lecture strategy is used. The key question to be answered is: What makes lectures and lecturers successful or unsuccessful? Over the past decade, Barbara Woodring has evaluated the response of nursing students to these questions, and each year responses have been consistent. The most frequently cited negative characteristics of lectures/lecturers focus on the person doing the presenting, *not* the method (Woodring & Woodring, 2014). In Tables 10-1 and 10-2, advantages and disadvantages of the lecture as a teaching method were outlined. The preparation and presentation of the faculty member as the implementer of the method deserves attention. The teacher who consistently lectures without integrating other strategies into class time may be subjected to student-generated negative comments, such as "This class is so boring—all he does is lecture," "It's awful—she reads to us right out of her book," or "I can't learn to think critically if all she does is talk!" Based on comments such as these, lecturing is often identified as a poor teaching method, a last resort for instruction, when in fairness it is not the method (lecture) but the teacher who is generating the comments. Kramer (2017) noted, "We need to identify which lecturers are an effective 'sage on the stage' and allow them, even encourage them, to continue refining their teaching style" (p. 247). At the same time, he advocated for finding those lecturers who are not as effective and encouraging a different method or assisting them in improving their capabilities.

To present an effective lecture, you must prepare, plan ahead, organize the content, and integrate some active learning strategies (e.g., discussion, video stream, audience response system, small-group interaction, role play, or demonstrative props/simulation) into each lecture session. This approach will increase self-assurance (O'Malley & Fleming, 2012), student interaction, and both student and teacher satisfaction. **TABLE 10-5** identifies attributes of lecturers that learners have perceived as negative and offers some suggestions for improvement.

TABLE 10-5 The Lecturer: Perceived Negative Factors and Suggestions for Improvement

Perceived Negative Factors	Suggestions for Improvement
Presentation disorganized or hard to follow Lack of outline or outline too detailed Presenter lacks professional appearance	Spend time in practice and preparation. Prepare and follow a brief outline for each lecture. Dress as a professional role model. If you are unsure what is acceptable for your role, consult a mentor or esteemed colleague.

Speaker lacks facial expression Monotone voice or nervous/shaky voice Facial expression and/or voice lacks enthusiasm Reads lecture material; eyes do not meet those of listeners	Video one of your lectures; view the recording with a friend/colleague and establish goals for improvement. Practice your lecture in front of a mirror until you know the main points by memory. Use only as many written notes as are absolutely essential; place cues in the margin for yourself (smile, walk, and relax!).
Remains behind podium to lecture (referred to as the talking head because that is all students see) Uses no visual aids or visuals of poor quality	Avoid putting too much information in small print on slides and/or handouts. Ask a librarian, media center, or learning center personnel for assistance in preparing visuals.
Too many PowerPoint slides	Use visuals to support, not replace, content.
Does not acknowledge that adult learners like to participate	Review techniques for keeping adult learners engaged.
Inconsiderate of learners' needs	Schedule breaks and/or implement change-of-pace activities every 30–45 minutes.
Distracting habits of presenter: pacing, staring out windows, playing with objects (paper clips, rubber bands, change), using nonwords (*ah, um*) and repetitious phrases (*you know, like, well, uh*)	Use a video of your lecture to identify repetitive habits. Repositioning hands or holding notes may help the nervous-hands problem. Make a list of alternative words that could be substituted for the frequently repeated pet phrases. *Nonwords* are a verbalization that allows your speech to catch up to what your brain is thinking; becoming aware of the use of nonwords may or may not be all you need to eliminate them. When they occur, stop, take a deep breath, and then go on.

Institutional Barriers That Lead to Negative Reactions to Lectures

There are certain physical, political, and situational barriers which exist in every institution—any or all of which may contribute to dissatisfaction with an instructional approach. The timing of a class offering is often a factor. Traditionally, teachers have disliked teaching, and students have disliked attending, classes offered at 7 a.m. or 9 p.m. No one likes getting up early or staying in class that late! Classes taught immediately after meal times are considered sleepers because blood leaves the brain and moves to the gastrointestinal tract, making everyone sluggish. Classes taught late in the afternoon or early evenings are difficult because the students and teachers are tired. Try as one may, short of one-on-one teaching or total reliance on

online/asynchronous education, the perfect time to hold a class will never be found. Speakers must make their presentations stimulating and motivating at any time of the day. Nevertheless, changes of pace, interactivity, occasional webcasting, and other technologic media that engage students can help offset undesirable time placement of classes.

Another institutional barrier to be considered is the number of students relative to the size of the classroom and the number of students in proportion to the number of faculty (student–faculty ratio). Lecturers are often placed in small, crowded classrooms with large numbers of students or large, cavernous classrooms with small numbers of students. Often, geographical relocation of desks/tables could ease the space configuration and provide a more positive learning atmosphere. Should the lecturer have the option, it is most ideal to be able to clearly see and make eye contact with each participant. This may be accomplished by arranging seating in semicircles around the lectern or angling tables/seats. If seating is fixed within the classroom, then it becomes the responsibility of the speaker to move away from the podium and make eye contact with as many learners as possible, as often as possible. Some of these logistical issues may be addressed as universities remodel or build new classroom facilities.

The large student–faculty ratio within classes will probably not decrease in postsecondary education in the near future. Large classes, especially at the freshman and sophomore levels, are very cost-effective. Budgets will continue to impose restrictions exacerbated by the increase in distance and multisite class sessions and faculty shortages in many health-related professions. The disproportionate student–faculty ratio will require lecturers to implement the tips listed in this chapter, as well as utilize technological support, teaching assistants for smaller group interactions, and other creative strategies to enhance student learning for material presented in large lecture sections. “Active learning strategies not only promote student achievement and productivity, they minimize disruption and reduce the potential for incivility by promoting cooperation, collaboration, and student engagement” (Clark, 2017, pp. 247–248).

Helping the Student to Remember Tomorrow?

The problem of retaining information gained from a lecture should be acknowledged and addressed. Although those educators who enjoy using the lecture method hate to admit it, research conducted in the 1990s found that 80% of information gained by lecture alone cannot be recalled by students one day later, and that 80% of the remainder fades in a month. Because minimal research has been done to alter this perception, we must still heed the results. Educational data indicate the more a learner’s senses (taste, touch, smell, sight, and hearing) are involved in the learning activity, the longer the knowledge is retained. Therefore, if certain types of

equipment are used to illustrate a point (touch, sight), a video clip is inserted into the midst of the lecture (sight, hearing), or any other active learning process (gaming, lab experiments, audience response activities) is introduced, the student's knowledge retention will increase.

In recent years, the use of *punctuated lectures* has also been viewed as a method to increase retention of information. The punctuated lecture requires students and teachers to go through five steps: (1) *listen* (to a portion of a lecture), (2) *stop,* (3) *reflect* (on what they were doing, thinking, and feeling during that portion of the lecture), (4) *write* (what they were doing, thinking, and feeling during that portion of the lecture), and (5) *give* (the written feedback to the lecturer) (Major, Harris, & Zakrajsek, 2016). This approach provides the lecturer and the students with an opportunity to become engaged with the learning process, as well as to self-monitor their in-class behaviors. In addition, Brookfield (2015, p. 71) suggests students cannot read the lecturer's mind. Students cannot be expected to know what teachers expect, stand for, or wish them to value unless the information is explicitly and vigorously communicated to them. The reflective teacher, according to Brookfield, must continually work to build a case for learning, action, and practice rather than assume these values to be self-evident to the learner. Implementing these suggestions should enhance knowledge retention emanating from a lecture.

Evaluation

An evaluation of the lecture/lecturer must be completed in a timely manner. The most useful time to obtain this data is at the completion of an individual lecture. Obtaining this information need not be laborious. Ask the listeners to respond to a few specific questions and then allow them to provide additional comments, or pose the questions and allow an automated clicker response before learners walk out the door. This type of feedback is especially helpful for the novice lecturer. The evaluation process should aim to provide constructive criticism and comments for improvement. One means of accomplishing this is to allow the students to make any comments they wish; however, a negative comment cannot be made without offering a suggestion for its resolution. When this evaluation technique is used routinely, the learners become accustomed to it. The process can be completed in five minutes or less, especially if automated response systems are used. Often, teachers are so interested in assessing whether the course objectives have been met that they forget to evaluate the means by which they were met. Lecturers will not improve without suggested change, and suggested change can best be obtained via the use of a planned evaluation tool/method completed by peers and/or class participants. The evaluation of a lecture or lecturer should not occur in isolation—it must be viewed as a portion of an overall evaluation and development plan—and should be conducted only when there are plans for growth, follow-up, and change. Be certain to provide feedback to the evaluators; let the class or colleagues know changes have been made in the way some topics are presented or how an assignment was changed based on previous evaluative comments.

Conclusion

Presenting an effective lecture is more than a stand-and-deliver process. The lecturer must be knowledgeable, well spoken, organized, creative, and considerate of the learners' needs, abilities, learning styles, and cognitive/developmental level(s). The desired outcomes for the class and the individual objectives of the learners must be addressed. Each section should be planned and presented in an organized manner, never off the cuff. The prepared lecturer will be considerate, credible, and in control (not to be mistaken for rigid and controlling). Several factors enhance the presentation of a lecture, but none is more important than genuine enthusiasm. The lecture should not be considered a secondary teaching strategy. In many situations, it is the most appropriate methodology to be used. However, to elicit the best results, the lecture should be accompanied by other effective strategies discussed in this text. Brookfield (2015) implores teachers to be credible and authentic in the classroom, to be responsive to students' feelings and concerns, and to model critical thinking to "be seen as an important enhancer of learning" (p. 43).

Discussion Questions

- Reflect on Table 10-2. Pick three disadvantages and apply them to a topic you currently teach. How can you improve your lecture to mitigate the disadvantages?
- What is the most effective method you use in teaching to capture and hold your students' attention?
- Reflect on your lecture classes and identify one active learning strategy you could employ easily. How will you determine its effectiveness?

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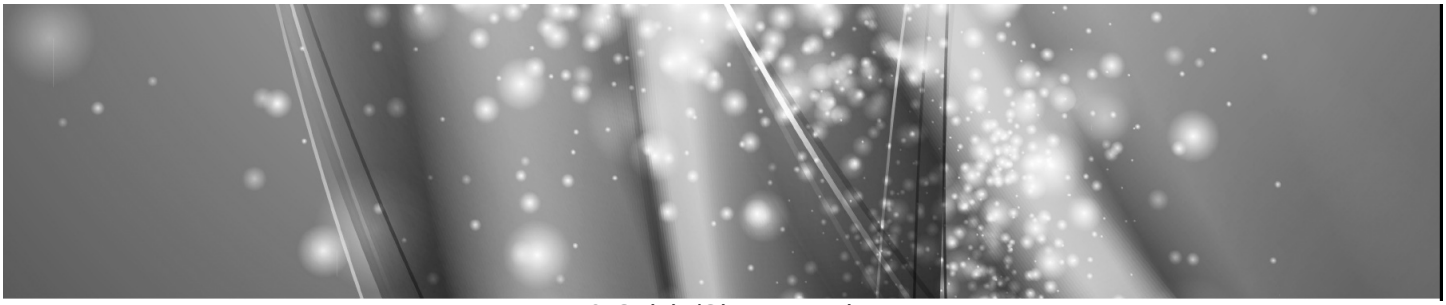
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CHAPTER 11

Lighten Up Your Classroom

Mariana D’Amico and Lynn Jaffe

Humor is also a way of saying something serious.

—**T. S. Eliot**

He who laughs most, learns best.

—**John Cleese** (Priest, 2007)

Introduction

Most educators take learning very seriously, especially those in health care. They overlook the fact that humor is a lifeline to sanity and reality. Humor is not a primary teaching strategy, and it is quite difficult to measure the educational effect of humor in isolation from other teaching methods. However, the judicious use of humor can influence the cognitive and behavioral aspects of learning by engaging at least six of Gardner's seven forms of intelligence (as identified in Chapter 1). Research on humor has been a multidisciplinary endeavor, including a focus on use in classrooms and health care (Allen, 2014; Berge, 2017; Bolkan, Griffin, & Goodboy, 2018; Corbin, 2015; Huss & Eastep, 2016; Klein, 2013; Machlev & Karlin, 2017; Van Praag, Stevens, & Van Houtte, 2017). Well-placed humor can make the classroom environment a safe, comfortable, and effective arena for cognitive and professional growth (Seidman & Brown, 2015; Smith & Wortley, 2017). Educators have used humor to alleviate classroom stress and facilitate knowledge acquisition and application for decades. Humor contributes to a positive affect and, to that end, humor has been used as a teaching tool for generations. Effectively using humor in the physical and virtual classroom requires knowledge, art, and skill, all of which may be learned (Smith & Wortley, 2017). This chapter highlights humor as an educator's tool and describes specific strategies for using humor in the classroom.

Definition and Purpose

Humor is a communication that induces amusement. Thus, it must be shared. It makes the learning environment a shared, pleasurable experience. In education, the most positive forms of humor are funny stories or comments, jokes, and professional humor. *Sarcasm* has been recorded as common in the classroom but tends to be a negative form of humor. *Wit* is the cognitive process that elicits humor. *Mirth* is the emotional reaction to humor, joy, and pleasure. *Laughter* or smiling is a physical expression of humor. With all these elements, the formal study of humor in the classroom has been a challenge. The literature on the use of humor in healthcare, secondary, and college education continues to evolve with mixed outcomes (Allen, 2014; Bolkan, Griffin, & Goodboy, 2018; Kosiczky & Mullen, 2013; Machlev & Karlin, 2017). Many studies are supportive whereas others continue to dissect the types of humor and refine methodology (Bolkan, Griffin, & Goodboy, 2018; Corbin, 2015; Ersanli, & Cakir, 2017). Whether the evidence is as sound as it should be remains equivocal, but the majority of authors praise its contributions to the educational experience (Allen, 2014; Kosiczky & Mullen, 2013; Machlev & Karlin, 2017; Seidman & Brown, 2015; Smith & Wortley, 2017).

Humor has been studied and discussed from a variety of approaches—the physiologic, psychologic, emotional, and cognitive. Recent reviews have summarized these studies (Berk, 2014; Nesi, 2012) and confirmed that humor can promote health as well as learning through the physical benefits of reduced stress, increased productivity, and enhanced creativity. Humor has been deemed a primary vehicle for enhancing the learning environment through enlivening potentially dreary topics, keeping lectures engaging and enjoyable, and humanizing faculty in students' perceptions. The cultivation of the abilities to laugh at oneself and with others bridges many gaps between people and broadens the pathway from student to professional (Huss & Eastep, 2016; James, Andershed, Gustavsson, & Ternestedt, 2012; Nesi, 2012; Smith & Wortley, 2017). This broadening pathway of humor can level the ground for communication between professionals and patients or clients, and between educators and students (Chiang, Lee, & Wang, 2016; Corbin, 2015; Huss & Eastep, 2016; Van Praag, Stevens, & Van Houtte, 2017).

The use of humor in the classroom can be productive, promoting comfortable, safe interactions between faculty and students. It has been shown to increase teacher credibility (Berge, 2017; Corbin, 2015). The effective use of humor promotes creativity, learning, retention, and enculturation of professionals (Allen, 2014; Corbin, 2015; Nesi, 2012; Seidman & Brown, 2015). Counterproductive humor can cause fear and hostility, decrease self-esteem and motivation, and disrupt the community within classroom and work settings (Berge, 2017; Berk, 2014; Bolkan, Griffin, & Goodboy, 2018; Chiang, Lee, & Wang, 2016; Leslie, 2015; Kosiczky & Mullen, 2013).

Several studies (Allen, 2014; Lund, 2015; Bolkan, Griffin, & Goodboy, 2018; Chiang, Lee, & Wang, 2016) compared perceptions regarding the use of humor between professors and students, whether students thought more favorably of professors who used humor, and what types of humor were preferred. Their findings had strong correlations among perceptions in the use of funny stories, funny comments, jokes, and professional humor. Students showed mixed support of humor in testing. Bolkan and colleagues (2018) found that integrating humor into content and testing were not beneficial to improved test outcomes and were found distracting by the students in their study. The use of sarcasm and derogatory humor was not supported in any study. Berk (2014) articulated the need to avoid derogatory and cynical humor in clinical teaching and the workplace by healthcare providers. He advocated the importance of maintaining professionalism, because educators are models for the next generation of providers. Educators need to be cognizant of this because such a misuse of humor will be counterproductive in the classroom and the clinical settings (Chiang, Lee, & Wang, 2016; Huss & Eastep, 2016; Kosiczky & Mullen, 2013; Lund, 2015; Van Praag, Stevens, & Van Houtte, 2017). Students often found that positive humor facilitated attention, morale, and comprehension (Berge, 2017; Earsanli & Cakir, 2017; Huss & Eastep, 2016; Machlev, & Karlin, 2017; Seidman & Brown 2015; Wortley & Dotson, 2016). Makewa et al. (2011) identified that affiliative humor and self-enhancing humor were most preferred by students. White's (2001) classic study identified agreement between professors and students regarding humor as a tool to relieve stress, create a healthy learning environment, gain attention, and motivate students. An item of greatest variation between faculty and student perceptions was in the use of humor to handle unpleasant situations—students believed it could be used, but faculty did not. Chiang, Lee, and Wang, (2016) found this in their study of classroom humor climate and acceptance of humor messages as well. Cultural awareness of humor and humor context remains important when using humor in the classroom, especially as classes contain more culturally diverse students (Aykan & Nalcaci, 2018; Chiang, Lee, & Wang, 2016; Corbin, 2015; Earsanli & Cakir, 2017; Kosiczky & Mullen 2013; Lund, 2015; Nesi, 2012).

Theoretical Foundations

Humor is a complex phenomenon with a long and rich history. While no one has been able to establish when the first joke actually occurred, we know the Greek theater used both comedy and drama to entertain and enlighten. Many authors, such as Dickens and Swift, used satire to comment on society. Theoretical foundations of humor are multiple. They have been categorized by discipline (biological, cognitive, physiological, linguistic, etc.) and construct (incongruity, superiority, affiliative, etc.; Aykan & Nalcaci, 2018; Huss & Eastep, 2016; Kosiczky & Mullen, 2013). Humor and laughter relate to play theory, and thus create a sense of shared playfulness. This sense of playfulness opens the participants to creative and critical thinking and action, while simultaneously alerting and disarming them in an environment of mutual trust and enjoyment. Additionally, Skilbeck (2017) advocated that Dewey's concepts of teaching and learning using purposeful activity supported the use of playfulness and humor as part of being attuned to the students' learning and classroom climate. Effective use of humor may be a component of all learning theories. Humor and laughter contribute to all necessary principles of learning: enjoyment; creativity; interest; motivation; a relaxed, open, warm environment; a positive student–teacher relationship; and decreased tension and anxiety. To be authentic is one of the most important qualities of an educator. Having a sense of humor is an aspect of authenticity (Lund, 2015; Skilbeck, 2017; Smith & Wortley, 2017). Humor used constructively builds a positive self-image (Berge, 2017; Leslie, 2015; Lund, 2015).

Cognitive and affective theories appear to be the most important for education because they account for linguistic, intellectual, and emotional aspects of learning. Some humor theories state that laughter or amusement occurs as an intellectual reaction to something unexpected, illogical, or inappropriate in some way (Nesi, 2012). Cognitive theory focuses on an understanding of language, knowledge, situation, and reasoning that addresses recognition of mistakes, incongruity, and wordplays (Aykan & Nalcaci, 2018; Berge, 2017). Puns, irony, and satire require analysis and synthesis of words, knowledge, and context (Ersanli, & Cakir, 2017). Without such understanding, students do not perceive the humor and may take affront or feel put down by the instructor. When students understand a concept well, they can make jokes or funny remarks about it, indicating their synthesis of the material. Cognition is shaped by culture, and humor has been defined as culturally appropriate incongruity (Aykan & Nalcaci, 2018; Berge, 2017).

According to Bloom, affect is an important domain of learning. Those theorists who subscribe to affective theory stress emotional components of humor. However, it seems inadequate to treat affect as separate from cognition, because emotion is largely constituted by thought. There has been extensive discussion regarding the emotional and physiologic benefits of releasing psychic energy through laughter.

Because of this, humor is an invaluable contribution to the educational process. Its use creates an affirmation of shared understanding and experience (Berge, 2017; Leslie, 2015; Lund, 2015; Van Praag, Stevens, & Van Houtte, 2017). Research supports its use to reduce anxiety and stress, build confidence, improve productivity, reduce boredom, heighten interest, and encourage divergent thinking and the creation of new ideas (Berge, 2017; Leslie, 2015; Nesi, 2012; Wortley & Dotson, 2016).

The affective component of humor engages the limbic system, thereby enhancing both short- and long-term memory and increasing the learner's willingness to apply knowledge and skills (Corbin, 2015; Leslie, 2015; Lund, 2015). Some believe the best time to deliver serious points to students when teaching is right after they laugh (Makewa et al., 2011). The expression of feelings, such as empathy and anger, can be more constructive when approached in a witty manner (Chiang, Lee, & Wang, 2016; James et al., 2012; Lund, 2015; Nesi, 2012). Both sides of the brain are actively engaged during laughter and the perception of humor. The right side of the brain involves reading and interpreting the visual, nonverbal information of humor, whereas the left side of the brain interprets the language nuances of humor. Novelty, imagination, and visualization help move information into long-term memory through the engagement of multiple brain cells firing simultaneously. However, there is still much research to be done about the neuroscience related to humor and the perceptions about what is humorous (Banas, Dunbar, Rodriguez, & Liu, 2011).

Types of Learners

Humor is a type of playfulness that spans multiple ages and venues. Developmentally and intellectually appropriate humor can be employed with all levels of learners (Skilbeck, 2017). Classroom humor relevant to course content is more appreciated by the adult learner than is random humor. It also is necessary to be aware of students' cultural backgrounds because words and concepts may have different meanings and be misperceived, or worse, be inappropriate to discuss (Allen, 2014; Corbin 2015; Ersanli & Cakir, 2017; Nesi, 2012; Seidman & Brown, 2015).

Studies have provided mixed reviews about students' acceptance and appreciation of humor used by the teacher. Some studies have shown that gender impacts the acceptance and use of humor, as does the match between the educator's and students' sense of humor (Bolkan, Griffin, & Goodboy, 2018; Nesi, 2012; VanPraag, Stevens, & Van Houtte, 2017). The associations found between intellectual ability and sense of humor suggest that educators need a firm check on the cognitive status of their students when employing wit, or they risk offending rather than amusing them (Ersanli & Cakir, 2017). Student reaction to humor has been differentially related to the gender of the educator as well, with female educators eliciting less overall appreciation of their efforts to be humorous (Nesi, 2012).

Conditions for Learning

Humor can be used judiciously throughout a class session or course and in all types of classroom situations: lecture, lab, fieldwork, and various course assignments. Mood can enhance or inhibit the reception of humor, making it imperative to read the class members accurately and create a positive and pleasant classroom experience. Positive and constructive humor can be used to put the learner and the teacher at ease with the subject matter (Allen, 2014; Berge, 2017; Corbin, 2015; Huss & Eastep, 2016; Nesi, 2012). Humorous activities, or icebreakers, that relate to the class session topic might begin a class. These activities can also be inserted at intervals to reaffirm the open, relaxed atmosphere that is most conducive to learning. Humor generated from course-content-related games can also create a fun learning environment and content retention. Tension relievers before exams are usually helpful. As long as the humor remains embedded in the content, learners will internalize the new knowledge; otherwise, the flow of the lesson can be lost or misdirected (Berge, 2017). Humor can be used to facilitate creativity and retention of material at any point in a lesson—from initial setup through final review (Seidman & Brown, 2015; Wortley & Dotson, 2016). Using minimally counterintuitive ideas increased recall and retention of new concepts. These ideas challenge the students' current cognitive knowledge template about a topic by presenting an exaggerated or unexpected parallel idea related to topic content or knowledge application.

Relationship between class size and classroom size may impact the effective use of humor because laughter is likely to be greater in larger, more crowded classes than in smaller classes in larger rooms. Laughter, like yawning, is contagious, so once a large group is stimulated by laughter it may take time to bring them back to focus. A group leader (educator in this case) should not stop the laughter, but let it stop of its own accord. The laughter helps reduce anger and tension and may build cohesion and well-being—both of which are essential to productivity and learning.

Humor is a part of communication and not dependent on the natural comedic ability of an instructor. It is an attitude and permission for enjoyment of the educational process (Allen, 2014; Leslie, 2015; Lund, 2015; Nesi, 2012). It can be spontaneous or planned (Smith & Wortley, 2017; Wortley & Dotson, 2016). Students seem to enjoy some playful and restful thinking when, as the first author observed, she uses "knock, knock" or children's joke books during breaks of intense cognitive, thinking, and problem-solving classes. Some authors recommend delivering the most important content or concept for learning just after a good laugh, when the mind is relaxed and open to new learning (Beckett, Sheppard, Rosene, & Whitlock, 2016). Essential to creating open communication and allowing humor within the classroom is the teacher's nonverbal communication and voice tone because these can convey openness or constrict enjoyment of learning. If the teacher's and class's humor style do not mesh, then the use of humor in the learning process will not be

effective (Chiang, Lee & Wang, 2016; Lund, 2015; Van Praag, Stevens, & Van Houtte, 2017). It is important to understand your audience—which in this case is the class—and to know your own sense of humor and be willing to experiment with others (Lund, 2015).

Humor is not necessarily universally appropriate. Some studies found integrating humor into class content and testing did not improve learning outcomes, and many students indicated that humor distracted from their learning (Beckett et al., 2016; Bolkan, Griffin, & Goodboy, 2018). Humor with a strong linguistic base may also disadvantage international students (Ersanli & Cakir, 2017; Nesi, 2012). Likewise, as mentioned previously, any use of sarcasm was seen to be detrimental to learning (Berk, 2014; Corbin, 2015; Lund, 2015; Van Praag, Stevens, & Van Houtte, 2017).

Humor can be very useful in the enculturation of novices into your profession, especially when dealing with the elements of embarrassing intimacy and reality shocks that may occur in healthcare provision (Allen, 2014; Berge, 2017). A healthy sense of humor is related to being able to laugh at yourself and your life without degrading yourself (Huss & Eastep, 2016). Those who enter the health professions must be able to cope with adversity and be able to help others cope as well. The development of a healthy sense of humor, beginning in preservice classes and continuing through professional in-services, benefits everyone.

Resources

As with any teaching strategy, the effective use of humor has to be learned and refined. Before using humor in teaching situations, educators may want to assess their own sense of humor using a humor profile such as the one developed by Richmond, Wrench, and Gorham (2001; see Appendix 11-1). The score obtained on the humor profile reflects your use of humor during communications. Completion of a humor profile is a preliminary step to learning your current facility with humorous content. Additional humor assessments worth considering are the Humor Styles Questionnaire (Martin, Puhlik-Doris, Larsen Gray, & Weir, 2003) and the Humor Climate Questionnaire (Cann, Watson, & Bridgewater, 2014).

Some ways to increase your use of humor include exposing yourself to and collecting humorous experiences, such as reading comics, sitcoms, and joke books; visiting comedy clubs; and even looking for the humor around yourself. This may include viewing the world through exaggeration or broad, silly perspectives. Using exaggeration is a method to clarify concepts—the contrast assists understanding. Incongruity is another technique for promoting humor in the classroom, which studies found aided retention and recall of concepts and application (Banas, Dunbar, Rodriguez, & Liu, 2011). One such example is comparing a stripper and a corporate CEO regaining work skills (see the Applied Example in **BOX 11-1**). Pinterest and YouTube are treasure troves of humorous situations waiting to be tapped by the healthcare professional looking for examples of exaggeration, incongruity, or basic fun. Listening and watching TED Talks is another way to develop a humorous style, repertoire, or skill set. Additionally, the use of props may also enhance humor within a lesson. Berk (2014) offers many examples for using humor in the classroom.

BOX 11-1 Tips for Using Humor in the Classroom

1. Create a casual (and safe) atmosphere
2. Smile; adopt a laugh-ready attitude
3. Relax, use open, nonverbal posture; increase interpersonal contact through eye-to-eye and face-to-face contact
4. Remove social inhibitions; establish a nonjudgmental forum for discussion
5. Begin the class with a humorous example, cartoon, anecdote, or thought for the day
6. Use personal stories, anecdotes, current events related to class content
7. Plan frequent breaks in content for application, humorous commercials, or exaggerated examples; provide humorous materials
8. Encourage give and take with students; laugh at yourself occasionally

Articles about infusing humor into online courses have suggested a number of techniques to promote a positive learning environment in the virtual classroom that mirror applications of humor in the regular classroom. Primary among these

techniques is the use of humor to project an authentic representation of the educator. The humor used, by necessity, is primarily linguistic, although cartoons are readily available (Nesi, 2012). Being humorous online requires more thought and finesse. As such, it requires extensive commitment, time, and effort as it needs to be planned, personalized to the students, and monitored for receptivity (Nesi, 2012; Smith & Wortley, 2017).

Web resources (available as of publication; web addresses may change)

1. Humor matters bibliography and resources:
   http://www.humormatters.com/bibindex.htm
   Learning the art of using humor: http://www.humorproject.com/
2. Sources for cartoon humor (some resources are paid services)
   Cartoons from the *New Yorker* magazine: http://www.cartoonbank.com
   Single cartoons by Randy Glasbergen, often about business or family: http://www.glasbergen.com/
   Variety of popular newspaper cartoon serials: http://www.gocomics.com/explore/comics
   Popular magazines carry sections related to humor or laughter.
3. Print resources:
   Print versions of cartoons (*Far Side*, *For Better or Worse*, *Zits, Pickles,* etc.), local newspapers, bookstores
   Desk calendars such as “A Little Bit of Oy;” “The Far Side,” and “Charlie Brown”
   Knock, knock joke books take humor across the lifespan and sophistication levels.
   Cathcart, T., & Klein, D. (2007). *Plato and a platypus walk into a bar: Understanding philosophy through jokes*. New York, NY: Penguin Group.
   Cathcart, T., & Klein, D. (2009). *Heidegger and a hippo walk through those pearly gates: Using philosophy (and jokes!) to explore, life, death, the afterlife, and everything in between.* New York, NY: Penguin Group.

Check the humor section of any brick and mortar or online bookstore.

Using the Method

The use of humor can be learned and has a growing evidence base, yet remains highly individualized. The Humor Project, (http://www.humorproject.com/), functioning consistently since 1977, is one workshop venue for learning how to use humor effectively. Humor is often a skill picked up and used by healthcare professionals when assessing health, recovery, and state of well-being of patients or residents in healthcare facilities (James et al., 2012; Proctor et al., 2011). Gender, culture, ethnicity, mood, and context affect the acceptance or rejection of this teaching strategy (Aykan & Nalcaci, 2018; Corbin, 2015; Nesi, 2012). Nesi (2012) found that witty, rather than funny, professors were considered interesting, entertaining, and motivating by adult learners. Four interrelated aspects to be considered in the area of education and humor are proposed: (1) enhancing the learning process itself through humor, (2) using humor to facilitate the process of socialization, (3) teaching the concept of humor as a communication and intervention tool, and (4) modeling the use of humor as a vehicle for facilitating the other three. Using humor in the classroom does not mean you must attempt to become a comedian. It involves assuming an attitude of authenticity and comfort within the classroom (Chiang, Lee, & Wang, 2016; Kosiczky & Mullen, 2013; Lund, 2015; Nesi, 2012).

Although not a natural gift of all educators, most authors promote the idea that the use of humor can be learned and ought to be learned by educators to enhance the teaching–learning process (Allen, 2014; Huss & Eastep, 2016; Nesi, 2012). Employing humorous methods is within every educator's reach and will enhance the educational experience for students.

Using humor in the learning process can take several forms. It is easy for most faculty to use spontaneous storytelling by relating their own experiences to enhance the learning process. Other faculty may need to collect jokes, cartoons, movie excerpts, and humorous exercises to insert into their regular teaching activities to enhance the learner's receptivity to information and participation during content presentations. **BOX 11-2** lists some useful tips.

BOX 11-2 Applied Examples

At the beginning of a class, in this case a pediatrics class on toddler development, cartoons that related to the lecture topic were used as a starting point for discussion. The cartoons had been selected from the daily newspaper over a span of years, and so there were many examples of toddler behaviors to choose from. Students who had their own children, or younger siblings, were able to immediately relate to the cartoon situations and discuss the behaviors depicted as well as other toddler behaviors and observations they had seen. Students without children or siblings participated in the discussion by asking questions of those with more experience. A lively discussion ensued. When presented with the accompanying reading material or tested on the material at a later date students exhibited better retention and recall of the information and the

discussion that occurred around the visual cue of the cartoon.

Another example of a humor-enhanced class discussion related to client-centered evaluation by using an exaggerated comparison and contrast of a stripper and a CEO's daily activity routines, expectations, and needs. Students started discussing their perceived stereotypes of these exaggerated individuals and, as new elements of typical activities of daily living were tossed out to the students to analyze for these individuals, another lively discussion occurred. When assessed for their understanding of activities of daily living evaluations, analyses, and syntheses for treatment plans, students exhibited a greater understanding of these processes related to individualized care with attention to details.

The frequent use of visuals such as cartoons, posters, and other images throughout an educational presentation to enhance the impact of the content is often recommended. From a cognitive load perspective, the use of cartoons may enhance recall and retention due to the complementary effect of visual and verbal information processing, as long as the cartoon/text match is consistent with the course content and learning level of the student (Makewa et al., 2011; Nesi, 2012). As previously mentioned, faculty must realize that what works for some people does not necessarily work for others (Lund, 2015; Nesi, 2012; Van Praag, Stevens, & Van Houtte, 2017). Moreover, Chiang, Lee, and Wang (2016) and Nesi (2012) found that some Asian cultures perceived humor used in the classroom as inappropriate.

Some specific techniques for including humor in a class situation include posting humorous situations on a bulletin board to teach interactive concepts or using irony to contrast expected outcomes and actual occurrence enhances remembrance because of incongruity (Ersanli & Cakir, 2017; Nesi, 2012). Case studies with funny names related to topical content also enhance memory of the examples. (Example: Petunia Potter liked working in her garden. She needed some ergonomic changes to facilitate her participation in this avocation. How would you adapt this occupation for her?) Use of exaggerations and unusual professions increases awareness of people's needs in the healthcare arena. Personal stories about real-life experiences and challenges in one's role as a new professional, or unexpected circumstances (or embarrassing moments), can have teaching value. Sometimes when students are called on to do group presentations on a given topic, they will use humor (often in the form of mimicry or parody of the instructors) to engage their classmates and, possibly, to alleviate their own stress. Humor usage will be as variable as those using it, which can be quite diverse (Berge, 2017; Lund, 2015; Nesi, 2012).

Potential Issues

Not everyone gets a joke (Aykan & Nalcaci, 2018). Some people are too serious. Some do not value humor in the educational process. Some find it too distracting to their learning. Using sarcasm, ridicule, and put-down humor can be counterproductive. Humor has the potential to be offensive, especially with ethnic, cultural, or gender issues. Incongruence between innate or cultural humor perceptions can be disruptive to the coordination of the learning environment. Besides potentially offending some members of a class, the use of deprecatory humor may affect students' perceptions of the faculty and undermine faculty effectiveness. Class clowns, who use humor for personal gain, also abuse the strategy and detract from the learning environment (Martin et al., 2003). It is essential for educators to remember that they are role models and exert power over students by their modeling (Berk, 2014; Lund, 2015; Van Praag, Stevens, & Van Houtte, 2017), and thus should be cognizant of the type of humor used in communications.

An example of a joke that may be appropriate for a class on clinical reasoning is provided in **Box 11-3**.

BOX 11-3 An Example of a Joke That May Be Appropriate for a Class on Clinical Reasoning

Sherlock Holmes and Dr. Watson went camping. After a good meal and an excellent bottle of wine, they lay down and went to sleep. A couple of hours later, Holmes woke up and nudged his faithful friend.

"Watson, Watson," he said. "Look up at the sky and tell me what you see?"

"I see millions and millions of stars," replied Watson.

"And what does that tell you?" inquired the master detective.

Watson thought for a moment, "Well, Holmes, astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately 2:25. Theologically, I can see that god is all powerful and that we are small and insignificant. Meteorologically, I believe we will have a glorious day tomorrow. What does it tell you, Holmes?"

"Watson, you imbecile! Some thief has stolen our tent!"

Reproduced from Tibballs, G. (2000). *The mammoth book of humor*. New York: Carroll & Graf; joke 2470.

Conclusion

It has been said that Plato believed one could discover more about a person in an hour of play than in a year of conversation. The same could be said about the culture of a classroom, cohort, or department. Teaching–learning communities are built on engagement and communication among students and faculty. The development of respect and desire to learn can be facilitated with the thoughtful use of humor. All involved will find their creativity, enjoyment, and problem solving boosted by this cognitively stimulating and emotionally safe learning environment.

Discussion Questions

1. Discuss your level of agreement with the definition of humor in this chapter; give modifications and/or examples of when you have used or experienced humor in a classroom.
2. What types of humor might negatively impact classroom productivity?
3. Can using humor be learned or must the person be naturally humorous?

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Humor Assessment Resources

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Humor Climate Questionnaire: https://www.researchgate.net/publication/277961001_Assessing_humor_at_work_The_humor_climate_questi

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http://www.jamescmccroskey.com/measures/humor.htm

APPENDIX 11-1

Richmond Humor Assessment Instrument

The Richmond Humor Assessment Instrument (RHAI) was designed to be a self-report measure of an individual's use of humor in communication. Unlike some other similar measures, this instrument does not focus on a particular kind of humor (e.g., storytelling). Alpha reliability estimates for this measure have been near 0.90.

Directions

The following statements apply to how people communicate humor when relating to others. Indicate the degree to which each of these statements applies to you by filling in the number of your response in the blank before each item:

5 = Strongly Agree; 4 = Agree; 3 = Undecided; 2 = Disagree; 1 = Strongly Disagree

_____ 1. I regularly communicate with others by joking with them.
_____ 2. People usually laugh when I make a humorous remark.
_____ 3. I am not funny or humorous.
_____ 4. I can be amusing or humorous without having to tell a joke.
_____ 5. Being humorous is a natural communication orientation for me.
_____ 6. I cannot relate an amusing idea well.
_____ 7. My friends would say that I am a humorous or funny person.
_____ 8. People don’t seem to pay close attention when I am being funny.
_____ 9. Even funny ideas and stories seem dull when I tell them.
_____ 10. I can easily relate funny or humorous ideas to the class.
_____ 11. I would say that I am not a humorous person.
_____ 12. I cannot be funny, even when asked to do so.
_____ 13. I relate amusing stories, jokes, and funny things very well to others.
_____ 14. Of all the people I know, I am one of the least amusing or funny persons.
_____ 15. I use humor to communicate in a variety of situations.
_____ 16. On a regular basis, I do not communicate with others by being humorous or entertaining.

Scoring

To compute your scores, add your scores for each item as indicated here. Recode items 3, 6, 8, 9, 11, 12, 14, and 16 using the following format:

1 = 5

2 = 4

3 = 3

4 = 2

5 = 1

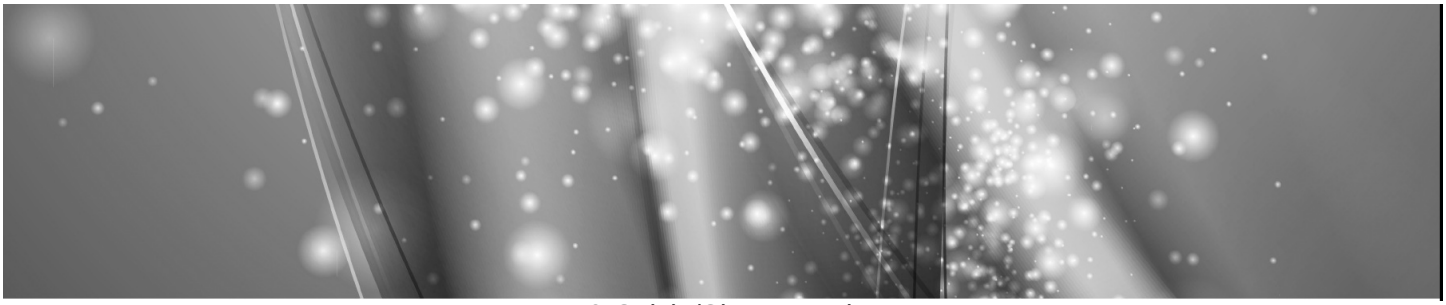
After you have recoded the previous questions, add all the numbers together to get your composite RHAI score.

Your score should be between 16 and 80. Scores of 60 and more indicate high degrees of humor usage; scores of 30 and less indicate low degrees of humor usage; scores between 30 and 60 indicate moderate degrees of humor usage.

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CHAPTER 12

Problem-Based Learning

Liliana Coman and Patricia Solomon

Introduction

Problem-based learning (*PBL*) is an educational process in which learning is centered on problems as opposed to discrete, subject-related courses. In small groups, students are presented with patient scenarios or healthcare problems, generate learning objectives related to what they need to learn to understand the issues, engage in independent self-study, and return to their groups to apply their new knowledge to the patient problem. PBL is largely acknowledged as starting in the medical school at McMaster University in the mid-1960s as a response to an educational environment which emphasized passive learning of large quantities of information that was quickly outdated and often appeared irrelevant. The emphasis in PBL is on learning content in an integrative way through small-group, self-directed study of a problem with the assistance of a faculty instructor who facilitates learning rather than lecturing (Walton & Matthews, 1989). There is increasing support for the idea that PBL is effective because it encourages the activation of prior knowledge and provides the opportunity for elaborating on that knowledge in small-group settings (Hmelo-Silver, 2004; Schmidt, Rotgans, & Yew, 2011).

Shin and Kim (2013) conducted a meta-analysis of the available literature to synthesize the effects of PBL in nursing education. The authors found that PBL has positive effects on satisfaction with training, clinical education, and skill courses. PBL is theoretically more effective in structuring knowledge; however, the most agreed-upon advantage is that it is more enjoyable than traditional learning methods.

Definition and Purpose

Since being introduced, PBL has been adopted by many health professional programs worldwide (Neville, 2009). The evolution of the scientific literature on PBL was described by Pinho, Mota, Conde, Alves, and Lopes (2015). Through a bibliometric analysis, the authors showed a strong, steady progression of scientific production about PBL since the end of the last century, with the United States, the United Kingdom, Canada, Australia, and the Netherlands having the highest number of publications since 1992.

Schmidt, van der Molen, Te Winkel, and Wijnen (2009) suggest that the literature includes at least three perspectives on PBL: a process of inquiry, a learning-to-learn process, and a constructivist approach to learning. Although many variants of PBL have been described, the following essential elements remain: (1) students are presented with a written problem or patient scenario in small groups, (2) there is a change in faculty role from imparter of information to facilitator of learning, (3) there is an emphasis on student responsibility and self-directed learning, and (4) a written problem is the stimulus for learning, with students engaging in a problem-solving process as they learn and discuss content related to the problem (Hmelo-Silver, 2004; Schmidt et al., 2011; Solomon, 1994).

Whereas PBL may be viewed as an educational methodology, it is most often associated with an overall curricular approach. PBL was originally viewed as an all-or-none phenomenon in which an educational program had to commit entirely to the curricular philosophy to attain the most benefits (Barrows & Tamblyn, 1980). Programs that had individual problem-based courses and traditional courses running concurrently were thought to send mixed messages to the student and devalue the problem-based components (Walton & Matthews, 1989). Although there is still concern that isolated problem-based courses will not be successful (Albanese, 2000), there is greater acceptance of curricula that use mixed or partial PBL approaches. Fyrenius, Bergdahl, and Silén (2005) argue that lectures can be valuable tools for learning in a PBL curriculum.

There have been several attempts to define and classify PBL curricula. Barrows (1986) describes a taxonomy based largely on the problem design and role of the teacher. Charlin, Mann, and Hansen (1998) present an analytic framework to understand and compare PBL curricula that varies along 10 dimensions, such as the purpose of the problem and the nature of the task to be accomplished during study of the problem. Harden and Davis (1998) offer an 11-step continuum of PBL, with theoretical learning and an emphasis on traditional lectures and textbooks at one end, and task-based learning (essentially learning in clinical practice settings with real patients) at the other. As one moves along the continuum, there is greater emphasis on the problem, activation of prior knowledge, contextual learning, and discovery learning. Solomon, Binkley, and Stratford (1996) provide a simple

distinction between a problem-based curriculum, which they describe as “fully integrated” (with few or no subject-related courses), and a transitional PBL curriculum, which uses traditional curricular elements early in the curriculum and incorporates increasingly larger components of PBL as the students progress through the program.

Theoretical Rationale

Some of the original theoretical premises for PBL have not found strong support within the literature. Contextual learning, with roots in the constructivist learning theory, was an appealing rationale for the superiority of PBL. The rationale was that by learning all content (including basic, clinical, and social sciences) within the context of a problem, a learner would be able to recall information better when he or she encountered a similar patient or problem within the clinical setting (Clifford & Wilson, 2000). However, there is weak empirical support for this theory, and it is likely too simplistic to integrate the complexities associated with PBL (Colliver, 2000).

The information processing theory, proposed by Miller in 1956, incorporates aspects of contextual learning theory and provides more comprehensive theoretical support for PBL, as it also considers activation of prior knowledge and elaboration of knowledge as core elements (Albanese, 2000; Schmidt et al., 2011). However, one theory may be insufficient support for PBL. Albanese (2000) outlines three others that are salient to PBL: cooperative learning theory, self-determination theory, and control theory.

Cooperative learning, based on Vygotsky's social development theory (McLeod, 2007), in which individuals are dependent on other group members to achieve their goals, is used extensively in small-group PBL. Learning occurs through mutual interaction and shared understanding (Dolmans, De Grave, Wolfhagen, & van der Vleuten, 2005). Additionally, accepting responsibility for learning as an individual and as a member of a group is thought to enhance intellectual development (Copp, 2002).

Self-determination theory identifies controlled, more maladaptive motivators of behavior and autonomous motivators that the learner finds more interesting and enjoyable (Williams, Saizow, & Ryan, 1999). *Controlled motivators*, which include external demands under which people act with a sense of pressure and anxiety, are more characteristic of traditional curricula. *Autonomous motivators*, which involve a sense of volition and choice, are more characteristic of a PBL curriculum. Control theory states that all behavior is based on satisfying the five basic needs of freedom, power, love and belonging, fun, and survival and reproduction (Glaser, 1985). Instruction can fail if it does not meet these basic needs of the learner. PBL may be superior at meeting these needs. For example, fun, or enjoyment of learning, has been frequently associated with outcomes of PBL (Albanese & Mitchell, 1993).

Schmidt and colleagues (2011) summarized the evidence relevant to the mechanism by which PBL affects learning in terms of two hypotheses derived from cognitive psychology: the activation-elaboration hypothesis and the situational-interest hypothesis. The authors conclude that elaboration in a small group (through self-explanation, discussion with peers, and practicing and responding to questions) facilitates the processing and adds to the long-term retention or memorability of the

knowledge gained. The situational-interest hypothesis stems from the literature on the psychology of curiosity and learning. The cognitively induced experience of knowledge deprivation (the gap between what one knows and what one wants to know) initiates information-seeking behavior intended to close the knowledge gap. As learning occurs, the situational interest decreases and knowledge equilibrium is achieved (Rotgans & Schmidt, 2011). It has been demonstrated that the presentation of the problem increased the level of situational interest significantly in the students taking a PBL course, and this was maintained during the small-group discussion (Rotgans & Schmidt, 2011).

A recent scoping review (Gewurtz, Coman, Dhillon, Jung, & Solomon, 2016) explored how theories of teaching and learning relate to and inform PBL within university-based educational programs. Their findings suggested that no single theory of teaching and learning fully represented the complexity of the learning process in PBL.

Conditions for Learning

Types of Learners

PBL has been used extensively in health professions programs. Health professions students at all levels can benefit from the use of PBL to simulate realistic clinical situations. It is important to note that students accustomed to more traditional ways of learning often experience stress and anxiety when adapting to this new student-centered style of learning (Solomon & Finch, 1998). Supports must be put in place to ease the students' transition to this type of learning.

Resources

PBL requires different resources to support its implementation. Unlike traditional programs in which one faculty member lectures to large numbers of students, learning occurs in small groups, necessitating additional faculty to support PBL. There also is a need for numerous small-group tutorial rooms and extensive library and other learning resources that enable self-directed learning. As elaborated upon next, there is an additional need for faculty who are well prepared to assume the role of facilitator.

Using the Problem-Based Learning Method

Role of Faculty

The instructor's role in PBL is different from that in a conventional class or tutorial setting. In PBL, the role of the instructor is to activate and facilitate learning in the group by encouraging participation of all members and to monitor and intervene when the desired quality of learning is not achieved (Barrows & Tamblyn, 1980; Maudsley, 1999). The instructor also plays a key role in assisting students to become self-directed learners and guiding them to become metacognitively aware: to learn to be conscious of what information they know, what information they need, and what strategies they should use to solve the problem. Students perceived stimulating active and self-directed learning as the most important tasks regarding group functioning (Boelens, De Wever, Rosseel, Verstraete, & Derese, 2015).

There has been significant debate in the PBL literature as to whether teachers with subject-matter expertise or teachers with good facilitation skills are preferable. Content experts are thought to be more likely to play a directive role in the learning process, speak more often, and supply more direct answers to students' questions, which may have a negative effect on the collaborative learning (Silver & Wilkerson, 1991). By contrast, Eagle, Harasym, and Mandin (1992) and Davis, Nairn, Paine, Anderson, and Oh (1992) suggest that instructors with content expertise are better at posing questions at critical moments, which positively influences students' learning. Although some debate remains (Kaufman & Holmes, 1998), it is generally recognized that a combination of content and process expertise is preferable.

Dolmans, Wolfhagen, Scherpbier, and van der Vleuten (2001) provide an excellent summary of issues related to instructor expertise. Not surprisingly, they conclude that faculty instructors initiate activities with which they are most familiar. Hence, content experts use their expertise to direct learner performance, and non-content experts use their process facilitation skills to direct group dynamics. However, this relationship is not as simple as once believed. A teacher's performance is not likely to be stable, as it is influenced by contextual circumstances such as the quality of the written cases, the structure of the course, and students' prior knowledge. Thus, teacher expertise may compensate if the structure or content of the problem is low and/or the students have little prior knowledge of the case.

While the evidence suggests that there is not a simple distinction between expert and nonexpert teachers, the implications for faculty development are clear: Faculty require training to assume more facilitative roles. Hitchcock and Mylona (2000) note that there has been little systematic study on effective ways to train faculty to assume PBL roles, although many descriptions have appeared in the literature. They emphasize that although the most obvious training need is in instructor facilitation skills, many other roles and skills must be developed. They describe Irby's sequence

of steps of skill development: (1) challenging assumptions and developing understanding of PBL, (2) experiencing and valuing the tutorial process, (3) acquiring general teaching skills, (4) developing content-specific instructor knowledge and skills, (5) acquiring advanced knowledge and skills, (6) developing leadership and scholarship skills, and (7) creating organizational vitality.

The skills needed to facilitate and evaluate the small-group process, to promote metacognitive skills such as self-monitoring of one's reasoning and decision-making skills, and to design curriculum and develop instructional materials to support self-directed learning are very different from the skills required in a traditional curriculum. These skills require long-term faculty development initiatives. A recent mixed-method study (Doherty, McKeague, Harney, Browne, & McGrath, 2018) explored the perspectives of the PBL instructors at a graduate entry medical school. Their findings emphasized the importance of sharing PBL instructors' experiences as a valuable part of professional development and as a resource that can be capitalized on to benefit both beginning and experienced PBL instructors.

Using the Problem-Based Learning Method

There appears to be no one best way to implement PBL. Although some maintain that fully integrated PBL is preferable, this curricular design may not be feasible for many institutions. Diversity in curricular design and approach is to be expected because different institutional structures and philosophies and faculty knowledge and skill development will influence the extent to which PBL can be incorporated into the curriculum.

Typically, the process is as follows: Students are presented with a written problem as a stimulus for learning. Problems are carefully designed to facilitate discussion related to specific learning objectives. In groups of six to eight, students read the problem (either aloud or to themselves) and brainstorm about what they need to learn to better understand the problem or hypothesize potential causes of the problem. During this initial process, students generate learning issues or questions for self-study. Learning issues can range from factual knowledge (e.g., which nerves innervate the upper extremity?), to more complex physiological questions (e.g., what is the process of inflammation?), to questions that include broader psychosocial issues (e.g., how would I apply a model of ethical decision making to this patient's care?), or questions that require evaluation of the literature and integration of evidence-based practice (e.g., what is the effectiveness of ultrasound in the treatment of lateral epicondylitis?). The process of developing a high-quality learning issue that is researchable may be quite time-consuming for the learner who is new to PBL. Generating the final list of learning issues that will be researched and discussed at the next learning session constitutes the end of the first stage of the PBL process.

Students can choose to independently research all learning issues that have been generated for that session, or to divide up the learning issues among themselves for self-study. When students return for the next learning session, they discuss their findings and the implications for patient care. At the end of the session, students engage in a structured evaluation of the learning process and their performance. Each student provides a verbal self-evaluation of his or her performance that day, and both peers and faculty provide feedback.

During the learning session, the faculty instructor does not provide expert content information. Rather, his or her role is to establish the climate for learning, encourage problem solving, and promote debate and discussion within the group. The instructor also role-models effective self-evaluation and provision of feedback. Barrows (1988) describes the faculty teaching role as going through the following three stages: (1) *modeling* of the thinking process for the students by questioning and challenging them; (2) *coaching* by the faculty when the students are off track or confused, which occurs as the group becomes more comfortable with the process; and (3) *fading* the role of the teacher, which occurs as students progress further and develop into a

well-functioning and effective learning group, leaving the group to work more independently. Barrows suggests that groups should work together for at least 8 weeks to allow for progression of these three stages.

The implementation of PBL in a curriculum is not an easy process, and erosions in a successful PBL program can occur (Hung, 2011). Azer, Mclean, Onishi, Tagawa, and Scherpbier (2013) published 12 tips as preventive measures to assist in the maintenance of PBL programs.

Gewurtz, Coman, Dhillon, Jung, and Solomon (2016) proposed eight principles relevant to PBL that can inform how PBL is operationalized in university-based health professions education. These key principles provide both theoretical and empirical support for curriculum design. Their conclusion emphasizes the critical importance of elaboration, reflection, and activation of prior knowledge in the process of learning, and of active student engagement in tutorials.

Potential Issues

The costs associated with the number of faculty required to deliver education in small groups is a key concern and potential barrier to PBL implementation (Albanese & Mitchell, 1993). Other costs related to space requirements for small-group rooms and development of self-directed learning resources may also pose barriers (Solomon, 1994). Without institutional support for curricular change, program leaders may find it difficult to engage successfully in curriculum reform.

An additional barrier to the implementation of innovative problem-based curricula relates to the lack of rigorous long-term data that demonstrate significant differences between traditional and PBL curricula. Consequently, debate about the effects of this method on learning when compared to traditional methods continues (Colliver & Markwell, 2007; Schmidt et al., 2011). The lack of evidence reinforces the concerns of critics who ask, “Why bother?” Some argue that PBL is worth implementing even if the only benefit of PBL is its more personal, humane, and enjoyable approach. Federman (1999) noted advantages of PBL that are not amenable to measurement and relate more to the personal and interpersonal aspects of practice. Even the most ardent of critics would agree that these benefits are desirable in health professions education. Some of these include: (1) the person-to-person contact inherent in a small-group learning process, (2) the positive regard that is fostered by the respect afforded to the beginning student, (3) the focus on patients that promotes relevance of the curriculum from the early days, (4) the increased opportunities to discuss moral and ethical issues and for the instructor to share his or her values, and (5) the positive effect on lectures because, with only a few lectures in the timetable, students are more committed to these lectures, which in turn has a stimulating effect on the faculty.

Recently, with the rise in popularity of online and web-based learning, there has been interest in doing PBL online. Increased accessibility and opportunities for asynchronous learning are obvious advantages for distance and continuing education courses. In health professions educational programs, PBL online has inherent appeal because the reduced number of facilitators required could make it possible to implement PBL in programs without sufficient resources to do face-to-face sessions. Although there have been some descriptive articles (Bresnitz, 1996), few have examined the effectiveness of computer-based PBL. Some of the characteristics of PBL, such as using patient problems, sharing learning, promoting the integration of knowledge, and self-directed learning, are relatively easy to transfer to online formats. Several authors (e.g., Donelly, 2009; Savin-Baden, 2007) consider PBL a pedagogical strategy that enables interaction, collaboration, discussion, and participation in online environments. In an e-learning context, PBL requires specific tools enabling group synchronization, document management, discussion, and task assignment to engage students in the group learning process.

However, the advantage of flexibility to access the course in an asynchronous manner may not be realized in intensive, integrated professional curricula in which the students' timetables are more restricted. Face-to-face PBL promotes the development of communication and verbal skills related to the ability to clearly articulate and present information, provide feedback to others, and develop and evaluate group skills. In an online PBL experience, the communication skills that are central to professional practice would clearly not be developed in the same way as they would in a small-group, face-to-face PBL experience.

Conclusion

PBL is an increasingly popular teaching and learning strategy within the health professions. The clinical relevance, small-group interactions, and active learning provided make PBL an appealing curricular alternative. Faculty training and expertise are essential for successful outcomes.

TEACHING EXAMPLE

1. The process of setting learning objectives in tutorials
   In the PBL method, setting good learning objectives is essential for the tutorial discussion. Setting learning objectives means the development of a framework by which students will choose to approach what they do not know about the healthcare problem. Setting learning objectives allows students to narrow their goals of study. Many tutorial groups quickly de-emphasize objective setting and/or overemphasize the clinical context, sacrificing the basic knowledge they need (relevant physiology, anatomy, pathology, basic science concepts, etc.). One of the tutor's responsibilities is to ensure that this doesn't happen in tutorial, but the tutor has no control of what happens outside tutorial, in the self-study period. Every tutorial group is unique and there is no specific process to set objectives that will work for each tutorial group. Tutors should encourage students, when they reconvene after self-study, to reflect on how they set the prior learning objectives and if they were appropriate. This process will help prevent the group from making the same mistake. The PBL instructor should encourage students to follow the sequence suggested for PBL tutorials: (1) Clarify and agree on working definitions and unclear terms and concepts; (2) Define the problems, agree which phenomena need explanation; (3) Analyze the problem (brainstorm); (4) Arrange possible explanations and working hypothesis; (5) Generate then prioritize learning objectives; (6) Research the learning objectives (self-study); (7) Report back, synthesize explanations and apply newly acquired information to the problem.
2. Feedback fatigue
   Time should be set aside during each PBL tutorial for peer and self-evaluations. Students, however, may start devaluing the importance of giving and receiving such frequent feedback. PBL instructors can discuss with their students the importance of self-assessment and what it entails: gathering information from external sources (peers and instructors) and determining what is needed to improve their own performance. Ask open-ended questions about how the group perceived the issues before providing your thoughts.

   Being creative with how feedback is provided can keep the group motivated. For example, at the beginning of the session, have each student choose a number from one to four and write it down. At the end of the session, inform the students that the number they chose corresponds to the number of feedback statements they are to provide to their peers. Ask students to always include suggestions for improvement in the feedback. Be sure to address any issues that arise during the feedback session.

Discussion Questions

1. The healthcare problem is central to PBL. What attributes would make a healthcare problem ideal for a class (successful for the student learning process)?
2. A cohort of learners in a program is divided into 10 tutorial small groups. How can the coherence of the curriculum be maintained while allowing students the flexibility of identifying their own learning objectives in the small groups?
3. What issues should be considered when designing assessment methods/tools in the PBL environment?

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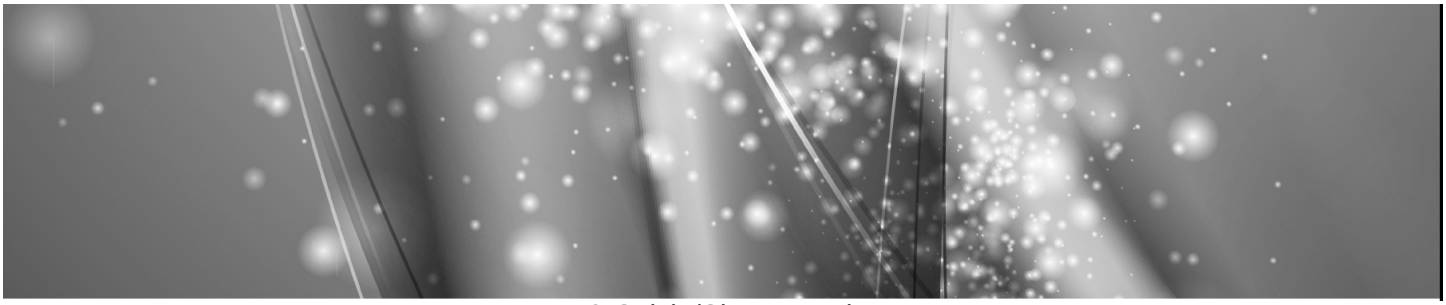
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CHAPTER 13

Debate as a Teaching Strategy

Martha J. Bradshaw

Introduction

The debate is a strategy long recognized as a means to address a topic on which there may be more than one viewpoint. Just as the value of a debate does not necessarily depend on the resolution of a topic or persuasive results, its value as a teaching strategy lies more in the process and presentation of the viewpoints.

Debate is defined as a formal discussion on a specific subject in which opposing arguments are put forward. A debate usually ends with a vote (Oxford University Press, 2018). Political debates are used as opportunities for candidates to make their perspectives known on key issues. This form of structured argument also has been used in philosophy, theology, law, and the sciences. In a teaching–learning situation, debate promotes mastery of content and problem definition. Also, debates foster knowledge about new issues and clarification of one's position on controversial issues (Boyd, Baliko, & Polyakova-Norwood, 2015). Based on these definitions and purposes, it is apparent that debate is a useful teaching strategy.

Debate provides opportunities for students to analyze an issue or problem in-depth and to reach an informed, unbiased conclusion or resolution (Hanna et al., 2014). Debate encourages participants to identify quickly the essential nature of the issue as substantiated by evidence; to establish criteria for judging its successful resolution; and to weigh, compare, and contrast the merits of alternative strategies for resolution. Debates require students to collaborate in data retrieval, analysis, evaluation, and synthesis to build successful arguments. In addition, the presentation of the debate allows students to practice oral communication skills, express professional opinions, and gain experience both in speaking to groups and in working in groups while preparing the debates.

Theoretical Rationale

Two important components of the professional role are the analysis of significant issues and the ability to communicate in efficient and effective ways. Professional communication is seen in many forms; scholarly publications, oral presentations, and electronic networking are a few examples. Similar to other skills, the development of effective communication skills must be fostered by faculty. The ability to communicate thoughts clearly and concisely evolves from the formulation of a perspective on a topic, analysis of that perspective and other views, and development of sound conclusions. Debate enables students to participate actively in a meaningful communication exercise.

In the current healthcare environment, compounding patient, organizational, and administrative factors contribute to a stressful work setting. Because conflict surfaces in many situations and is an inevitable part of interacting with others, attaining a high level of conflict competence, through skilled communication, is key for care providers to be effective in their roles and to create positive social change within work environments (Waite & McKinney, 2014). Learning how to develop structured arguments through formal debate provides a means by which students can manage the conflict situations and power relationships they will encounter during their professional careers. Furthermore, with the prevalence of technological communication through e-mail and text messaging, millennials are less adept at face-to-face communication. In the live classroom setting, debate provides an opportunity for students to engage in social interaction and discussion (Hanna et al., 2014).

The college setting is one that should develop the student's inquisitiveness and discriminating attitude. The debate is particularly helpful in causing a student to examine the position juxtaposed to a personally held view. Nyatanga and Howard (2015) point out that debate encourages healthy skepticism. One of the purposes of debate is to cause the learner to go beyond merely identifying an issue. Learners must actually analyze the issue: What are its key elements? What historical precedents have contributed to the issue? Who are the key proponents and opponents of the issue? What is the future of the issue? Students can learn how personal values or emotions influence thinking and responses to issues. Students also can identify what factors influence their thinking, such as the views of news analysts, popular literature, or peers. Analysis on this level leads to powerful learning, calling for the use of reasoning and other forms of higher-order thinking. The learner first becomes more aware of his or her thinking, then broadens and purposefully adapts his or her thinking.

Hanna and colleagues (2014) point out that the use of debate encourages the consideration of numerous viewpoints before arriving at a judgment or decision. In their work in pharmaceutical education, these authors state that this sequence

coincides with the ethical requirements that pharmacists should consider fully the options available, evaluate the risks and benefits associated with various courses of action, and respect diversity in the cultural differences, beliefs, and value systems of others. These principles apply across all healthcare settings as well. In their use of debate with second-year medical students, Mumtaz and Latif (2017) found agreement among their students that debate promoted critical thinking, encouraged tolerance about diverse ways of thinking, and had great potential in promoting communication skills with patients.

Conditions for Learning

Debate is most useful as part of a course or seminar in professional and academic settings. Because of the nature of this strategy, it should be employed in a course, either virtual or online, that focuses on issues or topics that raise debatable questions. Questions employed in a debate should be those that can be addressed from more than one defensible perspective. This strategy can be used to facilitate students' ability to implement analytical skills, to systematically research and critique an issue, to arrive at salient points, and to demonstrate more professional development related to group processes (Boyd, Baliko, & Polyakova-Norwood, 2015).

Furthermore, debate provides students the opportunity to develop planned responses to an issue, rather than facing an awkward silence when asked to respond during a teacher-led class (Nyatanga & Howard, 2015). From the perspective of the teacher, debate can validate a student's grasp of the topic and content and the extent to which the student is able to analyze an issue (Hartin, Birks, Bodak, Woods, & Hitchins, 2017).

The learning goals for the debate strategy include improving oral or written communication and research-referencing skills, structuring and presenting an argument, and exercising analytical skills. The process for formulating and presenting the debate should facilitate these goals as much as possible; therefore, the faculty should provide as much freedom as possible for the students to reach these learning goals independently. Students should be given enough structure or direction to help them plan and organize their work, but they also should understand the responsibility they must take for researching debate positions, analyzing key issues, and practicing speaking skills. In the debate strategy described by Lowenstein and Bradshaw (1989), students were encouraged to take the viewpoint opposite the one they (personally) held. This approach promoted an understanding of existing oppositional perspectives and enhanced the ability to respond to opposing views (Lowenstein & Bradshaw, 1989).

Preparation for the debate should begin early in the course to provide adequate opportunity for library research and the exploration of issues. Faculty facilitation is an essential part of the learning process. Conditions central to the use of debate as an effective strategy include the following:

- Students need to be introduced to key issues in the course and be able to identify controversial points suitable for debate.
- Students need to be familiar with one another so they can form working groups. If not, such as with an entirely online course, an introductory exercise is beneficial.
- Students need the knowledge of existing resources to use in formulating debate. This includes increased familiarity with the faculty member(s) as a source of

support and information.

Types of Learners

Debate can be used with all levels or types of learners, including undergraduate students, graduate students, and practitioners, because the learning goals of debate are suitable for all groups. Lowenstein and Bradshaw (1989) used debate with registered nurse students who were completing their BSN courses. Debate is a particularly successful strategy with this group because these students combine personal experience with actual patient or practice problems with the need to refine communication and analytical skills.

Hanna and colleagues (2014) developed debate as a new component to a core course in ethics for pharmacy students who were in their second professional year of a master's in pharmacology program. Objectives were for the students to develop an appreciation of various ethical issues relevant to pharmacy practice and the pharmaceutical industry, and to develop debating skills, including the formulation of arguments and evaluation of evidence. Sample questions for the debates addressed typical practice concerns, such as conducting drug development experiments on animals or selling abortion-inducing products. Thus, debate provides a true opportunity for contemplation about practice and professional growth in this type of student. By immersing themselves in the topic, students develop a better understanding of it than they would through other means of study. In these students, debate outcomes indicated that many of them actually changed their originally held viewpoint.

By creating the need to objectively analyze an issue, debate becomes useful for a student who is strongly influenced by personal values or certain work experiences. An undergraduate who has not formed a worldview about sensitive ethical dilemmas, for example, can have the opportunity to examine the issues and how decisions are made. A practitioner who has been receiving negative influence in the work environment has the opportunity for objective analysis of the situation.

Debate is a strategy to use when the instructor wishes to bring about active (rather than passive) learning, critical thinking, and creativity, and to introduce the learners to the role of conflict in professional endeavors. Direct confrontation—that is, face-to-face discussion—is particularly valuable in an educational environment in which students frequently converse in isolation through electronic means. Reliance on technology hinders students from cultivating skills for professional, purposeful conversations. Furthermore, use of debate is an opportunity for a student to hone the ability to speak in front of a group, especially one that is not entirely supportive of the speaker's point of view. Hartin and colleagues (2017) point out that although students are not comfortable with face-to-face confrontation, they see the merits of discussion in this form. Conversely, due to the high volume of electronic means of communication, online debate prepares students to choose words carefully, develop succinct comments that have the desired impact, and interpret written remarks from

others.

Resources

Faculty members serve as an important resource by assuming the role of facilitator. Formal debate questions and positions can emerge from class discussion about important issues. Faculty members can assist students in formulating the debate question and can direct them to resources related to the issue. Clinical experiences and current issues in health care offer a wide range of debate topics. By using the professional literature to identify debate issues, develop related positions, and support the debate position, students are introduced to a wide range of journals, books, and other sources. Electronic searches enable students to consider related topics and sources, outside of their own professional field, which may generate additional support for a position. The electronic media affords access to the most current information, which may be particularly helpful for students dealing with timely political topics. Electronic bulletin boards and other communication networks provide students an opportunity to interact with individuals outside their own institution who are involved with the issue.

The debate can be presented in any planned class setting. The environment should be such that the debate teams can be seen and/or heard by the audience. Boyd, Baliko, and Polyakova-Norwood (2015) used debate in a large online course to teach evidence-based practice in nursing. As with face-to-face debates, students collaborate in data retrieval, analysis, evaluation, and synthesis to build successful arguments. They gain a sense of teamwork during the process. Just as with the traditional debate method, online debate is interactive among students, rather than being teacher directed. However, when conducted online, this approach does not provide the opportunity for face-to-face interaction and development of oral communication skills. Consequently, a virtual platform such as Skype or WebEx may be desirable.

Using the Method

Traditional Classroom

In the Lowenstein and Bradshaw method of a traditional classroom setting, faculty members define broad (topical) areas from the course outline. Students choose the general area in which they are interested and form groups of four or five members. At least one group is formed for each topical area, to guarantee that course objectives or topics are addressed. Depending on student interest and enrollment, a second group may be formed in certain areas. For example, two groups may choose to address the area of professional roles and responsibilities. Specific debate questions are formulated by the group in keeping with the objectives or broad topics of the course and personal interests of group members. Many of the topics are those currently being debated by our colleagues in all areas of health care: Patient care delivery systems, healthcare reform, genetic screening, and euthanasia are a few examples.

Each group should meet with the faculty as needed to organize the debate presentation, gain insight into the points being presented, and receive assistance with resources. The instructor may assist the groups by refining their reasoning approaches.

Students are guided to consider the perspectives of all individuals or interest groups. Boyd, Baliko, and Polyakova-Norwood (2015) found that students see the benefit from examining others' perspectives. For each debate group, two students select the affirmative position, two select the negative, and the fifth serves as moderator. In groups of four, the faculty advisor serves as moderator. Each group develops a reading list of significant articles related to the issue under debate. The list is circulated to the entire class at least 1 week prior to the debate. Students not involved in the presentation are expected to be prepared to discuss the issues under consideration.

The debate consists of opening remarks by a moderator, two affirmative and two negative presentations, rebuttal, and summary. Following the presentation, the floor is opened to the class for discussion. Questions and comments based on the presentations and readings are generated by the class. The debate moderator facilitates discussion and provides a final summary of the issues and discussion. With some issues, it may be appropriate to develop a resolution plan upon conclusion of the formal debate. This plan can incorporate some ideas from both positions, to encourage win-win negotiation. This process gives students experience in developing workable solutions to practice-related issues. Class members not participating in the debate are asked to evaluate each presenter based on a rating scale. Students evaluate the analysis of the issue, evidence presented, supporting resources, organization of the presentation, the argument presented, interaction with

the audience and opponents, and the response to questions (**FIGURE 13-1**). An overall effectiveness score is given, and the evaluators indicate if their stand on the issue changed as a result of the debate. All faculty members participating in the seminar also evaluate the presenters. Debate grades are based on preparation, individual performance, and group efforts that were reflected in the effectiveness of the debate.

Date: _____ **Subject/Topic:** _____

Evaluate each speaker using the following scale:

Superior = 5; Excellent = 4; Good = 3; Fair = 2; Below standard = 1

Team A		**Team B**
1 2 3 4 5	Bibliography (4 max)	1 2 3 4 5
	Overview of problem (Debater 1 or 2)	
1 2 3 4 5	Representing side of debate (Debater 1 or 2)	1 2 3 4 5
	Opening remarks	
Debater 1 2 3 4 5		Debater 1 2 3 4 5
	Resolution plan	
Debater 1 2 3 4 5		Debater 1 2 3 4 5
	Response to opposing team	
Debater 1 2 3 4 5		Debater 1 2 3 4 5

FIGURE 13-1 Grading tool: debate.

Description

Online Course

In an online course for first-year pharmacy students, Swu-Jane and Crawford (2007) developed a series of three debates over a 12-week term. Teams of four to five members were established and paired as pro (affirmative) or con (negative). A team leader was selected to coordinate communications among team members and with

the faculty. A forum was set up for discussion posts for the paired teams. Students were expected to post three arguments in an online forum that included two constructive arguments and one rebuttal and summary argument. Each group posted in one-week intervals, beginning with affirmative and followed by negative, then a second affirmative followed by negative; the final argument started with negative first and then positive. A word limit of 400 to 600 words (excluding references) was set to correspond to a speaker's time limit in an oral debate. Students were encouraged to read articles recommended by the instructors to provide an overview for both sides of the debate topic, and to search, use, and cite additional reference sources. An orientation to the debate process was accomplished by providing written materials to assist the students in understanding the expectations and flow. Three judges were appointed by the instructors to decide the debate winners. This format is suitable for programs that are exclusively online, especially because of student familiarity with the course structure and discussion board. In using online debate with undergraduate students, they may need more time to prepare and respond to postings, due to demands of other coursework and their clinical practice experiences.

Evaluation of Learning

To reinforce the learning from the debate, students may be asked to write a formal paper on one of the professional issues discussed in the course. The paper can be evaluated on the presentation of the issue, arguments for both sides of the issue supported by literature, the student's position and rationale for selection of the position, application of ideas to practice, and use of references and format. Validation of learning or shaping of opinions through debate can be assessed by use of a pre- and posttest quiz.

Potential Issues

The debate strategy calls for significant student responsibility and preparation, for both debaters and the audience. Debaters are required to thoroughly research the issue and the position taken for the argument. Challenges for students that were discovered by Boyd, Baliko, and Polyakova-Norwood (2015) were that they may lack writing skills or the ability to conduct thorough literature searches. Students should be encouraged to explore literature outside of their professional field, such as the areas of business or sociology. From this preparation, they formulate a succinct and effective presentation. Oral debaters are expected to practice speaking skills and to prepare supporting materials for the presentation. The debate group provides an appropriate reading list for the other class members. Those students take the responsibility to read about the issue prior to the presentation, so they understand the issue and participate effectively in the discussion. Lack of preparation on the part of team members leads to inadequate presentation of the issue and superficial discussion. In contrast, students who are acquainted with the opposing team members may collaborate and develop a “planned” debate to maximize opportunity for a successful outcome. While this may be difficult to discover on the part of the instructor, it clearly is an example of academic dishonesty.

The debate causes students to clearly classify an issue as one that is right or wrong, or answered yes or no. Many topics have no conclusions or answers, and thus may impose a false dualism. Students may have to defend a position to which they are not clearly committed. Students with strong moral beliefs about an issue may have difficulty defending a specified position or accepting the views of others (Hanna et al., 2014). At some point during the presentations, it must be made very clear that there is no “right” or singular answer to many issues.

Nervousness about speaking in public can be a major concern. Some students have had little or no public speaking experience, or they may have had negative experiences that continue to generate anxiety. In addition, students of certain cultural groups may have difficulty with open debate as a way to learn. Students need encouragement and need to view the debate as an opportunity to speak to an open, receptive group in order to gain experience. What some students view with apprehension often results in being uplifting and beneficial. For example, one student was timid about speaking in groups and was extremely nervous before and during her debate presentation. Her nervousness was manifested in physical symptoms such as sweating, flushed face, tremulous voice, shaking hands, and rapid blinking. She received appropriate support from faculty and students, which encouraged her to work on this problem during the rest of her academic time. Three years later, she successfully defended her master’s project in a dignified and professional manner. Her public speaking skills have now advanced to the point where she is able to address both groups and individuals effectively in her current

employment as a clinical specialist.

The argumentative or confrontational nature of the debate may also create anxiety. In addition, debate or public speaking may be a new strategy on which students are graded, thus heightening anxiety. Faculty and students must continually emphasize that the debate is a learning experience. The excitement of defending a position, stressing key points, and deriving a workable solution should be presented as positive outcomes of the debate. Faculty members should stress that students will not be condemned or inappropriately criticized for taking unpopular viewpoints during the debate. Faculty members are prepared to handle strong emotional viewpoints and to help students understand that there is room for conflicting opinions in our society.

Conclusion

Debate is a strategy that promotes student interaction and involvement in course topics. There are many advantages to using this strategy. Debate expands the student's perspective on a given issue, creates doubt about the existence of one clear answer, and requires much thought and further evidence before a solution is derived. Debate also increases awareness of opposing viewpoints. As an interactive strategy, debate develops techniques of persuasion, serves as a means by which students confront a controversial issue, and promotes collaborative efforts and negotiation skills among peers. This strategy promotes independence and participation in the decision-making process, as well as enhancing writing and organizational skills. Debate allows for the examination of broad issues that influence professional practice. Critical thinking is enhanced by the scrutiny of more than one position on the issue.

Selection of debate as a teaching strategy requires a strong commitment to preparation and guidance from faculty. Faculty members have to deal with the emotions that can be elicited by the arguments. Faculty members must provide support for students who take minority or unpopular positions and for those who have limited public speaking skills. Following the debate, those students whose ideas are not accepted by the majority should be encouraged to recognize those parts of their work that were of value, even if others disagreed with their position. Those students whose ideas reflected the majority view should also recognize that public consensus can change quickly, and, as more information becomes available, opinions may be swayed. Finally, faculty members can help students recognize that the debate is just a start to exploration of professional issues. Students will need to be encouraged to incorporate their newly learned and practiced skills into their professional practice.

Discussion Questions

1. How should the instructor create a debate framework to avoid having the strategy seem confrontational and adversarial?
2. What potential topics for debate may be difficult to defend or refute?
3. What are the advantages and disadvantages of having peers grade each other after a debate?

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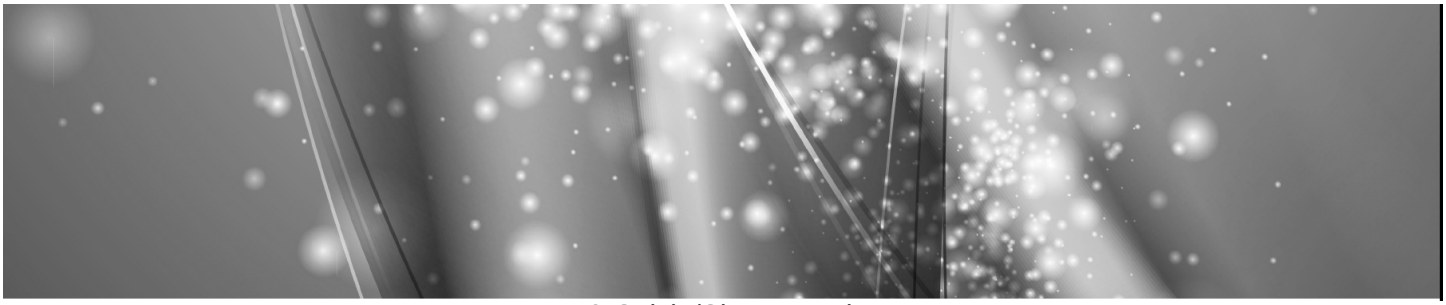
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CHAPTER 14

Games Are Multidimensional in Educational Situations

Lynn Jaffe

Creativity, problem solving, critical and analytical thinking, decision making, risk taking, all found in game-based learning.

—**Mark Grundel**

Never, ever underestimate the importance of having fun.
We cannot change the cards we are dealt, just how we play the game.

—**Randy Pausch**

Introduction

Games are a useful addition to educational strategy repertoires. Games used for educational purposes, referred to as serious games, are a way to motivate, reinforce skills, promote collaboration through their experiential format, and provide quick, frequent feedback (Kerfoot et al., 2012; Pront, Müller, Koschade, & Hutton, 2018; Vlachopoulos & Makri, 2017). There is extensive literature on game theory and gaming in multiple disciplines, although the current focus tends to be on digital or video gaming (Cain & Piascik, 2015; Holmes & Gee, 2016). The strength of the supporting evidence for the use of games in healthcare education is still equivocal (Abdulmajed, Park, & Tekian, 2015; Aburahma & Mohamed, 2015; Skiba, 2013); however, some rigorous studies and systematic reviews, particularly regarding digital games, are demonstrating significantly positive results in favor of game-based learning (Boeker, Andel, Vach, & Frankenschmidt, 2013; Kerfoot et al., 2012; Swiderska, Thomason, Hart, & Shaw, 2013; Vlachopoulos & Makri, 2017). This chapter is an introduction to the use of games as a teaching/learning tool within the classroom or clinical setting. It also introduces the idea of “gamification” in education—the process of turning the entire learning experience into a multiplayer game (Holmes & Gee, 2016; Sederstrom, 2014; Sheldon, 2012). Definitions, evidence regarding practice, and the types of learning that will fit most easily within the various game structures will be described, as will the limitations of game use within the educational or clinical environment.

Definition and Purpose

A game is an activity often classified as fun, governed by precise rules that involve varying degrees of strategy or chance, and one or more players who cooperate or compete (with self, the game, one another, or a computer) through the use of knowledge or skill in an attempt to reach a specified goal. In addition, and potentially the most salient feature of games, is that they have a fairly immediate feedback system. Current students expect and desire immediate feedback on the accuracy of the knowledge they are acquiring (McGonigal, 2011; Nevin et al., 2014). Educational or "serious games" are believed to provide learning benefits that last beyond the game itself for all participants. There are three major categories within the genre—games, simulations, and simulation games.

Game is a generic term that includes board, card, digital, and skilled activities. Many simple educational games use popular formats, such as bingo, *Jeopardy!*, *Trivial Pursuit*, and *Who Wants to Be a Millionaire?*, that provide familiar frameworks for inserting content and creating learning activities. These "frame" games typically involve a set of rules for player moves and termination criteria so that winners may be determined. The frameworks are easily adaptable to a wide variety of content and instructional objectives, usually in the lower cognitive domain areas. These games have been described in the literature and examples are listed under "Recommended Reading." Also see websites listed in the "Resources" section for templates of popular game shows for educational use.

Simulations, in this context, are role-playing games and are discussed in other chapters. Simulation games are contrived reality-based conflicts that must be resolved within the constraints of the game rules and have been shown to enhance competency development among health professionals (Cain & Piascik, 2015; Kanthan & Senger, 2011). They have the potential to attain new heights of efficacy in digital game formats where they can be used to enhance other aspects of the educational experience than mere review of content. Within authentic contexts, students have the opportunity to get immersed in the game and call on past knowledge and experience to problem solve, make decisions, and examine attitudes, affect, and empathy (Chen, Kiersma, Yehle, & Plake, 2015; Gleason, 2015).

Debriefing is an important aspect of the learning process that occurs after the game. It is a discussion focusing on the concepts, generalizations, and applications of the topics covered within the game (Aburahma & Mohamed, 2015). This process assists learners in recognizing the learning that has occurred within the fun experience of the game and contributes to the learner's ability to use self-reflection to consolidate the learning. Effective debriefing requires a good deal of skill and experience in the facilitator and should be allotted as much time as was spent actually playing the game (Imlig-Iten & Petko, 2018).

Theoretical Foundations

The use of games for educational purposes is a very old idea (for a comprehensive summary, see Wilkinson, 2016, under “Recommended Reading”). The earliest recorded use was for war games 3,000 years ago in China, in the 18th century in Europe, and, within this century, by the U.S. military. Game use was brought to the business community by ex-officers to provide training in problem solving and decision making. It was considered a bridge between academic instruction and on-the-job training. In the 1950s and 1960s, as the theoretical focus of learning shifted from the instructor to the student, experience-based learning became prominent, and games were used to meet this goal. In health-related areas, psychologists and nurses made numerous contributions to the literature on game use in both academic and clinical education, although the research is still inconclusive when judging their effectiveness, primarily due to small sample sizes, poor operational definitions, and other design flaws (Abdulmajed et al., 2015; Pront et al., 2018; Shiroma, Massa, & Alarcon, 2011).

Game use falls under the theoretical umbrellas of active learning strategies and cooperative learning described previously in this text, and under the concept of flow coined by Csikszentnikhlyi (1990), which refers to a psychological state achieved when learning and enjoyment coincide. The focus is on actual engagement with both the educational material and classmates, constructing knowledge, and engendering positive attitudes that promote deep processing of the learning experience. It can be intense, absorbing, and motivating (Holmes & Gee, 2016; Kanthan & Senger, 2011).

Conditions for Learning

Games can be used to address all levels of cognitive objectives, from reinforcing the learning of basic facts, through developing application and analysis skills, and culminating in promoting synthesis and evaluation. They do this through the promotion of initiative, creative thought, and affective components within a safe forum for listening to others. Games are credited with supplementing rote memorization, providing useful organization of the material, encouraging the application of ideas, and providing comic relief from the otherwise anxiety-provoking task of preparing for exams (Vlachopoulos & Makri, 2017).

Games are inherently student-centered and interactive, generating enthusiasm, excitement, and enjoyment. It has been found that students often prefer multiple methods, or styles, of learning (Wright, 2012). When new occupational therapy students are asked what their preferred learning style is, the predominant answer is usually hands-on/experiential. An experiential learning method, such as gaming, creates an environment that requires a participant to be involved in a personally meaningful activity using multiple styles of learning, such as visual, auditory, and kinesthetic. Fostering a match between teaching strategies and student needs is one of the key factors in effective education. In addition, learning has a greater impact when it has an element of emotional arousal, takes place within a safe environment, and has a period of debriefing to provide a cognitive map for understanding the experience.

Board or card games tend to be most appropriate for skill-based knowledge and practice in the cognitive domain, such as memorizing or concept matching. *Jeopardy!* and *Trivial Pursuit* are quite popular in many disciplines for reviewing course information in such subjects as abnormal psychology and research methods because of the quick mobilization of facts or labels required. In health care, both would lend themselves to reviews in human development, clinical conditions, or other primary knowledge topics. These games are used to review facts, reinforce or test knowledge and understanding, and foster application. The games can be adapted in multiple ways—through the content and through the external attributes of the game itself, such as time limits and the degree of luck built into the format. Crossword puzzles, word searches, and bingo-style games have been used in nursing in-service training to review required materials as well as increase staff attendance and compliance. Games can also be created for the psychomotor domain; speed of manipulation, safety in transfers, and knowledge of intervention techniques could all be addressed through a game format that would reward an individual or a team.

Simulation games, referred to as adventure games when in digital format, are adapted to teaching problem solving, hypothesis testing, and the affective domain outcomes. Problem solving is best taught through practice and reflection. Within the

format of the simulation game, especially in a computer or video game format, there is more opportunity for such repetition and practice than is available during limited classroom or clinical practice time. Video games also may offer consistent assessment of clinical reasoning skills in case study situations of home or clinic visits. The potential is there for multiple users in these virtual environments, and professional exploration may be accomplished through digital simulation games (Baaden et al., 2018). Serious game design works best when communication is built in through blogs, wikis, and other Internet technologies (Kerfoot et al., 2012). The time/effort involved in creating such environments becomes less feasible when faculty members are faced with overloaded clinical placements.

One academic strategy is to structure an entire class, or major elements of a class, as a game, referred to as gamification (Lee & Hammer, 2011; Sederstrom, 2014; Sheldon, 2012). The concept employs elements of games, such as experience points for accomplishments as opposed to grades, levels that students rise through as they gain the experience points, and assignments that are structured as quests or challenges, to promote engagement in learning. One gamification approach is to have assignments that can be repeated until competence is achieved (challenges). These challenges are created for the student's current skill level and increase in difficulty as the student's skill level advances. Another approach is to have group-based activities (quests) that foster teamwork and critical thinking. The gamification approach sparks motivation and emotional engagement through the choices offered to students—choices to engage in select activities or not, and to plot one's own path through the course material (Lee & Hammer, 2011; Sheldon, 2012). The takeaway for instructors is to provide feedback often and keep the stakes low while initial learning is taking place, so that the repetition needed to actually master the material can be a positive emotional experience, rather than a punishment. It does not require a game format to accomplish this, but a game format can keep the focus on active, engaged learning that is within the learner's control rather than assignments being seen as an obstacle a professor is throwing in the path of perfect grades.

Types of Learners

Games are being used throughout the educational continuum, from preschool through graduate education. They can be used for students who like to compete or for those who prefer to cooperate. For learners with achievement needs, games motivate through competitiveness and leaderboards (Landers & Landers, 2014; Nevin et al., 2014). Games may also be motivating for those with strong affiliation needs, such as millennial learners, because games can require team play and cooperation for completion. The element of luck within an educational game gives all students, not just the studious ones, a chance at winning and thereby keeps engagement higher. Educators must appreciate the different maturational stages students pass through. Adult learners have a particular need to engage meaningfully with content and apply it in a variety of methods, which can be accomplished through the interactive, immediate, and diverse format of gaming.

Games can be structured to require a degree of flexibility on the part of the student to adapt to changing circumstances, especially when addressing the development of interdisciplinary awareness, problem solving, cultural sensitivity, and empathy with clients. Finally, particularly with the use of digital simulation games, some degree of computer/technology comfort is required on the part of both the students and the faculty/trainer. Most millennial and postmillennial students arrive on campus equipped and eager to use web-based technologies (Lynch-Sauer et al., 2011); some faculty need to increase their comfort level with this method.

Resources

Creating games for the classroom usually takes time, imagination, and desire. The rewards can be great, although in this productivity-driven age, the trade-offs must be considered. As previously described, the quickest resources are based on those games that are currently available in toy stores or on television. Using the frames of these games requires loading in course material, and then it is easy to introduce to the students because of their familiarity with the format.

As of this text's publication date, the following websites offered templates for such games:

PowerPoint games at http://people.uncw.edu/ertzbergerj/msgames.htm or

https://tekhnologic.wordpress.com/2016/12/27/10-powerpoint-games

Crossword puzzles or word games at http://www.crossword-puzzles.co.uk/ or
Eclipse crosswords at http://www.eclipsecrossword.com/

A more challenging approach than using the aforementioned sites is developing the entire game from your own imagination, although if the educator engages small groups from a class to create the game using some of the guiding principles in the next section, this may become more feasible. Dr. Martha Rosenthal, at Florida Gulf Coast University, has her students create games from class topics as an assessment assignment within her classes to great success. She described the need to think about the material, opportunity to be creative, increased interest, and fun as some of the benefits (M. Rosenthal, September 21, 2015, personal communication).

Digital game developers have been creating structures that may be available as frameworks for cognitive and affective domain objectives. These frameworks range from addressing the lower/moderate end of knowledge/awareness, as in a WebQuest (http://www.webquest.org/index.php) search for specific information, through the high-end evaluating/internalizing found in the Pod Game (ZaidLearn http://zaidlearn.blogspot.com/2008/04/free-learning-tool-for-every-learning.html), where you can make judgments and decisions under a time constraint. The challenge for the educator is in finding and then using such formats because of the technological knowledge required on top of the content application. Currently there are only a few such games that are directly applicable to health care. An international group has developed a small series of games to teach research and statistics that they offer for free to anyone wanting access: http://www.chermug.eu/index.html.

For those who like the recommendation that it is better to use teaching practices that are game-like rather than to try to develop whole games that may actually

detract from the educational intent because of the novelty or the development time involved, a key resource for gamification is a blog with many linked resources found at http://top5onlinecolleges.org/gamification/.

The “Recommended Reading” section at the end of this chapter has a variety of articles and websites that describe gaming used in classroom education and in-service training. Some articles specifically target a greater use of technology, such as computer or web-based games. The references that describe active learning and cooperative learning are excellent background information for the new academician and are available online.

Using the Method

Many authors have described the methodology behind using games in the classroom, and their advice is summarized in **TABLE 14-1**. To begin, games rarely succeed as add-ons; they must be integrated into the overall educational strategy (Cain & Piascik, 2015; Nicholson, 2011). A game pulled out of nowhere, just to be novel, will have no effect on outcome measures. In essence, when developing a game, the educator must determine the content area, statement of the problem, and objectives of the game. After this, he or she must determine the game format, number of players, time frame, and rules. If using a frame game, the generic rules already exist and can be adapted for the topic within health care. The next decisions regard roles players assume and scenarios in which play occurs. These can be simple adaptations for frame games, or more complex if setting up a game that is a simulation of a clinic. The scoring system and physical elements of a frame game tend to remain consistent with the original game; for simulation games they often need to be created outright. The designer chooses the media used, based on available time and resources, whether they are common materials or specially constructed components. The game needs to be tested on a small sample initially, critiqued, and possibly revised. Finally, it is beneficial to the community of healthcare educators if the game is then disseminated (Nicholson, 2011).

TABLE 14-1 Process for Game Development

Step	Element	Probes
1	Specific objectives for game	Do they parallel and/or facilitate the course objectives?
2	Fit within the curriculum and the environment	Are the concepts relevant? Is this for review or to move understanding forward? Is there adequate functional space for implementation? If digital, are there enough computers (or smartphones) and technical support?
2a	Employs conflict	This could be a time limit, competition between teams, or competition with a manager, depending on the objectives. Does it provide a just-right challenge? Can the student alter the level of challenge?
2b	Rules of play and criterion for closure are easily communicated	Are all the rules known up front, or are they learned over time? If there are dead ends or eliminations, what happens next?
2c	It is fun	If not, stop right here and rework or discard
2d	Provides immediate feedback to the participants	Do students know how they are doing at all times? Is uncertainty part of the game? Does the feedback assist

		the student in modifying beliefs or performance in order to improve?
2e	Meets the needs of the students	Does the game help organize the course material? Is it a reliable measure of their comprehension, or will it mislead them? Does the game encourage the players to “laugh with” as opposed to “laugh at” one another? Is it inclusive in nature?
3	Field-test to eliminate bugs	Did it go as planned, or are there needed revisions?
4	Mechanism (such as pretesting and posttesting) that allows measurement of learning	Other than student satisfaction, check to see if actual learning occurs.
5	Share it with colleagues	Publish or post—there are many educational game websites.

Note Modified from Consult Pitt, M. B., Borman-Shoap, E. C., & Eppich, W. J. (2015). Twelve tips for maximizing the effectiveness of game-based learning. *Medical Teacher, 37*, 1013-1017.

Overarching elements that must be considered when using instructional games include the layout and amount of space in the classroom or availability of technology, to ensure equal opportunity to play. Time to be spent during the game, with enough time for the debriefing, must be allocated. It is essential to plan the method by which the students will become aware of the rules of the game and rewards for results, including whether the rewards are intrinsic or extrinsic. Remember that for best effect, the game must be integrated into the instructional strategy of the course and directly related to the subject. It must be challenging enough and not feel like busy work.

Potential Issues

Effective use of games in the classroom can be undermined in the ways most strategies fail—poor planning, lack of student buy-in, and lack of follow-up (Cain & Piascik, 2015; Vlachopoulos & Makri, 2017). One example of inappropriate game use stemming from each of these obstacles was the use of a simulation game to evaluate treatment skills. There was a specific scoring sheet to test students on the use of a computer program for cognitive rehabilitation. The students were *therapists* with faculty *clients*. This experience was to provide feedback on the student's knowledge of the computer program, as well as provide valuable lessons on therapist–client interaction and use of the environment (e.g., paying attention to the physical environment even though they were intervening for a cognitive task). The main drawbacks to this experience were neglecting to emphasize the game nature of the simulation to reduce trepidation, and having faculty be the clients, which increased anxiety. More planning would have improved the introduction of the activity. More preplanning may have provided the impetus to revise the format so that there could have been *peer* clients. Knowledge about the use of educational games is essential to create a relaxed and appreciated learning experience.

Other potential pitfalls of game use require the instructor to be aware of:

- *Timing*. Monitor play, termination, and transition to the next learning activities. Fun activities can take on a life of their own. Simulations (especially) and games reduce control of the class period timing; the instructor must be comfortable with that reduced control or it will not work. While spontaneity and flexibility are admirable, there is also a need for planned sequences of activities and firm timekeeping.
- *Competition.* Motivation may be limited to those who win; losing may produce a failure experience that decreases self-esteem. Be conscious of all class members and monitor the degree of competition and cooperation required to achieve educational goals. Be ready to change out key players or use teams to encourage more extensive participation.
- *Initial high costs of developing and running a game.* It is quite time-consuming to create or flesh out even a frame game. In some instances the task involves no more than developing more test questions/answers (as in *Jeopardy!* or *Trivial Pursuit* games), but that is often easier said than done. In the case of simulation games, a lot of thought is necessary to create an adequate situation and produce a complete cast of characters with goals and belief systems.
- *Unmet needs of participants.* Not all students' learning needs will be met within a simulation or game; therefore, instructors should not depend on these strategies as solo teaching approaches.
- *Closure.* Facilitate appropriate debriefing by allowing adequate time for this phase

of the learning experience and being an active listener.

Conclusion

Games are a suitable supplement for a variety of academic and clinical situations. They are a method of helping students recognize how much they know or how much they still need to study. Different types have been described, as has the appropriate usage within the wide variety of instructional objectives and content in healthcare curricula. The choice and time management required may seem daunting, but educators have found they enjoyed the respite from standard classroom practice while developing and implementing an educational game. It is well worth the effort.

Discussion Questions

1. What aspect of your teaching content lends itself most readily to adaptation into a frame game?
2. Given your teaching environment/context, what are the pros and cons of developing a game within your course?
3. What are your thoughts on use of student-developed games related to class content as part of your assessment of their learning?

TEACHING EXAMPLE

Inspired by Warburton and Madge's report of their class activity, an occupational therapy educator modified the game "Snakes and Ladders" to use as an active review in a research methods class. Students played the board game in small groups and answered questions about appropriate/inappropriate procedures in research to climb the ladders and attempt to avoid sliding down the snakes. The game was well received by the students, and the debriefing helped clarify concepts from the class and textbook. (A. Mitchell, personal communication, October 27, 2018; Search web for Snakes and Ladders template).

The format of *Jeopardy!* is often used for review of class material. One example is of pre-exam reviews in a mental health class for occupational therapy students with categories covering such areas as theories, *Diagnostic and Statistical Manual of Mental Disorders,* defense mechanisms, leadership techniques, and pharmaceuticals. The class was divided into three teams. The regular jeopardy and double jeopardy were employed, although final jeopardy was not. Each team had a person designated as the beeper, and the beepers could collaborate within the team to come up with the question that matched the answer on the overhead projector. Most of the class engaged in the spirit of the game. During the process there was time for discussion and clarification of the topic areas. There were errors made on the exam itself, despite the review, so the game did not lead to the degree of achievement expected. Additionally, it was not formally evaluated or compared with other methods. The participation and apparent enjoyment of that review class were clear though. (For an example using *Jeopardy!* in nursing education see Boctor, 2013). A modification of *Jeopardy!* for large groups is to use a multiple-choice format for the potential question and have everyone (or the representative of a small team) write their name on a small piece of paper and drop it into a letter-identified bucket. The winner of the round is selected from the bucket corresponding with the correct answer. That person gets a "prize" and chooses the next category.

An example of a simulation game used in a class on life span development employed the use of percentage dice rolls that each pair of students used to create families and newborns who would function throughout the semester to demonstrate typical human development from birth through adolescence. Each newborn had characteristics (e.g., motor skill, cognitive level, appearance, longevity, social environment, financial environment) that would be based on a limited number of dice rolls. The higher the dice roll, the better the performance or status of the attribute to which it was assigned. The students' first objective was to determine which combination of attributes would lead to the best life outcomes for their children. Was it more important to be very smart or to be very attractive? Could you be successful in life with poor motor skills? After these decisions, there were journaling assignments regarding the development of the children and lots of negotiation between the partners regarding a series of developmental issues, culminating in special dice rolls in adolescence that determined whether the adolescent engaged in smoking and/or sexual activity, was involved in violence, and so on. Student feedback on this experiential assignment was mostly positive, although some did report that it was quite time-consuming. The expected degree of learning regarding human development was demonstrated in the journals. However, the greater learning experience was attitudinal change based on the discussions between partners of differing backgrounds and how they managed to cope with some of the unexpected events of these simulated lives.

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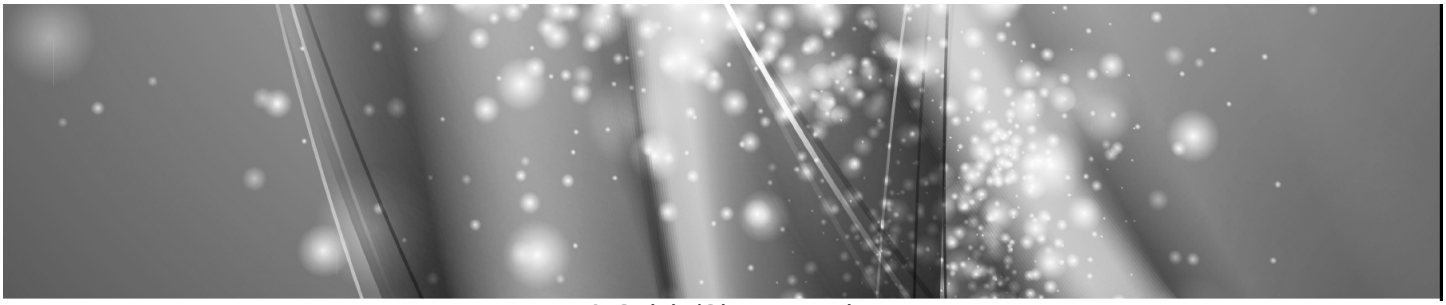
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SECTION IV

Teaching in Experiential Practice Settings

The learner-centered strategies in this section are intended to encourage innovative approaches to the development of professional competencies such as critical thinking, clinical reasoning, safety, interprofessional collaboration, and communication in healthcare settings. Learning is most effective when students take an active role by exploring alternatives to previously held assumptions and framing questions through the debriefing process to create new context. When learners' thought processes are challenged in structured and supportive practice settings, they realize that they can safely and successfully approach and solve clinical problems. As the facilitator in a learner-centered environment, the faculty member or mentor can individualize and adapt situations for the level of challenge needed to promote deep learning outcomes.

The traditional apprentice-style clinical experiences have long been the mainstay of health professions education, providing an authentic complex environment that cannot be completely replicated in a lab setting. However, due to the challenges of finding meaningful clinical practice placements and the frequent limits of student observational roles in clinical settings, faculty are depending more on the skills laboratory. The environments of the skills laboratory and the simulation center provide a safe and controlled setting for students to practice with guided feedback and develop increasingly complex skills. Furthermore, learning experiences within the skills lab make use of task trainers, haptic devices, virtual reality, hospital equipment, patient simulators, and video-extended learning opportunities that are not always available in patient care settings. The chapters on clinical skills laboratories, interprofessional education, high-fidelity patient simulation, and mentored practice centers provide foundational information for incorporating experiential learning strategies in program curricula.



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CHAPTER 15

The Clinical Skills Laboratory

M. Margaret Calacci

A well-designed clinical skills laboratory (CSL) with qualified staff can provide experiences that energize and motivate students, facilitating the students' transitions from tentative skills practice to later holistic patient care. Faculty can employ multiple modes of teaching in the CSL while providing a safe environment for students to integrate new knowledge and skills. With growing limitations on clinical placements of healthcare students—due to increasing enrollments, complex contracts, high patient acuity, and faculty shortages—the clinical lab offers a realistic environment to standardize skills practice, reinforce clinical reasoning, and evaluate learning outcomes. As technology increases in complexity, the learning environment of the skills lab can provide realistic practice situations equal to, and sometimes better than, those in live clinical environments (Hayden, Smiley, Alexander, Kardong-Edgren, & Jefferies, 2014).

Definition and Purpose

Integration of knowledge, attitudes, and skills is an important component of the educational curriculum for healthcare professionals. Nurses must be able to demonstrate critical thinking as they assess patients' individual needs for skillful intervention. Additionally, nurses use clinical reasoning to safely administer medications, intravenous therapy, and other interventions in healthcare settings. These and other fundamental patient care skills are learned and practiced in the CSL before implementing them in the care of live patients.

The CSL is well suited for the development of both skills and clinical reasoning abilities in students representing all levels of practice, from beginning prelicensure students to those in graduate-level advanced practice courses. Aldridge (2017) reports student perceptions related to learner success in psychomotor skill acquisition that include the importance of peers, realistic practice on humans, influence of faculty, environment, anticipation of patient needs, and managing anxiety. Repetitive deliberate practice with immediate feedback from faculty has been shown to improve learning outcomes (Oermann, Muckler, & Morgan, 2016), but requires thoughtful planning to schedule and implement. Program administrators and faculty should consider these factors in deciding how to integrate the use of the CSL with other learning experiences across the curriculum.

The roles and responsibilities of the educator in a clinical lab setting have changed along with advances in learning technologies. Healthcare programs suggest the following names for skills labs based on their services: clinical skills laboratory, clinical resource center, learning resource center, clinical competencies learning laboratory, or simply, nursing laboratory or health professions laboratory. The CSL offers a continuum of services depending on the school's interests, specific curriculum needs, and resources. Most facilities offer assessment labs, direct care labs, static mannequins, task trainers, video libraries, and online resources. Some CSLs are combined with high-fidelity simulation suites, clinic spaces, interprofessional spaces, and/or telehealth capabilities.

Teaching strategies used in the CSL should promote progression of both physical skills and clinical reasoning. Through the design of dynamic patient scenarios for the clinical lab setting, a faculty member may be able to observe the student's decision-making and prioritization skills. This type of contextual evaluation, whether formative or summative in nature, is effective for supporting individualized student progress and goals. The purpose of this chapter is to explore how instructional design, innovative teaching strategies, sustainable operations, and flexibility of the CSL staff can effectively support educational program outcomes for a wide range of health-related disciplines.

Theoretical Rationale

Adult learning theory has shaped the way that effective educators present information to students in higher education. With life experiences to color the acquisition of new knowledge and skills, adults thrive in a learning environment that is open to creativity, respectful of prior knowledge, and relevant to immediate learning goals. Adult learners desire to make individual choices and decisions about how they learn. Therefore, the CSL can accommodate the unique needs of the adult learner in an active learning setting relevant to direct patient care. It is common in healthcare education that students complete preparation such as video presentations, lectures, or learning modules prior to a session in the skills lab. Adult learners are motivated to accomplish course objectives through exploration in the skills lab when they see a direct connection to the use of those competencies (Halalau, Falatko, & Mi, 2016).

A reflective perspective established by CSL faculty and staff encourages learners to make a 360-degree assessment of their actions incorporating self, peer, and faculty perspectives. The skill of reflection on learning can assist both faculty and learners in the measurement of cognitive, psychomotor, and affective domains. When learners use reflection, they can change their frames of reference, improve proficiency, and develop self-confidence as they practice psychomotor skills without excessive fear of failure (Pai, 2016). Students can employ a deliberate practice of learned skills for a simple task or in the context of a larger experience with timely feedback from peers and faculty.

Benner's theory of skill acquisition plays an important part in the nursing education curriculum (Benner, 2001). Benner proposed a model for the nursing profession based on the Dreyfus model, explaining that nurses function at various levels of skill, from novice to expert. According to Benner (2001), students may progress from novice to advanced beginner, and then to the competent, proficient, and expert levels of nursing ability over the course of a career. The novice level is characterized by a lack of experience of the situations in which the person is involved and is expected to perform. The beginning nursing student usually functions at the novice level with behavior that is rule-governed, limited, and inflexible. Faculty members impart rules to guide the novice's safe performance until the information begins to make sense to their students. Deliberate practice of new behaviors allows the students to gain confidence in their abilities despite little understanding of the contextual meanings of recently learned nursing concepts. Thus, the skills lab plays an important role in the learning process of new students who have limited contextual understanding. As the student progresses through the curriculum to graduation, the activities in the skills lab can be changed to meet the expectations for more advanced learning specified in the course and program objectives.

When learning in the skills lab, the student must progress beyond the "how" of a

procedure to the more complex level of thinking to ask “why.” Evidence-based practice is a systematic approach to problem solving, using internal or external evidence in association with knowledge and preferences, which can be also used in the CSL or applied to patient care delivery (Melnyk & Finout-Overholt, 2014). For example, germ theory dictates the procedure of successful hand washing, a skill that every student must master to prevent infection. Teaching skills that are based on evidence prepares students with state-of-the-art information for the safe implementation of skills with positive patient outcomes. Inviting students to participate in evidence-based processes is an opportunity for them to discover best practices regarding competencies and content reviewed in the skills lab. For example, students can be assigned to seek reputable best-practice standards for a particular topic, such as blood pressure measurement or safe medication administration. The elements of procedures and relevance of skills change as knowledge and technology grow. The CSL faculty and staff must reflect and promote the most current best practice information when educating students, but that is not enough. Future health professionals must know how to update their own practices throughout their careers as new evidence becomes available.

Selecting Teaching Strategies

The skills laboratory can be used effectively for learning experiences throughout the curriculum. Students are encouraged to achieve a predefined level of competence as skills move from simple and familiar (such as bathing) to complex and specific (such as suctioning). Educators should identify the skills appropriate to the program and student level that can best be learned through practice in the lab. The skills lab can provide healthcare students with a rich experience that supports diverse learning preferences. Through the use of simulators, software programs, diagrams, charts, pictures, video demonstrations, deliberate practice, discussion, or even music, the CSL can provide context for unlimited opportunities of knowledge acquisition.

The faculty in the CSL can individualize instruction based on each student's abilities and learning preferences. Whether a generation Z, millennial, generation X, or baby boomer, each student approaches the learning environment with different characteristics and learning needs (Billings & Halstead, 2016). Generational differences among students can be addressed using the variety of teaching strategies possible in the skills lab.

Effective learning in the lab depends on the faculty's use of varied and innovative, but well-organized, approaches. For example, the millennial student often prefers to work with a team and be socially involved. As the student learns new skills in the lab, questions arise and what-ifs are posed to enhance the learning experience. According to Ford (2015), less experienced learners were more comfortable seeking a peer mentor instead of a faculty member. The peer mentors' support helped to comfort and ease the beginning nursing students' anxiety regarding learning a new skill. Additionally, the peer mentor benefited by developing leadership skills, self-confidence, and a sense of competence (Ford, 2015).

Skills lab experiences can facilitate clinical reasoning scenarios. The CSL environment typically lends itself to psychomotor skills, but other cognitive and affective domain skills can be developed there as well. The learning lab can be used to facilitate the development of caring actions that are key to the practice of the art of nursing. By observing role modelling of caring behaviors by faculty with lab mannequins, students can gain an appreciation of the elements of a therapeutic relationship and begin to practice demonstrating empathetic interactions.

Students learn initial therapeutic communication and interpersonal skills through guided interactions with peers and with mannequins. For example, students can approach a mannequin to practice greeting the patient, correctly confirming two patient identifiers, introducing themselves, and explaining procedures as in a real patient encounter. A personal approach to the mannequin helps students gain confidence and become more comfortable with patient exchanges in the clinical environment. In addition, faculty-developed case studies used in the lab can be structured to include a communication component, such as contacting the provider

to clarify an order or interacting with a distressed family member.

Learning situations can be enhanced in a CSL environment of collaboration and inquiry. Questions about new procedures or concepts can be answered and discussed promptly without the constraints of a fast-paced patient care area. Students can feel confident about trying new skills in a low-risk situation without fear of harming patients. Mistakes in the lab are excellent topics of reflection for learning without serious consequences.

Faculty may find value in using the skills lab to provide academic assistance when a student has difficulty integrating knowledge regarding a psychomotor skill, for remediation, or in some cases a makeup day for a missed clinical experience. Through one-on-one interaction, the student can practice and receive immediate feedback to gain knowledge and confidence. According to DeBourgh and Prion (2017), students can practice and test by video recording and submitting their videos for evaluation and feedback. The use of video analysis in a simulated environment was found to be an effective evaluation tool. The most common positive theme that students expressed was learning from their mistakes by watching their performances on video. Subjects indicated that the visual feedback from viewing their actual performances complemented the verbal critique offered by the faculty member (DeBourgh & Prion, 2017). If the skills laboratory is used for summative performance evaluation of student abilities, the results can be recorded as a component of a course grade.

Conditions for Learning and Resources

With often-fierce competition among educational programs for optimal student assignments in hospitals and community agencies, the skills lab takes on increased importance for all clinical courses in the curriculum. Skills that were once practiced briefly in the lab then refined when performed on live clients may no longer be feasible to practice in the clinical area due to patient unavailability or high acuity level. Practice in the skills lab may be the only opportunity for learning skills that require additional time, staffing, and supplies.

Skills taught using low-fidelity simulators such as task trainers and static mannequins can also be incorporated later in scenarios with high-fidelity human patient simulation. These realistic scenarios offer students opportunities to interact with human patient simulators presenting specific problems, where the skills learned are carried out as interventions in context, rather than in isolation. Thus, scenarios based on learning objectives for each course throughout the curriculum, and embedded with increasingly complex skills, become an important avenue for assisting the student to progress to higher levels of motor skill ability and clinical reasoning. As a student's professional knowledge increases in complexity with each course, clinical reasoning proficiency can also be refined through practice in the skills lab. Skills performed within scenarios also allow the adult learner to apply knowledge and practice psychomotor coordination.

According to Gonzol and Newby (2013), incorporating clinical reasoning is important when students are practicing psychomotor skills. They suggest that students must understand the scientific rationale or purpose of performing each step of a procedure or skill. For example, a student should know why air is injected into a vial before a medication is drawn out with a needle and syringe. This knowledge contributes to the student's ability to think through clinical challenges when faced with diverse variables and complex situations. The authors used Webber's identify, relate, understand, explain, predict, influence, control (IRUEPIC) reasoning model, which offers steps that build progressively to understand the reasoning behind actions. Using the model resulted in a statistically significant difference in student outcomes when compared to a nursing process-based skills checklist. The reasoning model helped the students to be aware of and react to more contextual patient care elements, including speaking to the patient about the procedure and possible complications.

The CSL environment includes the sights and sounds of a busy clinical area. Labs should include the equipment, technology, and resources that are found in the clinical environment. Rooms may need to be designed and equipped for specialty areas such as obstetrics, emergency care, acute care, home care, pediatrics, surgery, intensive care, and ancillary units. The CSL provides not only clinical equipment, such as intravenous pumps, but also technology devices and access to

the Internet. Through the use of available computers or laptops in the lab, students can engage in self-directed learning during lab activities by finding answers to questions or searching for information about skills independently. Students should have access to best-practice guidelines and evidence-based resources to assist them with problem solving and clinical reasoning as they work through scenarios. Students can explore their understanding of the role informatics plays in the healthcare arena as they learn to work with databases and documentation software. As the acute care environment changes and innovations such as telehealth become commonplace, skills labs may require design elements that provide multiple-screen workstations connected to multiple simulators.

Students in some programs have kits of equipment and supplies to continue practicing skills independently during open lab or at home. These kits include such things as mock wounds for dressing changes, intravenous supplies, mock medication vials, and procedural kits.

Using the Method

Teaching in the skills lab combines the best of traditional methods of instruction with technological advances. Regardless of the complexity of the motor skill, acquisition begins with didactic instruction and practice in the lab on task trainers or low-fidelity mannequins. The phases of psychomotor skill learning include the cognitive, associative, and autonomous phases. In the cognitive phase, students learn indications for using a skill, the task, the equipment, and the performance steps. In the associative phase, they begin to practice with frequent feedback to refine details. The autonomous phase is when students improve timing, consistency, and confidence (Oermann, Muckler, & Morgan, 2016).

In the fast-paced live clinical environment, time is of the essence, and students are often expected to perform beyond the level of novice learner. Yet, clinical reasoning, problem solving, obtaining appropriate supplies, manipulating equipment, looking up resources, performing procedures safely, and communicating verbally and in writing are all activities that require considerable amounts of practice by the novice learner. Students can move beyond the novice level with the use of credible scenarios and simulated patients in the realistic, transferable environment of the skills lab. Skills can be embedded within a scenario that presents the appropriate complexity of care based on the course objectives. The importance of the skill takes on new meaning as it becomes a part of care for a patient with specific needs and responses.

Even when only one student performs a skill at a time, other students can actively participate in the skill through debriefing or providing support. Communication and professionalism are fostered with other team members. Group discussions with the faculty as facilitators can assist the students in applying theory, correcting mistakes, answering questions, identifying learning needs, and making connections to the real world.

Skills labs may include evaluations of specific skills as outcome measurements at the end of the rotation or semester. Students are often evaluated while performing a specific skill or skills while the faculty observe and record the performance. Return demonstration of skill mastery is an effective method to determine the safety of students' transitions to patient care in the clinical setting.

One type of summative evaluation is objective structured clinical examination (OSCE), a practical test used to determine proficiency in one or more skills. This evaluation strategy has been used in the healthcare field to assess or evaluate undergraduate, graduate, and postgraduate competence. OSCE can be used to evaluate student performances at multiple stations using standardized patients.

Patient safety is the overriding criterion when documenting student abilities. For example, a student may proceed through a series of skills stations to perform a particular skill, such as bandaging or interviewing, while a faculty member observes,

guided by a rubric of required actions. If students perform well, the faculty can validate the practices. If students perform poorly, remedial action can be taken to improve skills before patients are at risk. For example, if a student in a lab checkoff draws up 10 mL of a medication instead of the required 3 mL dose, the faculty can reeducate the student immediately, validate eventual mastery, and avert a potential for patient injury in subsequent clinical encounters.

Skills can be evaluated within a short scenario that provides context. Students should be aware of the criteria and expected behaviors, having previously practiced all the skills to be evaluated. It is not always possible to have students perform as the sole provider in a scenario, so there are ways to have multiple students actively involved. Three to five students can care for a simulated patient and perform various skills as the interventions become necessary in the scenario. At the beginning of the scenario, students can draw from a hat for the skills they are to perform during the scenario. As the scenario progresses, students care for the patient together, except when a specific intervention skill is needed. Peers then become observers, as the student assigned that skill performs according to the criteria outlined and is evaluated by the instructor. Peer observers mentally rehearse and evaluate the skills as they are being performed. Once the skill has been completed, the scenario resumes until another intervention is needed. The process is repeated throughout the scenario until all students have demonstrated their selected skills. Following the scenario, the instructor can give verbal and/or written feedback to the students individually or as a group. Students may also give their peers feedback about their performance. This same strategy can be utilized with standardized patient actors as opposed to static mannequins when live communication is important in evaluating the competency.

Skills must be practiced sufficiently to support retention and transfer to the clinical area. Individual skill competency across healthcare professions can deteriorate in as quickly as two to four months (Aqel & Ahmad, 2014). Course faculty can schedule the lab space for skill refreshers/reintroductions. Having a daylong skills review session before a semester commences is an effective way to refresh, practice, and critique skills before learning new skills or beginning patient care delivery in new settings. These intensive skill sessions promote the retention and safe performance of learned skills and also help develop student confidence.

Potential Challenges

One of the greatest challenges in the development of the modern skills laboratory is sustainability. A strategic planning process aligns with curricular goals, directs expenditures to the highest priorities, and increases the efficiency of operations. It also reminds administrators of the critical importance of sustained funding sources such as budget line items and course fees to support the integral role of the skills lab in students' education. Many labs are set up with initial funding donations or grant support. Hence, it takes fiscal discipline to ensure continued operations.

A large portion of the budget likely will go to staffing. Similar to a healthcare organization, CSL administrators must look for the right mix of personnel to meet the program's needs. Staffing mix may include staff positions for lab coordinators and technologists while maximizing the specialized education and skills of faculty. Smaller programs that do not have CSL staff positions may assign faculty to manage and staff the lab as a part of their workload.

Additional cost considerations include provisions for technology, capital equipment, supplies, and physical space. So that students can practice with equipment used in professional sites, similar equipment or trainer versions must be obtained or purchased from healthcare vendors. Authentic equipment pieces used by clinical agencies may be very expensive. Capital equipment may include hospital beds, gurneys and cribs, smart intravenous administration pumps, tube feeding pumps, and task trainers. In addition to the equipment, disposable supplies include items such as intravenous catheters, indwelling catheter kits, central line dressing kits, needles, syringes with built-in safety devices, and demonstration dose medication. Supplies change frequently, requiring constant updating in the laboratory to provide students with tools similar to those that they will use in their clinical experiences.

The International Nursing Association for Clinical Simulation and Learning (INACSL, 2016) has identified standards for setting up a well-administered skills lab within a simulation center. Design features of a lab should include sound and light control as well as attention to workflow. Skills labs have typically been large rooms with multiple beds and static mannequins. Large numbers of students often practice the same skill at the same time. Although this type of space and instruction present a good beginning, additional specially equipped rooms are needed for implementing simulations.

Often, a core group of faculty members use the services of the skills lab on a routine basis, but all instructors should be informed about the applicability of skills lab services to augment the delivery of the curriculum content. Faculty may need support and targeted development to implement experiential pedagogy that is learner-centered. Learning new strategies for teaching and managing the equipment and simulators requires additional faculty effort. Writing evidence-based scenarios to

support skills development is a time-intensive faculty activity, unless commercial versions are purchased. Implementation of evidence-based case scenarios requires additional dedicated faculty participation.

Every skills laboratory must be a safe environment for faculty, students, and staff. Skills labs are required to follow strict procedures to protect personnel and students in the lab from injury or spills. Needles, sutures, and performance of certain procedures pose daily threats. Adherence to federal and local government regulations is costly but necessary to maintain a safe and effective skills lab.

Students often want to remember situations or procedures learned in the lab by taking a photo of equipment or videotaping a procedure performed by an instructor or other peer. Faculty members must emphasize compliance with Health Insurance Portability and Accountability Act (HIPAA) as well as the Family Educational Rights and Privacy Act (FERPA). Faculty should consider the school's guidelines concerning the use of images taken while at the campus, and no images of students should be generated without signed photo consents on file. Concerns regarding students taking photos and/or videos in the CSL that may be posted on the Internet or social media sites could provide a useful discussion topic with students regarding the implications of social media in practice settings (NCSBN, 2018).

Communication with faculty and students about the range and limits of skills lab services is a critical element of an effectively functioning lab. This challenge is often addressed through the use of web-based learning management resources. The skills lab can offer a website for students and faculty where policies and procedures, calendar events, and contact information for lab personnel are posted. A schedule of open lab times and remedial sessions should be easily accessible for students who need those services.

Conclusion

The CSL provides a robust learner-centered atmosphere that encourages faculty and learners to engage in active exploration for mastery of new knowledge and development of skill proficiency. In the safe environment of the skills lab, students explore, make mistakes, question ideas, practice psychomotor skills, and expand knowledge to new levels. Program success is dependent on both educational and fiscal planning. Strategic plans should address learner needs and program outcomes while securing appropriate funding. Educational outcomes can be assured through the use of diverse experiential strategies. Students in the lab can learn through experimentation that would be impossible and dangerous in direct patient care situations. The skills lab is an excellent venue to assess additional learning needs, provide practice or remediation, and perform summative evaluation.

TEACHING EXAMPLE: COMPREHENSIVE NURSING SKILLS EXPERIENCES

Administration of medications such as insulin and metoprolol can be used as exemplars for student practice. Sliding-scale insulin orders could be written in an educational EHR where students are assigned various blood glucose results so that they have to determine how much insulin to draw up. In the lab, students practice drawing up insulin, explaining the process to a patient, selecting an appropriate site, administering the medication on a task trainer, safely discarding the syringe, and documenting the interaction in the lab's EHR. They can also practice giving oral medications such as metoprolol correctly, which includes specific pre-assessment such as auscultating the apical pulse and assessing blood pressure. Not only must learners perform the skill of giving the medication correctly, they also need to recognize circumstances under which the medication should be withheld, and recognize when the healthcare provider should be notified. Once students are confident in the fundamental skill of administering oral medication and injections, they can be presented with the EHR of a patient with selected clinical problems and practice validating, preparing, and administering medications for the correct patient. Some lab EHRs allow for scanning bar-coded medications and patient identification bands similar to those in healthcare agencies. Medications are noted in the medication administration record (MAR) including insulin sliding scale, oral medication, and PRN medication orders. This complex situation cultivates clinical reasoning and problem solving to meet patient care requirements. As the students progress across the curriculum, the faculty members offer less prompting and more validation of the clinical decisions.

Discussion Questions

1. Research supports the theory that all students have the ability and desire to learn. Choose one psychomotor skill that is taught in a skills laboratory (such as nasogastric tube or intravenous catheter insertion) and develop an experiential teaching plan to help students with diverse learning preferences be successful.
2. As clinical placement sites decrease in availability, what role can the skills laboratory play in facilitating a student's transition to a competent health professional?
3. What are the potential strengths and limitations of using the skills laboratory for an increased percentage of clinical learning time?

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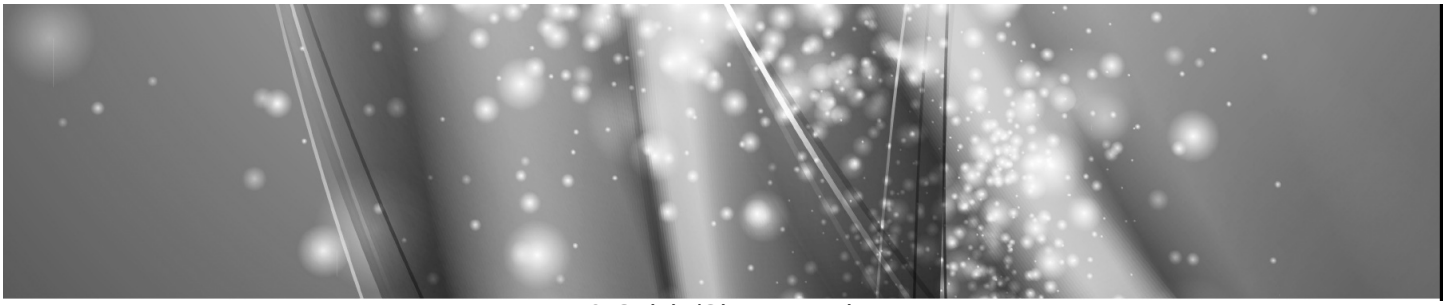
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CHAPTER 16

Interprofessional Education Strategies

Jenn Salfi

Introduction

The delivery of safe and quality care in today's complex and ever-changing healthcare system relies on effective interprofessional communication and team functioning. Role clarity among team members, as well as a mutual and ongoing focus on person-centered care, have been declared essential in collaborative relationships. Interprofessional education (IPE) aims to develop the competencies of role clarity, communication, team functioning, and person-centered care, which serve as the foundation for a collaborative workforce that is better prepared to respond to the challenges and complexities of the current healthcare environment (World Health Organization, 2010).

Interprofessional Education

IPE occurs when students of “two or more professions learn with, from, and about each other to improve collaboration and the quality of care” (Centre for the Advancement of Interprofessional Education [CAIPE], 2002, para. 1). CAIPE (2018) uses the term *interprofessional education* to include learning in both academic and clinical settings before and after qualification, certification, or licensure. Some of the benefits of exposing prelicensure students to IPE are that it helps to cultivate mutual trust and respect, confronts misconceptions and stereotypes, and dispels prejudice and rivalry between professional groups (CAIPE, 2018).

Effective Interprofessional Education

A few key points should be upheld when designing and implementing activities and opportunities for IPE. Effective IPE (1) reinforces and provides the opportunity for individuals to develop and refine essential team-based skills; (2) provides individuals with the opportunity to learn about their own scope of practice, while learning the skills, languages, and perspectives of others’ professional roles; and (3) is grounded in mutual respect, honoring the distinctive experiences and expertise that all participants bring to the healthcare team from their respective backgrounds (CAIPE, 2018). Embedded within these principles of effective IPE are several competencies (knowledge, skills, and behaviors) that are required for interprofessional collaborative practice. The number and specificity of interprofessional competencies required may vary across academic institutions, but overall, they can be summarized into four core areas:

1. Knowledge of, and the ability to clearly articulate your professional role and responsibilities to others;
2. Knowledge of the roles and responsibilities of other health professionals, and knowledge of when to refer and/or collaborate with others, to provide optimal person-centered care;
3. Possession of the skills required for collaboration, and the ability to collaborate with others to establish common goals (i.e., demonstrates effective communication, including skills in effective listening, shared decision making, giving/receiving feedback, and conflict management); and
4. Contribution to team function by consistently exhibiting the following behaviors: upholding values and ethics that are person-centered and reflect a shared commitment to delivering safer, more efficient, and more effective systems of care; respecting others’ opinions; demonstrating flexibility and open-mindedness; and demonstrating the ability to trust others within the team (Canadian Interprofessional Health Collaborative [CIHC], 2010;

Interprofessional Education Collaborative of the United States [IPEC Expert Panel], 2016).

These competency domains are embedded into successive levels of IPE such as exposure, immersion, and mastery levels (Charles, Bainbridge, & Gilbert, 2010).

Exposure Level

Exposure-level IPE strategies are primarily knowledge based, with a strong emphasis on the first two competencies of role clarity. These strategies are typically of short-term duration and enhance awareness of the scopes of practice of all health and social care professions within a team. Some examples of exposure-level IPE strategies might include interviewing and shadowing other professionals, as well as observing multidisciplinary panel discussions.

Immersion Level

Immersion-level IPE strategies are typically of longer duration than exposure level strategies and require higher levels of interaction between professional groups. All four competency areas may be addressed through these strategies. Individuals learn to communicate and collaborate with other health professionals, share in decision making, and solve problems together. Examples of immersion-level IPE strategies are the communication skills labs and gross anatomy dissection courses described in greater detail later in this chapter.

Mastery Level

Mastery-level IPE strategies are the most complex and integrative group of activities. At the mastery level, individuals integrate interprofessional knowledge and skills in a team environment. Typically, these IPE strategies are of long-term duration, and there is an ongoing opportunity to build relationships and be actively engaged in a team. Although mastery-level strategies are primarily clinical practice experiences, some extended courses or student projects may also support mastery-level activities.

Theoretical Foundation

IPE introduces a pedagogy with its own classification that aims to recontextualize traditional and distinct bodies of professional knowledge into the knowledge of collaborative practice. Most prelicensure education is uni-professional, in which students learn together as a single-discipline group and do not learn with or alongside other professional groups. IPE provides students the opportunity to learn with other professional groups, in turn, sensitizing students to the roles of other health and social care professionals and exposing them to the key components of interprofessional collaborative practice.

Social psychology theories such as contact theory (Carpenter & Hewstone, 1996) have been used in the interprofessional literature. Originally developed by Allport (1954), contact theory proposes that the most effective way to reduce tension between groups is to bring them together. Allport (1954) believed that simply placing people together was not enough to effect positive change, so he proposed the following three conditions: (1) equality of status between groups, (2) groups that work on common goals, and (3) cooperation of the groups during their contact.

This form of teaching can overcome the traditional ways of knowing about how to be a professional practitioner, and it has the potential to result in more effective relations within the healthcare team (Allport, 1954). The most predominant philosophical argument for IPE is that when IPE is offered at the prelicensure level, improvements in interprofessional communication and collaboration will ultimately result in improved delivery of care and health outcomes for patients.

Types of Learners

The introduction of IPE at the undergraduate level (for example, in nursing), remains controversial. One of the arguments against the introduction of IPE at the undergraduate level is that most students at this level have not acquired a sense of their own professional characteristics or sufficient practical experience to be able to experience the full benefits of IPE. Some believe that premature introduction of IPE could have negative repercussions for undergraduate students because it might interfere with the establishment of a distinct professional identity (Michalec, Giordano, Pugh, Arenson, & Speakman, 2017). Terry et al. (2018) proposed that individuals who had already developed a strong sense of self and empathy for others might progress to altruism and self-actualization through their interprofessional education experiences. Currently, there are no studies demonstrating that early exposure to IPE hinders the ability to acquire or develop one's professional identity. Conversely, research has revealed advantages associated with integrating IPE within undergraduate and graduate curricula—specifically in innovative and interactive interprofessional environments such as case-based and simulation-based learning, as well as work-based learning, where students experience cultural contexts and workplace demands alongside other professionals (Arenson et al., 2015; Hammick, Freeth, Koppel, Reeves, & Barr, 2007).

Using the Method: Interprofessional Education Strategies

Example 1: Communication Skills Lab

The ability to communicate in a respectful manner facilitates connectedness among members of a team, as it demonstrates an awareness of equal power and fosters shared decision making, responsibility, and authority. One example of an immersion-level IPE strategy is the communication skills lab, which was originally developed in 2004 and designed to address core IPE competencies such as role clarity, team functioning, and communication (Salvatori, Mahoney, & Delottinville, 2006).

It has been suggested that students need to be challenged with complex, realistic healthcare scenarios using cooperative learning as part of the learning process, such as using a paper-based healthcare scenario or, better yet, a scenario involving a simulated patient. The scenario provides the starting point for learning in a communication skills lab. Well-constructed scenarios provide a focus for learning, stimulate interest in the content, and provide a meaningful context within which prior learning is activated and new knowledge is gained. The design and development of a patient care scenario effective for learning purposes involves several key steps. Using a design similar to that of Drummond-Young and Mohide (2001), the framework shown in **FIGURE 16-1** was constructed to illustrate the steps of development used to create a scenario (**BOX 19-1**) for an interprofessional communication skills lab.

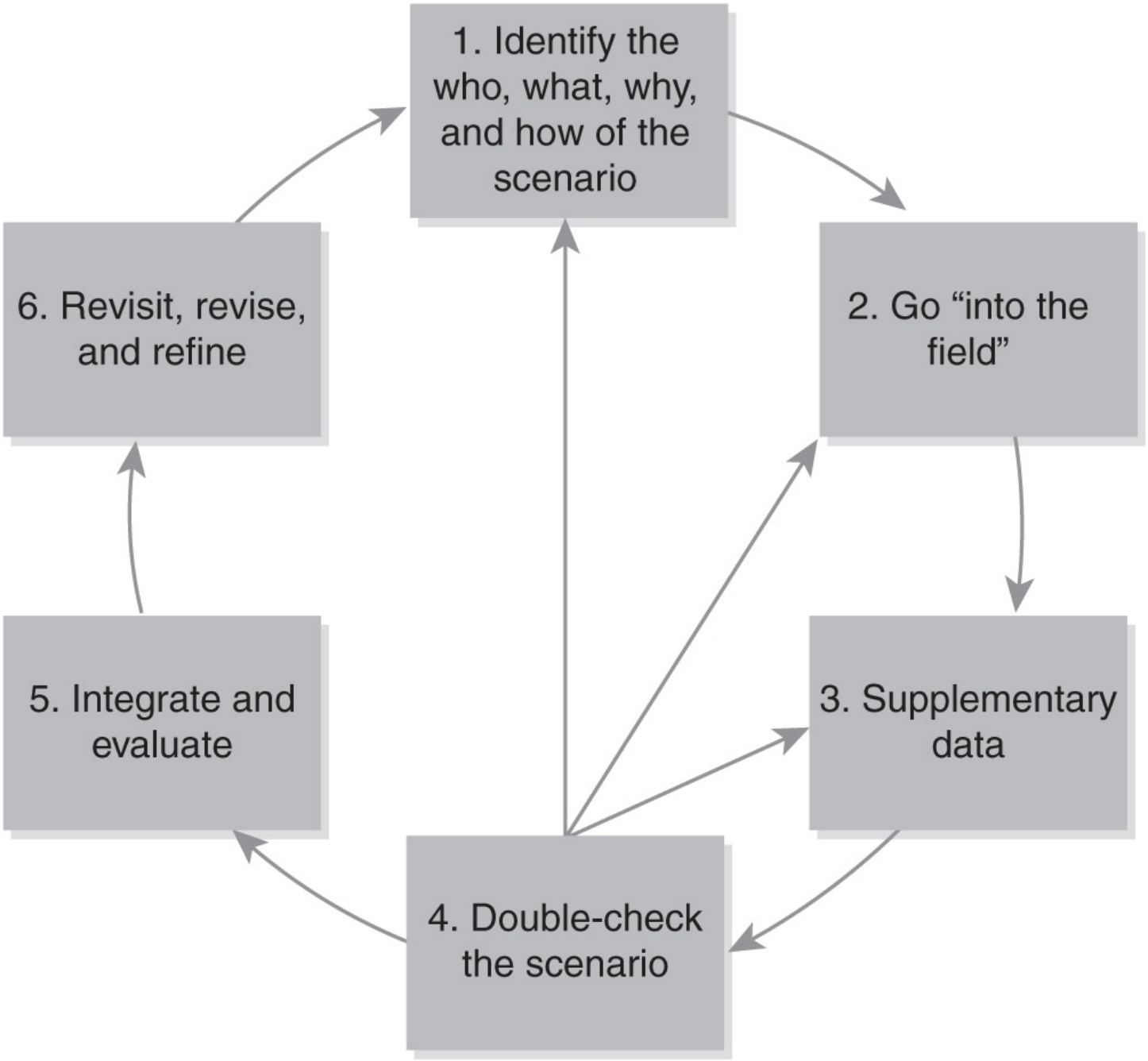


FIGURE 16-1 The cyclical nature of developing a scenario. Multiple steps are involved in creating a scenario for an interprofessional communication skills lab.

Description

BOX 16-1 Example Scenario: The Case Manager’s Home Visit

Mrs. Cooke is a 74-year-old woman who lives with her small dog in a one-bedroom apartment. Because Mrs. Cooke was recently widowed, her community case manager came to reassess her ability to function on her own. Prior to this visit, Mrs. Cooke was receiving 1 hour of personal care per week to assist with her bath. Upon the case manager’s arrival, the door to the apartment was wide open, and Mrs. Cooke was wandering around without stockings, and with her blouse half-open. Bruises were visible on her legs. Her wallet sat open on the kitchen table, next to an empty medication dosette.

Developing the Scenario

1. *Identify the who, what, why, and how of the scenario.*
    a. *Who will be the audience experiencing the scenario? Make sure the scenario is relevant to each professional group.* In creating the scenario referred to in this chapter, the author first had to identify the audience, so that the scenario could be designed to offer each student (profession) opportunities for learning in terms of knowledge, skills, and dispositions. A scenario involving an older adult in the community setting was chosen, both for its complexity and for the number of health and social care professionals who could potentially be involved in the delivery of care.
    b. *What are the main concepts/issues of the scenario?* A scenario about an older adult in a community setting could present several topics for exploration (for example, safety in the home, elder abuse, depression/suicide, caregiver burden, and long-term care placement). Effective communication and efficient collaboration within a team of health and social care professionals are critical in delivering a holistic plan of care that is person-centered.
    c. *Why is this scenario being developed? What is the purpose?* The main purpose of this scenario was to provide an opportunity for communication and collaboration among students from across a variety of professional programs. Effective communication skills (sharing information, listening attentively, respecting others' opinions, demonstrating flexibility, using a common language, providing feedback to others, and responding to feedback from others) are critical in a healthcare team and are the main focus of these interprofessional labs.
    d. *How will it play out? What is your vision for implementation?* The author wanted to develop a scenario that would mimic a common situation in the community setting: caregiver burden and long-term care placement. The vision for the scenario involved a recently widowed woman and a very tired and worried daughter, whose relationship had become strained since the daughter suggested assessment for long-term care placement. To play out the scenario, it was envisioned that there would be two standardized patients—a mother and daughter dyad—so that the students could gain practice assessing and communicating with both individuals, as well as observe the dynamics of the relationship and communication patterns between an older adult and her daughter.
2. *Go into the field.* If possible, go into the field and retrieve/develop a scenario based on a real clinical case(s). To further enhance the authenticity of the scenario, have a professional who has had experience with a similar case provide detail and feedback. Authenticity and customization of an interprofessional event so that it reflects relevant healthcare delivery and

settings are important for a positive experience for the participants (Hammick et al., 2007).

3. *Provide supplementary data.* The scenario should be brief, with enough detail to stimulate critical thinking and encourage hypothesis generation. Previous research indicates that students prefer and appreciate a complex, "real-life" scenario (Salvatori et al., 2006; Thistlethwaite et al., 2012). Create supplementary resource material—for example, lab results or chart data—to offer additional details.

   A community case manager/care coordinator was selected as the lead professional in this case, as case managers are the individuals who primarily assess and coordinate home care services, and potentially initiate the process for long-term care assessment. They also tend to be one of a variety of healthcare professionals (e.g., nurse, physical therapist, occupational therapist, social worker, dietitian, or speech-language pathologist).

   The example scenario was created with enough information to steer the interprofessional group of students toward the author's intended focus for the scenario: an older woman with a decreased ability to function safely at home, and possibly a candidate for long-term care placement. However, the scenario also included a few extra details to stimulate brainstorming and critical thinking. For example, the following topics could be explored from this scenario:

   - What is the cause of her current state?
     - Polypharmacy?
     - Disease?
     - Other sources of delirium: Diabetes? Urinary tract infection?
   - What else could be going on?
     - Depression? Grief and bereavement? Potential for suicide?
     - Was there an intruder?
     - Falls? Other safety concerns?
   - Is she able to stay in her own home with increased home care?

4. *Double-check the scenario.* After the scenario has been created, seek feedback, preferably from other healthcare professionals with similar experiences. Once feedback has been received and adjustments made, recruit and train standardized patients for the scenario. *Standardized patients* are individuals who "are specially trained, by a specific yet not complex method similar to 'method acting' to simulate an actual patient in every detail" (Barrows & Tamblyn, 1980, p. 63). In the example scenario, two standardized patients were trained: an older woman as the mother and another woman as the daughter. In training this dyad, the author simply narrated her vision of the scenario, describing in detail the personalities of each individual, the relationship between the mother and daughter, and the communication (verbal and nonverbal) techniques to be acted out by each individual. Another detail

that was included in the author's vision for the scenario was the appearance of the standardized patient; in this case, the elderly woman was to appear a bit disheveled, indicating difficulty in completing activities of self-care.
Once details and plausibility of the scenario have been checked out and the standardized patients have been trained, test the scenario to observe how it unfolds. Does it unfold as you had envisioned it? Does it meet the objectives of the skills lab and have something to offer each discipline in the group? Does the scenario promote communication, teamwork, and collaboration? Make adjustments and add information to the scenario as necessary.

5. *Integrate and evaluate.* Integrate the scenario into the program and continue to evaluate the content and process of the scenario. Gather feedback on a regular basis from multiple sources, including faculty, students, and standardized patients. Students, faculty, and standardized patients all bring a unique perspective to the scenario, which can elicit valuable comments and suggestions for change.
6. *Revisit, revise, and refine on a regular basis.* Scenarios grow old and outdated, so to remain current in the field of health care and continue to offer exciting new challenges for the students, scenarios must be revisited on a regular basis. Review the scenario and determine whether it should be refined, revised, or re-created.

The composition of a small group in a communication skills lab may vary from week to week (depending on the availability of students), but generally consists of five to eight students, with representation from at least three professional groups (Salvatori et al., 2006). A week prior to class, students are asked to complete some key readings to provide some context for the IPE event. They are also asked to review their scope of professional practice, because this is information that they will be required to share during the lab.

The initial interview with a standardized patient is 20–30 minutes in duration. When the interview is over, the patient leaves the room, and the student team meets to discuss its findings and treatment and/or discharge plan. Once this task has been completed, the patient returns to the room, and a follow-up meeting is conducted to discuss the interprofessional plan of care. The entire session typically runs for approximately 3 hours in length, with a 15- to 20-minute break midway.

Example 2: Gross Anatomy Dissection Course

Interprofessional education can take place anywhere or at any time within a health or social professional curriculum—it should not be limited by location—so long as the previously stated principles of effective interprofessional education are upheld. A dissection course in anatomy presents yet another venue for offering an effective

immersion-level IPE strategy.

Anatomy is typically a content-intensive course. A qualitative study from Sweden exploring the experiences of medical students with their anatomy courses revealed that learners acquire knowledge of anatomy in three ways: through memorizing, by contextualizing, and through experiencing. It was suggested that both contextualization and experiential learning were most effective in helping students retain knowledge of anatomy and physiology (Wilhelmsson et al., 2010).

Contextualization and linkage to clinical problems are commonly achieved through case-based learning experiences. Case-based learning may also serve as a venue for interaction, fostering teamwork, communication skills, professionalism, and respect for one another (Thistlethwaite et al., 2013). Recognizing the potential for learning gross anatomy while developing competencies in interprofessional collaboration, a novel interprofessional case-based gross anatomy dissection course was designed and implemented in a large university in southern Ontario. The 10-week-long course is offered annually to students from a variety of health professional programs, providing them with the opportunity to communicate and collaborate while working through gross anatomy clinical cases and dissections (Fernandes, Palombella, Salfi, & Wainman, 2015).

The weekly 3-hour course is divided into segments: two presentations, a patient care scenario to stimulate discussion in interprofessional teams, and hands-on dissection in the same interprofessional teams. Prior to each class, students use their course guide to review cases and anatomy. To open each session, anatomy relevant to the week's dissection and case study is presented. Next, a student coordinator from one of the represented professions outlines the scope of practice of her or his discipline. Students then complete case studies in their assigned interprofessional teams (six to eight students). This provides the opportunity to discuss the roles of their profession in managing the case, and to learn about the roles of others. The session ends with hands-on dissection in their interprofessional teams (Fernandes, Palombella, Salfi, & Wainman, 2015).

Over the course of 10 weeks, students acquire knowledge of nine body systems of human anatomy, as well as knowledge of other professional roles within a healthcare team. The nature of this immersion-level IPE strategy also affords students the opportunity to develop the skills and positive attitudes required for effective interprofessional team functioning.

Evaluation of IPE Strategies

Example 1: Interprofessional Communication Skills Lab

Interprofessional activities are generally well received by participants, especially when the context for learning reflects the students' current or future practice. In one mixed-method study, students from a variety of health professional programs (*n* =

96) rated their satisfaction with the communication skills labs as high. Students enjoyed the opportunity to interact with colleagues from other professions in an intensive, yet realistic, educational event. The students learned about each other's scopes of practice and became more confident in their communication skills. The skills of the facilitator and preparation for the experience were perceived to promote success (Solomon & Salfi, 2011).

Example 2: Gross Anatomy Dissection Course

To assess what students learned about interprofessional collaboration, teamwork, and anatomy in an interprofessional dissection course, a sequential explanatory mixed-methods study design was conducted, collecting data from class cohorts spanning from 2011 to 2014 (n = 97). Quantitative results revealed that both the "perception of actual cooperation" and "competency and autonomy" subscales within the Interdisciplinary Education Perception Scale (IEPS; McFadyen, Maclaren, & Webster, 2007) demonstrated statistically significant positive change ($P < 0.05$). Similar results were seen within the Readiness for Interprofessional Learning Scale (RIPLS; McFadyen et al., 2005), where the "teamwork and collaboration," "positive professional identity," and "roles and responsibilities" subscales showed statistically significant positive change ($P < 0.05$). Qualitative findings mimicked these results, highlighting key themes of (1) learning about self and others, (2) learning about anatomy, (3) experiencing the benefits of a long-duration IPE initiative (developing pride and faith), and (4) going forward (commitment to future interprofessional practice; Fernandes et al., 2015).

Most studies evaluating IPE strategies show significant improvements in the attitudes and perceptions of healthcare professional students immediately following the IPE experience; however, there is a paucity of research assessing the lasting effects, if any, of IPE courses and the long-term influences of IPE experiences. To assess the long-term effects of this intensive 10-week interprofessional gross anatomy dissection course, a follow-up study was conducted, measuring the interprofessional attitudes and perceptions of past participants of the IPE gross anatomy dissection course. Participants were asked to fill out a follow-up questionnaire consisting of a modified RIPLS (McFadyen et al., 2005), as well as complete a series of open-ended questions. Thirty-four past participants of the IPE gross anatomy dissection course who are currently working in interprofessional settings and who are currently employed in the healthcare field responded to the questionnaire.

Quantitative analysis revealed a significant decrease in teamwork and collaboration and positive professional identity subscales, but a significant improvement in their understanding of roles and responsibilities compared to their results immediately after the IPE course. Qualitative analysis of open-ended

questions revealed several themes such as (1) developing interprofessional competencies, (2) developing relationships, and (3) remembering the strengths of the IPE dissection course (Zheng, Palombella, Salfi, & Wainman, 2017).

This study also discovered that even after several years, graduates greatly appreciated this IPE opportunity, and were still able to recall what they had learned and gained from this unique interprofessional experience. Despite this, however, the study ultimately found that exposure to the clinical environment may have eroded some of the gains made from the IPE course (i.e., positive attitudes toward other professionals and collaborating with others). The overall conclusion of this follow-up study suggested that although IPE initiatives within prelicensure healthcare education are still highly valuable and critical in preparing a collaborative workforce, the need for postgraduate IPE (for new graduates and professionals) might also be essential to maintain the interprofessional competencies and positive attitudes gained in prelicensure IPE experiences (Zheng et al., 2018).

Small-Group, Case-Based Learning Approach

Both the communication skills labs and the gross anatomy dissection courses rely on the formation of small interprofessional groups. Small-group learning allows students to develop a sense of responsibility for their learning progress. Small-group learning in an interprofessional environment further enhances learning as students develop a sense of responsibility for accurately representing the knowledge and skills base of their profession. Furthermore, students in a group environment learn about human interaction, develop interpersonal skills, and may become more aware of their own emotional reactions and moral standing. Learning how to listen and provide and receive evaluative feedback, all of which are essential in a healthcare environment, are also skills that small-group learning helps to cultivate (Neufeld & Barrows, 1974).

The interprofessional nature of the small group experience provides an opportunity to learn about each other’s roles and skill sets, and the students learn to respect the distinctive experiences and expertise that each participant brings from his or her individual professional fields. Working in student teams establishes mutual respect and enhances collaboration, and the equal status of students contributes to a sense of safety, allowing them to take risks that they normally would not be ready to take in clinical practice. Finally, the experiential learning associated with the communication skills lab and the gross anatomy dissection course reinforces the importance of communication and teamwork in providing safe and quality care in the healthcare setting.

Potential Problems

There are many barriers to interprofessional education strategies, despite the many benefits associated with this style of learning. IPE is complex and often challenging to sustain.

Students must be immersed in the theory and science of their own discipline to be respected colleagues in interprofessional situations (Yancey, Cahill, & McDowell, 2018). It can also be very difficult to identify available time for IPE initiatives within prelicensure programs due to rigid curricular timetables and incompatible clinical shifts. Faculty report a lack of time for planning interprofessional strategies and a lack of physical space to hold interprofessional events (Dow & Thibault, 2017).

Another barrier to the delivery of IPE in health science programs includes faculty interest and expertise in IPE. As identified by Hammick and colleagues (2007), a key mechanism for effective IPE involves faculty development. Unfortunately, funding to support the initiation of IPE opportunities for students has diminished, as has the number of faculty interested in IPE. Faculty need to be knowledgeable, competent, and confident if they are to be effective in implementing interprofessional core competencies into the health sciences curricula. Faculty also need to be proficient in applying principles of adult learning, as this has also been cited as essential for well-received IPE (Hammick et al., 2007).

Even though skills and content may be similar across professional programs in health sciences, there still tends to be minimal interaction between the students in each professional program. This lack of attention to IPE could lead to undervaluing or misinterpreting each profession’s contributions, with the potential of impairing communication, collaboration, and teamwork in the clinical environment after graduation. Thus, to address the call for competent healthcare teams that are adequately prepared to respond to the challenges and complexities of the current healthcare environment, IPE still needs to be endorsed and mandated by programs, with full support from senior administration for faculty champions who are committed to exploring a variety of approaches and venues for interprofessional education.

Conclusion

Students in healthcare and social care programs do not acquire interprofessional competencies from sitting side by side in lecture halls, and they do not develop skills in communication and collaboration by simply observing or shadowing a health professional. Both the communication skills lab and the gross anatomy dissection course provide unique interprofessional strategies to communicate and collaborate with students from a variety of prelicensure programs, which has been shown to promote both role understanding and the value of working together as a team. However, as current research has revealed, it may also be valuable to extend IPE to postgraduate and current professional cohorts to maintain interprofessional competencies and positive collaborative attitudes gained during effective IPE experiences at the prelicensure level.

Discussion Questions

1. What interprofessional education strategies could you realistically implement in your clinical and/or academic setting that would allow your students to learn with, from, and about other health professionals? What interprofessional competencies would you be developing?
2. How would you evaluate the previous IPE strategy to determine whether or not the strategy has been effective?
3. Are there obstacles in your setting that might prevent or hinder your ability to initiate, implement, and/or sustain your proposed IPE strategies? What could you do to overcome some of these obstacles?

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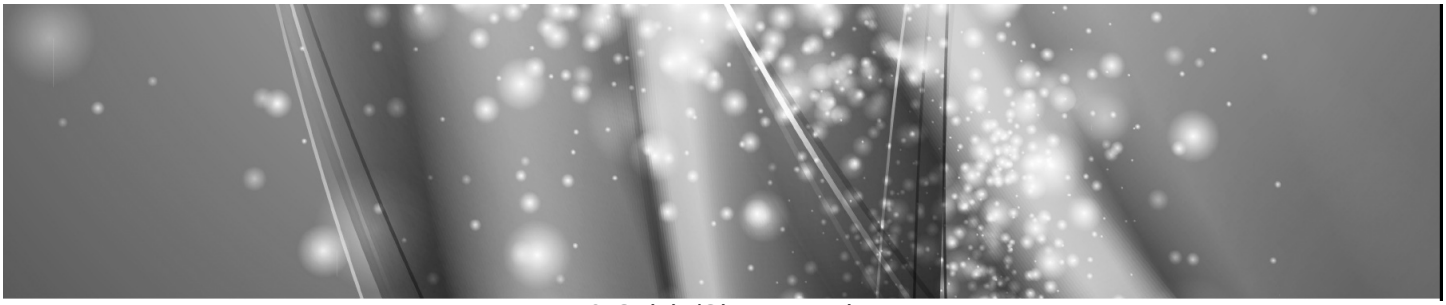
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Recommended Reading

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CHAPTER 17

High-Fidelity Patient Simulation: An Evolving Strategy

Catherine Bailey

Introduction

Human patient simulations (HPS), also known as *high-fidelity patient simulations (HFPS)*, have been integrated into most nursing education programs as a pedagogy during the last 10 years (Turner & Harder, 2018). *Simulation* refers to an educational strategy in which specific sets of conditions are created to resemble realistic situations that may occur in life for the purpose of promoting, improving, or validating a participant's performance (INACSL Standards Committee, 2016a). The term *fidelity* has been used to classify the degree to which a simulated experience approaches reality (INACSL Standards Committee, 2016a). The level of fidelity increases as the realism or authenticity of the circumstances of a simulation-based experience (SBE) increases. That level tends to be supported by the environment, participant factors, and the tools and resources.

The INACSL Standards Committee (2016a) has described the dimensions of fidelity to include conceptual, physical/environmental, and psychological fidelity. Conceptual fidelity ensures that all elements of the scenario relate to each other in a realistic manner. Environmental fidelity is supported by the mannequins, the room, moulage, equipment, and noise or props. While referring to the functional fidelity of equipment, Lopreiato et al. (2016) explained that an SBE with a static ventilator would provide a lesser degree of fidelity when compared to an experience that includes the use of a working ventilator with alarms. Psychological fidelity describes the ways in which the environment evokes the psychological processes that are anticipated in a real-world setting.

Modality refers to the type of simulation used for the SBE (Lopreiato et al., 2016). Examples of the popular modalities for simulations are task trainers, mannequins, standardized patients or simulated patients. A *task trainer* is a model or device that represents a part of the human body, which is useful for supporting manual procedural skills training such as IV insertions or suturing (Lopreiato et al., 2016). *Mannequins* can be life-sized human-like simulators that represent patients, as full or partial body representatives of a patient, or as full or partial body simulators with varying degrees of physiologic function and fidelity. According to Lopreiato et al., mannequins provide useful representations of patients with computer-controlled heart and lung sounds, pulses, voice interactions, and certain movements such as seizures and eye blinking.

A *standardized* or *simulated patient* is a person who is trained to consistently portray a patient in a scripted scenario for the purposes of instruction, practice, or evaluation (Lewis et al., 2017; Lopreiato et al., 2016). Simulated patients include computer-based, virtual reality, and hybrid versions. *Computer-based simulations*, including computer-assisted or virtual realities, provide interactive three-dimensional computer-generated realities that allow learners to experience various visual and auditory stimuli for the purpose of using information to assess, make clinical

decisions, intervene, and observe the results of interventions in action (Lopreiato et al., 2016). *Hybrid simulation* is a term that describes the use of two or more modalities of simulation to enhance the fidelity of a scenario (INACSL Standards Committee, 2016a). For example, a scenario could integrate the environment, physiology, emotions, and dialogue of a real patient encounter into a simulated experience with a mannequin (representing the patient) and an embedded participant, who speaks for the patient or assumes the role of an anxious family member.

Simulation in nursing is recognized as an educational approach that has been grounded in conceptual models, theories of learning, and the use of various technologies that support the fidelity of learning environments (Aebersold, 2018). Modalities such as case studies or role-playing with task trainers that help participants to learn from a clinical situation or practice a skill are examples of a low-fidelity simulation (Lopreiato et al., 2016). By contrast, high-fidelity simulations provide extremely realistic high levels of interactivity for the learner. A high-fidelity simulated experience is not limited to any one modality, but the term could be applied to experiences with humans, mannequins, task trainers, or virtual realities. The emphasis of this chapter is on HFPS with the use of full-scale computerized simulators, otherwise referred to as high-fidelity human simulators.

Definition and Purposes

HFPSs are highly complex full-bodied mannequins that have the ability to mimic human body functions at a high level (Lopreiato et al., 2016). They are computerized with complex, interrelated, multisystem physiologic, and in some cases pharmacologic, models that generate observable responses from the mannequin. When the use of HFPS simulators are integrated throughout the curriculum, they offer students opportunities to practice skills, to develop clinical reasoning, and to become competent in caring for patients and/or their families in a safe environment (Aebersold, 2018).

Human patient simulators were developed in the 1960s, and became popular when anesthesia educators and researchers used simulators to improve education and study clinical performance (Gaba & DeAnda, 1988; Good & Gravenstein, 1989). By the late 1990s, the use of HFPS evolved from the management of anesthesia to include other types of patient-related care within emergency medicine (Fritz, Gray, & Flanagan, 2008), armed forces medicine, pediatrics, surgery, trauma, cardiology, intensive care medicine, dentistry, and military medicine triage (Rosen, 2008). In 2005, computerized infant mannequins were introduced to assist with teaching neonatal resuscitation. Applications of high-fidelity patient simulator use among healthcare providers have included training for procedures and communications, evaluations for individual responses to critical incidents and deteriorating patients, equipment evaluations, task analyses, and team training (Aebersold & Tschannen, 2013; Lupien, 2007; Merchant, 2012). Common educational applications of simulation have included theme-based workshops on ventilation, pharmacology, airway management, conscious sedation, disaster response, ongoing skills development, and the practice of clinical decision making.

The first nurse-specific uses of HFPSs were introduced for nurse anesthetists (Fletcher, 1995). After 2000, the use of HFPSs expanded to include the educational activities of pre-licensure nursing students and licensed nurses returning to practice, and the validation of clinical judgment and competencies of nurses in practice settings (Hoffman & Burns, 2011). Areas of focus have included the development of procedural skills, critical thinking, safer patient and staff environments; competency testing; and novice to expert models, enhanced teamwork, and crisis management skills (Merchant, 2012; Nehring, 2010).

Simulation-Enhanced Interprofessional Education

According to the INACSL Standards Committee (2016a), simulation-enhanced interprofessional education (SIM-IPE) is the overlap of the pedagogy of simulation and interprofessional education (IPE) as a collaborative approach for the development and mastery of interprofessional practice competencies. SIM-IPE is designed for individuals to learn how to effectively collaborate with other professionals in improving health outcomes.

During an integrative review of research on interprofessional simulations in nursing education, reviewers identified 48 studies examining the trends of SIM-IPE published between 2010 and 2016 (Horsley, O'Rourke, Mariani, Doolen, & Pariseault, 2018). Thirty-one (64.58%) of those studies provided the students with high-fidelity SBEs with HFPS, while eight (16.66%) of the studies used a combination of high-fidelity human patient simulators and standardized patients. Each of the selected studies were evaluated using the Simulation Research Evaluation Rubric (SSR) designed to rate the quality of the published article rather than the quality of the study (Horsley et al., 2018). Items of interest included such elements as the background/rationale, literature review, conceptual framework, study design, results, and discussions. The SSR has a 5-point rating scale ranging from 0 to 4. Four represents an excellent score, while 0 represents an unsatisfactory score. For quantitative studies, raw scores range from 0 to 56 and are converted to percentage scores. The overall mean score of these 48 studies was 56%, which was equivalent to a rating of good. The collaborative experiences included disciplines from pharmacology, social work, athletic training, physician assistants, radiography, physiotherapy, paramedics, respiratory therapy, medical residents, dentistry, dietetic, health administration, physical therapy, and speech and hearing therapy. The majority of the reviewed studies reported on the work of only two disciplines during a SIM-IPE experience. Medical students were the most frequently paired discipline with the targeted nursing student population.

Some examples of the conceptual frameworks within the studies included: the NLN Jeffries simulation theory, Kolb's experiential learning theory, theory of self-efficacy and IPE, and practice core competencies and practice theory (Horsley et al., 2018). The most frequently reported outcomes were satisfaction, confidence, readiness, and attitudes toward collaboration and SIM-IPE. Despite the fact that there are increasing numbers of interprofessional simulation research, Horsley et al. concluded that more rigorous research designs, implementations, and strategies of analysis are needed to fill the gaps about the effectiveness of simulation.

One example of a research study that focused on a SIM-IPE project included undergraduate nursing students and graduate-level physical therapy (PT) students

who participated in the care of HFS patients with a diagnosis of coronary artery bypass graft or a thoracotomy in a mock intensive care unit setting (Mai, Pilcher, & Frommelt-Kuhle, 2018). The nursing students completed a brief assessment of the patient and used the situation, background, assessment, recommendations (SBAR) communication technique to report to the PT students. The PT students were expected to recognize and manage the patients' mobility problems and report back to the nursing students with the SBAR technique as well. A retrospective analysis of the qualitative data associated with the students' recorded reflections indicated that the HFS was a valuable tool to assess learning outcomes from an interprofessional perspective.

High-Fidelity Human Patient Simulators

In the United States, HFPSs are most popularly supported by the use of automated human patient simulators manufactured by CAE Healthcare, Laerdal, and Gaumard Scientific. CAE Healthcare (2018) manufactures CAE models of Apollo, an adult patient simulator; iStan, another adult patient simulator; Lucina, a childbirth simulator; Athena, a female patient simulator; HPS, an anesthesia-appropriate simulator; Caesar, a trauma patient simulator; PediaSim, a pediatric patient simulator, and BabySim, an infant simulator. Laerdal (2018) manufactures various models of SimMan, identified as 3G, ALS, Essential, Vascular, Trauma, SimMom, SimBaby, SimJunior, and SimNewB. Gaumard Scientific (2018) manufactures various simulator models of Hal, which include a standard simulator, a trauma simulator, a 1-year-old and a 5-year-old, named Pediatric Hal; a 30-week premature infant, named Premie Hal; a childbirth simulator, named Victoria: and a newborn, named Newborn Tory.

The simulators typically include the following four main components: a lifelike mannequin, a freestanding enclosure that contains many of the simulator's components, a computer to integrate the function of the simulator components, and an interface that allows the user to control the simulation and modify physiologic parameters. Depending on the sophistication of the specific HFPS, features may include a functioning cardiovascular system with synchronized palpable pulses, heart sounds, measurable blood pressures (by palpation or auscultation), electrocardiographic waveforms, and invasive parameters such as arterial, central venous, and pulmonary artery pressures that may be displayed on a physiologic computer monitor (CAE Healthcare, 2018; Gaumard, 2018; Laerdal, 2018). Respiratory system components include self-regulating spontaneous ventilation, measurable exhaled respiratory gases, and breath sounds. Other optional simulator features include bowel sounds; speech; pharmacologic systems capable of responding to administered drugs; a urologic system; blinking and reactive pupils; tongue swelling; bronchial occlusion; jugular vein distention; and the ability to accept defibrillation, use of a transthoracic pacemaker, needle cricothyroidotomy, jet ventilation, needle thoracentesis, chest tube insertion, IV fluid administration, intraosseous infusion capability, and pericardiocentesis. A visit to each of the websites for CAE, Laerdal, and Gaumard Scientific provides a wealth of educational information related to the implementation of high-fidelity simulators.

Examples of some modifiable physiologic parameters include changes in heart rates or sounds, respiratory rates or breath sounds, and the quality of bowel sounds. Most of the simulators have both a portable interface allowing instructors to control simulations from the mannequin's bedside or from a remote location where changes can be made without the participant's knowledge. To initiate a simulation, the user may select a patient profile, such as a healthy adult male or female. If desired, a

clinical scenario, such as a case that progresses to anaphylaxis, can be superimposed on the physiology of the healthy adult profile. Once the scenario has been initiated, the instructor may allow the simulation to run as programmed or make modifications to individualize the learning opportunities and emphasize specific teaching points.

Conditions for Learning

A well-planned HPS can replicate high-risk clinical situations, while providing a safe and reproducible platform for the student to demonstrate clinical competencies under realistic conditions in real time with actual clinical supplies (Hooper, Shaw, & Zamzam, 2015; Aebersold, 2018). Other observable practical advantages of simulation include the ability to allow learner-driven management errors to develop, to allow multiple treatment options to be explored without injury or discomfort to a real patient, and to manipulate time as a factor in managing nursing care (Larew, Lessans, Spunt, Foster, & Covington, 2006).

Educational advantages of simulation include opportunities for learners to improve competence and clinical judgment; to practice communication skills; to gain self-confidence, knowledge, and perceptions of being prepared to practice (Fisher & King, 2013; Kim, Lee, Avila, Ouyang, & Walker, 2015), and to reinforce learning with constructive feedback during debriefing or reflective sessions following the simulation (Fanning & Gaba, 2007). The application of mental health–based simulation techniques has provided opportunities to identify biases, anxieties, and fears as well as knowledge deficiencies among nursing students (Brown, 2015). Because of the ability to create customized learning scenarios, HPSs can be used in a wide variety of situations for all types of students. For example, prior to clinical experiences, simulation has been used to orient students to providing care on an unfamiliar unit.

Meyer, Connors, Hou, and Gajewski (2011) prepared student nurses with a 6-hour curriculum over 4 days of caring for pediatric patients in an HPS setting prior to entering their clinical rotation. During the SBE, they practiced taking vital signs; administering medications; communicating with healthcare providers, the child, and the child’s parents; and documentation. When compared to their peers who did not participate in these simulations, students who participated demonstrated more significant and positive effects on therapeutic skills, documentation scores, and interpersonal communication during their clinical rotations (Meyer et al., 2011).

Used concomitantly with clinical practice, simulation provides students and faculty with the opportunity to replicate real clinical experiences and use the simulator to explore more useful alternative management strategies. Students can create customized patients based on their knowledge of physiology and pathophysiology, and then compare the responses of their simulated patients to patients observed in clinical practices (Register, Graham-Garcia, & Haas, 2003). Although the fidelity of HPSs is not sufficiently developed to replace the practice of caring for human patients, simulation can be used to create learning opportunities that are not ordinarily available in most clinical environments. For example, students can practice high-risk technical procedures such as defibrillation using actual equipment in real time, or provide patient care during cardiopulmonary resuscitation

or anaphylactic reactions on the simulator. In the field of anesthesiology, programs such as Anesthesia Crisis Resource Management (ACRM; Gaba, Howard, Fish, & Smith, 2001) and Team Oriented Medical Simulation have focused on the actions of all members of a healthcare team, with the goal of improving team performance (Baker, Gustafson, Beaubien, Salas, & Barach, 2005).

Following an analysis of the documented effects of HPS in hospital-based education programs, Merchant (2012) concluded that simulation offered nurse educators enhanced learning opportunities with an ability to measure clinical performance during certain aspects of nursing care. Specifically, efforts that focused on teamwork-related competencies and crisis management demonstrated positive clinical outcomes that included error reduction, decreased mortality rates, cost reductions, and increased patient safety in high-risk circumstances. Additionally, the studies which allowed nurses to practice repetitive simulations with checklists appropriate for the care of high-risk patients led to the identification of training needs and improved care among the unit's actual patients (Berger, Kuszajewski, Borghese, & Muckler, 2018; Turkelson & Keiser, 2017). More specifically, Turkelson and Keiser discovered that the use of the repetitive simulation improved adherence to critical safety practices and self-confidence among the nurse participants as they attained the critical care performance markers associated with the changes in the simulator's hemodynamic parameters.

In addition to its uses as an instructional tool, simulation has been recognized for its potential to evaluate student cognitive or behavioral skills from a formative or summative perspective. Formative evaluation provides the facilitator an opportunity to focus on the learners' progress toward goal attainment for the purpose of providing constructive feedback (INACSL Standards Committee, 2016a). Instruments that are useful for formative evaluation capture students' perceptions about their learning and self-confidence, and they provide faculty with insights associated with the pedagogy of simulations (Elfrink Cordi, Leighton, Ryan-Wenger, Doyle, & Ravert, 2012). Summative evaluations offer opportunities to determine competencies (with preset criteria) of a participant engaged in an activity at the end of a learning period and with an assigned grade (INACSL Standards Committee, 2016a).

One of the difficulties associated with integrating HPSs into a program is the cost associated with the initial setup. Costs include the purchase of the simulators and their associated support systems; the maintenance of the simulation lab and all the necessary supplies; insurance costs; and the supporting lab personnel, which could include instructional, administrative, and clerical roles (Fletcher & Wind, 2013). Following the start-up phase of an HPS program, managing the costs of maintaining the program can be equally challenging with a continual need to support faculty and staff training as well as provide the financial support for faculty who conduct research (Doolen et al., 2016).

Theoretical Foundations

The landmark Flexner Report to the Carnegie Foundation in 1910 established the dominant paradigm for healthcare education in the 20th century (Beck, 2004). Key components of the model were for the learner to practice scientific medicine, be engaged in laboratory experimentation, and provide hands-on care at the bedside. The scientific curriculum had historically featured lecture-based instruction during the first 2 years of training, where students were passive recipients of factual scientific knowledge (Papa & Harasym, 1999). Information was imparted by domain experts according to a predetermined timetable. Although the lecture format assured that the important educational material had been disseminated, the learner was at risk of missing the conceptual links necessary for retention of the information. By contrast, the clinical practicum more effectively engaged students with a contextual experience to organize the facts that they had learned.

Achieving a successful balance between academic and clinical education challenged educators, who needed to prepare graduates for healthcare institutions with both broad-based knowledge and technologically current specialty clinical skills (Manuel & Sorenson, 1995). In the past, these expectations created a sense of placing classroom learning, viewed as the foundation of academic priorities, in competition with the need for clinical experiences, a workplace priority. From the perspective of situated cognition, both classroom and clinical experiences are equally necessary, as knowledge is believed to be situated as a product of the activity, context, and culture in which it is used (Brown, Collins, & Duguid, 1989).

Situated Cognition

Situated cognition, sometimes called *situated learning*, is recognized as a learning theory that proposes that learning is influenced by the situation within which it occurs (Onda, 2012). In a high-fidelity simulation environment, situated cognition emphasizes the necessity of higher-order thinking skills over the retrieval of memorized facts. When students face a complex or ill-defined task within the context of a high-fidelity simulation scenario, they have an opportunity to recall information that is relevant to the situation as they problem solve and practice skills that are appropriate for situations similar to those in a clinical setting.

The principles of the situated cognitive framework include thinking and learning as measures of knowledge, making sense within particular situations, people acting and constructing meaning within communities of practice, knowledge depending on the use of a variety of artifacts and tools, and making sense of situations within a historical context (Paige & Daley, 2009, p. e99). Three interacting components based on situated cognition principles have been used to support learners in their quest for knowledge (Paige & Daley, 2009). The interacting components of a

situated cognitive framework may be viewed as people (including the community, or more specifically patients, families, nurses, physicians, and ancillary personnel), ingredients or tools (including prior knowledge or concepts), and activity (including participation in real-life events). **FIGURE 17-1** shows a graphic representation of the situated cognition framework.

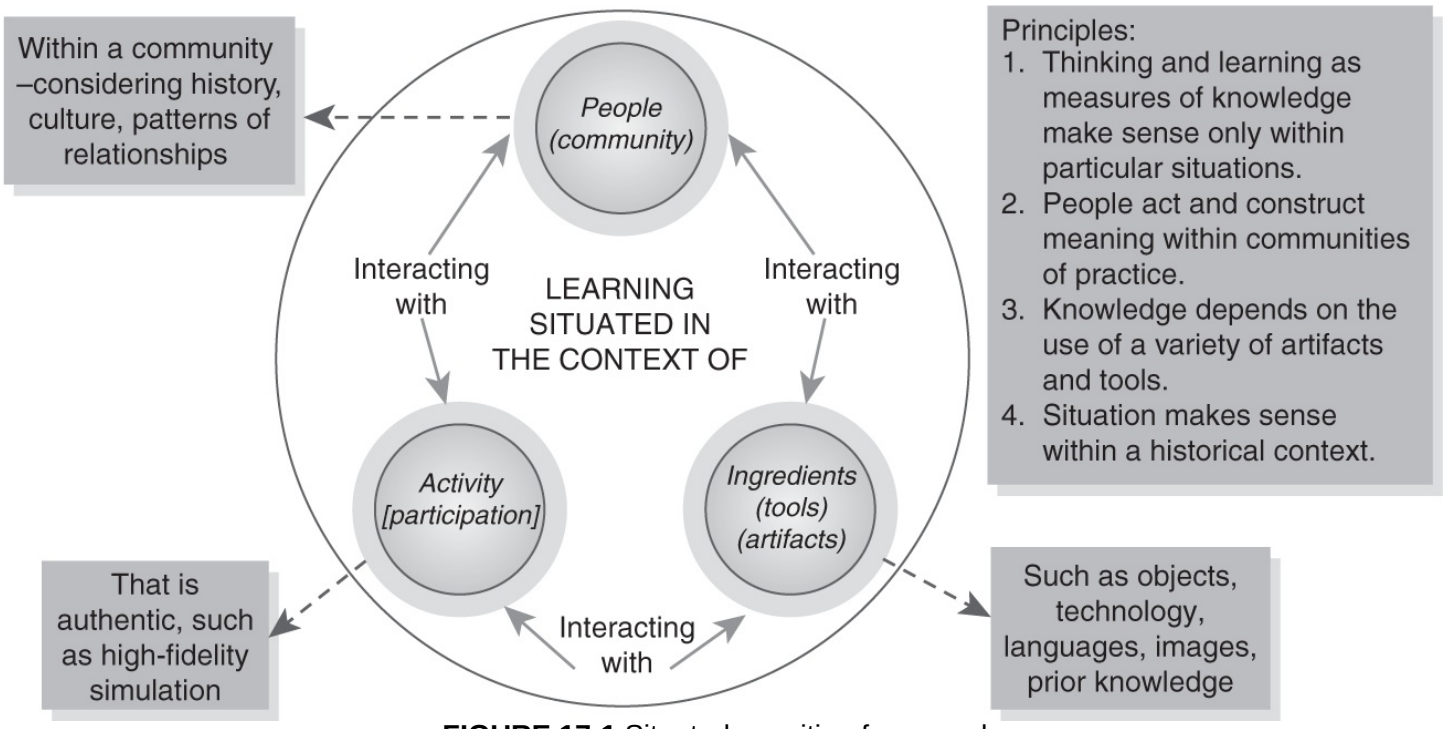


FIGURE 17-1 Situated cognition framework.

Reproduced from Paige, J. B., & Daley, B. J. (2009). Situation cognition: A learning framework to support and guide high-fidelity simulation. *Clinical Simulation in Nursing, 5*, e97–e103. https://doi.org/10.1016/j.ecns.2009.03.120

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Description

Learning that is structured within the framework of situated cognition and the application of HPS offers nursing educators a strategy to bridge a student's advancement from theory-based knowledge to practice and social integration into professional nursing. Paige and Daley (2009) described a case of the care of a patient experiencing unstable angina. An HPS provided students with opportunities to transfer knowledge, which was enhanced by an environment in which they needed to page the provider, make a status report, take verbal orders, and prepare a drug for administration. The construction of meaning within the community of practice was exemplified by the necessity to meet the needs of the simulated patient, which included answering the patient's questions about chest pain and intervening to reduce pain and anxiety. The ingredients or tools included the student's prior knowledge of the concept of pain, and demanded an understanding of pain that was tailored to the unique needs of a patient with cardiac tissue ischemia. Finally, the

principle of the historic context that encompassed cultural practices, values, and strategies of thinking and perceiving was viewed as enculturation into the healthcare environment with a review of the roles and responsibilities of professional nurses.

NLN Jeffries Simulation Theory

Following a systematic process that involved a thorough synthesis of the literature and discussions among nurses who were immersed in simulation activities, the simulation framework originally developed by Jeffries (2005, 2007) was endorsed as the NLN Jeffries simulation theory (NLN-JST; Jeffries, 2016). Jeffries describes *clinical simulation* as “a phenomenon defined as a perceived situation, a process, a group of events, and/or a group of situations” (2016, p. xi). This mid-range theory is intended to provide guidance for the implementation of simulation and future research studies of the simulation phenomena, and also to contribute to the science of nursing education (Jeffries, 2016).

The concepts of the NLN-JST include the context (which encompasses all the contextual factors that impact every aspect of the simulation), the background, the design elements, the simulation experience, the facilitator and educational strategies, the participant attributes, and the outcomes of the simulation (Jeffries, Rodgers, & Adamson, 2016). The outcomes of the simulation may relate to the participant, the patient, and the system. (Jeffries et al., 2016). **FIGURE 17-2** provides a graphic representation of the NLN-JST.

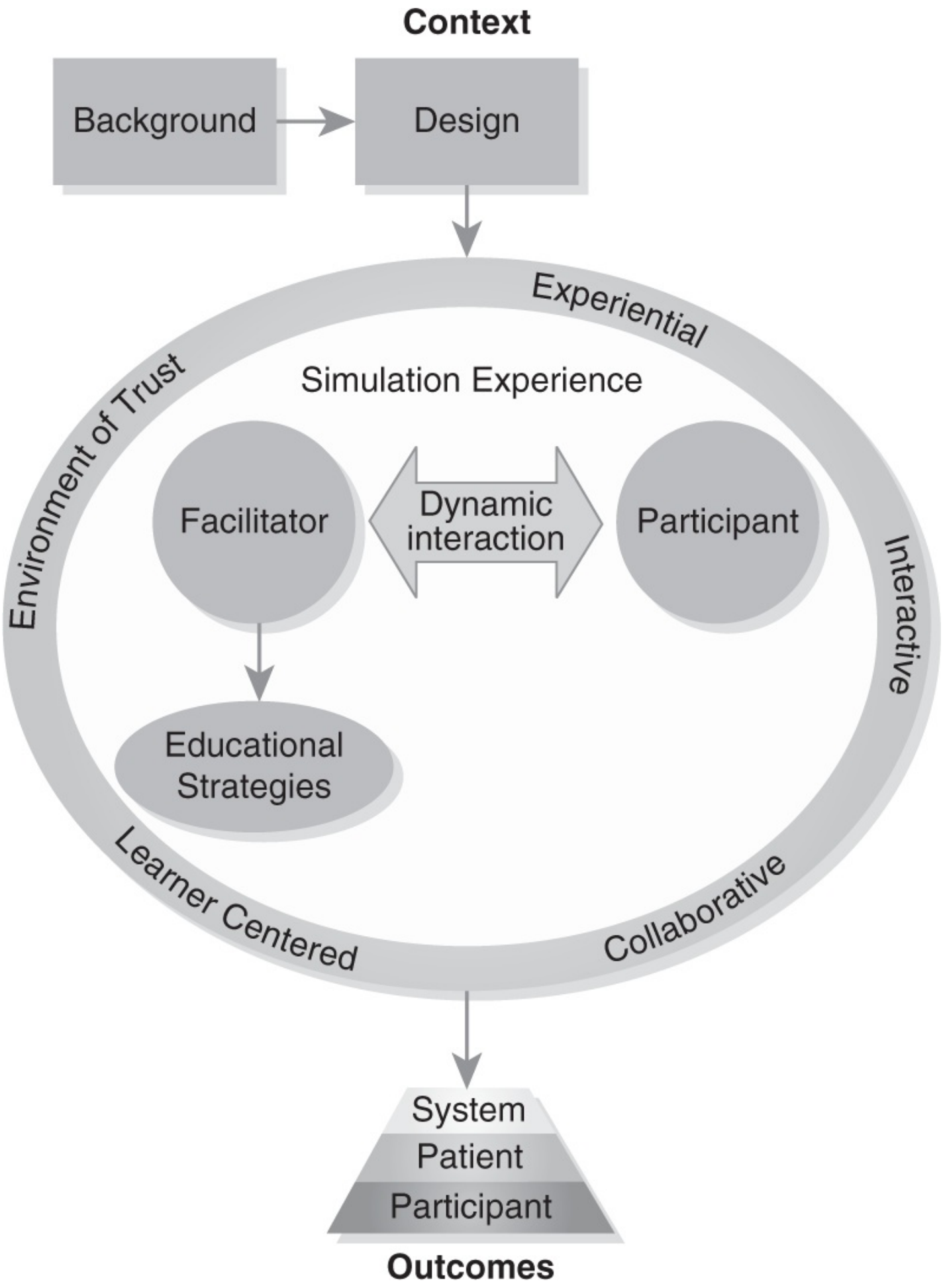

Context
Background
Design
Experiential
Simulation Experience
Environment of Trust
Facilitator
Dynamic interaction
Participant
Interactive
Educational Strategies
Learner Centered
Collaborative
System
Patient
Participant
Outcomes

FIGURE 17-2 NLN-JST.

Reproduced from Jeffries, P. R., Rodgers, B., & Adamson, K. (2016). NLN Jeffries Simulation Theory: Brief narrative description. In P. R. Jeffries (Ed.), *The NLN Jeffries Simulation Theory* (p. 40). New York, NY: National League for Nursing. Copyright © 2016 by the National League for Nursing, New York, NY. Reprinted with permission.

Description

Context

The contextual factors of the simulation have been identified as the circumstances and the setting of the SBE (Jeffries et al., 2016; Jeffries, Rodgers, & Adamson, 2015). The context may include the overarching purpose of the SBE, which could be for instructional or evaluative purposes, and also the place, which could be an academic or practice setting.

Planners have been advised to focus on the intended function of the environment by integrating the concepts of clinical, educational, and theatrical environments (Seropian & Lavey, 2010). For example, the types of rooms to consider would include an open learning area; a simulation theater; a control room; a room for debriefing, observations, or conferencing; a supply room; preparation areas; medication rooms; server rooms; rest rooms; offices; and reception areas.

The most basic critical aspect of a successful simulation program is the designation of a dedicated physical space for the simulator and its support equipment. To accommodate the simulator, instructor, and four to six students requires approximately 250 square feet of floor space. A sample floor plan for a simple simulation room is presented in **FIGURE 17-3**.High-fidelity patient simulators require electricity and, in the case of student anesthetists, gas sources, which could include oxygen, carbon dioxide, nitrogen, and nitrous oxide (Seropian & Lavey, 2010). Electricity requirements include outlets for the simulator plus additional sources of power for patient care equipment. Depending on the type of simulation selected, patient care equipment may include physiologic monitors, infusion pumps, ventilators, anesthesia machines, and a defibrillator. Support equipment includes airway devices, needles and syringes, dressings, chest tubes, intravenous and urinary catheters, scrub wear, gloves, and surgical masks, caps, and gowns.

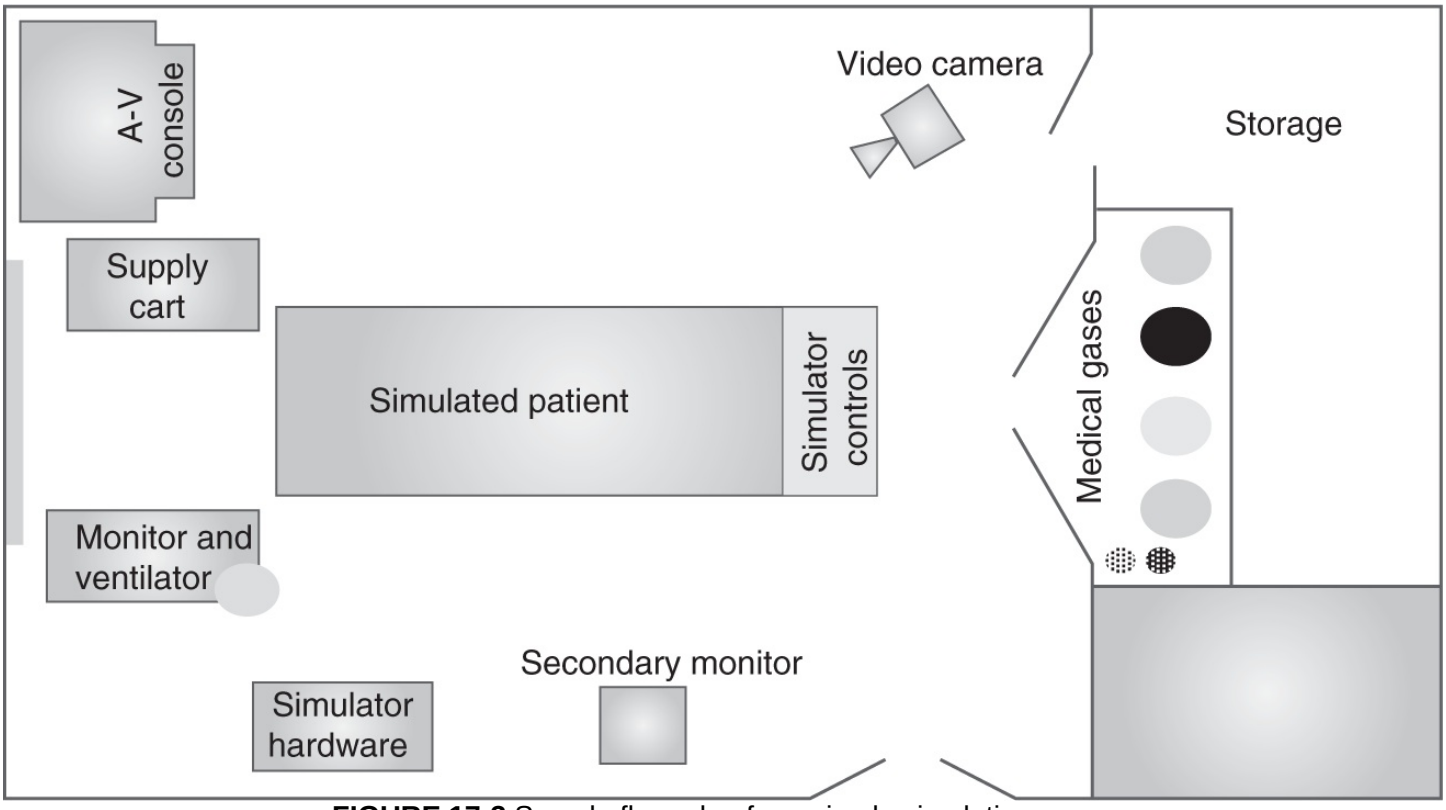


FIGURE 17-3 Sample floor plan for a simple simulation room.

Description

The efficacy of simulation can be enhanced through video recordings of sessions with subsequent debriefing (Seropian & Lavey, 2010). Recording systems range from a single video camera to complex recording systems that allow multiple camera views, superimposed physiologic waveforms, and audio recordings from participants and faculty. Dedicated simulation centers may include a debriefing room where the videotapes can be reviewed or an observation room for the simultaneous instruction of other students. Simulation centers also include a control room adjacent to the training room. One-way glass windows between the rooms allow individuals in a control room to observe simulation sessions as the operator and faculty communicate via headsets with microphones. In this type of room arrangement, a technician or faculty member in the control room is responsible for monitoring the simulation, making adjustments to the scenario as necessary, and selecting video and audio sources for recording.

Background

The background includes the goals and expectations that influence the design of the SBE (Jeffries et al., 2015, 2016). The theoretical perspective for the specific SBE and how it fits within the curriculum are important elements that inform the design and implementation of the activity. According to Jeffries et al., the background also includes the resources of time and equipment and how they will be allocated.

Design

The design includes the elements that must be considered before the HPS is implemented. The design includes the measurable learning objectives that guide the selection of activities and clinical scenarios in terms of content and problem complexity (Jeffries et al., 2015, 2016; Lioce et al., 2015). The elements of the physical, conceptual, and psychological aspects of fidelity include the decisions related to the necessary equipment, the moulage, and the predetermined roles and responses of the facilitator as they relate to the participants' interventions. Other considerations for the design include the participant roles, the progression of the activities, the briefing and debriefing strategies, and decisions associated with video recordings of the SBE.

Briefing, used synonymously with *prebriefing*, describes the information or orientation session immediately prior to the start of the simulated experience that includes an orientation to the equipment, environment, mannequin, roles, time allotment, objectives, and patient simulation (INACSL Standards Committee, 2016a). *Debriefing* describes the reflective process following the simulation experience that is led by a trained facilitator using an evidence-based debriefing model. This effort permits the participants to explore emotions, question and reflect, and provide feedback to one another (INACSL Standards Committee, 2016a).

Successful simulation sessions depend on carefully planned scenarios and clearly defined roles of the participants (Jeffries et al., 2015, 2016; Lioce et al., 2015). Depending on their expertise level, the facilitator may be responsible for selecting the scenario, guiding students through the simulation, providing important information and clinical cues that are not immediately available from the simulator (such as skin temperature), providing transition cues, modeling behaviors, monitoring student performance, and troubleshooting in the event of an unexpected simulator issue. In complex situations, the facilitator may be assisted by another faculty member or technician who serves as the simulator operator. In this case, the operator's responsibilities would include activating the simulation system, starting the patient software, overlaying the clinical scenarios, monitoring the progress of a scenario, and adjusting the scenario as it was intended to play out by the primary facilitator. Additional faculty, students, or assistants may role-play as members of the healthcare team and family.

Simulation Experience

The HPS is characterized by an environment that supports an experiential, interactive, collaborative, and learner-centered situation (Jeffries et al., 2016). According to Jeffries et al., there should also be a shared responsibility of trust between the facilitator and participants of the experience. Within the HPS, there is a dynamic interaction between the facilitator and the participants. The attributes of the

facilitator include skills, preparation, and educational techniques. The educational strategies, which may be adjusted as the experience advances, include the timing of activities and use of feedback or cues during the experience and debriefing toward the end of the SBE. Participant attributes that affect the SBE have been identified as age, gender, levels of anxiety, and self-confidence, as well as the state of preparedness for roles of the activity (Jeffries et al., 2015, 2016).

Outcomes Evaluation

The outcomes of the simulation relate to the participant, the patient, and the system (Jeffries et al., 2015, 2016). Participant outcomes could include satisfaction, self-confidence, learning, and translation of learning into the clinical environment; patient outcomes could relate to the health outcomes of recipients whose caregivers were trained using simulation; system or organizational outcomes could be associated with cost-effectiveness and improved changes in practice. A first consideration regarding the outcomes associated with simulation relates to a clear conceptual definition of the selected phenomena (Adamson & Prion, 2015). The next concern is with an operational definition that provides a valid and reliable measurement of the selected outcome. A few examples of outcomes that have been operationalized for evaluating participants after HPS are the Lasater Clinical Judgment Rubric (LCJR), the Simulation Effectiveness Tool-Modified (SET-M), and the Creighton Competency Evaluation Instrument (CCEI).

The Lasater Clinical Judgment Rubric (LCJR)

The LCJR was developed to provide a measure of clinical judgment skills (Lasater, 2007). The LCJR is based on the conceptual framework of the clinical judgment model (CJM), which describes the reasoning processes that nurses employ as they provide care in complex patient care situations (Tanner, 2006). As clinical learning is one of the outcomes of clinical judgment, the model implies that nurses are continually learning as they develop their expertise through experiences and reflection. Components of the model include noticing, interpreting, responding, and reflecting. These components suggest that the nurse must be aware of the patient's needs, make sense of the situation, and respond with the best course of action, which will be submitted to reflection after outcomes are realized and evaluated. **FIGURE 17-4** displays the CJM developed by Tanner (2006).

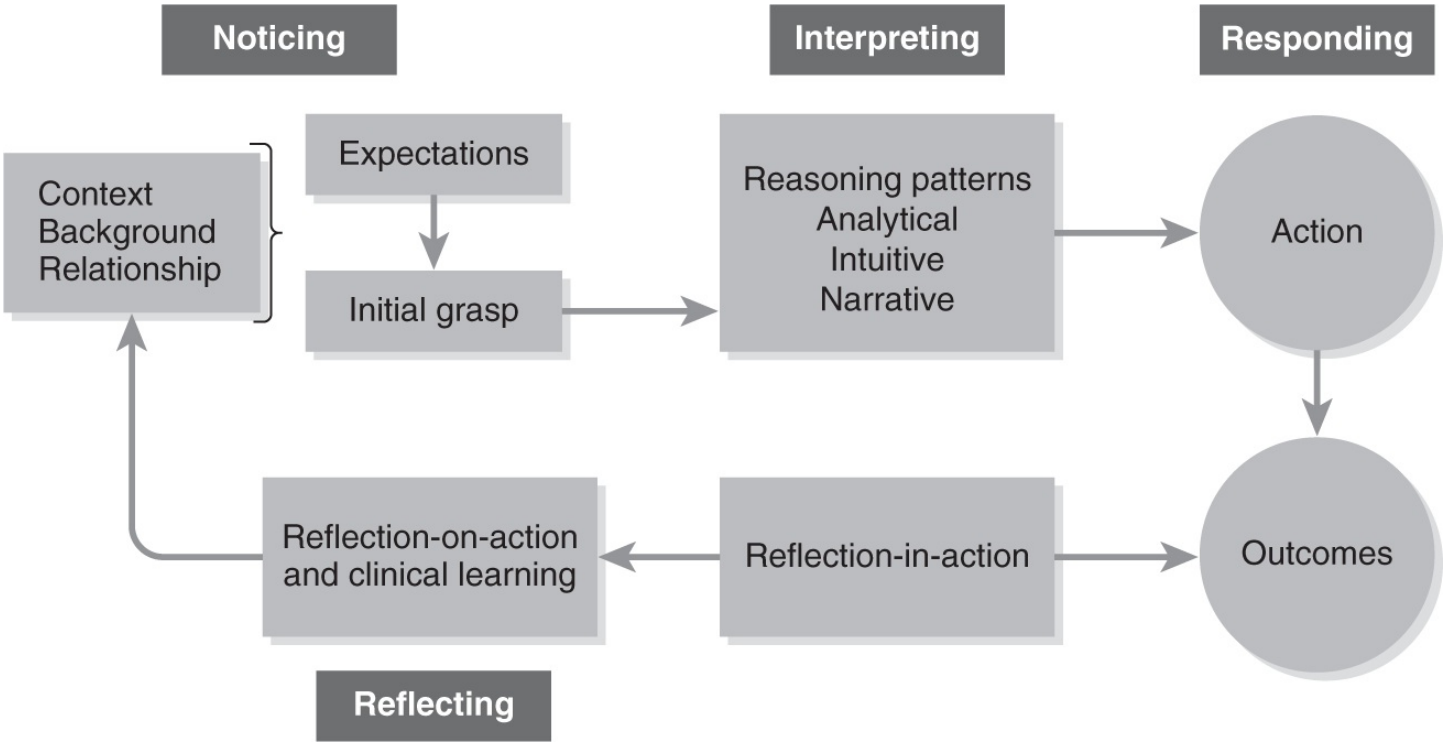


FIGURE 17-4 Clinical judgment model.

Reproduced from Tanner, C. A. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. *Journal of Nursing Education, 45*(6), 204–211. Retrieved from http://www.healio.com/nursing/journals/jne. Reprinted with permission from Slack Incorporated, copyright 2009.

Description

The LCJR provides the four phases of the CJM—noticing, interpreting, responding, and reflecting—with 11 dimensions (Lasater, 2007). Effective noticing involves focused observations, recognizing deviations from expected patterns, and information seeking. Effective interpreting involves prioritizing and making sense of data. Effective responding involves a calm, confident manner, clear communication, well-planned intervention/flexibility, and skillfulness. Effective reflecting involves evaluation/self-analysis and commitment to improvement. The rubric offers participants an opportunity to reflect on their performance for each dimension and rate themselves as exemplary, accomplished, developing, or beginning following a simulation experience. It should be noted that the LCJR is appropriate for actively involved participants; it is not useful for examining the thinking of observers (Shelestak, Meyers, Jarzembak, & Bradley, 2015).

The LCJR has met the criteria for instrument validity and intrarater and interrater reliability during HPS through the efforts of three research teams (Adamson, Gubrud, Sideras, & Lasater, 2012). Adamson and Kardong-Edgren (2012) used a database of standardized, validated, video-archived simulations that depicted nursing students performing at three different scripted levels of proficiency, while nurse educator observers rated the student behaviors as below expectations, at level of expectations, and above expectations.

Gubrud-Howe (2008) reported acceptable interrater reliability of observations with the LCJR during rater training and also following a pretest and posttest design study when pairs of students working as registered nurses were observed during 50-minute-long simulations. Sideras (2007) demonstrated that four observers, who were not informed of the educational levels of the nursing students, used the LCJR to accurately differentiate between the clinical judgment performance of graduating seniors and end-of-junior-year-level students during three recorded simulation cases as a type of validity testing for known groups. Despite the reported achievement of instrument reliability, Adamson et al. (2012) suggested that researchers still need to (1) identify the locations of variability in reliability of the LCJR under different conditions of use, (2) identify the true ranges of students' clinical judgment abilities, (3) avoid cases of complex simulation scenarios where floor and ceiling effects influence rating responses, and (4) establish standards of rater training for the instrument.

The Simulation Effectiveness Tool–Modified (SET-M)

The SET-M is a modified version of the Simulation Effectiveness Tool that was originally designed to assess how well the simulation experience met the student learner's needs (Leighton, Ravert, Mudra, & Macintosh, 2015). According to Leighton et al., the SET-M provides a better reflection of the *Standards of Best Practice in Simulation* as well as the Quality and Safety Education for Nursing (QSEN) competencies. The instrument contains 20 items (with 3-point ordinal scales) that are divided into four subscales to address prebriefing, learning, confidence, and debriefing. Exploratory factor analysis testing supported the existence of the four subscales. Internal consistency reliability testing for the subscales of prebriefing, learning, confidence, debriefing, and the overall instrument demonstrated acceptable to good Cronbach's alphas of .833, .852, .913, .908, and .936, respectively (Leighton et al., 2015).

Creighton Competency Evaluation Instrument (CCEI)

The CCEI is a modified version of the Creighton Simulation Evaluation Instrument (C-SEI) that was developed to evaluate clinical competencies among students within both associate and baccalaureate nursing programs for the National Council of State Boards of Nursing Simulation Study (NCSBNSS; Hayden, Keegan, Kardong-Edgren, & Smiley, 2014). As there was a belief that competencies observed in the simulation setting would also be demonstrated in the clinical environment, the items within the CCEI were reframed to reflect the core competencies found in the documents associated with the QSEN and the American Association of College of Nurses Essentials (Hayden et al., 2014).

The major concepts within the revised CCEI were categorized as assessment,

communication, clinical judgment, and patient safety, with a total of 23 items (Hayden et al., 2014). Content validity of the CCEI was determined by 35 faculty members who used a Likert-type scale with scores ranging from 1 (strongly disagree) to 4 (strongly agree) to rate the items according to necessity, fitness to reflect the corresponding category, and ability to understand the behaviors within the category. Interrater reliability was supported by 31 faculty and staff who viewed and rated videos of the same simulation scenario at three levels of performance proficiency. The responses of each of the 31 faculty were then compared with those of an expert rater. The overall agreement with the expert rater was 79.4%; Cronbach's alphas were above .90 and considered highly acceptable. When the CCEI was used by clinical instructors, the instrument was rated as easy to use, easy to understand, and useful to rate performance and learning among students in both the simulation and clinical environments.

The use of summative evaluations during an HPS has met with controversy, as the primary aim of HPS is to prepare the student to safely and effectively care for patients in the actual clinical setting, and there are limited numbers of valid and reliable psychometric measurements that can be used to quantify these types of outcomes. For example, Adamson, Kardong-Edgren, and Willhaus (2013) reported that the literature is full of low-level participant evaluations that address how learners reacted to a learning process, but there is a need to measure what really matters from a perspective of translational research and to identify how simulation also affects patient outcomes. These types of goals suggest that more researchers should focus on developing measurement instruments that are appropriate for the specific populations and activities that they are intended to measure, in addition to having sufficient reliability and validity scores.

Nursing Resources for the Use of HPS

The desire to promote the most appropriate and efficacious use of HPS associated with the education and evaluation of nurse-related health care has prompted a need to provide empirically supported guidance for these efforts. Two major resources specific to nursing that provide this type of support are the International Nursing Association for Clinical Simulation and Learning (INACSL) and the National League for Nursing (NLN).

The INACSL is a professional organization whose mission is to advance the science of healthcare simulation (INACSL, 2018). INACSL's stated vision is to be the global leader in transforming practice to improve patient safety through excellence in healthcare simulation (INACSL, 2018). The goals of INACSL are: (a) to provide innovative professional development to members as well as nonmembers from regional to global arenas; (b) to expand collaborative opportunities and the reach of the organization; (c) to advance the science of healthcare simulation for academia, practice, industry, and other relevant stakeholders; and (d) to develop, review, and update policies and procedures that support the work of the organization (INACSL, 2018). INACSL supports its goals with an annual conference, virtual educational opportunities, a research fellowship, regional workshops, and an international, peer-reviewed online journal, *Clinical Simulation in Nursing.*

The INACSL has published the INACSL *Standards of Best Practice: Simulation* for the purpose of advancing the science of simulation, sharing best practices, and providing evidence-based guidelines for implementation and training (INACSL, 2018). These standards provide information on the detailed processes that support the evaluation and improvement of simulation procedures. In agreement with the goals of INACSL, the standards demonstrate a commitment to quality and the implementation of rigorous evidence-based practices in healthcare education to improve patient care. The INACSL *Standards of Best Practice: Simulation* address the following: the simulation design, objectives and expected outcomes, facilitation, debriefing, participant evaluation, professional integrity, simulation-enhanced interprofessional education, and operations. Each standard is supported by rationales and the required elements of criteria necessary to meet the standard. Readers are invited to visit the INACSL website at https://inacsl.org for a comprehensive understanding of the value of the INACSL contribution to simulation.

The NCSBNSS used the *Standards of Best Practice: Simulation* in its national multisite study to quantify empirical support for replacing clinical hours with SBEs in pre-licensure nursing education (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). In 2015, an expert panel determined that the findings from the NCSBNSS provided confidence that a substitution of 50% of simulation time promoted outcomes similar to traditional clinical experiences (Alexander et al., 2015). The panel additionally developed a set of simulation guidelines for pre-

licensure programs that promote the use of the *INASCL Standards of Best Practice: Simulation* as well as the resources that are supported by the NLN. INACSL provides a link to a map that shows the percentage of clinical placement hours that are acceptable for pre-licensure nursing programs according to their state. The map may be accessed at https://www.inacsl.org/sim-regulations.

The NLN advances the field of nursing education through professional development, research, student exam services, nurse educator certification, public policy, and networking (NLN, 2018a). The NLN is an advocate for simulation and technology. The NLN Center for Innovation in Simulation and Technology, in collaboration with Laerdal Medical, has developed the Simulation Education Solutions for Nursing (SESN) program to help schools successfully implement effective simulation training for nursing students (NLN, 2018b). A visit to SESN at the NLN website describes opportunities to learn from online modules and on-site workshops to (a) analyze how their course curriculum integrates simulation teaching activities with course learning objectives, (b) observe demonstrations of well run and expertly debriefed simulations, (c) examine debriefing techniques that are grounded in critical theory, and (d) develop a comprehensive simulation evaluation plan. Online access to the NLN website can be found at http://www.nln.org/home.

An Example of Scenario Development

To develop and implement a new simulation scenario, the following process is recommended. For a more detailed approach, review the criteria necessary to meet the *INACSL Standards of Best Practice: Simulation* simulation design (INACSL Standards Committee, 2016) and an example for designing a standard for novice learners (McDermott, Sarasnick, & Timcheck, 2017).

Determine educational objectives or goals following a needs assessment. For example, the simulation may be intended to promote the advancement of technical, cognitive, or behavioral abilities or a combination of these competencies. Decide how the attainment of the objectives will be evaluated and measured. Determine in advance whether the progression of the simulation will be constrained to unfold with a predetermined sequence or to develop spontaneously.

Construct a clinical scenario to facilitate attainment of educational objectives. Although the scenario should be clinically realistic, it should be customized to the student's level of expertise and designed to promote the student's successful progression toward a higher level of decision making and demonstration of competencies.

Define underlying physiologic concepts to be manifested throughout the scenario

as they relate to the patient's responses to various events as they occur. To address the issues surrounding fidelity, determine which essential elements of the clinical scenario are to be represented in the SBE, which elements may be absent or overlooked, and which missing elements should be integrated into the experience. For example, as a patient develops a progressive hypoxemia, tachypnea and decreasing hemoglobin saturation as measured by pulse oximetry are expected to occur. Although HPS offers educators in the health professions numerous opportunities to prepare students for the clinical setting, there are some limitations that should be recognized and addressed. One limitation to HPS is its incomplete or inaccurate presentation of reality. Although simulators provide lifelike representations of human beings, they are not capable of exhibiting a complete range of signs and behaviors. Thus, there is a need to identify cues that contradict the intended signs within the simulator or provide the critical cues for appropriate advancement of the scenario. Although a real patient would also eventually become cyanotic, the designer of the HPS experience must decide whether the observation of skin color changes is necessary. When considering the fidelity of the clinical situations, it is also essential to decide whether changes must be technically accurate or just sufficiently realistic and prominent to elicit the intended response from the learners.

In the case of high-fidelity human simulators that have preprogrammed patients and scenarios, modify the scenario as necessary. Program modification generally includes specifying the baseline physiology and clinical condition of the underlying patient, preparing the scenario to include optional modifiable states, and defining transitions between various patient states as the scenario evolves.

Identify required equipment. Decide which devices will be displayed prominently or stored (as they might be in the clinical environment); whether learners will have the opportunity to inspect, assemble, and test equipment prior to the experience; and if the student will have options among multiple devices for use in the simulation. Decide whether additional personnel will be required to implement the clinical scenario, the qualifications (both actual and the role played) of the additional participants, and how the participants will be able to access/involve the supplemental personnel resources.

Develop questions to guide an environment of reflective debriefing after the simulation.

Run the program and collect feedback. Prior to use with students, the scenario should be run to establish that the simulation scenario unfolds as designed, with the intended levels of instructor and faculty participation.

Reiterate steps until satisfied. The simulation scenario is continuously refined

until it unfolds as intended, without unintentional ambiguous details that distract from the educational objectives, and the faculty is able to concentrate on observing and evaluating the student's performance while maintaining a positive, effective learning environment.

Determine how the facilitator/instructor will participate. Once the simulated scenario begins, the instructor may participate in a variety of ways. The instructor may function as a role model who demonstrates critical thinking, decision making, and therapeutic interventions; as a coach who is available to help students when necessary; or as a passive bystander observing the scenario with minimal involvement.

Prebrief. Plan how the students will be prepared for the SBE and oriented to the environment and the expectations associated with performance.

Debrief. Regardless of the level of participation during the simulation, one of the instructor's key responsibilities is to facilitate the debriefing session afterward to reinforce the objectives of the scenario and to ensure that the intended learning occurs. During an ideal debriefing session, through reflective thinking, the students should have opportunities to describe and interpret the scenario, clarify their thoughts and actions as they occurred during the simulation, critique their performance in a nonthreatening way, and generate alternative decisions and plans of actions that would improve future performances.

Evaluation. Determine how the objectives of the experience were met and gain feedback on the perceptions of the participants.

Trends and Gaps in the Use of Simulation

Jeffries (2018) has reported a move toward more realistic simulators and continual improvement in the fidelity of simulations. Additionally, hospitals are adopting the use of simulation in their orientation programs, team training, and overall competency testing. Regulatory boards and accrediting bodies are adopting policies to integrate simulation-based curricula for institutions within their respective states. Based on an integrative review of interprofessional simulations in nursing education, there are positive trends in the quantity of SIM-IPE research (Horsley et al., 2018).

Although the research has greatly increased, there is a need to incorporate simulation interventions that lend themselves to the assessment and evaluation of outcomes, especially among students who are in their last semester of nursing education (Jeffries, 2018). There is also a need to focus on high-quality reporting of findings with the use of research reporting guidelines (Horsley et al., 2018). These concerns were more specifically reinforced following the analysis of a survey that addressed the perceived gaps in nursing simulation research (Mariani & Doolen, 2016). The findings of the survey identified four categories of gaps in simulation research that related to outcomes, simulation designs and settings, participants and facilitators, and research rigor. Although the respondents stated that satisfaction, perceived self-confidence, and self-efficacy were well-studied, there were gaps in the research on the transfer of knowledge and skills to positive patient outcomes, critical thinking, communication, and interprofessionalism. On the topic of simulation design, the respondents identified gaps in the study of mental health, veterans' health, level of fidelity, and other elements of importance in simulation design. In reference to participants and facilitators, there were gaps that addressed large sample sizes, how many students should be in each scenario, the roles played by the students, the preparation of the facilitators, and psychological safety in simulation. Finally, the topic of research rigor included concerns with evaluation methods, reliability and validity of measures, multisite simulation studies, interventional studies, randomization, longitudinal studies, academic service partnerships, and interprofessional studies.

Recommendations for the Future of High-Fidelity Simulations

Jeffries (2018) holds that the value of simulation is evident in the research. It is considered a popular method to facilitate learning in healthcare education, especially among nursing students prior to entering the clinical setting. As simulation is evolving into an evidence-based and effective learning technology, it is important that nursing educators learn to effectively design, facilitate, and debrief simulated experiences to meet the objectives for their students' learning experiences (Aebersold, 2018).

The acceptance of the NLN-JST as a mid-range theory has shown support for the theoretical thinking and testing that promotes simulation as a learning methodology among nursing education researchers (Jeffries, 2015). Additionally, the *Standards of Best Practice: Simulation* provides comprehensive guidance for high-quality simulations (INACSL Standards Committee, 2016). The NCSBN suggests that learning through simulation is dependent on high-quality simulation (Doolen et al., 2016). Publication of the *Simulation Guidelines for Prelicensure Nursing Programs* indicates that there will be a need to evaluate how nursing programs substitute simulation for traditional clinical experiences and a need to establish evidence-based simulation programs (Alexander et al., 2015).

While recognizing the challenges associated with the advancement of simulation-based learning, research should be systematically developed using rigorous standards that reflect the state of the science (Franklin, Leighton, Cantrell, & Rutherford-Hemming, 2015). That research should adhere to the *Standards of Best Practice: Simulation* (INACSL Standards Committee, 2016) and also be guided by the relationships of the concepts within the NLN-JST framework (Doolen et al., 2016). More specifically, future research should include: the transferability of skills and knowledge to the clinical setting, the components and effects of prebriefing as well as debriefing, multisite studies, interprofessional simulations, National Council Licensure Examination readiness, and the effect of HFS use on patient outcomes (Doolen et al., 2016).

Conclusion

Simulation is a popular strategy to facilitate learning in healthcare education. High-fidelity patient simulators are highly complex full-bodied mannequins that have the ability to mimic human body functions (Lopreiato et al., 2016). When integrated into nursing curricula, HFS offers students opportunities to practice the skills necessary for the care of patients and their families in a safe environment. The NCSBN reported that high-quality simulation experiences could be used as a substitute for traditional clinical experiences; *Simulation Guidelines for Prelicensure Nursing Programs* offers guidance for evaluating the readiness of nursing programs to make that transition (Alexander et al., 2015). Nursing educators need to learn how to effectively design, facilitate, and debrief simulation experiences to support students in meeting program objectives (Aebersold, 2018). There is a need to evaluate the effectiveness of HPS interventions as well as to develop valid and reliable measurement instruments. Research should be systematically developed using rigorous standards that reflect the state of the science (Franklin, Leighton, Cantrell, & Rutherford-Hemming, 2015). The NLN-JST is a mid-range theory that supports the theoretical thinking and testing that has been done to promote simulation (Jeffries, 2015). The *INASCL Standards of Best Practice: Simulation* (2016) provide evidence-based guidelines that are useful for developing research questions.

TEACHING EXAMPLE: USING HIGH-FIDELITY SIMULATION IN AN UNDERGRADUATE CRITICAL CARE NURSING COURSE

This example illustrates how simulation was used to reinforce concepts of respiratory assessment and nursing care as part of a critical care nursing elective for senior-level undergraduate nursing students.

The course included 40 didactic hours and was designed to complement a 200-hour clinical practicum. The course focused on pulmonary, cardiovascular, and neurologic critical care; advanced hemodynamic monitoring; and critical care pharmacology. The respiratory care section of the course included lectures on respiratory gas exchange, advanced assessment techniques, arterial blood gas analysis, airway management, and ventilatory support. To complement the lectures, a simulation session was developed.

Determine Educational Objectives

The simulation session was designed so that the student would be able to achieve the following objectives:

- Complete and continuously revise the assessment of a patient who is acutely and dynamically ill.
- Select appropriate oxygen therapy devices for a specified clinical situation.
- Collect and prepare the appropriate equipment and medications for emergent tracheal intubation.
- Administer appropriate medications to facilitate emergent tracheal intubation and assess the drug effects.
- Perform airway management procedures, as indicated, to include bag-valve-mask ventilation and insertion of an endotracheal tube.
- Confirm appropriate placement of an endotracheal tube.
- Prepare an unstable patient for transport from an inpatient unit to a critical care unit. Initiate positive-pressure ventilatory support for an acutely ill patient and adjust ventilatory parameters (to include mode, FiO2, tidal volume, respiratory rate, and positive end-expiratory pressure) as indicated by patient

condition, arterial blood gases, capnography, and spirometry.

Although the scenario involved nursing students, it can easily be expanded to include respiratory and emergency care providers. The instructor was actively involved in the session as a coach who provided interactive feedback to students and helped them clarify clinical observations.

Construct a Clinical Scenario

Students were told that they were going to evaluate a patient with pneumonia hospitalized on an inpatient medical unit. A brief patient history was provided.

Students were given the opportunity to assess the patient, including observation of respiratory effort, lung auscultation, estimation of arterial oxygenation by pulse oximetry, and measurement and analysis of arterial blood gases. At the time of initial contact, the patient demonstrated signs of moderate hypoxia to include rapid, shallow breathing, mild oxyhemoglobin desaturation, and crackles on chest auscultation. Upon a signal from the instructor to the simulator operator, the patient experienced significant oxyhemoglobin desaturation. The scenario was designed so that the patient initially would require oxygen therapy and then require more aggressive treatment, including tracheal intubation and positive-pressure ventilation using a bag-valve device. Once the patient was transferred to the critical care unit, ventilatory support using various modes such as assist control, intermittent mandatory ventilation, positive end-expiratory pressure, and pressure support ventilation could be explored.

Define Underlying Physiologic Concepts to Be Manifested Through the Scenario—Patient and Events

The physiologic concepts underlying pneumonia include decreased lung compliance and increased shunt. Manifestations of these alterations include an adaptive respiratory pattern with increased rate and smaller tidal volume, increased peak inspiratory pressure, hypoxemia, mild hypercarbia, rales, tachycardia, and cardiac dysrhythmias. Patient deterioration within the scenario resulted from progressive reductions in lung compliance and increases in shunt. For this exercise, it was determined that sufficient physiologic changes to induce learner critical thinking, decision making, and action were more important than technical accuracy.

Modify Programmed Patient and Scenarios, as Necessary

A geriatric model developed by faculty and master's-level nursing anesthesia students was used.[2] To exhibit signs of pneumonia, crackles were introduced, lung compliance was decreased, shunt fraction was increased, and the CO2 set point was increased slightly (to produce mild hypercarbia). Temperature was increased slightly to reflect an underlying infection. As a result of these changes, tidal volume decreased automatically and respiratory rate increased to compensate for the reduced tidal volume. Physiologic alterations were also manifested automatically through changes in heart rate and arterial blood gases.

So that the patient would initially appear to be stable and then deteriorate upon the instructor's command, baseline and decompensation states were created. Although an automatic transition could have initiated the decompensation at a predetermined time, a manual transition was selected to assure that the destabilization occurred when intended by the instructor.

Assemble Required Equipment

Because the patient was not physically transported from the medical unit to the critical care unit, the simulation lab was originally configured with equipment available to acute care personnel. Items included a resuscitation cart with cardiac monitor and defibrillator, an oxygen source, oxygen therapy devices, and various airway management devices such as a bag-valve-mask device, pharyngeal airways, endotracheal tubes, laryngoscopes, and suction equipment. Once the scenario shifted to the critical care unit, a positive-pressure ventilator was also available for student use.

Run Program and Collect Feedback

Prior to use with students, the scenario was run several times with faculty and staff to observe the rate of change for physiologic variables and the effects of various therapeutic options.

Reiterate Steps 2–6 Until Satisfied

Physiologic parameters were modified incrementally so that the patient would appear stable, but with sufficient respiratory compromise to entice the learner to initiate oxygen therapy. Once the deterioration sequence was initiated, the decompensation had to be sufficient to warrant more aggressive therapy yet progress at a rate such that novice nurses with limited skills and therapeutic options could stabilize the patient.

To implement the simulation, the instructor selects the customized geriatric patient from the Patient Options menu of the user interface and respiratory exercise from the Scenario Options menu. The simulator immediately begins emulating the pneumonia patient in the stable baseline state. Progression to the decompensation state requires only one additional keystroke or mouse click.

Careful testing of the simulated patient and clinical scenario reduces the likelihood of unanticipated events during the educational session; however, the instructor should be prepared to help students with assembling and using unfamiliar equipment as well as performing advanced technical skills, such as effective bag-valve-mask ventilation and tracheal intubation. Careful coordination with the simulator operator will allow the patient to deteriorate at a rate appropriate for the experience of the learners, with pauses in the deterioration (if desired) during specific teaching moments or as technical maneuvers are performed.

For this exercise, evaluation of the learner achievement was formative and informal. After the simulated patient's condition was stabilized, the faculty and students reflected on clinical signs observed and how the patient's condition, clinical setting, and events affected decision making and actions; how medications, devices, and procedures were used to stabilize the patient; and how potential alternative solutions could have led to more rapid or improved outcomes.

[2]Development of the geriatric model was supported, in part, by a grant from the Division of Nursing, U.S. Department of Health and Human Services, Bureau of Health Professions.

Discussion Questions

1. You are responsible for developing a human patient simulation experience for undergraduate student nurses who have completed a pharmacology and a physical assessment course. You plan to allow the students an opportunity to demonstrate the nursing skills associated with taking vital signs before they administer a patient's heart medications in the simulation lab. Discuss how you would design this experience. For example, (a) identify your learning objectives, (b) list which modifiable physiologic features on the simulator would be useful as the students assess the patient, (c) what type of equipment you will need to create a realistic environment, (d) what kind of case scenarios you will develop, (e) how you will implement debriefing, and (f) how you will evaluate the students' performances.
2. You are in the beginning stages of developing a plan for integrating human patient simulations in your medical-surgical nursing course. The first scenario will include an opportunity for students to recognize and respond to signs of deterioration in a patient with asthma. Access the *INASCL Standards of Best Practice: Simulation* at the INASCL website (https://inacsl.org). While referring to the standards for professional integrity, create a working document that will guide the attitudinal and behavioral expectations for the individuals who participate in the simulation. Explain how these expectations relate to the NLN-JST.
3. You are designing a human patient simulation experience for students who will be providing care for a patient with unstable angina that may progress into a myocardial infarction. Develop a guide for the activities of facilitation for the simulation. Refer to the *INASCL Standards of Best Practice: Simulation* at the INACSL website (https://inacsl.org). Link your plans with the relationships of the concepts within the NLN-JST.

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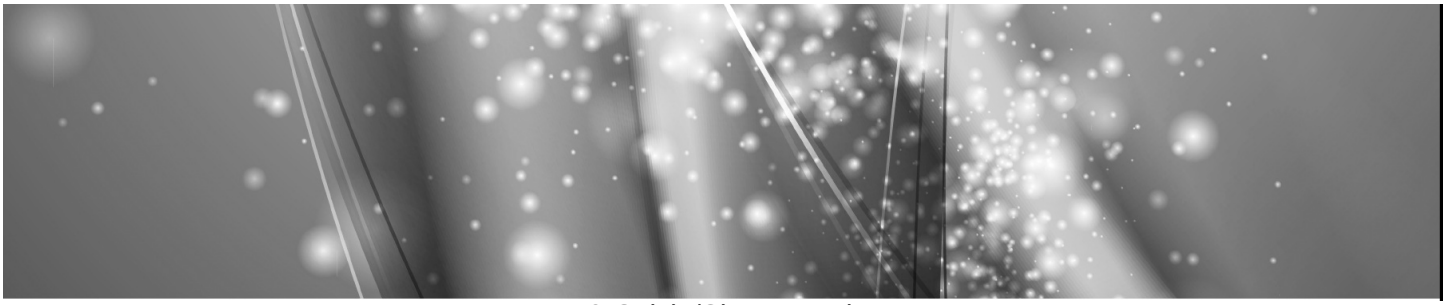
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CHAPTER 18

Facilitating Learning Using Patient Simulation

Kim Leighton

Introduction

Nearly two decades have passed since faculty in the healthcare industry began facilitating learning with technologically high-fidelity human patient simulation, a technique that continues to grow in sophistication and broaden in type and modality. Educators often struggle with how to prepare students adequately to assume the role of the healthcare provider. The vast content, technical and interpersonal skills, and professional role expectations, coupled with the increased number of incoming students and decreased availability of clinical placements have created a frustrating and sometimes dangerous situation. Clinical sites, which once were the primary place of learning, now restrict student activities, leading to suboptimal experiences for content integration and mastery. Many healthcare facilities have restricted the number of students per unit, causing the clinical instructor to divide time between units and floors, thereby decreasing observation and interaction time with learners. Students also have been restricted, at some facilities, from giving medication, performing skills, and documenting in the electronic health record (EHR). Additionally, today's hospitalized patients have medically complex needs that are often situated within challenging psychosocial circumstances beyond the capabilities of novice nursing students to manage. Observational and preceptored experiences are not always beneficial because preceptors are frequently preoccupied with pressing patient problems and are not available to facilitate student learning. Using patient simulation as a teaching strategy provides opportunities for educators to fill gaps in students' knowledge and experience that result from limitations posed by traditional clinical environments.

The use of simulation situated in a learning environment to closely resemble a clinical setting can present learners with situations that might occur in a real patient care setting. Although the technology still intimidates many, the techniques of facilitating learning are the essence of this pedagogy. For those who embrace this pedagogy, teaching with simulation using realistic scenarios is exciting and rewarding.

This methodology provides an environment for educating learners without risk to human life and promotes the development of clinical nursing judgment (Victor, Ruppert, & Ballasy, 2017). This chapter is intended to present innovative ways of utilizing patient simulation.

Definitions

Patient simulation encompasses several typologies and modalities including mannequin-based models (described in Chapter 17), standardized patients, and virtual patients that can be cared for in the face-to-face encounter, via tele-simulation, in the classroom, or through virtual learning environments. The list of various typologies and modalities has grown quickly over the past few years as educators and researchers better understand the capabilities and potential of simulation-based education (Leighton, 2018a).

Simulators can be transported to classrooms, hallways, outdoors; placed in cars; and even used in active military training as newer models are tetherless and do not need to be physically connected to power to run. Simulators located in a specific physical environment can be used by learners at that location, but distance technologies allow for remote learners to participate via telemedicine equipment, virtual reality goggles, or simply through the use of two-way interactive video such as FaceTime. Virtual modalities have opened new possibilities with the advent of holograms, wearable technology, and avatars as virtual patients (Leighton, 2018b). Standardized patients have been used since the 1960s to portray physical and psychological conditions during assessment of healthcare providers in training (Duncan & Rock, 2018). These trained actors participate in “scripted scenarios for the purpose of instruction, practice, or evaluation” (INACSL Standards Committee, 2016, p. S44).

It is outside the scope of this chapter to go into depth about the various typologies and modalities of simulation; definitions may be found in the International Nursing Association for Clinical Simulation and Learning’s (INACSL) *Standards of Best Practice: Simulation* (INACSL Standards Committee, 2016) and in the *Healthcare Simulation Dictionary* (Lopreiato et al., 2016). However, it is important to understand that the basic tenets of simulation-based education are the same regardless of typology and modality. For example, all simulation-based experiences (SBEs) should have learning objectives and include debriefing. The innovative use of simulation as a whole will be discussed in this chapter.

Purpose of Integrating Simulation

The purpose of integrating simulation into any curriculum is to provide students with beneficial learning experiences that will assist in meeting course and program objectives while promoting safe patient care. Simulation-based experiential learning focuses on the needs of the learner, rather than on the needs of the patient, in contrast to what it must be in the hospital or other clinical environment. However, the overall goal of SBE learning is to improve patient outcomes. Carefully chosen SBEs provide the opportunity for multiple objectives to be met by multiple learners at the same time; this may include nursing students and interprofessional student teams.

Following the seminal report *To Err Is Human* (Kohn, Corrigan, & Donaldson, 1999), the Institute of Medicine (IOM) identified five core competencies for integrating safety and quality into nursing education, all of which can be addressed using simulation. The competencies are (1) provide patient-centered care, (2) work in interdisciplinary teams, (3) employ evidence-based practice, (4) apply quality improvement, and (5) utilize information (Greiner & Kneble, 2003). In 2006, the Quality and Safety Education for Nurses (QSEN) initiative was created based on these five initiatives plus an additional focus on safety, with the goal to decrease preventable patient deaths by improving education (Sherwood & Barnsteiner, 2012). Simulation is one methodology promoted to enhance clinical learning when used in addition to traditional learning experiences. Examples of how the QSEN competencies can be included in SBE are shown throughout this chapter.

Educator Development in Simulation Pedagogy

In the fall of 2014, the National Council of State Boards of Nursing (NCSBN) published the results of a landmark national simulation study (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). The findings of this study led to the conclusion that up to 50% of traditional clinical hours can be replaced by SBE in all pre-licensure nursing courses if the following conditions are met:

> Faculty members are formally trained in simulation pedagogy,
> An adequate number of faculty members support the student learners,
> Subject matter experts conduct theory-based debriefing, and
> Equipment and supplies [are available] to create a realistic environment. (p. S38)

The release of these findings led to a concern that nursing schools may decide to replace their traditional clinical hours without having adequately trained faculty for simulation. The NCSBN recommended incorporation of best practices into simulation programs through use of the *Standards of Best Practice: Simulation* (INACSL Standards Committee, 2016).

INACSL developed its first seven standards in 2011, made revisions and added guidelines in 2013, and added two more standards in 2015. A comprehensive revision was published in 2016 with one additional standard published in 2017, demonstrating the rapid change that is occurring in healthcare simulation. The *Standards* include:

Professional Integrity: Outlines the responsibilities of all involved in the SBE (e.g., confidentiality, professionalism, respect)

Outcomes and Objectives: Measurable objectives are necessary to achieve expected outcomes.

Facilitation: Describes responsibilities for managing the learning experience.

Debriefing: Identifies the need for a theory-based process to improve performance.

Participant Evaluation: Identifies criteria for formative, summative, and high-stakes assessment.

Simulation-Enhanced Interprofessional Education (SIM-IPE): Offers guidelines for collaborative opportunities.

Simulation Design: Designing SBEs to meet learning objectives and expected outcomes.

Simulation Glossary: Defines terms used within the Standards (INACSL Standards Committee, 2016).

Simulation Operations: Identifies criteria for systems and operational support for SBE (Modified from INACSL Standards Committee, 2017).

The NCSBN provided further guidance through the release of simulation guidelines for pre-licensure nursing programs to use as they plan and prepare for successful use of simulation in their programs (Alexander et al., 2015). These guidelines include the need for administrative commitment, appropriate facilities, educational and technological resources, and qualified faculty and personnel (p. 40). Preparation checklists are provided for faculty and programs to use to determine their level of preparedness.

There are now numerous pathways for educators to enhance their knowledge of simulation-based education, as well as opportunities to learn and master the skills of teaching with this pedagogy. The educator may take on the role of facilitator of the SBE, or that of the designer of the curriculum, or be responsible for running the simulator, setting up and tearing down the scene. It is important to identify what skills are required for the role prior to seeking educational opportunities. There are a variety of options for the simulation educator (Lioce, Graham, & Young, 2018):

Books: There are numerous books with a variety of foci designed for nursing educators, healthcare educators, and operations personnel.

Professional Organizations: Several professional simulation organizations have annual conferences, active listserv discussions, and professional journals.

Fellowships: These are offered by educational healthcare institutions to enhance abilities in specific areas such as SBE design or research.

Courses and Workshops: Opportunities exist for a variety of program lengths from one day to immersive experiences, face-to-face, and online via webinar or synchronous/asynchronous learning management system; basic through advanced courses are available.

Academic Certificate and Degree Programs: Courses are available online and face-to-face for academic credit that can be transferred into a degree program as well as purpose-designed academic degree programs currently at the bachelor’s and master’s levels.

Nursing educators new to simulation, or even those who have been working in this

pedagogy for years, may benefit from self-assessment of their abilities and knowledge as a facilitator. The Facilitator Competency Rubric (FCR) provides a mechanism to assess competency in the areas of preparation, prebriefing, facilitations, debriefing, and evaluation (Leighton, Mudra, & Gilbert, 2018). The FCR was created based on Benner's novice to expert theory (Benner, 1984) and is available at the Evaluating Healthcare Simulation website: https://sites.google.com/view/evaluatinghealthcaresimulation. In addition, certification programs offer guidelines to help simulation educators achieve the designation of Certified Healthcare Simulation Educator (CHSE) or CHSE–Advanced (SSH, 2018).

The remainder of this chapter outlines steps involved in creating effective SBEs, while providing ideas for innovative ways to manage this pedagogy within the guidelines and standards described.

Using Simulation as a Teaching Strategy

Identifying Needs That Can Be Impacted Through Simulation-Based Learning

Deciding on appropriate SBEs to integrate into any curriculum takes careful thought and planning and should be based on a needs assessment. What test questions do students most commonly answer incorrectly? What difficult content requires the faculty to host study sessions? What areas of the licensure exam have the lowest scores?

Decisions should be made based on the objectives of the program and the course in which the SBE is to take place. Major curricular threads should be considered when developing SBEs. All clinical courses and many didactic classes, such as pathophysiology, pharmacology, and cultural issues, can incorporate simulation. A review of the program's specific strengths and limitations will assist in choosing SBEs that will best meet student learning needs. Concepts that seem hard for students to grasp or that are difficult to teach are excellent choices for SBEs. Test scores and item analysis, such as from the National Council Licensure Examination–Registered Nurse or Practical Nurse (NCLEX-RN; NCLEX-PN), Assessment Technologies Institute (ATI), Health Education Systems, Inc. (HESI), or faculty-developed tests for specific courses, give indications of content and concepts that students do not comprehend well. SBEs that address these areas should be chosen to facilitate learning in weak areas.

When choosing SBEs, there are two lines of thought: (1) choose conditions or illnesses that are not readily available in the clinical agencies, so that all students will have the opportunity to care for that type of patient; and (2) choose conditions or illnesses that are most commonly seen in clinical practice, so as to provide the opportunity for repetition that may lead to earlier recognition of deteriorating conditions. SBEs that prepare students for specific clinical experiences (see **BOX 18-1**), for high-risk situations, or for complex patients are also excellent choices, as are those designed in response to patient safety issues such as prevention of medication error. Opportunities for interprofessional simulation experiences should be strongly considered, in alignment with programs such as TeamSTEPPS (AHRQ, 2018), National Patient Safety Goals (The Joint Commission [TJC], 2018), and the Interprofessional Education and Practice Competencies (Interprofessional Education Collaborative, 2016).

BOX 18-1 Example: Identifying Learning Needs

The faculty at the end of a program identify that students on the clinical units do not seem to understand the

pathophysiology of chronic obstructive pulmonary disease and why oxygen should not be increased whenever the client feels short of breath. A review of NCLEX results shows low scores in the Physiological Adaptation subcategory of Physiological Integrity. Scores are borderline in the Management of Care subcategory of Safe and Effective Care Environment. A review of exam scores in pathophysiology shows low scores in questions related to gas exchange. The faculty further evaluates the care plans across each clinical course and realize that most students are not taking care of patients with significant respiratory diagnoses. As a result of this needs assessment, the faculty plan to incorporate more simulation scenarios that focus on patients with respiratory diagnoses. Further, they contact the dean of the respiratory therapy program and learn that there are similar concerns with their students. An interprofessional SBE is planned for the following semester.

The timing of the simulation is another important consideration. Didactic material corresponding to the SBE, as well as practice with expected skills, should have been reviewed prior to the learning experience so that students have the necessary foundation upon which to base their decision making. Some schools incorporate simulation at the beginning of each course to assist with preparation for entering a new clinical rotation and again at the end of the rotation as a capstone experience. Each course within a program will have its own needs and objectives that can be addressed through carefully planned SBEs.

Designing the Simulation-Based Learning Experience

Using standardized templates when designing simulations will help to ensure that all relevant information is included, such as objectives, the patient story, health history, healthcare provider orders, lab results, needed supplies and setup information, method of evaluation, preparation questions and materials for students, and a debriefing plan. Numerous template examples are available online. Another option is to use scenarios outlined in various simulation books and journals or to adopt/adapt scenario packages from simulation vendors. Many scenarios, such as the NLN's ACE.S unfolding cases are fully and freely available online. Most educators underestimate the time and effort involved to create an SBE that is realistic, effective, reproducible and leads to enhanced learning outcomes. Some educators prefer to create SBEs while others prefer to adapt existing scenarios to meet their needs.

Once the needs assessment has been completed, the scenario is developed. The *Standards of Best Practice: Simulation Design* (INACSL Standards Committee, 2016) provides a framework for planning and developing the case study that will be implemented using simulation. Following the identification of a need, the educator identifies what outcome is desired and creates learning objectives designed to help learners reach those outcomes.

Once the learning objectives are determined, it is time to write the patient's story. Many find this to be the easiest part of the process as they reflect on patients and families they have cared for over their career and weave their stories into the design

of the scenario (see **BOX 18-2**). As scenarios are written, include all pertinent information that a student would expect to have available on the traditional clinical unit. What precipitated the need for health care? What happened that resulted in the patient needing to be cared for today by this student? What medications, allergies, and medical history does the patient have—and don't forget holistic concerns such as psychosocial, spiritual, cultural, or developmental needs. While developing the scenario, keep in mind Benner's theory of novice to expert (1984) as well as knowledge of the curriculum and educational theory. It is tempting to put numerous patient problems into one scenario as you may have limited time with the students; however, cognitive load theory explains why the learner can only manage small chunks of information at a time in order to remember what they have learned (Clapper, 2018). It is recommended that an SBE have no more than two to three learning objectives.

BOX 18-2 Example: Faculty Collaboration

The course faculty have presented various simulation scenario templates to the faculty-at-large to gain consensus on using one template across all courses. They outlined all the information that is to be included in scenarios and created a job aid for faculty reference when new scenarios are developed. The faculty have agreed to use newly created scenarios as well as to adapt existing scenarios to meet the identified need. The simulation staff has asked the faculty to collaborate with them when developing scenarios so that they understand the expectations of the faculty and can ensure the learning environment is prepared.

Scheduling Students in the Simulation Laboratory

Scheduling of the SBE is often a major hurdle for faculty to overcome. For most educational institutions, class scheduling is part of a complex process that includes many departments, faculty, resources, and buildings. Making even one change can have a domino effect. Therefore, it is important to consider a variety of options when integrating simulation into the curriculum, beginning with a critical look at current teaching methods and clinical experiences. Often, health education programs have been challenged to increase enrollment but have limited clinical resources. As a result, experiences that do not provide the best opportunity to meet learning objectives for the student may have been added to the clinical rotation schedule. The site's experiences may be too complex, or too easy, for a given level of learner. Available hours, such as those in the evening or on weekends, may not fit easily into the course schedule. Occasionally, behaviors at the clinical site do not represent those professional behaviors taught in the nursing program. Faculty are encouraged to critically review all clinical placement sites to determine if needs are being met well in those environments. If not, consideration should be made for moving the experience to the simulation lab.

Questions are often raised about the number of clinical hours that can be provided in the simulation lab. While the NCSBN has suggested that up to 50% of clinical time can be replaced with simulation (Hayden et al., 2014), the actual number of hours allowed remains dependent on the program's state board of nursing regulations. States vary widely on this issue; all allow simulation as a supplement to traditional clinical hours. At least one state does not allow any substitution of simulation for traditional clinical experiences, whereas others allow as much as 50%. Other states leave discretion to the faculty as long as program outcomes continue to be met. In advanced nurse practitioner programs, simulation cannot replace clinical hours. INACSL has collated the current state board regulations related to the use of simulation in undergraduate programs and placed those directives on their website at https://www.inacsl.org/sim-regulations.

A more difficult question that is currently being studied is, How many hours of simulation are needed to replace the same number of clinical hours? Does 1 hour of simulation equal 1 hour of clinical? Some simulation experts believe that, due to the concentrated nature of learning in the simulation lab and the continuous presence of and observation by a faculty facilitator, a ratio such as 1 hour of simulation for 3 hours of clinical could be considered. This question is challenging to answer, and the answer has to be supported by future research.

Yet another frequently discussed question is, How long should a scenario last? There is no right answer for that question because it depends on the learning objectives, the number of students who need to participate, available faculty time, as well as what time frame is available to schedule the simulations. This is a multifaceted challenge because the length of an SBE may be determined by lab availability. Examples will be provided for a variety of scheduling options that are designed to help overcome this challenge.

Scheduling simulation throughout the curriculum is best achieved by using a variety of scheduling methods (see **BOX 18-3**). This allows for increased simulation use with less disruption to the course schedule. Several methods can be utilized: stations in a lab, set blocks of time, postclinical conference, entire day, and class time. It is important to remember that the students will always take longer to make decisions and perform skills than faculty expect, as this is part of their learning process. To decrease frustration and the need for catching up during the day, allow more time than thought necessary to schedule SBEs.

BOX 18-3 Example: Scheduling Simulation Experiences

Five clinical courses will begin using simulation in the next semester. The simulation coordinator places a large calendar on the wall and invites faculty to bring their course schedules and help to determine how best to schedule the simulation activities. The beginning medical-surgical course will provide short SBEs as part of their skills lab stations in the afternoons on Tuesday and Thursday, the scheduled lab day. The maternal

health course will take the birthing simulator to the classroom on three different Mondays during the course to provide experiences in normal delivery, postpartum hemorrhage, and shoulder dystocia. The mental health faculty will use standardized patients in the classroom during eight sessions to help students recognize signs and symptoms of various illnesses and practice communicating with patients. The critical care course will conduct simulations for two hours each week on Wednesday afternoons, bringing in one clinical group each week for postconference. The pediatric course will bring a different clinical group to the lab every Friday to simulate an entire clinical day.

Stations

Using stations works well for integrating SBEs into assessment and fundamental skills courses, as well as in later courses where stations could be set up to review previously learned skills. These courses are often designed so that students work in pairs and small groups to practice psychomotor skills, communication techniques, and critical-thinking activities. Students often rotate through different learning activities during lab time. A short SBE that allows the students to apply what they have learned within the context of a patient situation can be added as a station. Using this method may add time to the existing lab schedule, but often, another (perhaps less effective) learning station can be deleted.

Blocks of Time

This method creates a set period of time for self-determined groups or faculty-assigned groups to participate in an SBE. All blocks of time might be scheduled together during a specific week of the course, or the blocks of time could be distributed throughout the semester until everyone has completed their time. Blocks of time must be long enough and filled with enough activity to make it worth the students' time to come to campus for the experience. For programs with set numbers of student contact hours, some faculty have decreased their time at the traditional clinical site by 10 minutes/week over a 15-week semester, resulting in the ability to reassign that time (150 minutes) to simulation.

Clinical Post Conference

A scheduling method involving a conference at the end of each clinical practice experience can be planned in advance or done impromptu based on activities of the clinical day. Typically, clinical post conferences last approximately 1 hour and occur at the end of the clinical day. They are designed to serve as a time to reflect on the day's activities, but they are often used for various other activities as well, such as topical review of difficult theoretical concepts, as review prior to exams, or even as time to remain on the clinical unit to observe an unusual activity. This time frame is included in the schedule of the clinical day, and some faculty have found that SBEs, designed to include concepts unique to their clinical unit, are a valuable use of this

time. For example, a postoperative unit may have several patients with chest tubes, but not every student has the opportunity to care for those patients. Managing a patient who has a chest tube in the simulation laboratory provides an opportunity for every student.

Entire Day

In this scheduling method, a clinical group participates in various SBEs over an entire day. Rather than going to a hospital unit or clinical agency for a clinical experience, the students report to the simulation laboratory. The simulation laboratory is placed on the clinical schedule rotation in place of going to an agency site. A typical day's schedule should begin and end at the usual clinical times. Students can provide care for a variety of patient types, depending on the length of the scenarios, or they can provide care to one patient over a simulated period of time, perhaps over days or even months. It is helpful to assign rotating roles to keep students engaged. Expectations for preparation, care, resource use, and documentation should be the same as on the clinical unit.

During Class

Simulations can be conducted during class time by moving a portable simulator to the classroom, using two-way interactive video (e.g., Skype) to transmit from the simulation laboratory to the classroom, or incorporating a standardized patient or role-playing experience. Portable simulators are designed for ease of movement and can be placed in the front of the classroom to demonstrate various concepts. Students can be chosen to participate in caring for the simulated patient either randomly, based on skill level, or based on identified learning needs. Students remaining in the audience can participate in directing the care, prioritizing care, or observing for various aspects of care, such as communication techniques. Using video, especially two-way interactive video, provides an in-class learning advantage without moving the simulator. Another learning opportunity is provided when both an adult and a pediatric simulator are moved into the classroom, setting the stage for comparing and contrasting the care of an adult patient and pediatric patient with the same illness or disease process.

An additional in-class learning opportunity exists through use of the simulation software. The computer running the simulation software can be connected to the classroom LCD projector, allowing all students to see the patient parameters. After orienting students to the various parameters, the faculty member can demonstrate the hemodynamic changes that occur with hypervolemia, hypovolemia, pneumothorax, pericardial tamponade, different cardiac rhythms, and numerous medications. The simulator does not have to be connected to this computer in order to demonstrate these features.

Fidelity of the Simulation-Based Experience

Realism of the SBE is commonly referred to as *fidelity*. There is no consensus as to how much fidelity is necessary for learning to occur, but historically, many simulationists believed that the closer to reality a scenario was, the more engaged students became and the more opportunities there were for learning to occur. As the concept of fidelity has matured, it has become clearer that the highest level of fidelity is unnecessary for many SBEs (Paige & Morin, 2013). One analysis found that in nearly all studies reviewed, there was no significant advantage related to fidelity when evaluating performance outcomes (Norman, Dore, & Grierson, 2012). Results of a meta-analysis found strong educational effects, but there was no correlation to fidelity level (Kim, Park, & Shin, 2016). Gaba's advice from more than a decade ago (2004) is unchanged: It is important to match the level of fidelity to the desired learning outcomes, as some simulated clinical experiences require higher levels of fidelity than others.

The learning can be positive or negative, and while it is hoped that only positive learning is transferred to real patient care, the potential for negative transfer of learning also exists. Therefore, it is important that processes and procedures in the simulation laboratory mimic reality as closely as possible. For example, it is not appropriate to have students pretend to wash their hands prior to providing care to the simulated patient. Having them pretend repeatedly over time increases the risk of carrying this behavior to the patient care area. This section focuses on three common areas where educators can have an impact on fidelity when designing the SBE: the physical patient, holistic aspects of the patient, and the environment.

Physical Patient

Fidelity of the simulated patient's physical condition should involve as many of the student's senses as possible, including sight, smell, touch, and hearing. This involves significant creativity on the part of the faculty member, but can often be accomplished at little cost. Creating this type of fidelity is often referred to as *moulage*. Examples of low-cost solutions to create physical conditions are provided in **TABLE 18-1** and **BOX 18.4**. Always test new moulage in an inconspicuous area of the mannequin if there is a risk that staining could occur.

TABLE 18-1 Physical Fidelity of the Simulated Patient

Sense	Physical Condition or Disease	Moulage
Sight	Vomit	Egg white whisked with fork; streak with yellow food coloring with toothpick tip

	Blood clots	Thick, lumpy tapioca with red food coloring; partially gelled sugar-free red gelatin
Smell	Incontinence/Vomit	Water with yellow food coloring and ammonia Add grated parmesan cheese to vomit
Touch	Clammy skin	Spray with water bottle
Hearing	Hospital sounds Hospital overhead pages	Loop MP3 recording and play back Announce random overhead pages via microphone

BOX 18-4 Example: Moulage and Environment

The faculty wants to create an SBE of an elderly client who has experienced abuse. The patient is being visited in the home during the community health course. To create realism, the faculty considers putting the simulator into a chair, rather than the bed, and dressing the patient in worn, old-fashioned clothing with piles of magazines and newspapers on an end table. There are multiple empty drinking glasses on the table and the general site is cluttered. The patient is disheveled and has bruises of various colors on his upper arms and abdomen.

To create this fidelity (realism), the faculty borrows a chair from the lobby and obtains clothes from a thrift shop. The faculty sends an email to other faculty and staff asking them to bring in old newspapers and magazines, old cups, and old blue, green, and brown eyeshadow. This allows the faculty to create a realistic environment at minimal expense.

Holistic Aspects of the Patient

Nursing care of the patient involves not only physical care, but developmental, cultural, psychosocial, and spiritual care as well. These important aspects are often left out of the SBE, leading students to report that learning needs related to holistic care were better met in the traditional clinical environment (Leighton, 2015). Simulation provides an environment where students can learn to identify and address patient concerns outside of the physical realm. Positively impacting these learning needs is easy to do in the simulation lab and costs little or no money to do so. In most cases, adding more information to the patient's story or health history can add this dimension. **TABLE 18-2** outlines several ways in which holistic patient care can be added to the SBE.

TABLE 18-2 Holistic Aspects of the Simulated Patient Examples

Aspect	Patient	Concern
Developmental	45-year-old male with heart attack 14-year-old with abdominal pain	Patient and spouse have five children, and he is unable to return to his construction job.

		Patient is sexually active and has contracted a sexually transmitted disease.
Cultural	26-year-old female speaks only Vietnamese 88-year-old Native American patient urgently needs medication	The only available person who knows Vietnamese is the hospital's maintenance man. The patient prefers to wait for a tribal medicine elder.
Psychosocial	8-year-old boy requires appendectomy 72-year-old patient with COPD requires several medications	Parents recently moved to the area and the family's health insurance has not yet taken effect. The patient is unable to afford medications with current finances.
Spiritual	52-year-old female requires abdominal surgery 66-year-old patient was just diagnosed with cancer	The patient declines to remove jewelry with religious icons. The patient declines treatment because he believes the illness is a result of past sins.

A variety of props can be added to the simulated patient's room to help prompt students to address holistic aspects of care. A picture frame with a family picture including several children might be placed at the bedside to see if students address the patient's role in the family. A religious book or icon can be placed at the bedside to shift the focus to spiritual aspects of care. It is helpful to have resources available to students so they can look up information about different cultural and religious beliefs while caring for the simulated patient.

Environment

Simulation centers or laboratories come in all shapes and sizes, from the corner of a skills lab to a large, freestanding space with individual patient rooms. Many SBEs take place on the clinical unit, lending realism to the experience; however, in the academic environment the educator may need to creatively make the environment as realistic as possible to the intended clinical environment. While this is typically a patient's hospital room, SBEs can occur in other settings, such as a patient's home, an outpatient setting, or in the recovery room. Having the equipment and props characteristic of the desired environment will help learners to be engaged and learn the use of appropriate equipment and supplies.

Obtaining supplies and equipment can be a costly endeavor. Consider discussing simulation needs with clinical nurse managers who may be able to divert opened sterile kits to the simulation laboratory if they cannot be used with human patients. Many hospitals have warehouses where unused or overstocked equipment is stored. Simulation laboratories are often able to purchase at a discount or borrow

equipment. Many pharmacies now return expired medications for account credit; however, simulation personnel may be able to obtain these medication vials or ampoules. Great care must be taken to dispose of real medications according to policy and to note that the fluid in the vials must not be used for real patients. Different regions of the country have differing rules and regulations as to the disposal of expired items. Some simulation laboratories have reported obtaining syringes and expired intravenous fluids from veterinarians and from patients who no longer require home-care services. Be creative but safe in seeking out solutions to supply and equipment needs.

It is imperative that clear labels and signage state that all equipment and supplies are not to be used for real patients, and access to those outside the employ of the lab should be limited and monitored. The risk of simulated medications and supplies getting into the real patient care environment is high, as evidenced by the distribution of simulated intravenous fluids to hospitals in at least 23 states with over 40 people receiving infusions of the fluid intended for practice use (Robyn et al., 2015). Numerous hospitalizations and one death are attributed to this error. Simulation educators should strongly consider the use of labels indicating the simulation supplies and equipment are not for human use. Labels and templates are available at the Foundation for Healthcare Simulation Safety website: https://healthcaresimulationsafety.org/labels/

Student Preparation/Professional Expectations

It is recommended that students prepare for SBEs in the same manner and to the same degree as they do for traditional clinical experiences. Providing the students with focused preparation activities is more efficient than the time spent seeking out information from the chart, the patient, the family, and other caregivers, as is often required when preparing to care for human patients. Preparation activities contribute to learning and allow the simulation facilitator to answer questions, clarify misconceptions, enhance the knowledge base, and facilitate learning rather than teaching. Time in the simulation lab is therefore likely to be focused and intense.

Professional behavior and dress are important to the learning experience in the simulation laboratory. Observations have been made that students behave more professionally when in uniform than when in street clothes, and most simulation lab guidelines require students to come in uniform. While learning to manage a variety of patient types and conditions, students are also learning professional behaviors and communication techniques. Providing an environment in which professional behaviors are modeled and practiced may enhance professionalism. As simulation activities replace traditional clinical teaching methods, efforts should be made to ensure that the experiences in the simulation laboratory are as realistic as possible.

Prebriefing

Simulation-based experiences begin with prebriefing. Prebriefing has received more research attention recently and found to be a valuable part of the simulation experience. Chamberlain (2017) found that students who received prebriefing had higher perceptions of overall simulation effectiveness, learning, and self-confidence than students who did not participate in prebriefing. Prior to prebriefing, the learners may be expected to complete assignments that will prepare them to participate in the SBE. An example of planning the prebriefing is provided in **BOX 18.5**. During prebriefing, assigned preparatory work is reviewed and questions answered. Misconceptions are clarified, and facilitators determine whether students are prepared to provide care to the simulated patient. If not prepared, a student might be dismissed from the lab experience to return at another scheduled time when he or she has prepared better. After preparation is evaluated, the students will be given a report on their patient, and they may be asked to determine which types of care are needed and how that care will be prioritized. This ensures that students know where to begin upon entering the patient's room. Roles may be predetermined, and facilitators should ensure that the students are oriented to the simulator, supplies and equipment, the environment, and expectations both of the students and of the simulation faculty and staff. Learners must be aware of confidentiality, expectations of professional behavior, and use of video.

BOX 18-5 Example: Prebriefing

Faculty of the nursing and medicine departments are conducting an SBE designed to help students learn each other's roles and responsibilities in patient care. Prior to the SBE, learners may be given an assignment that guides them to learn more about professional roles other than their own. During prebriefing, both faculty should be involved in the discussion and ensure that students know what is expected of them and how their role fits into the team. For this type of simulation, defining roles and responsibilities is critical for the novice learner; however, more advanced students near graduation should require less guidance because of their clinical experience. The facilitators ensure the students know about the environment and what equipment or supplies are available to use.

Implementing the Simulation-Based Learning Experience

Faculty Roles

Faculty roles during simulation are primarily facilitative. Although the role varies somewhat depending on the level of the students, the faculty may choose to provide the learners with prompts and cues designed to help students achieve the expected outcomes. Cues are most often in the form of carefully crafted questions that stimulate critical thinking and problem solving and assist the students in taking necessary actions with appropriate interventions, or a cue may be a change in the patient's condition that prompts action. As students progress through the program, fewer prompts and cues are required or are given. One way to manage cues is to stay in character and maintain voice cues and ask questions via the patient's voice or that of a family member. For example, the simulated patient could ask, "Are there any side effects I should watch for?" when receiving a medication; or "I've heard I can get AIDS from a blood transfusion," requiring students to provide explanations. The facilitator can then evaluate the students' knowledge based on their responses.

Critical thinking, clinical judgment, clinical reasoning, problem solving, planning, and prioritizing care are aided in simulation when a large flip chart or whiteboard is utilized. One person is assigned to be the documenter/recorder for the simulation. Beginning with the report, the documenter writes down pertinent information and continues to record as assessments, new data, and interventions occur. The information can then be easily viewed by all participants and is constantly referred to, unlike an electronic medical record that only one person can view at a time. This documentation can be utilized as the student calls the healthcare provider, as the patient (facilitator) asks questions about the meaning of newly acquired lab data, or as students plan care based on new orders. If a flip chart is used, the paper can easily be removed and taken to debriefing for further evaluation and discussion of care. This method is also useful for concept mapping or nursing process development. The use of the EHR is further discussed later in the "Charting" section of this chapter.

The Dreyfus and Dreyfus model of skill acquisition (1980), adapted for use in nursing by Benner (1984), supports learning on a continuum beginning with novice and progressing through the advanced beginner, competent, proficient, and expert stages. This model has implications for faculty who facilitate sessions in the simulation laboratory. Learning the skill of facilitation is a new challenge for most faculty members, and they begin at a novice level. It is important for faculty to recognize this and to not attempt an SBE that is overly complex and detailed for their first efforts. They should begin with simple scenarios, which often have as much

impact as those that are complex. As the level of comfort with facilitation grows, so will creativity and a willingness to attempt more complex scenarios. Trying to do too much at the beginning will only frustrate the facilitator and the students, making the next attempt at simulation more of a challenge.

The novice-to-expert approach has also been used to help determine the role of facilitators when interacting with students in the simulation laboratory. The current trend is for the facilitator to observe the scenario from a separate control room, as it is believed that students can then perform autonomously and without interference. However, other options have also proven successful for labs that do not have a separate control space. In addition, the level of the learner should be considered. Novice students may experience increased stress or anxiety when placed in an unfamiliar environment and given new expectations to care for a simulated patient. They have little to no experience to draw from, so it may be helpful for the faculty to be present at the bedside, to assist in proper assessment techniques and respond to questions immediately.

As the students progress to advanced beginner, the facilitator can play the role of a family member. Continued presence in the room provides a level of comfort and reportedly decreases anxiety among students. The facilitator in the family member role asks questions of students to determine if students understand the care that they are providing and can provide appropriate education and responses to the patient and family.

When learners reach the proficient stage, the facilitator becomes further removed, although (depending on the laboratory setup) he or she might remain in the room with the students. However, at this point, the facilitator only observes unless it is essential to intervene and redirect the students. While some educators advocate for students to experience the results of their indecision or incorrect decisions, this must be weighed in light of whether the learning objectives will be met. There are psychological considerations when students believe they “killed the patient,” and this will be discussed later in the chapter. At the expert stage, the facilitator is completely removed from the simulated patient room, when possible, and observes through a one-way window or via audiovisual technology.

Student Roles

One of the biggest challenges facing faculty in the simulation laboratory is that of group size. Defining roles for each individual student brings focus to the experience and decreases confusion. A variety of roles can be utilized, depending on the SBE objectives. Roles can be chosen at random or purposefully assigned based on identified student weaknesses. Suggestions of roles and responsibilities utilized by many simulation laboratories are provided in **TABLE 18-3.**

TABLE 18-3 Roles for Students in the Simulation Laboratory

Role	Responsibilities
Primary nurse	Assessment: final decision Consider two primary nurses so one student is not responsible alone if a poor outcome is experienced
Secondary nurse	Backs up primary nurse if two-primary-nurse system not used Assists the primary nurse in assessment and decision making
Medication nurse	Administers medications safely according to orders
Documentation nurse	Documents on paper or electronically to maintain a patient record Documents on flip chart or whiteboard to keep all informed of assessment findings and care provided
Healthcare communicator	Provides information to healthcare provider in person or via phone calls Contacts ancillary departments for test results
Observer	Provides a focused role for the observer, such as observing for communication between nurse and patient, identification of cultural care, patient education provided by nurse, recognition of psychosocial care, overall management of care

Nursing facilitators are encouraged to utilize roles that are nurse-specific. Assigning roles of other healthcare providers, such as laboratory technician, respiratory therapist, or physician, is often troublesome, as the students do not have the background to know the roles of those providers. As nurses, there is a risk of stereotyping the other professional roles and expecting performance that is not true to the profession's scope of practice. It is also challenging to have students play the role of the family member because most lack that type of experience, but also because they have to perform in front of their peers. Those who are shy or introverted tend to struggle in these types of roles, whereas extroverts often go off script or may break out in laughter at inappropriate times.

Facilitators often express concern that the students in the observation role will not learn as much as those actively caring for the simulated patient. Early research in the NLN simulation study found that there were no significant differences in knowledge gain, satisfaction, or self-confidence based on the role of the student (Jeffries & Rizzolo, 2006). A recent systematic review found that observers had better learning outcomes and satisfaction if engaged and through use of an observer tool, while value was enhanced by inclusion in the debriefing (O'Regan, Molloy, Watterson, & Nestel, 2016). Others reported that students preferred to have an active role in a primary position, rather than observe or have a supporting role (Harder, Ross, & Paul, 2013).

Use of Resources in the Simulation Lab

Mobile devices, such as phones with Internet service, and electronic tablets and notebooks are being incorporated into SBE. During the SBE, students can immediately access textbook information and can look up diseases, care plans, drug and laboratory guides, medical dictionaries, procedural guidelines, and literature databases. It is important in today's constantly changing healthcare environment that students learn where to access needed information rather than expecting to rely on memory. Point-of-care access is vital so that nurses can use the latest evidence-based information to make decisions. These tools are invaluable as students move from performing skills to making decisions about care based on the latest evidence available. Clinical calculators are also utilized in simulation laboratories to more safely determine drug dosing and intravenous drip rates, and for other physiological calculations.

The simulation lab is an excellent place to practice communication between providers and between provider and the patient and family. The Joint Commission (TJC) identified communication breakdown as one of the top three leading root causes of sentinel events in the United States (TJC, 2015). These sentinel events resulted in unintended harm to patients and prompted recommendations for standardized handoff communications. The mnemonic SBAR (situation-background-assessment-recommendation) is used by hospitals across the country to improve communication; some variations exist such as ISBAR (Identify-SBAR) and ISBARQ (ISBAR + Questions and Answers). During the SBE, students can practice communication skills by giving handoff reports, calling healthcare providers, and interacting with the interdisciplinary team utilizing the SBAR format. Use of the format assists students in becoming more organized and confident in their thinking and reporting.

Charting

Types of documentation can range from paper charting, using blank forms obtained from a local facility or creating one's own, to electronic charting comparable to a full hospital-grade electronic health record (EHR). The level of complexity in the design of these documentation systems is up to the faculty. Some faculty create realistic systems using word processing or spreadsheets. There is no known research indicating whether one method is better than another. The underlying principles and concepts of documentation are the important focus.

Charts and forms for all aspects of patient care should be constructed for each SBE. Additional forms that might be appropriate for the SBE, such as emergency department records, blood transfusion and blood bank forms, and incident reports, for example, should also be available. Documentation forms should be as similar as possible to those the students utilize in their clinical areas. Unfortunately, many

students have to learn a different system at each clinical site. While it is helpful to use a system as close to what students see on the traditional clinical unit as possible, simulation EHRs are expensive. Several existing commercial products are available, but many simulation facilitators create their own system. The goal is to help students understand the principles and legalities of documentation.

Multidisciplinary/Interdisciplinary Team Simulations

As a result of the prominence of the QSEN competencies and the National Patient Safety Goals (TJC, 2018), nursing faculty are collaborating with other health professions to incorporate SBEs that foster an interdisciplinary team approach with other healthcare students. The IOM has said that "all health professionals should be educated to deliver patient-centered care as a member of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics" (IOM, 2003, p. 3). As the population ages and lives with multiple comorbidities and chronic health needs, the care for that population requires the collaboration of multiple healthcare professionals. Therefore, simulation provides the perfect opportunity for students to work together on complex patient care problems. Pharmacy, respiratory therapy, social work, seminary, medical practitioners, medical students, and others have all collaborated with nursing students during SBEs. Students learn the knowledge, roles, responsibilities, and frame of reference that each person brings to the patient situation. They learn to work together as a team, to share the information they have about the patient, and to communicate and resolve differences related to care. An example of planning an interprofessional experience is provided in **BOX 18.6**.

BOX 18-6 Example: Interprofessional Education

Faculty are concerned that students are not comfortable discussing death and dying or providing care to a terminally ill patient. While at a campus-wide retreat, they learn that this problem is not limited to nursing. Representatives from nursing, medicine, respiratory therapy, pharmacy, and pastoral care begin planning for an interdisciplinary educational event. They agree on overarching outcomes, learning objectives for their students, and a general patient situation for the SBE. They review the INACSL Standard: SIM-IPE to identify the remaining criteria and guidelines that need to be addressed.

Many hospitals and schools of nursing are utilizing the TeamSTEPPS program developed by the Department of Defense's Patient Safety Program in collaboration with the Agency for Healthcare Research and Quality (AHRQ). This program provides materials and a training curriculum for an evidence-based teamwork system to improve communication and teamwork skills. Information about this program can be obtained at http://teamstepps.ahrq.gov/. The goal of TeamSTEPPS

and all interdisciplinary training is to assist in providing higher-quality, safer patient care through more effective communication among health professionals.

After the Simulation-Based Learning Experience

Debriefing

Debriefing is essential to the simulation experience and should never be omitted (Oriot & Alinier, 2018). It is during this time that students have the opportunity to reflect on the experience, their actions or inactions, and connections to clinical practice. Faculty trained in the art of debriefing function as facilitators by stimulating students to reflect on what they were thinking during the simulation, how they were feeling, what they did, what occurred as a result, and how they can apply what they have learned to their care of real patients. To debrief, the facilitator must have observed the SBE and been attentive to the knowledge, skills, and attitudes of the learners as well as identify areas of opportunity for growth. It is important that the debriefing environment provides privacy to maintain confidentiality, and that the environment created by the debriefer is one where students feel supported through feedback and can engage in reflection (INACSL Standards Committee, 2016).

Debriefing should be based on a structured theoretical framework. Several different models are used by facilitators, who may choose one method or a combination of methods. The plus/delta model is often used for debriefing that must occur in a short period of time. The students and facilitator place actions into two columns: a positive column and a column designated for actions or activities that could be done differently. Debriefing models with varying levels of complexity and overlap have been developed in recent years, including Debriefing for Meaningful Learning (Dreifuerst, 2015), Promoting Excellence and Reflective Learning in Simulation (PEARLS) (Eppich & Cheng, 2015), debriefing with good judgment (Rudolph, Simon, Dufresne, & Raemer, 2006), the 3D (defusing, discovering, and deepening) debriefing model (Zigmont, Kappus, & Sudikoff, 2011), the Gather-Analyze-Summarize (GAS) method (American Heart Association, 2012), and the Outcome-Present State-Test (OPT) model (Kuiper et al., 2008).

Each debriefing model has nuances as to how questions are asked of the learners, and the phases of the model; however, at the heart of debriefing is the need to promote self-reflection so that learners can identify what went well, what didn’t, what happened to the patient or situation as a result, and how learning might extend beyond the simulation lab into the clinical environment. Reflection in-action, on-action, and after-action are key components to the learning that occurs during and after simulation (Schön, 1983). Though each model has its own specific components, the overall goals of debriefing are the same: to understand, analyze, and synthesize thoughts, feelings, and actions; ensure that the experience is interpreted correctly by all participants regardless of their role; ensure that learning

objectives are met; link classroom content to clinical practice; and positively change behaviors or practice. An example of faculty members choosing a debriefing model is provided in **BOX 18.7**.

BOX 18-7 Example: Debriefing

Faculty teaching in a large nursing program have recently obtained simulators and equipment as a result of grant funding. The faculty are considering the debriefing model that should be used across the organization. Faculty are in disagreement over which model they prefer to use. The fundamentals instructors want to use plus/delta following short simulations that focus on one skill. The mental health faculty want to use the 3D model, while the advanced medical surgical faculty want to use Debriefing with Meaningful Learning. Faculty are encouraged to align debriefing models with the type of simulation experience and desired outcomes, while realizing that learning a variety of debriefing models may create initial confusion and slow the student time to mastery of the models. The faculty decide to focus on the GAS model for the first semester while exploring more information about other models.

The facilitator has many responsibilities for guiding the debriefing, beginning with a review of the expectations for respectful communication without distractions such as cell phones. A trusting environment should be established to promote confidentiality and freedom to become engaged. The facilitator should keep a learner-centered focus based on the learners' level of engagement by maintaining eye contact and practicing active listening. Using open-ended questions with a Socratic style in conjunction with the advocacy/inquiry technique is a common way to help learners reflect on the experience and what has been learned. Audiovisual records of the experience may be judiciously used for deeper analysis of specific sections of the scenario. It is the facilitator's responsibility to provide constructive feedback, ensure that the learning objectives are met, and help the learners identify how to take what has been learned and apply it to their clinical practice (Dreifuerst & Decker, 2012).

Debriefing should be conducted immediately following the SBE to capture the initial reactions of the learners; however, debriefing may also occur during the scenario if needed. If a critical error has occurred, an important teaching moment has arisen, or the students have gone down a path that will never meet the learning objectives, then it would be appropriate to pause the SBE for debriefing before resuming the scenario. In general, following the scenario, debriefing should take place away from the bedside in order to separate the actions of patient care from the reflective activity of debriefing. There has also been considerable discussion about how long debriefing should last, but there are no research-based decisions. The length of debriefing is dependent on the objectives, the level of the learners, and the actions or decisions that occurred during the SBE (Dreifuerst & Decker, 2012). As with the scenario itself, educators should err on the side of planning for more time than believed necessary.

After a Simulated Patient Death

A special circumstance exists when the SBE involves the death of the simulated patient. There continues to be controversy surrounding simulation of death, especially when it is not tied to the learning objectives of the SBE. Many simulation facilitators are fearful that simulated death experiences will cause the students to believe they killed the simulated patient or are responsible for its death, leading to feelings of guilt. There is also concern that buried feelings may rise to the surface, leading to psychological trauma. The facilitator is charged with recognizing and managing participants' psychological stress (Leighton, 2009a).

Recommendations for managing simulated death include the need to assess the comfort level of the facilitator when dealing with death, provide adequate prebriefing, save simulator death for more advanced learners, prohibit punitive use of simulator death, balance emotions, provide careful debriefing, and assure psychological safety (Corvetto & Taekman, 2013). The debriefing process is vital to managing the psychological stress, as students are given the opportunity to talk about their feelings and explore the events that occurred during the SBE in a safe, nonjudgmental environment. The facilitator may consider involving a chaplain or mental health practitioner in the scenario or during the debriefing. In some cases, the facilitator may need to refer the student for further psychological assistance (Leighton, 2009a). Anecdotally, many students have reported that experiencing death in the simulation lab helped them to better understand previous real-life experiences.

Evaluation/Assessment

The number of valid and reliable tools available for use in SBE has grown dramatically. Adamson, Kardong-Edgren, and Wilhaus (2012) provided a list of these tools, but additional psychometrically sound options have been published since then. For this section, the terms *assessment* and *evaluation* are used interchangeably. Four areas of SBE should be assessed: the experience, the participants, the curriculum, and the facilitator. A selection of tools that have undergone reliability and validity testing follow, though numerous others exist and could be considered for use.

Evaluating the Experience

Despite an educator's best efforts, it is possible to create SBEs that do not meet the learning needs of the students; therefore, it is vital to evaluate the effectiveness of the experience. An early tool developed by the National League for Nursing, the Simulation Design Scale, assesses the students' perception of the objectives, fidelity, problem solving, student support, and debriefing constructs (Franklin, Burns, & Lee, 2014). A tool that evaluates the SBE from prebriefing through the scenario and debriefing is the Simulation Effectiveness Tool-Modified (SET-M). This tool is an update of the SET that was developed in 2005 (Elfrink Cordi, Leighton, Ryan-Wenger, Doyle, & Ravert, 2012) and evaluates items on four subscales: Prebriefing, Confidence, Learning, and Debriefing (Leighton, Ravert, Mudra, & Macintosh, 2015). Students should complete evaluations of the SBE at the end of the experience. These evaluations can provide valuable information about what was most helpful to the students and what might be changed to make the SBE an even better learning experience. It is important to remember that these evaluation tools ask for learner perceptions and do not measure knowledge or skill gain. An example of using an evaluation tool is provided in **BOX 18.8**.

BOX 18-8 Example: Simulation Program Evaluation

Simulation has been integrated throughout an undergraduate pre-licensure program over the past two years. The dean has requested that simulation faculty be evaluated on their performance, but an evaluation instrument doesn't yet exist that can be used. The simulation coordinator reviews results of the SET-M, completed after each SBE, and the CLECS, completed at the end of each academic year. The coordinator identifies that students consistently score very low in the debriefing section of the SET-M. In addition, the students note marked differences in how holistic aspects of patient care are perceived to have been addressed in simulation and in the traditional clinical environment. The coordinator uses this information during the evaluation process to create goals of higher debriefing scores and more congruence in the holistic care aspect of the SBE. To reach the goals, the coordinator will plan for a workshop with opportunities to practice debriefing each semester and plan asynchronous online modules related to enhancing the holistic care opportunities in the simulation lab.

Evaluating the Participants

It is important to measure outcomes following SBE. Knowledge gains are often evaluated through the use of pretests and posttests, while checklists are used by observers to evaluate completion of skills; however, these are rarely evaluated for reliability and validity prior to use. Several psychometrically sound tools are available now for use in evaluating different outcomes of SBE. The Creighton Competency Evaluation Instrument (CCEI) was developed as an evaluation instrument for use in both traditional and simulated clinical environments. It includes four categories—assessment, communication, clinical judgment, and patient safety—along with items designed to rate student performance (Hayden, Keegan, Kardong-Edgren, & Smiley, 2014). The Simulation Thinking Rubric (Doolen, 2015) and Lasater Clinical Judgment Rubric (Adamson, Gubrud-Howe, Sideras, & Lasater, 2011) can be used to evaluate higher-order thinking following the establishment of evaluator interrater reliability. The State-Trait Anxiety Inventory (STAI; Spielberger, 1985) is also commonly used to evaluate anxiety levels of learners under different conditions. Surveys used for the purpose of establishing student satisfaction with simulation as a teaching strategy provide results that can be used internally to garner support for simulation; however, studies related to satisfaction have saturated the literature.

Evaluation instruments have been developed and tested for use with interprofessional simulation activities, such as the Mayo High Performance Teamwork Scale that evaluates crew resource management skills (Malec et al., 2007), the Health Communication Assessment Instrument (Pagano et al., 2015), which is currently undergoing psychometric assessment of revisions to the instrument, the ISBAR Interprofessional Communication Rubric (Foronda et al., 2015), and the Actions, Communication, and Teaching in Simulation Tool (ACTS) designed to evaluate the contributions of confederates to simulation experiences (Sanko et al., 2016).

Evaluating the Facilitator

There are two tools that specifically address the debriefing construct of the SBE. The Debriefing Experience Scale (Reed, 2012) consists of 20 items within four subscales: analyzing thoughts and feelings, learning and making connections, facilitator skill in conducting the debriefing, and appropriate facilitator guidance. The Debriefing Assessment for Simulation in Healthcare (DASH) tool (Brett-Fleegler et al., 2012) considers six elements related to the behaviors of the facilitator. These tools can be completed by students to provide valuable feedback to faculty about their debriefing skills.

The Facilitator Competency Rubric (FCR) is a new observational evaluation

instrument designed to evaluate the facilitator in the areas of preparation, prebriefing, facilitation, debriefing and evaluation, in accordance with Benner's (1984) novice-to-expert theory. The goal of this rubric, whether completed by an observer or as a self-evaluation, is to determine if the facilitator is competent, requires additional knowledge or training, or is proficient/expert and can provide training and mentorship to the novice facilitator (Leighton, Mudra, & Gilbert, 2018).

Simulation as a Part of the Curriculum

The Clinical Learning Environment Comparison Survey (CLECS; Leighton, 2015) was created to compare how well undergraduate nursing students believed their learning needs were met in the traditional and simulation learning environments. This tool was developed to help clarify the similarities and differences between the two environments and was used in the NCSBN simulation study. This valid and reliable tool has six subscales: nursing process, teaching-learning dyad, communication, self-efficacy, holism, and critical thinking. This tool can be used at the end of the semester for course evaluation, or at program end to provide valuable information about how well learning needs were met in the traditional and simulation learning environments throughout the students' course of study. The tool can also be used as part of a comprehensive evaluation of simulation lab faculty and staff or to evaluate individual SBEs.

High-Stakes Testing

The use of high-stakes testing with simulation for nursing has been under a microscope for several years. *High-stakes evaluation* was defined as a process "that has a major academic, educational, or employment consequence . . . at a discreet point in time" (INACSL Standards Committee, 2016, p. S41).A roundtable discussion held at the 2009 International Nursing Association for Clinical Simulation and Learning conference led to general agreement that while a worthy goal, nursing education was not yet ready for high-stakes testing, due to a variety of reasons, including the fact that not all nursing programs are teaching with simulation (due to budgetary reasons). Another concern of significant proportions was the lack of consistent methods of facilitation and use of standardized scenarios (Kardong-Edgren, Hanberg, Keenan, Ackerman, & Chambers, 2011).

The NLN undertook a multisite project to investigate the use of simulation for high-stakes evaluation. Experts worked to develop scenarios that were appropriate for this type of evaluation, while noting that facilitator differences can still alter outcomes (Willhaus, Burleson, Palaganas, & Jeffries, 2014). Some nursing programs do use simulation for high-stakes; however, Kardong-Edgren et al. (2017) warn that little research has been done into development of inter- and intrarater reliability, stating, "All faculty are content experts, but not all are expert evaluators"

(p. 67). On a campus level, it is imperative that nursing program faculty identify their philosophy related to evaluation or assessment in the simulation laboratory. To begin, definitions must be developed or adopted. During meeting discussions, participants use a variety of different terminology to describe evaluation, assessment, and testing. It is clear that many of these conversations are attempting to compare apples to oranges.

Questions that should be considered during discussions about evaluation, testing, and assessment could include:

> Is the simulation lab better suited for facilitating learning or for evaluating students? Is it possible to do both?
>
> Is it fair to test students if they have not had significant exposure to SBE?
>
> Are faculty all competent in their roles? How is this variable controlled for evaluation purposes?
>
> How do we account for the variety of student responses and interventions that are inherent in simulations?
>
> Are we sending mixed messages when we tell students that simulation is a safe environment to learn in and then use that same environment for evaluation?
>
> Do we test students in the traditional clinical environment? Is it then fair to test in the simulation lab?
>
> If the focus is on testing, will the experience become an experience about performing rather than about learning?
>
> What can you learn about your students in the simulation environment without formal evaluation or testing?
>
> If we say that most of the learning occurs in debriefing, can we fairly evaluate students before that debriefing occurs? (Leighton, 2009b, p. e57)[1]

Research and Advancement Opportunities

A wide variety of research opportunities exist for educators using simulation. Outcomes-based simulation research has grown exponentially as faculty have become more sophisticated in their understanding of this pedagogy.

Conducting research in the simulation laboratory has several advantages over research in the traditional clinical environment—first and foremost, there is no risk to patients. Facilitators are also able to control the scenario, patient responses, communication with healthcare providers, and equipment. However, faculty members, as a variable, can be difficult to control and need to be trained as a facilitator in the research study so that they respond the same way for each participant or group that is participating in the study. The lack of standardization for educating faculty to the facilitator role creates challenges with research, particularly multisite studies where faculty at different schools are involved. Other challenges to simulation research include inconsistent use of theoretical frameworks, not conducting sample size or power analysis prior to the study (Franklin, Leighton, Cantrell, & Rutherford, 2015), and lack of adherence to standard research reporting guidelines (Cantrell, Franklin, Leighton, & Carlson, 2017). It is a responsibility of each simulationist to help move the field forward through well-designed research studies and documentation of best practices and standards of excellence. It is no longer enough to document that students like simulation or that they prefer this method to another. The time has come to document that learning occurs and study the transferability of that learning to traditional patient care. As the competition for clinical sites continues to increase, simulation will take a vital role in the future of nursing education. INACSL (2018) has outlined the following priorities for research:

Translational research

Evaluation methods

Validity and reliability of instruments

Ratio of clinical time to simulation time

Prebriefing

Use of theory in simulation

Measurement of higher-order thinking (e.g., clinical reasoning)

Faculty development

Facilitator competence

Communication

Two international simulation organizations have taken the lead on furthering the competency of faculty and the overall management of simulation programs: INACSL and the Society for Simulation in Healthcare (SSH). Both organizations include members of all types of healthcare educators, although the INACSL has a narrower focus to nursing. The two organizations affiliate with each other, and members can avail themselves of numerous benefits, including ongoing education, annual conferences, and academic journals.

The SSH has created a certification program for simulation educators that includes an advanced level. In addition, SSH has developed an accreditation program for simulation centers and laboratories. Following a self-study and site visit, centers around the world have been accredited.

The Association of Standardized Patient Educators (ASPE) provides support and education for those who work with this type of simulation. Numerous other simulation organizations exist around the world and for specific audiences, such as the International Pediatric Simulation Society. In addition to the resources offered by these organizations, the NLN hosts the Simulation Innovation Resource Center (SIRC), an online repository of course offerings, forums, and databases with information to support simulationists.

Conclusion

This chapter has provided information intended to help those who take on the challenge of facilitating learning in the simulation laboratory. While many nursing programs have managed to obtain funding for simulation equipment, there continues to be little forethought given to how faculty will manage to learn this type of teaching strategy and where the time will come from for that purpose. This chapter was intended to aid the process of faculty development by providing realistic ideas that can be easily implemented by facilitators in simulation laboratories. The simulator and its features have little value if faculty do not know how to effectively teach with the technology.

TEACHING EXAMPLE: STRATEGY

The strategy involves the incorporation of fidelity, role of faculty, and holistic aspects of patient care for a beginning assessment course using an SBE. Participants in the simulation laboratory include the course faculty member and up to eight students.

Expectations

The students are expected to obtain subjective and objective assessment data and inform the healthcare provider of their findings. Prerequisite knowledge should include anatomy and physiology of the cardiovascular system and corresponding assessment techniques. The example involves a young, morbidly obese female patient whose symptoms are precipitated by a systolic heart murmur. Guidelines for the instructor follow.

Setting

Place the simulator on a bed or stretcher and inform students the “patient” has not been seen by a healthcare provider. Place two individual breast models (often used to teach palpation for lumps) on the chest of the simulator. The patient’s obesity can be simulated by placing a pillow over the abdomen and securing it with elastic wrap or a gauze roll. Put female clothes appropriate for the weather on the simulator (to make it easier to dress the simulator, cut the shirt up the back, leaving the collar intact; cut the pants along the back to the inseam) and add a woman’s wig to the head. Makeup can be applied to the simulator after it is tested in a nonvisible place for staining. Personal effects such as a magazine, cell phone, and purse can be placed on the bedside table next to a bottle of sugary carbonated beverage.

Simulator Settings

Set systolic murmur (or other preferred abnormal heart sound). All other settings are normal.

Faculty Role

If this is the first SBE for students, they are at a novice level and will need faculty assistance. Orient students to the simulator and its applicable features prior to starting the scenario. Only tell students what they need to know to care for this patient, as providing information on IV sites, defibrillation, or monitoring is above their knowledge level and will be extraneous information.

Begin outside of the simulator’s room and brief students on the patient who has just arrived at the healthcare provider’s office. Report is as follows: “This is a 38-year-old female with complaints of fatigue, orthopnea, and palpitations. She is 5 feet, 2 inches tall and weighs 100 kilograms.”

Student Expectations for Focused Health History

Knock on the door and announce entry
Introduce self and role to patient
Wash hands
Ask subjective questions to obtain more information from the patient, such as the following (with answers in parentheses):
How long ago did your symptoms start? (6 months ago; gradually worsening)
Any associated symptoms? (no shortness of breath or chest pain)
What makes the symptoms worse? (walking and exercise)
What makes the symptoms go away? (rest)
How many pillows do you use at night? (three)
Do you have any history of medical problems? (no)
Do you have any family history of medical problems? (no cardiac disease)
Do you smoke, drink alcohol, or use drugs not prescribed for you? (no)
How much do you exercise in a week? (none)
Has there been any change in your weight recently? (gained 40 pounds past 4 months)
What is your typical diet? (fast food, soda)
Do you take any medications? (ibuprofen as needed for back pain)
When was the last time you saw a healthcare provider? (2 years prior for a PAP smear)
Questioning may continue until the facilitator believes that enough data have been collected. The facilitator then prompts the beginning of the physical assessment.

Student Expectations for Physical Assessment

Wash hands upon entering the room
Explain what will be done to patient
Conduct general survey
Provide for privacy
Complete head-to-toe physical assessment with emphasis on cardiovascular system
Wash hands after assessment of the patient is complete
Make sure personal items are in reach
Ensure safe environment

During the physical assessment, the students will discover an abnormality in the heart sounds. Although it may be beyond their scope to recognize and define a heart murmur, they should be able to identify that an abnormality exists. All other findings, including vital signs, are normal.

Holistic Aspects (one or more may be included)

Psychosocial. Patient does not have health insurance and voices concern about how to pay for office visit, follow-up tests, or prescriptions.
Spiritual. Patient may be anxious and ask the student to pray with her.
Cultural. Patient may be from a culture other than that of most of the students.
Developmental. Patient may blame weight gain on a recent life experience, such as a divorce.

Anticipated and Unanticipated Events and Consequences

Nervousness

As this is the first SBE for the students, they are prone to nervousness and have trouble getting started. The facilitator may need to ask each student to pose a subjective question to the patient. The person responding as the patient should allow time for questions to be formulated, not rushing the students.

Scattered Thought Processes

Novice students tend to randomly ask subjective questions without organization. Following subjective questioning, the facilitator can help them to prioritize their completed assessment questions and findings.

Incorrect Assessment Techniques

The facilitator is at the bedside with this novice group and can correct technique as problems occur. Unless the SBE is recorded, learners at this level may not recall what they did right or wrong by the time debriefing occurs.

Failure to Recognize Abnormality

The novice student may fail to recognize an abnormality due to lack of experience to draw upon. If this is the case, the facilitator should point it out and have all students listen to the heart sounds. The respiratory rate may be lowered on the simulator and the heart sound volume increased to facilitate hearing of abnormal heart sounds.

Evaluation of Learner Attainment

The intent of this SBE is to provide an introductory-level experience for the student who has not yet interacted with a real patient and is just beginning to learn physical assessment techniques and concepts. The facilitator will often be surprised by the learner's inability to formulate subjective questions and conduct a basic physical assessment. Remembering that novice learners have no experiences to draw upon will keep expectations in perspective. Learners should be able to demonstrate physical assessment techniques learned in class; however, they often need help in refining their technique and need reassurance that they are doing the assessment correctly.

Discussion Questions

1. You are responsible for ensuring that faculty who will be facilitating learning in the simulation lab are qualified. What faculty development opportunities will you consider providing so as to meet the conditions set by the National Council of State Boards of Nursing guidelines?
2. When designing a simulation-based learning experience, what resources are available to help you determine what the focus of the experience should be?
3. You have been asked to address the faculty at the monthly faculty senate meeting. The purpose is to try to gain support for integration of simulation throughout the curriculum. What information will you convey in the 5 minutes you have been given?

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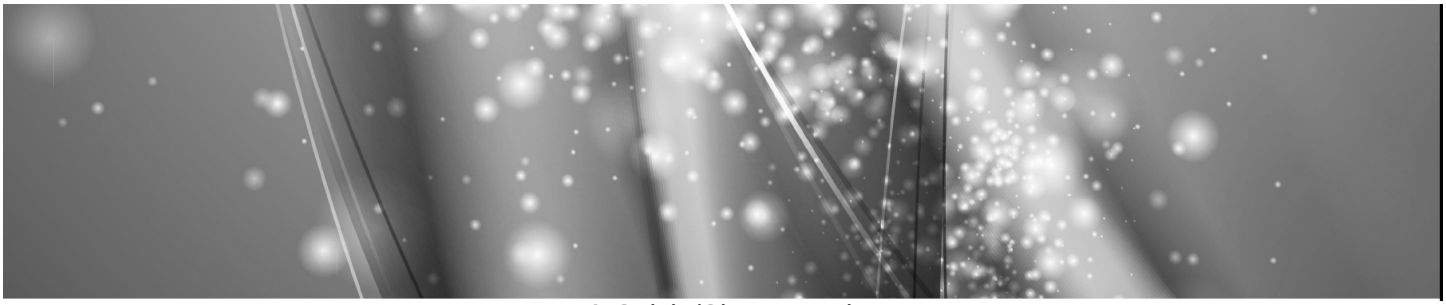
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CHAPTER 19

Learning in an Interprofessional Faculty-Mentored Student Practice Center

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Introduction

If we are to pursue excellence in any field, we must go beyond knowledge and skills in our education of graduate students. We need to identify the qualities of mind which underlie excellence and leadership potential in our disciplines, and we need to build those qualities into the foundations of our educational programs. It has also become increasingly clear over the past decade that healthcare education must be provided in an explicitly interprofessional manner if graduates are going to enter the workforce with the necessary collaborative skills to work effectively on interprofessional teams (Cahn et al., 2018). In this chapter we address both these issues in our description of a graduate education program for speech-pathology students housed within the Institute of Health Professions.

Starting with our first need to identify qualities of mind which underlie excellence, we ask, What does it mean to have a *critical spirit*? Experts in the field of critical thinking use this metaphorical label to mean “a probing inquisitiveness, a keenness of mind, a zealous dedication to reason, and a hunger or eagerness for reliable information” (Facione, 2015). The faculty members of the healthcare programs at the MGH Institute of Health Professions (IHP) asked themselves this question: What are the foundational components that excellence and leadership in the field are built on, and how can they be identified and nurtured in our graduate students? The result has been the development of a core set of competencies, called the IMPACT Practice Core Competencies. These competencies, based on the foundation of the four Interprofessional Education Collaborative Core Competencies (IEC, 2016), emphasize excellence and systematically develop the skills of professionalism, patient- and client-centered care, communication, clinical decision making, systems-based practice, and leadership for a diverse society in our students (see **TABLE 19-1**).

TABLE 19-1 IMPACT Practice Core Competencies

Professionalism	Commitment to ethical principles, humanism, accountability, and altruism.
Patient-and Client-Centered Care	Collaboration with the healthcare team in partnering with patients/clients and their families to meet health-related needs.
Communication	Exchange of information with and listening to patients, families, and members of the healthcare team.
Clinical Decision Making	Decision making based on open-minded analysis, deliberate thinking, and reflection that leads to appropriate action.
Systems-Based Practice	Awareness of the larger context of health care and the ability to promote changes that enhance the delivery of care.

Leadership	Courage to influence change for the benefit of patients/clients, the health system, and the professions.

Professional licensure and program accreditation standards form the basis of the academic and clinical curriculum of clinical education programs. The American Speech-Language-Hearing Association (ASHA) requires that the education of graduate students seeking to become speech-language pathologists include the acquisition of both *knowledge* and *skills* in a variety of content and disorder areas (ASHA, 2014). The breadth and depth of knowledge and skills that are required for recent healthcare graduates to practice effectively in current times is immense. Programs of all types are struggling to develop sophisticated knowledge and skills in their graduates to meet an enlarging scope of practice. Recent updates to program accreditation standards across professions also now require students to be educated in interprofessional contexts to gain experience with interprofessional practice (Council on Academic Accreditation, 2019). So, why expand the demands on students and faculty by developing these extra sets of requirements related to the ideas of excellence, leadership, and interprofessional practice?

The reason is simple. In a world where knowledge is exploding and skill sets must keep pace, the most valuable education is one which teaches you to think critically, to be innovative, to collaborate effectively, to take the perspectives of others and modify your behavior accordingly, to understand the value of taking thoughtful risks, to practice in a manner which is self-reflective, and to understand the perspectives of other healthcare professionals involved with a patient's care. Education should teach students how to unlock their personal potential to spend a lifetime pursuing excellence and becoming not just leaders in their chosen field, but in interprofessional practice.

As in most healthcare programs, ensuring students gain the requisite knowledge base required by the accrediting body is accomplished primarily via academic coursework. And, like education models in many healthcare professions, most programs in speech-language pathology in the United States utilize a series of clinical externships in which students work in different healthcare and educational settings to acquire the clinical skills they will need to become professional practicing clinicians. Many also have on-site clinics in which students learn the preliminary clinical skills they need before venturing out to their externships. In this chapter we describe the MGH Institute of Health Professions' faculty-mentored student practice clinic, known as the Speech, Language and Literacy Center (SLLC). The center operates as both an entry-level and an advanced practice clinic. The SLLC operates within a broader IMPACT Practice Center at the Institute whose mission is to provide multiple opportunities for students to experience interprofessional education (IPE) and interprofessional practice (IPP). Although the examples we provide will necessarily be related to speech-language pathology, we believe the lessons

learned from this clinical educational model are pertinent to a broad range of healthcare fields.

The model of clinical education we describe in this chapter is based on the *teacher-practitioner model* (Kleinpell et al., 2016; Meyer, McCarthy, Klodd, & Gaseor, 1995; Montgomery, Enzbrenner, & Lerner, 1991; Peach & Meyer, 1996). We created an enhancement of this model that also includes scholarship, which we refer to as the teacher-practitioner-scholar (TPS) model. One of the important features of our implementation of this model, highlighted in this chapter, is the integration of academic (knowledge-based) with clinical (practical and excellence skills-based) education. We describe both our entry-level and advanced practice clinics and then discuss the positive outcomes of using this model, as well as several innovative learning experiences focused on interprofessional practice that operate within the IMPACT Practice Center.

Definition and Purpose of the Teacher-Practitioner-Scholar Model

The essential principle of the TPS model is that students learn best from individuals who have roles as teachers, scholars, and practicing clinicians. In this model, supervising faculty members teach in the classroom, engage in scholarly activities, and provide clinical education in the center. In the classic model of supervision in speech-language pathology (Anderson, 1981; McCrea, 2014; McCrea & Brasseur, 2003), a continuum of skill development is emphasized for both the student and the clinical educator. Interaction between the two parties is also a key feature of the continuum model. This interaction and the continuum of skill development are also fundamental features of the TPS model. This model, which is used by many academic institutions, seeks to create a strong linkage between scholarly and professional roles of the clinical educator. Students have opportunities to see firsthand how theory relates to their clinical work with individuals with communication disorders. This model is the foundation for our faculty-mentored student practice center, which operates as a site for the education of students and provides communication therapy services to the community. This model also is a natural fit for interprofessional education and practice. While students learn about what speech-language pathologists do in practice, they are also learning how that practice interfaces with other rehabilitation professions, such as occupational therapy and physical therapy, and with healthcare professions such as nursing and physician assistants.

In its main role as a setting focused on student learning, the IMPACT Practice Center provides an atmosphere for the integration of academic knowledge and research-based practice in a clinical environment. As a place where faculty mentor beginning clinicians, an on-site clinical center is an ideal environment for linking clinical practice with theory and academic coursework. We use the term *clinical educator* to represent a person in the professional role of clinical instructor or preceptor. This setting encourages the development of core competency skills, as well as the development of students' self-evaluation and self-reflection skills and the establishment of personal goals for clinical and professional growth. Superficially, it might appear that the "best" learning atmosphere is a real-world setting, such as a hospital, rehabilitation center, or specialty clinic. While these settings offer diverse, rich, and important experiences, the pressures of productivity, insurance issues, and medically complex patients make these environments exceptionally challenging for beginning clinicians. Like many healthcare professionals, speech-language pathologists face personnel shortages and increased requirements for documentation. External clinical educators often struggle with the demands of high caseloads and productivity and not enough time to teach and support students who

have limited knowledge and experience. Therefore, these settings are often best suited to advanced students who have already developed a solid basis in the understanding of intervention planning, diagnosis, and professional interaction.

The design of the TPS model at the MGH Institute is uncommon across graduate programs in speech-language pathology nationally. Due to institutional requirements related to tenure and financial pressures at many colleges, academic faculty rarely participate in clinical work; clinicians involved in supervising students within graduate school clinics are often not considered faculty and may not be as involved with academic teaching and scholarship. Thus, the split between researcher/academic and clinician begins immediately in the educational process itself. Beginning students need clear paths drawn from the classroom to clinical application if they are to learn to think critically while developing a scholarly approach to practice based on evidence from research. Our model provides this bridge from the classroom to the clinic. It is a bridge crossed in both directions, because research in applied fields should be guided by questions which arise in the real world of practice. A secondary purpose of the faculty-mentored student practice center is to provide diagnostic and therapeutic services to community members with communication disorders. Because the faculty-student practice center is an integral part of the educational program, our institution financially supports the center as a place for student learning. Therefore, the center is not dependent on outside sources such as state or governmental funding or payments from insurance or private-pay individuals. This is possible because of the nature of the integration of academic and clinical resources, including teachers and clinical educators. Furthermore, because the clinic is not dependent on outside funding, it is able to provide services to underserved and underprivileged populations. Additional pro bono clinical services available to the community at the IMPACT Practice Center also include occupational therapy, physical therapy, and health and wellness programs headed by nursing and physician assistant faculty clinical educators. Because all these services take place at the same site, numerous opportunities have been created for students to learn with and from their peers in other programs and to observe and participate in interprofessional practice.

Use of the Teacher-Practitioner-Scholar Model

The Entry-Level Clinical Center

The Speech, Language and Literacy Center was designed as a space for beginning graduate students to work with children and adults who have various speech and language disorders, as well as for experienced graduate students to work in an outpatient setting with adults who have acquired communication disabilities. The physical layout of the IMPACT Practice Center includes 25 individual treatment rooms of various sizes, which can be reconfigured for multiple purposes. A digital observation system allows parents, caregivers, students, and clinical educators to observe and record sessions. All treatment rooms have video cameras that project to a third observation room equipped with television monitors. This gives student clinicians independence in the therapy room even while they are being carefully observed by a clinical educator.

Students are supervised by licensed speech-language pathology faculty members with advanced expertise in their field. All clinical educators are faculty members in the Communication Sciences and Disorders Department and are promoted on the basis of excellence in teaching and scholarship. This integration of academic and clinical expertise allows for a unique learning atmosphere for the students, and a rich collegial environment for faculty.

Students in their first year of the graduate program will have two semesters of clinical experience in the Speech, Language and Literacy Center. During one of these semesters, students work with children who have spoken language disorders, such as toddlers, preschoolers, or early school-age children who demonstrate difficulties in the areas of expressive or receptive language, articulation or phonology, or social communication. These children might also present with a specific diagnosis such as autism, cerebral palsy, or Down syndrome, but most often do not have a specific diagnosis. Students also spend one semester with school-age children and adults who have reading and writing disorders. Some of these clients may have a diagnosis of dyslexia. These two semesters of clinical experience occur during the first and second semesters of the students' graduate program. Each student is paired with another student as a dyad partner. Dyad partners share two clients who are each seen twice a week for individual sessions. Each partner is responsible for the creation of weekly lesson plans as well as participation in diagnostic and therapeutic activities. This experience of working with a partner was designed to explicitly facilitate the development of professional collaboration skills. Beginning clinical work is often highly stressful for novice clinicians. Some students may have experienced some type of clinical environment during their undergraduate

education or prior employment, but many see the clinical world as foreign and daunting. Pairing each student with another beginning graduate student fosters a feeling of companionship and collegiality. In addition, working in a partnership provides students with direct experiences with more than one client. This diversity of clients leads students to a greater understanding of a variety of disorders and fosters clinical growth in a manner that working independently with only one client would not allow.

In addition to the dyad partnership, students also participate in a weekly clinical team (CT) meeting. Students are provided written documentation of CT group expectations and responsibilities. These include examples of behaviors demonstrating the core competency skills as well as process requirements for case presentation. For example, students are expected to actively participate in group discussions by: asking questions which demonstrate critical thinking, giving examples of innovative approaches they have developed, taking the risk to discuss and analyze errors, reflecting on and assessing their performance, thinking from the perspective of the client, and communicating in a professional manner.

In the weekly CT group meeting, students spend two hours with a small group of peers in a discussion format, facilitated by a faculty member. Therapy sessions are recorded so students can then select a digital segment to present to the group. For example, students might select a clip of a therapy activity which yielded unexpected results, a positive outcome, or perhaps led them toward a question about the client and the therapeutic process. Each student is given time to discuss issues pertaining to his or her client and is also required to participate in discussions regarding other clients. This forum engages each student in a learning process that expands his or her knowledge base beyond a single client. Because multiple clients are represented, students learn about therapy techniques and treatment planning for a variety of disorders. This type of “peer group supervision” encourages students to expand their perspectives to include alternate viewpoints through critical thinking and exploration. Therefore, students have the opportunity to learn from their peers as well as their clinical educator (Morris, Gorham-Rowan, & Robinson, 2018; Williams, 1995).

A clinical discussion group syllabus guides the faculty member in facilitating the group. The syllabus includes the core competency and knowledge and skill objectives to be targeted each week. Faculty use a questioning hierarchy based on Bloom’s revised taxonomy (Anderson & Krathwohl, 2001) to facilitate growth in critical thinking. Students are provided with both the hierarchy and Bloom’s taxonomy, which are also used to guide written feedback in planning documentation. Students are given explicit information about how a person moves through the hierarchy of critical thinking toward advanced skills and self-supervision (Anderson, 1988); the progress is facilitated by the clinical educator by means of scaffolding and the use of facilitative questions. Encouraging active engagement in the learning

process as a group facilitates critical thinking and self-evaluation in all members. Expectations for clinical team meetings should be clear and openly discussed with students (see **TABLE 19-2**).

TABLE 19-2 Expectations for Clinical Team Meetings

Purpose of CT Meetings	Role of Students	Role of Clinical Educators
■ Facilitate the development of core clinical excellence skills: 1. Professionalism 2. Patient-centered care 3. Communication 4. Clinical decision making 5. Systems-based practice 6. Leadership 7. Self-knowledge and reflection ■ Create a community of collaborative learners ■ Expose students to a broad range of clients ■ Provide information ■ Provide teaching context for learning and practicing new skills	■ Pursue knowledge actively. Ask questions! Resource! Read! ■ Think critically. ■ Analyze and synthesize information. Integrate and apply information from courses. ■ Learn collaboratively with your peers. Offer ideas and resources, ask questions, seek to support the progress of all clients seen by your group. ■ Risk making mistakes! ■ Reflect thoughtfully and honestly about your performance and development. ■ Come to meetings having prepared to use the learning time actively, efficiently, and effectively.	■ Provide information. ■ Model core skills. ■ Scaffold student development. ■ Facilitate the development of critical thinking. ■ Facilitate collaboration. ■ Encourage, model, and reward risk taking and innovation. ■ Require active learning. ■ Facilitate the development of self-knowledge. ■ Provide opportunities for self-evaluation. ■ Evaluate student progress and participation.

The development of self-knowledge and reflection is foundational to excellence in clinical practice. Active engagement in one's own learning encourages students to maintain an inquisitive nature and nurtures the development of critical thinking (Morris, Gorham-Rowan, & Robinson, 2018; Facione, 2015).

The concept of a continuum of competency utilizes a mastery approach to clinical learning and gives the students a feeling of acceptance of current skills, while creating a mentorship relationship between faculty and student. Students are asked to self-evaluate and identify strengths and areas of growth in the beginning of the first term in the form of a narrative reflection on excellence. Students complete a reflective, competency-based self-assessment of skills during midterm and final clinical evaluations. Clinical educators use this assessment to assist students in developing clinical growth goals. It is common for students to either overestimate or underestimate their skill level at particular stages during the clinical learning process. Discussions between clinical educators and students about perceived skills allow for the self-evaluation process to become foundational to growth in clinical excellence. Clinical educators can then guide students in determining appropriate goals and

objectives for growth. Students are required to take this self-assessment into advanced practice experiences to continue the reflection and growth process.

The Advanced Practice Clinical Center

The clinical excellence curriculum and the TPS model provide the base for clinical education across terms. In keeping with the philosophy of the entry-level clinical center, clinical education is provided in the advanced practice center by faculty members who also teach and conduct research in acquired communication disorders. Students in the advanced practice clinical center are expected to further develop their clinical excellence and critical-thinking skills to a more advanced level.

The advanced practice clinical center specializes in providing diagnostic and treatment services to adults with acquired neurogenic speech and language disorders such as aphasia, dysarthria, alexia, agraphia, and other cognitive-linguistic disorders resulting from brain damage. The center was started to provide a site for a subset of the second-year graduate students to gain clinical experience working with adults. As part of the IMPACT Practice Center, it operates as a pro bono outpatient rehabilitation center which provides speech-language pathology services to people who have acquired communication disorders. The advanced practice center operates simultaneously with the entry-level clinical center, so both first- and second-year students are seeing clients in the center at the same time. Many other speech-pathology graduate programs throughout the country operate on a similar model. In addition to providing a clinical practicum experience, the advanced practice center also allows students to learn several important realities of the larger healthcare arena. With the high costs of health care in the United States and the limited availability of funds to pay for services, many adults with communication disorders no longer qualify for services. The reasons for this are varied, but generally arise from severe limitations in coverage for chronic conditions such as aphasia. Although a variety of therapies are generally covered by insurance plans in the first few months after a stroke or injury, many insurance plans no longer cover treatments for communication disorders in the chronic phase. As they enter the post-acute period, many people with brain injuries from stroke or head trauma are denied further treatment. This is particularly true for individuals with limited means or those without family members to advocate for extended coverage beyond the acute period.

Settings such as the advanced practice clinical centers in universities and other healthcare education institutions can serve as bridges across this gap in service. Patients can receive the treatments they require while students gain valuable insights into both the nature of chronic impairments and how variably people respond to their chronic conditions. The clinical educators in the advanced practice clinic manage all new referrals and discharges of clients. Clients may continue to receive services in the clinic for as long as they are benefiting from the intervention provided. Following the World Health Organization's *International Classification of Functioning* (ICF) model (WHO, 2001), both impairment-based and life-participation-based treatments are incorporated into the clinical practice model. *Impairment-based*

therapies are those that would be considered standard treatments to improve a specific speech or language deficit which is interfering with communication to some extent. For example, direct treatment targeting impairments in syntax (the rules for combining words in language) would be a type of impairment-based therapy which could be provided. Life-participation-based treatment approaches are attempts to take a step further to address the effects the communication impairment has on an individual's quality of life and ability to participate in desired life activities. This approach also considers the environment as a potent factor in determining outcomes for post-stroke patients. By creating a supportive communication and social environment in the center, some of the environmental barriers that are routinely experienced by people with aphasia are lessened. Students also learn about a patient-centered orientation to care provision whereby each individual they are working with is more fully understood as a person living in an environmental context and not seen simply as a collection of impairments. In their academic coursework covering acquired adult language disorders, students learn about the life participation approach to aphasia (Chapey et al., 2008). Students learn about this approach and other recent advances in their academic coursework, but experiencing them firsthand in the advanced practice clinic makes them come alive for students. In this way, students learn to take on an advocacy role they will be able to extend into, and expand on, in other clinical contexts.

Along with faculty, students may participate in research in either the entry-level or advanced practice clinic. They have an option to complete a master's thesis during their two-year program, and many have completed projects either fully or partially within the on-site clinic. Individual case studies, small-group assessment studies, and short-term treatment studies are possible types of projects that can be conducted within the center. In planning and conducting their research, students become familiar with the process necessary to complete a research project, from the initial step of getting approval from an institutional review board (IRB) to the final stages of data analysis and interpretation. Although students are not required to do their research projects in the clinic, the on-site availability of subjects of all ages with a variety of communication disorders makes the process easier to accomplish for many students. Finally, the mix of clients in our waiting areas, who are attending either the entry-level or the advanced practice clinic, has presented some interesting learning experiences pertaining to living with disabilities among our students, faculty, clients, and their families. For example, we observed children attending the clinic reading books with an adult with aphasia in the waiting room. Young children have direct observation of individuals with disabilities, and adult clients have opportunities to interact with young people in a social communication situation that might not otherwise be available to them. Similarly, students, faculty, and staff members benefit from the environment. For example, students in the entry-level clinic have the opportunity to interact with adults who have aphasia in the social environment of the

waiting room before they have the course on aphasia. This gives students of all programs initial exposure to a population they will learn about later in their education.

Because speech-language pathologists rarely work independently in the healthcare and educational fields, learning how to function on a collaborative team is a crucial skill. To foster these skills, students across all programs are required to participate in a number of interprofessional educational courses and clinical experiences at the Impact Practice Center. Multiple examples of the IPE and IPP activities that have been developed for use in the IMPACT Practice Center are available in the Appendix.

Types of Learners

A faculty-mentored student practice center can support a wide range of student learning styles and needs, including students who have little experience with clinical application as well as those who are moving toward independence. Using the TPS model, clinical educators can often be matched to students with specific needs. For example, an instructor who is an expert writer might supervise a student who needs assistance with the development of clinical writing skills. This model also facilitates the learning styles of students who lack confidence, as well as those who appear overconfident.

It is common for students facing their first clinical encounter to feel unprepared, anxious, and frightened. Although many of these students find they can move beyond this fear and quickly become acclimated to the clinical environment, some students continue to lack confidence in their clinical and interpersonal skills. The model allows the instructor to approach this type of student in a positive, supportive manner. Clinical educators might spend time in the therapy room with the student clinician modeling techniques and strategies before moving outside of the room to observe via camera. Students are also encouraged to use self-evaluation and peer discussion as the means for improving self-confidence and awareness of areas of strength. Likewise, students who have exaggerated perceptions of their knowledge and clinical skills (Brasseur, McCrea, & Mendel, 2005; Dowling, 2001) can also be supported in a faculty-mentored student practice clinic. It is for these students that the development of self-evaluation skills is most critical prior to going into an external placement. Analysis of a video after the session can be useful for the student to have a more objective view of what occurred in the session. For example, a clinical educator might assist a student in analyzing a video clip of a session where a client's desired behavioral objective was not met. The clinical educator can then help the student identify clinical and personal skills that should be further developed.

Recently, institutions of higher education have increasingly been moving in the direction of competency-based education models and designing educational models to be more interprofessional. In an environment where the costs of higher education to the student are coming under increasing scrutiny with respect to the eventual benefit of that education, using an interprofessional competency-based model makes sense. The IMPACT Practice Core Competencies and the interprofessional activities that we devised for use in our on-site clinical centers can serve as a model for developing the competencies that students across all programs are expected to master over the course of their education.

Conclusion

Many positive outcomes have emerged because of this clinical education model. First, the TPS model has allowed our students to be highly prepared when entering external practicum experiences. Skills learned in the entry-level center are referred to as “portable skills” in that they are the key components of clinical excellence in all professional settings where a speech-language pathologist may practice, including clinics, hospitals, schools, and home environments. As a result, our students receive multiple job offers upon graduation and have become highly successful professionals in the field. The emphasis on excellence and interprofessional collaboration throughout the program allows students to become lifelong learners who see their professional growth as a continuum of development. Many alumni currently volunteer to precept our students in their clinical setting, and several former students have returned to our program to teach courses and supervise students in our on-site clinic.

Use of the teacher-practitioner-scholar model in a faculty-mentored student practice clinic allows the integration of academic knowledge, the development of clinical skills, and the beginning preparation for a lifetime of excellence. Leadership and the pursuit of excellence are not something universities “train into” students. Students sit before us with the potential for a lifetime of excellence in service; it is our job to facilitate the unfolding of that potential.

Discussion Questions

1. How might the TPS model enhance a student's clinical education skills in various environments?
2. What would be the benefits and challenges of this model for faculty and staff in a university setting?
3. The idea of clinical excellence is found in many fields in the healthcare professions. What do you see as the primary role(s) of a clinical educator in the development of these skills in your area of expertise?
4. Given that clinical centers in university settings can be costly, in your opinion, do the possible benefits of the faculty-mentored student practice center model outweigh the financial and workload challenges? Why or why not?
5. What are the benefits and barriers that might come with interprofessional education in your setting?

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APPENDIX

Interprofessional Education and Interprofessional Practice Activities at the IMPACT Practice Center

1. **Child Development Day:** This activity involves interprofessional groups of students and faculty observing and interacting with families with infants and toddlers. Students work collaboratively on an assignment to consider strengths, next areas of development, and family concerns while sharing information from their own disciplines.
2. **Screenings:** Working in interprofessional teams, students conduct screenings on a set of clients seen in the center who might benefit from receiving additional services offered by other professions, including audiological services or discipline-specific services.
3. **Simulation:** Choreographed simulation scenarios with standardized patients are part of a required course in the IPE curriculum, which all students take in their first year. The simulation scenarios are designed to give students practice in communicating with patients and family members as well as collaborating with their peers in interprofessional teams. Carefully constructed observations and debriefings are part of the simulations for all students.
4. **Spaulding-IHP's Comprehensive Aphasia Program (S-IHP's CAP):** This is an annual intensive comprehensive aphasia program (ICAP) that is offered to eight participants with aphasia in collaboration with a nearby rehabilitation hospital. Participants attend the program all day for four full days a week for a period of 5 to 6 weeks. Speech-language pathology and occupational therapy graduate students together completed the assessments and developed the participant's individualized treatment plans. Each morning participants received 2 hours of individual or dyad speech and language therapy, followed by an activity-oriented occupational therapy group. They then traveled to the rehabilitation hospital a half-mile away, where they socialized together at lunch. The afternoon programming was a mix of adaptive sports activities (biking, boating), music therapy, group communication treatment, harmonica group, mindfulness meditation sessions, and a weekly swim group. Students learned firsthand about what music therapists or adaptive sports trainers do in their clinical practice. In addition, they were helping to educate these other professionals about how to adapt their communication styles to people with

different types and severities of aphasia. Both participants and students find the program challenging and inspirational.

5. **Wellness Group:** The wellness group is a weekly hour-long group comprised of clients seen in the Aphasia Center and carried out by an interprofessional group of students across SLP, OT, PT, and Nursing under faculty supervision. After conducting a needs-assessment, the students design the topics for each week's group. Sample topics have included tai chi and chair yoga, advocating for oneself at medical visits with aphasia-adapted materials, nutrition post-stroke, and preventing falls.
6. **Caregiver Group:** A caregiver group designed and carried out by interprofessional teams of students across disciplines and supervised by nursing faculty was offered to caregivers of clients seen in the aphasia center. Students learned skills in facilitating a group while enhancing their perspective of life post-stroke by focusing on caregivers' needs and concerns.
7. **Interprofessional Observations:** Multiple observational experiences in the Aphasia Center are provided to nursing students to learn more about rehabilitation services in the context of learning about treatment for chronic care disorders.



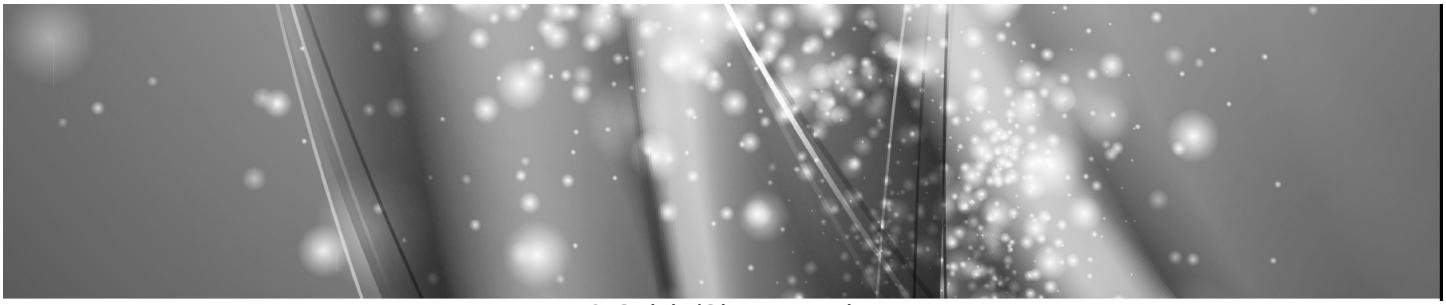
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SECTION V

Teaching in Unstructured Settings

The teaching–learning strategies in this section are intended to encourage new ways of thinking, application of concepts, and use of imagination or visualization as applied in practice settings. By stretching their thinking, students realize that they can independently and successfully solve problems and use clinical reasoning in patient situations. Learning is most effective when students are engaged and assume a participatory role, occasionally counter to roles held previously. The teacher assumes the part of a facilitator, encouraging interaction among students and holding an advisory, rather than leading, role.

Clinical experience has been the mainstay of a health professional's education. Students need foundational experiences specific to their practice roles, in some form of a skills or simulation lab, and they need opportunities to combine or broaden use of both technical and communication skills. Clinical education is a key component of any healthcare profession education. Chapters in this section describe the foundational concepts as well as the method to craft a comprehensive clinical experience. In addition, precepted clinical experiences are a valuable tool to expose the student to authentic clinical experiences as well as observing clinical judgment in a seasoned professional. Lastly, service learning and global experiences broaden the students in extremely meaningful and rewarding ways. This section provides concrete examples for learning in these unstructured environments.



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CHAPTER 20

Philosophical Approaches to Clinical Instruction

Martha J. Bradshaw and Rebecca Meraz

Introduction

The purpose of clinical instruction is to give the student opportunities to bridge didactic information with the realities of practice. Clinical learning within the realm of health professions education is best achieved when there is consistent and meaningful interaction between the student and a clinical instructor who is part of an educational institution. In guided situations, students blend theoretical knowledge with experiential learning to achieve a synthesis and understanding of those endeavors known collectively as *good clinical practice*. Clinical learning is directed by an educator who operationalizes his or her practical knowledge about teaching. Through use of this practical knowledge, the instructor translates the didactic content into application for use in health care.

Clinical instruction in all health professions has become more challenging because of changes in the healthcare environment and the need for health professionals to fulfill increasingly diverse roles. Instructors need to examine their personal philosophy (underlying beliefs) about teaching, especially considering the changes in traditional models of clinical learning. The need for clinical judgment or clinical reasoning, especially in complex patient settings, calls for dual competence, content-specific knowledge and an ability to use the information for clinical practice and decision making. However, constant changes in the practice settings make competence elusive and demanding (Hofler & Thomas, 2016; Kavanagh & Szweda, 2017).

Role of the Clinical Instructor

The goal of the clinical learning experience is for the instructor to guide novices in what constitutes safe practice and to help them develop clinical reasoning abilities. In the clinical setting, planning and selection of clinical learning activities tend to be instructor driven. Depending on the instructor's amount of experience and sense of self-efficacy, the nature of clinical learning may become more student centered. In either case, the teacher guides the students in applying theory to patient care.

The faculty role in clinical instruction is as diverse and demanding as are the settings. The instructor is expected to be competent, experienced, knowledgeable, flexible, patient, and energetic. The instructor should be capable of balancing structure with spontaneity. Clinical learning is aimed at knowledge application, skill acquisition, and professional role development. The instructor must be aware of didactic information the students are studying to provide parallel opportunities for application. The instructor plays a pivotal role in guiding students to understand and find meaning in clinical experiences (Megel, Nelson, Black, Vogel, & Uphoff, 2013).

By recognizing the importance of a skill and performing it safely and efficiently, students will increase confidence in their abilities to provide direct patient care. Labrague and colleagues point out that clinical instructors who exhibit knowledge and skills, as well as respect and assurance to students, have a positive influence on student development of similar behaviors (Labrague, McEnroe-Petitte Papathanasiou, Edet, & Arulappan, 2015). Nursing students have indicated that their most successful clinical experiences (over time, such as a semester or rotation) are ones in which the instructor uses strategies to improve self-confidence, foster responsibility, and encourage clinical reasoning (Etheridge, 2007; Niederriter, Parsh, 2010; Eyth, & Thoman, 2017). In summary, the role of the clinical instructor is to direct the student to think like a health professional (physical therapist, nurse, dentist, etc.).

Typically, two approaches to clinical instruction exist: technical or task focus and outcomes focus (Forbes, 2010). Task mastery instruction is based on the instructor's decisions about what behaviors and ways of thinking are important for care providers and, therefore, should be reproduced in students. In essence, clinical instructors are gatekeepers, allowing students to enter the profession once they have demonstrated their ability. With the outcomes approach, the instructor serves as a mentor, guiding students in patient-centered decision making, actions, and evaluation that serve as the framework for comprehensive care. The focus on skills and other procedures may be suitable with novice students or in technical programs, but the outcomes-focused approach has a more far-reaching effect on students as they progress in their educational program.

The successful student clinical experience—measured in terms of learning outcomes and an internalized sense of fulfillment—is largely influenced by the

planning and selection of learning activities available to the students. Selection of activities, as well as actual teaching, is value-laden and reflects the faculty member's philosophical approach to clinical learning and the role or roles the instructor chooses to fulfill. The roles in which individual instructors see themselves may include interaction with students, serving as a role model, or functioning as an expert reference. In a review of the literature, Collier (2018) found three main instructor characteristics that students see as important for clinical instructors to be effective: competency or current knowledge about nursing, the ability to develop interpersonal relationships, and positive personality traits that make the instructor approachable and a good mentor. Students have reported that instructors who are supportive, respectful, constructive, and, above all else, approachable contribute most to their clinical learning. Once this self-image is determined, teachers consciously or subconsciously shape situations that enable them to enact their various roles. This action enhances teacher effectiveness because the instructor is most comfortable in fulfilling preselected roles.

Foundations for the Selection of Clinical Activities

Another philosophical perspective that governs clinical learning is the instructor's view of the *purpose* of the clinical learning experience. The three most common purposes are for students to (1) apply theoretical concepts, (2) experience actual patient situations, and (3) see and implement professional roles. Based on the chosen perspective, the instructor selects the agency or unit and plans the type of clinical assignment that is best suited for the identified purpose. The realism of clinical activities brings added benefit to any of the three types of experiences.

The planning and supervising of clinical learning call for the instructor's own philosophical stance to be blended with the selected goal(s) of the clinical experience. Student assignments may have one of the following goals: learn the patient, learn the content area, or learn the role. Learning the patient may be accomplished by providing one-to-one total patient care, while learning the content area may include a variety of care activities. For example, applying didactic knowledge of impaired tissue perfusion may include clinical activities aimed at gaining a deeper understanding of the concept. To facilitate learning the role, the instructor may plan activities that emphasize the nurse as a team member, practitioner, administrator, or other selected role.

Within the framework of the assignment, the instructor then makes decisions about which activities will enhance learning outcomes. This process again reflects the teacher's values and beliefs about how learning should take place, and how teacher role fulfillment will influence this learning. For example, the instructor who values participatory learning and role modeling will be actively involved in many aspects of the student's activities, and his or her presence will be felt by the student—with the patient or interacting with staff members. Role modeling, at a basic level, includes teaching students by demonstrating a task or an intervention (Adelman-Mullally et al., 2013). Opportunities for role modeling also can extend beyond the performance of a technical skill to the domains of clinical reasoning, ethics, therapeutic communication, collaboration, and conflict management, to name but a few. Staying calm, having an encouraging attitude, and serving as a resource person are attributes that decrease student anxiety and strengthen the instructor–student relationship (Collier, 2018; Niederriter, Eyth, & Thoman, 2017; Rowbotham & Owen, 2015). The instructor who wishes to foster independence in students may take on the role of resource person and become centrally available to students as needed. The instructor who places emphasis on organization and task accomplishment will oversee numerous student activities and facilitate completion of the assignments within a designated period.

Many instructors value all of these activities as a part of student learning.

Accomplishing these activities calls for a great deal of diversity and planning by the teacher. There are clear advantages for students to be engaged in more than one type of learning experience from one clinical day or week to the next. This broadens the possibilities for learning and also strengthens understanding of multiple roles and diversity of settings. The clinical instructor as a facilitator not only seeks to provide a real-life perspective for clinical instruction and supports experimentation in practice, but also has regard for the uniqueness of each student (Adelman-Mullally et al., 2013). The clinical instructor, with both knowledge of didactic content and practice experience, is well positioned to design formative clinical activities that best prepare students for contemporary practice.

Some philosophical approaches to teaching and role assumption by educators are more subtle, yet promote more complex, higher-order learning. More specifically, the teacher who values empowerment and accountability in students will take on a less directive role and assume one that is more enabling for each student. Bradbury-Jones, Sambrook, and Irvine (2007) point out that the concept of empowerment is associated with decision making, ability to express one's own needs, and ability to negotiate. Personal empowerment is closely aligned with self-esteem, a much needed characteristic for self-confidence. A sense of self-confidence and empowerment develops through positive experiences and reflection of self during the experience. A student who has the freedom and opportunity to advocate for the patient, volunteer a plan of care, and give an opinion about decisions of care will feel more empowered. The instructor who wishes to promote independence in students must be willing to release a certain amount of control, to give students freedom to learn and grow.

Periodic, timely feedback is essential. Students can only recognize strengths and areas for improvement when they are given objective, constructive feedback. Feedback should be not only evaluative, but also encouraging in order to bolster confidence and independence. Students feel the need for personal feedback from the instructor, and it helps clarify for the student what the instructor expects from them (Giles, Gilbert, & McNeil, 2014). This need indicates both the value of the instructor as a guide and also the emphasis students place on feedback for clinical success or failure. Furthermore, feedback is an opportunity for the student to refine his or her practices by gaining insight from an experienced clinician (the instructor). The topic of feedback and clinical evaluation is addressed in depth in Chapter 27.

Clinical Activities and Clinical Reasoning

The instructor who promotes clinical reasoning in students fashions learning activities to meet this goal. Discovery learning is one way in which student autonomy, problem solving, and clinical reasoning can be enhanced. Students can have opportunities to realize, or discover, patient responses to certain aspects of

care, or experience how structuring an activity differently is more time-saving. These discoveries boost self-esteem when students see what they have learned on their own, or that they have the ability to resolve certain problematic situations. The instructor then is rewarded by seeing growth take place in the students.

According to a meta-analytic review conducted by Alfieri, Brooks, Aldrich, and Tenenbaum (2011), a discovery learning task can range from implicit pattern detection, to the elicitation of explanations and working through manuals, to conducting simulations. Discovery learning can occur whenever students are not provided with an exact answer, but instead get the resources so that they can find the answer themselves. Detection of implicit patterns can occur with beginning students by having them assume an observational role. By watching the practitioner conduct routine responsibilities, learners develop an “aha” understanding about the role. The next step, then, is seeking explanations for actions and a description of decision making. This can be accomplished particularly well in a student–preceptor relationship. These observations and thought processes can be applied in simulated, then actual, patient situations as students continue to grow in knowledge and expertise.

Another approach to promoting growth of problem-solving abilities is to emphasize the clinical, or patient, problem, rather than the clinical setting. Student assignments that take place in familiar, repetitive settings enable students to deal with patients *in that setting*. In addition to learning how to deal with clinical problems, students in new or unexpected settings also experience professional socialization through role discontinuity. In making the transition from instructor-directed, structured, familiar assignments to empowering, unstructured, undefined patient problems, students experience new ways of defining their own roles and responsibilities as practitioners. The chapter on clinical pathways (Chapter 26) describes how to structure and evaluate students in a one-time clinical setting.

Student-Centered Learning

The strategy of reciprocal learning not only meets clinical learning needs, but promotes collegiality as well. Reciprocal learning usually takes the form of peer teaching, or student-to-student instruction. This learning occurs informally within most clinical groups and can become more purposeful and goal-directed through instructor planning. By pairing students for specific learning activities, the student learner gains information, experience, and insight in new ways. Learners receive individualized, empathetic instruction and may feel more relaxed with a student peer than with a faculty teacher. The student teacher also learns about instruction, helping, and working with others. Peer support is useful for building student self-confidence, providing a mechanism for feedback from someone other than the clinical instructor, and initiating students into the collaborative role (Brooks &

Moriarty, 2009; Harmer, Huffman, & Johnson, 2011).

From the viewpoint of the instructor, student-centered learning increases student accountability and independence. This is especially beneficial for students who are closer to graduation and need to break ties with the instructor. As students increase independence, the instructor can receive satisfaction from this new level of student performance. Students appreciate the trust that the instructor conveys to them. In fact, the promotion of cooperative learning, active involvement, and the recognition of diverse ways of learning are attributes that students rank highly in effective teachers (Wolf, Bender, Beitz, Weiland, & Vito, 2004).

Innovations in Clinical Instruction

Newer approaches to clinical education have emerged to ensure optimal student preparation for practice. One such alternative to the traditional clinical model is the student-centered approach (Jeffries et al., 2013). Nursing school faculty have typically been required to provide clinical instruction to 8 to 10 students in a single clinical setting, make patient assignments, and assume responsibility for the safe care of the assigned patients. Students commonly work with different staff nurses each clinical day, and the faculty educator is solely responsible for student oversight and evaluation. The student-centered approach to clinical education refocuses the relationship among the staff nurse, the faculty educator, and the student (George, Locasto, Pyo, & Cline, 2017; Huston et al., 2017). Central to a student-centered approach is the belief that the nurse–faculty partnership is vital in the student nurse's education (Jeffries et al., 2013). Nurses employed by healthcare agencies typically have current clinical expertise and are more familiar with their specific organizational processes, while faculty educators have expertise about effective clinical education strategies, student outcomes, and nursing theory. The partnership combines the expertise of both the staff nurse and the faculty member to create an optimal learning environment for the student (George et al., 2017; Harris, Keller, & Hinton, 2018). Clinical models that utilize a student-centered approach are often referred to as dedicated education units (DEUs), educational resource units (Didion, Kozy, Koffel, & Oneail, 2013), or blended units (combine features of a traditional clinical unit and a DEU unit; Plemmons, Clark, & Feng, 2018).

A hallmark characteristic of the student-centered clinical approach is an academic–agency partnership. In the partnership among the faculty educator, staff nurse, and student, the responsibility for teaching and learning is shared (Jeffries et al., 2013). Features of this learning community include: (a) staff nurse commitment to sharing in clinical instruction; (b) permission for students to perform skills without faculty presence under the guidance of selected staff nurses; (c) nursing program commitment to provide support, education, and professional development for agency nursing staff; (d) faculty presence on the unit and; (e) faculty retention of responsibility for student evaluation (Plemmons et al., 2018).

In the collaborative relationship among the faculty, staff nurse, and student, there is a shifting of roles (Rusch et al., 2018). The role of the staff nurse is expanded to the role of clinical instructor. The faculty educator then takes on the role of a facilitator. Nursing faculty educate staff nurses to serve as clinical instructors and provide instructional support. Optimally, a student is partnered with the same staff nurse for the duration of the clinical rotation. The faculty role is less focused on direct patient care and more focused on partnering with the nurse and student to link classroom concepts with clinical activities to facilitate student development of clinical reasoning (George et al., 2017; Rusch et al., 2018). The goal of the faculty educator

is to spend more quality time providing guidance for the educational process and assuring the achievement of expected learning outcomes for each student.

Students have perceived several advantages to the nurse–faculty partnership. These include: a welcoming environment, consistent mentoring and commitment to teaching, and more opportunities for communication, skill acquisition, teamwork, and time management (Jeffries et al., 2013; Nishioka, Coe, Hanita, & Moscato, 2014b). Likewise, when surveyed, faculty report that they prefer a partnership unit over a traditional clinical unit (Nishioka, Coe, Hanita, & Moscato, 2014a). Staff nurses who participated in the partnership have demonstrated increases in leadership, autonomy, and motivation (Jones, Simpson, & Hendricks, 2017). Several investigations have shown that students participating in a unit with an academic–practice partnership had significantly larger increases in clinical self-efficacy and confidence compared to students on traditional units (George et al., 2017; Plemmons et al., 2018; Schecter, Gallagher, & Ryan, 2017). Student-centered clinical instruction also promotes the development of quality and safety competencies in students (George et al., 2017; Masters, 2016). Innovations in clinical instruction are showing promise to facilitate dialog about clinical needs, expectations, and new graduate preparation between both academia and practice to promote quality improvement and excellence in patient care (Huston et al., 2017; Jeffries et al., 2013).

Faculty Development

The powerful influence of the instructor as a person should not be overlooked. Development of an effective clinical instructor and the evolution of a meaningful, positive clinical learning experience are based on insight, planning, and implementation by the faculty member. Therefore, individual teachers need to cultivate an appropriate self-image as a teacher. In addition, the clinical instructor should indulge in periodic self-reflection:

- Is my own clinical competence being maintained?
- Are my own views on the profession and the teaching–learning process congruent with student perspectives and needs?
- Should teaching strategies, types of assignments, or communication skills be revised?

Just as encouraging self-reflection in students guides them in viewing their clinical experience as a success (Hanson & Stenvig, 2008), self-reflection by the instructor also will bring about synthesis of the experience and evaluation of successes and failures. The effective faculty member then may need to reshape his or her own teaching perspectives to better blend with the perspectives held by the clinical students.

Conclusion

The philosophical approach to teaching is the foundation on which the instructor operationalizes his or her own practical knowledge. The responsibilities for the instructor are great, calling for clinical expertise, role modelling, and understanding of teaching and learning principles for a variety of students, settings, and clinical experiences.

Collier (2017) points out that much of the instruction that takes place is related to how the instructor has assimilated good interpersonal skills and developed a self-image as a practitioner and role model. The instructor who wishes to promote empowerment in students must see himself or herself as empowered to do so. Only then can needed socialization and empowerment take place. The empowered instructor is more likely to employ innovative teaching strategies and may be better equipped to respond more effectively to the challenges facing nurse educators (Hebenstreit, 2012). The nature of clinical practice has been redefined, as must the nature of clinical learning experiences.

Effective clinical instruction emerges from conscious efforts by the instructor. These efforts should be based on background knowledge, strongly formed values, and a well-defined self-image as a nurse teacher. Applying these personal resources enables the teacher to bring about effective clinical instruction. Formal and personal learning outcomes then are achievable.

Discussion Questions

1. How can students be guided to give examples of the application of class content to their patient care situations?
2. When a clinical instructor pairs students for reciprocal learning, should the students be asked to evaluate each other’s performance?
3. How can an instructor promote independence and empowerment in a student who lacks confidence?

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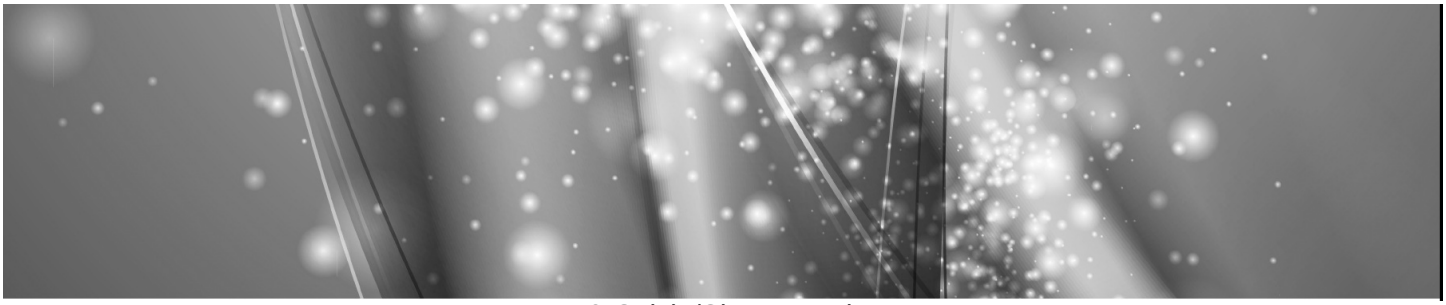
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CHAPTER 21

Crafting the Clinical Experience: A Toolbox for Healthcare Professionals

Stephanie S. Allen and Lyn S. Prater

Introduction

Clinical teaching is where it happens, and the clinical teacher needs to know what to do to make it happen. Healthcare education historically has been based on the expert–novice or mentor–protégé model. Optimal learning outcomes are not achieved when the teacher is just an authority figure and content expert. Rather, optimal clinical learning is best achieved when the teacher is a true educator. For expert clinicians to become effective teachers in their professional programs, an additional knowledge base and skill set are required. The clinical experience is a time in which the student applies theory to practice. It is the role of the clinical instructor to facilitate this application and evaluate learner outcomes. Establishing and maintaining professional boundaries with students, while remaining current in practice, teaching, and implementing evidence-based practice, is both an art and a science. This chapter provides a framework for implementing the use of best teaching practices in the areas of clinical teaching and evaluation.

Role Preparation

Role preparation for health professions faculty typically came from graduates completing educational preparation in order to practice in their chosen professions, gaining clinical experience, and showing an interest in teaching. It is thus incumbent on the educational institution to provide the necessary mentoring for new faculty so that not only the scholarship of discovery can be implemented, but also the scholarship of integration, application, and teaching can be developed. These roles identified by Boyer (1990) provide a pathway for faculty to develop and flourish in the structure of higher education.

The scholarship of *discovery*, as noted by Boyer (1990), is the need for scientific inquiry into the discipline of healthcare professions, and this faculty research role is imperative in higher education. In addition, the Institute of Medicine core competencies are being utilized as the foundation for nursing program evaluation (Morris & Hancock, 2013). The scholarship of *integration* is that part of the faculty role where the making of meaning, perspective, and connections across disciplines, and the placement of the specialties in a broader context, can be explored and applied. Bannister, Hanson, Maloney, and Dudas (2018) describe the importance of preparing oneself and the team so that bedside teaching can occur with every encounter. The scholarship of *teaching* is the heart of health professions education, but is often not a part of the basic education for entry into practice. The scholarship of *application* is relevant in the healthcare professions because it calls for the educator to maintain competency in the clinical field. Remaining current in practice heightens the educator's ability to blend academic and practice roles. Teaching will likely be the primary activity of most nursing faculty, so it is imperative that this role be articulated and developed in new faculty.

Clinical teaching is especially challenging, as the clinical sites vary greatly from institution to institution, and faculty must help students assimilate into their role of caregiver in an increasingly acute setting. Ongoing changes in technology, along with a generation of students who must learn to conform to an intense, highly regulated, and highly standardized system for healthcare delivery, make the clinical teaching event both challenging and rewarding. Clear objectives, professional boundaries, and collegial relationships with healthcare staff are all important components for clinical faculty to possess in order to bring about a successful clinical experience for students. This area of scholarship is especially pertinent for faculty in healthcare programs because these programs are part of an applied practice. The scholarship of application is invaluable as faculty members prepare and guide their students for the practice arena of the future. An ongoing process for evaluating the effectiveness of the clinical instructor is an important aspect of performance assessment and feedback for professional development. Input from a variety of evaluators, including students, agency personnel, and the academic clinical

coordinator, will provide comprehensive feedback (van der Leeuw, Slootweg, Heinman, & Lombarts, 2013). In addition to incorporating Boyer's model into a personal teaching style, the clinical educator must be aware of and able to implement effective clinical teaching behaviors. Esmaeili, Cheraghi, Salasali, and Ghiyasvandian (2014) found three main themes related to effective clinical education: (1) appropriate communication, (2) incorporation of theory into practice, and (3) instructors with specialty-specific knowledge. The open collegial relationship is maintained by providing clear and consistent expectations. Adapting the experience to the student requires student participation in determining learning goals and needs. "Mentors must strive to develop their knowledge and clinical behaviors according to students' needs in clinical settings" (Esmaeili et al., 2014, p. 460). An important category of facilitating clinical reasoning is utilizing thinking out loud with the student. The benefit of receiving environmental support lies in feeling valued. According to Esmaeili et al. (2014), respectful and caring interpersonal relationships between the instructor and the student result in supportive and approachable communication. Also, students view faculty as positive role models if they are current in their specialty.

An additional aspect of role preparation, according to Wetherbee, Peatman, Kenney, Cusson, and Applebaum (2010), is for the clinical and academic stakeholders to mutually agree on standards and outcomes, so that all work toward a common goal. Role preparation is critical to the success of the healthcare professional as an educator. Utilizing resources available and garnering support from seasoned faculty will make the implementation of the educator role easier.

Implementing the Role

Students recognize and respond to clinical instructors who exhibit passion and enthusiasm for their work. Passion is contagious and promotes the development of a positive learning environment. Turocy (2015) contends that “faculty that have both content and clinical expertise in the areas that they teach are able to maximize connections within and across content areas, as well as understand and adapt to their learners” (p. 328).

An international study found that the instructor’s caring behaviors positively influenced nursing students’ caring behaviors. This study of 586 student nurses from four countries provided a cross-cultural perspective on the importance of faculty role modelling the competence of caring as an effective teaching strategy (Labrague, McEnroe-Petitte, Papathansiou, Edet, & Arulappan, 2015). As clinical faculty define and develop their teaching approaches, these passions may be used as a framework for building their philosophy of teaching and supporting their values.

Clinical Orientation: How to Get Off to a Good Start

It is the responsibility of the clinical instructor to complete all required agency orientation and be knowledgeable of agency policies and procedures. Good rapport will be maintained between the instructor and clinical site when students and faculty follow agency guidelines. This both shows respect for the agency and allows an opportunity for professional development in the students. Instructors cannot just drop off students on a unit or at a clinical agency and expect the staff to provide all the teaching. Staff nurses appreciate an instructor who is present, acts as a team member, has experience, is relaxed, and is organized. A component of orientation is the identification for the staff of what their responsibilities will be. Frequently, clinical staff as agency employees are called on to participate in the educational experience. Clinical staff are familiar with their role as patient care providers and in teaching patients and family members, but they may not have been provided any formal instruction about teaching or serving as a preceptor of students. Consequently, clinical instructors need to communicate to the healthcare system clinical liaison clear expectations for each clinical experience. Unless the educational institution provides a structured orientation for this process, the clinical instructor will be responsible for this process as well. If this formal process does not take place, each student’s clinical experience will differ due to the varying quality of instruction provided by the instructor/preceptor within each clinical setting.

Establishing rapport with the clinical management and staff takes time and dedication. Refer to **BOX 21-1**, which is a typical schedule for new faculty orientation. An additional consideration for ensuring a positive experience for faculty and students related to clinical placement is to ensure that the faculty members have

consistent placement on clinical units from semester to semester. There is a hierarchy of both education and psychological needs that must be included in the clinical environment to attain clinical competency (Maher, Pelly, Swanepoel, Sutakowsky, & Hughes, 2014). This provides organizational familiarity, continuity, and a positive sense of belonging for students.

BOX 21-1 Orientation for New Clinical Faculty

New Faculty Orientation
Room 407
Lyn Prater, PhD, RN, Undergraduate Clinical Coordinator

1. Welcome and introductions
2. Baylor mission, philosophy, and curriculum
3. Human needs framework
4. Intranet
5. Care plans
6. Learning contract
7. Midterm evaluations
8. Final evaluations
9. Clinical evaluation tool
10. Schedule
11. Workroom, secretary, and communications
12. Clinal expectations
13. Dress code
14. Questions and answers

Crafting the Clinical Experience

Once faculty have oriented themselves and the students to the clinical site, it is critical to craft the clinical experience so that the assignments match the course objectives and are congruent with the theoretical concepts. For example, the instructor would assign patients who have fluid and electrolyte deficits during the time frame the students are learning about this concept in their theory course. Additional practice with calculating maintenance fluids and analyzing lab values will help the students make the connections between theory and practice. More background on the selection of clinical activities can be found elsewhere in this text.

In clinical settings in which the patient care activity is very specific, the clinical instructor might want to use an assignment sheet or form. This communication tool provides an easy reference for the unit staff to know which students will be caring for which patients. Because this assignment sheet contains sensitive information, it must be posted away from public access. Outlining clearly, on the assignment sheet, which student is doing what and when helps the staff know which experiences to save for a student and which ones they themselves are responsible for. At the beginning of the clinical day, the instructor will review the student's preclinical

preparation and determine whether there are any gaps or inconsistencies for care. The student will receive a report from the primary caregiver assigned to his or her patient and assume care within the context of the agency guidelines and clinical assignment. For the clinical instructor to organize a number of students within a clinical setting, he or she must negotiate and communicate the student's responsibility. As an example, even if a student has read the procedure for lab blood draws, he or she will benefit from watching it done at least once before attempting it on the patient.

It is imperative to follow agency policies regarding the procedures in which students may and may not participate. (Refer to **FIGURE 21-1**, which is an example of an agency schedule for student orientation). Credibility as a clinical instructor may initially be tested by staff members as well as by students. This is not unusual and should not threaten the instructor's sense of clinical competence. Once trust is established, the clinical instructor will find that this testing dissipates. Purposeful assignments should, in addition, be congruent with the evaluation tool. Clinical instructors can improve their students' satisfaction while in the clinical setting by providing specific instructions, delivering individualized attention, and maintaining organization (Lovecchio, DiMattio, & Hudacek, 2015). Keeping detailed anecdotal notes and documenting the student's progress or lack thereof in meeting the course objectives make the final evaluation process less subjective. Providing students with specific, positive examples as well as examples of omissions or errors helps guide them in reflective practice. An important question that is worth discussing is: "What would you do differently next time?" In addition to focusing on the nursing role, interprofessional socialization opportunities should be taken advantage of in the clinical setting. According to DiVall et al. (2014), "interprofessional education is the cornerstone of providing future healthcare providers" (p. 576).

Guidelines and Expectations for Students: Presbyterian Hospital Dallas Nursing Clinical Experience/Rotation

PHD Nursing Staff/Support

- RNs/all patient care staff will ultimately maintain responsibility for patients.
- Nursing staff will show a positive attitude and willingness to mentor students and be role models.
- Nursing staff will share objective observations regarding students' clinical performance with faculty.
- Provide cooperation to promote the success of the student clinical rotation.
- Designate an individual on unit as a student contact.
- RNs may observe students do procedures with patients *only* after instructors have checked off students.
- NPD is the department responsible for coordinating all student affiliation educational rotations; *any changes* of rotation *must be approved* by NPD.
- Maintain professional and courteous behavior with instructors and students.
- Maintain standards of patient care.
- NPD provides orientation for faculty and students to hospital and assigned units.
- Nursing staff provides orientation on the assigned unit.
- Recommend a maximum faculty-to-student ratio of 1:10.
- NPD provides an evaluation tool for completion by students and gives results to staff.
- PHD requires faculty and nursing students to be vaccinated for HBV.

Nursing Institution/Instructor

- Faculty must always be on assigned units and be available for students' learning experience.
- Faculty must be proficient and qualified in the area of teaching experience/clinical assignment.
- Disseminate and post clinical assignments (length, dates, hours of clinical experience) and phone/pager numbers as appropriate for each service area/unit and NPD (include student/faculty names and numbers).
- Arrange own conference space as needed.
- Supervise students' *first* time using clinical skills with patients on units.
- Notify unit personnel and NPD of student objectives for the learning experiences in writing.
- Clinical assignment changes must be approved by NPD.
- Seek information from RNs about student performance.
- Provide NPD with proof of malpractice/liability insurance and CPR certification of both faculty and students prior to the beginning of the semester (day of orientation).
- Provide NPD with Texas Nursing Registration number of each faculty member assigned to PHD.
- Maintain professionalism and courtesy with both staff and students.
- Obtain approval from NPD for any faculty/substitute on the clinical schedule throughout the rotation.
- Conduct end-of-semester PHD evaluation with students regarding the learning experience at PHD and return to NPD.
- Be vaccinated for HBV; the series of injections must begin prior to the beginning of the semester and proof must be provided to NPD.
- Maintain confidentiality of patient information.

Students

- Responsible for action with patients.
- Responsible for reporting to the nursing staff information concerning patients.
- Be prepared for clinical assignments; show initiative in learning and work as a partner with the staff nurse.
- Exhibit professional and courteous behavior with patients and staff.
- Notify the unit if unable to be onsite for the assigned day.
- Always report/check out with the RN assigned to patients before leaving the unit either for a break or for the conclusion of the clinical day.
- Complete end-of-semester PHD evaluation regarding the learning experience at PHD.
- Be vaccinated for HBV; the series of injections must begin prior to the beginning of the semester and proof must be provided to NPD.
- Maintain confidentiality of patient information.

FIGURE 21-1 Agency orientation schedule.

CPR, cardiopulmonary resuscitation; HBV, hepatitis B virus; NPD, nursing professional development; PHD, Presbyterian Hospital Dallas; RN, registered nurse.

Used with permission from Texas Health Resources, Presbyterian Hospital Dallas.

Description

Clinical Rounds

Clinical rounds provide an opportunity to observe students interacting with their patients and patients' family members. Introductions by either the student or the instructor are important to facilitate ongoing rapport. Rounds also provide the opportunity for spontaneous learning by using the teachable moment. An astute clinical instructor will use these teachable moments as she or he encounters the student engaged in the delivery of real-time care. Guidance and/or gentle prompting regarding additional resources for the teaching/learning event can be given, and role modeling by the instructor can be provided at the bedside. The clinical instructor may observe a student assuming responsibility in the role or having difficulty and becoming an onlooker. The "onlooker" may describe himself or herself as being excluded from delivering care, unable to overcome obstacles, and feeling insecure in his or her role. In this situation, the clinical instructor must recognize and intervene for the patient's safety and well-being and must provide timely feedback to promote independence and increase confidence (Hellstrom-Hyson, Martensson, & Kristofferzon, 2012). Timely feedback may prevent students from making incorrect assumptions about clinical competence and allows for improvement in future performance. Nottingham and Henning (2014) found that feedback provided from certified clinical instructors should be focused on frequency, privacy, and form.

Ongoing care and teachable moments are excellent occasions for challenging students to grow by using directed questioning. An example of this type of questioning is when the instructor asks the student to discuss the rationale for use of a medication as a treatment modality that differs from the drug's primary action (e.g., nifedipine in the preterm labor patient). According to Hoffman (2008), clinical instructors should be utilizing higher-level questions to facilitate critical-thinking skills in the clinical setting. "These questions require the student to correlate clinical findings with textbook descriptions and apply this content to the care of their patients" (p. 234). It is important to avoid spoon-feeding the answers. Make the student look up policies and procedures and medical terminology. This provides an opportunity to utilize resources and to become self-directed in their pursuit of knowledge in the profession.

One of the goals of the clinical teaching experience is to provide the students with an experience that keeps them engaged and places them in the role of a total patient care provider. By eliciting feedback from both the student and the staff members, the instructor will be able to determine whether the assignment is too

challenging or is not keeping the student engaged, and thus will be able to adjust it accordingly. Developing self-awareness in students is a professional priority. It is important to share observations made by the staff and instructor that promote a positive professional demeanor as well as those that detract from a student's professional demeanor. When a student is overly focused on programming an IV pump and not making eye contact with a family member who is asking a serious question, the establishment of a therapeutic relationship is affected. Actions by students, such as washing hands in the patient's room and then running those hands through their hair before putting on sterile gloves for a central line dressing change, may diminish trust when observed by patients and family members. At these times, the instructor must redirect the student to ensure safety, using a professional approach.

Clinical Decision Making

Fiset, Graham, and Davies (2017) have provided insight that the types of clinical decisions students make using evidence-based practice depends on the level of placement within their program. Students' progress from assessment decision making to interventional decision making, with the capability of appraisal, incurs risk to themselves as well as to the patients. It is important, then, for the clinical instructor to monitor and support the student throughout the clinical day and semester by being present and providing feedback for the decisions the student makes. One method of providing this feedback for students, related to their critical thinking, is through reflective writing. Naber, Hall, and Schadler (2014) determined that students' critical thinking was improved by having students participate in reflective writing assignments based on Paul's model of critical thinking.

In addition to clinical rounds, preclinical and postclinical conferences provide a rich opportunity for clarification and teaching. There are advantages and disadvantages to preplanned conference activities. An instructor should have a planned conference activity, but should also be flexible and spontaneous when the need arises. Both instructor and student may be exhausted by this point in the learning process, so it is important for the clinical instructor to utilize innovative strategies to assist the students in finding meaning in their recent clinical experience (Megel, Nelson, Black, Vogel, & Uphoff, 2013). Student–staff dyads and group activities are proven strategies designed to create a supportive learning environment that enables students to meet the clinical learning objectives. Nygaard (2015) believes that peer-to-peer feedback is something that is not done enough and, if done in writing, it becomes an important feedback tool for professional writing contributions made within an author's discipline. Closure at the end of the clinical experience is an important last step for both students and clinical instructors. Some examples of activities to use in postclinical conferences are discussed next.

Postclinical Conferences

Example One: Taking Action Based on the Analysis of Patient Information

Analyzing patient information guides the students in cultivating analytical abilities and assuming accountability for action.

Step 1. Each student identifies abnormal assessment findings.

Step 2. Each student analyzes which nursing implications those abnormalities have for patient care.

Step 3. Each student shares with the group how patient care was altered and the team process for implementation of the changes.

Example 2: Applying Evidence-Based Research to Practice

Applying evidence-based research to practice prompts students to examine current evidence regarding practices in which they have participated during the clinical day. Exercises such as this will enable the practicing professional to remain current in practice.

Examples of these activities include using current clinical situations from the day's experiences and pulling the current theory content threads out to interact with away from the bedside. This provides a nonthreatening atmosphere that is not time dependent and allows exploration in greater detail. For example, the week that fluid and electrolyte content is covered in class, the instructor could use the following steps.

Step 1. Assign each student to look up abnormal lab values for every patient cared for.

Step 2. Print the lab data and remove all patient identifiers.

Step 3. Lay the lab data out on the table and ask each student to identify which are their patient's data.

Step 4. Provide 10 minutes to do research before asking the students to report back to the group the implications these abnormalities have for the care they provided.

It will be instantly clear who included lab preparation within their preclinical preparation.

Example 3: Incorporating Evidence-Based Practice

Another example for postclinical conference learning and discussion would be incorporating evidence-based practice (EBP) into students' care for the day.

Step 1. Students are instructed to bring an evidence-based research article that is related to some aspect of their patient's care.

Step 2. Students present the research findings along with an example of how they incorporated the findings into their patient care with the clinical group.

Example 4: Peer-to-Peer Feedback

A fourth example for postclinical conference is peer-to-peer feedback. Guiding students through the process of critiquing each other's documentation emphasizes the significance of attention to detail and provides a model for future communication with professional peers. The ability to give and receive peer-to-peer feedback as students is a rehearsal for future practice as we prepare students for entry into peer interaction within their practice. Nygaard (2015) encourages listening and reading actively during the giving portion and notes that being the receiver allows one to see their work as it appears to others.

Step 1. Have students sit next to one another in pairs.

Step 2. Provide each pair with a tool to analyze the written documentation they have completed during that clinical experience.

Step 3. The students hand over their documentation to their peer; the peer evaluates it using the standardized tool.

Step 4. Once the evaluation is complete, the peers share their findings and make suggestions for additions and corrections to the documentation. An innovative way to facilitate EBP learning by students is a more formal academic–clinical agency partnering process described by Susan Moch and colleagues (Moch, Quinn-Lee, Gallegos, & Sortedahl, 2015). This approach helps busy staff engage with students on a common project that ultimately benefits both agencies.

Conducting the Clinical Day

Every instructor should develop a purposeful, organized method for conducting the clinical day. Typically, the structure is based on a plan for both instructor and students. Patient care assignments for each clinical experience must be tied to

course objectives. The instructor will map his or her day by using a master sheet for jotting notes. This tool, which includes all aspects of patient care, helps the clinical instructor track and plan times for specific interventions such as medications and treatments. To ensure that interventions and medications are administered in a timely manner, restrictions will have to be placed on the number of students participating in direct patient care activities at one time. For instance, during a 12-hour shift, all eight students will have a medication administration experience; however, four students will give medications at the beginning of the shift while the remaining students will administer medications during the last 6 hours of the shift.

During this process, it is the responsibility of the student to keep the instructor and staff informed of the outcome(s) of the interventions implemented. Documentation is an important aspect of the learning activity and may be regulated by the clinical institution. Regardless of whether the student or the staff actually document in the medical record, it is the responsibility of the student to provide accurate and timely patient status reports. An additional responsibility of the instructor is to keep accurate anecdotal notes during the clinical day for use in formative and summative evaluations.

Anecdotal notes are an important tool for the clinical educator, as they can be used to evaluate the student's progress and are a critical component in the documentation process of formative and summative evaluation. Hall (2013) studied faculty use of anecdotal notes in the United States and Canada asking faculty to rank 15 behaviors in order of importance. In rank order the top five behaviors were: "1. Incorporation of discharge planning, 2. Documentation of patient education, 3. Progression of accuracy in written clinical assignments, 4. Professional appearance, 5. Provision of patient education" (p. 275). Recordkeeping of clinical student behaviors over time is captured in the form of instructor-generated anecdotal notes. Instructors may wish to develop a tool to be used during each clinical experience, and that tool is directly related to the institution's formal clinical evaluation tool. (Refer to the sample formats for anecdotal notes shown in **FIGURES 21-2** and **21-3**.)

Pediatric Clinical Anecdotal Notes Form

Absences _____ Makeup work _____ Name _____

WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	Family Assessment
					Denver Developmental Screening Test
					Physiological
					Psych
					Social
					Spiritual

FIGURE 21-2 Anecdotal notes form.

Courtesy of Judy Howden, RN, PhD

Description

N4435 Level III Nursing Practicum Student _____

Clinical Evaluation: Daily Data Form Date _____ Unit _____

Assessment: Interaction(s) _____ Use of time _____ Activities _____
Use of standardized clinical tools _____ Thoroughness and depth in assessment _____
Evidence of preclinical prep _____ Level of thrp. comm. tech. _____
Adapts comm. to pt's state _____ Presentation of data at post conference _____
Meds: Name ____ Action ____ Dosage ____ S/E ____ S/E Obs ____ Nsg. Implic _____ **Lab** _____

Analysis: Level of clinical decision making _____ ID of Nsg. Dx/interventions/priorities _____

Planning: Realistic and measureable goals _____ Can formulate an in-depth plan of care _____
Takes initiative in planning pt/family education based on specific needs _____

Implementation: Ability to thrp. comm. _____ Awareness of specialty standards of practice _____
Communicates accurately verbally and in writing _____ Collaborates _____
Nursing actions evident today _____

Evaluation: Evaluates care provided and client outcomes _____
Evaluates all interventions for client and family response _____
Develops alternative interventions and goals when needs not/partially met _____

Professional Behaviors: Arrived on time ____ Compliance with dress code ____ Self-initiative/self-direction _____
Shows interest in learning _____ Seeks out learning experiences _____
Asks pertinent questions _____ Supportive/respectful of peers _____
Respects client confidentiality _____ Assumes responsibility for actions _____

Comments:

FIGURE 21-3 Anecdotal note format.

Courtesy of Judy Howden, RN, PhD.

Description

Student Issues

A hallmark of a good clinical educator is knowledge of the student's background and learning needs (Koharchik & Redding, 2016). Emerging workforce generation characteristics were discussed in Chapter 3. In addition, instructional strategies must be tailored to the student's cognitive style. This requires the educator to be flexible and adapt his or her teaching style to the needs of each student in the clinical setting (Chen et al., 2016). Cognitive styles were discussed previously in this text.

Frelin (2015) found that early identification of at-risk nursing students is related to success and retention in their academic program. This early identification begins with the admissions process, where academic and nonacademic predictors can be utilized for student selection. In addition, when a teacher's work involves coping with external, internal, and relational demands, they may need to reach out and utilize additional resources to assist them with coping. Early intervention with students who are not doing well in clinical practice can improve their performance. It is prudent to have a clinical faculty member serve on the admissions committee, as the admission criteria can make or break the clinical experience for students. Once the program identifies which predictors of success are valid, the next step is to develop a model of student support. Academic institutions may have this additional support in the form of a success center or additional student services.

At times the clinical instructor may be called upon to manage a challenging student situation. The purpose of the following material is to address some issues that may challenge the clinical instructor. Setting and enforcing boundaries is a key element in establishing the instructor–student relationship. Although codes of ethics may initially be introduced in a theory course, it is in the clinical setting where students are bound to practice by these codes of ethics. Having students describe their ethical responsibilities during a certain clinical situation or having them discuss how they protected their patients' confidentiality are examples of integrating this concept into the clinical experience. By defining and maintaining clear boundaries, the instructor is role modelling behavior that will be expected in future practice. Setting emotional boundaries with the student will facilitate the educator's role in managing the clinical experience. Maintaining this professional boundary prevents the clinical instructor from ceding his or her power and getting off track with the student. Realize that maintaining this balance will require focus, vigilance, and self-awareness.

Unprofessional Behavior

One challenging student situation involves unprofessional behavior on the part of the student. This may be something that the clinical instructor observes while it is occurring, or it may be reported by someone else. This could range from a minor

infraction such as nontherapeutic communication to a major issue such as a Health Insurance Portability and Accountability Act (HIPAA) violation. It is within the instructor's role to enforce compliance with professional issues such as tardiness, absence, and dress codes. Consistency among faculty related to enforcing policies such as these provides the student with a standardized approach and allows for integration of these professional behaviors over time (see the chapter on socializing students to professional behaviors). Infractions involving unprofessional behavior must be dealt with immediately: The student must be confronted with the issue and given the opportunity to problem-solve future prevention strategies. This is an appropriate time to explore with the student the question, What would you do differently next time? Many evaluation tools include professional behavior as a grading criterion, and any infraction may cause lowering of the final clinical grade.

Academic Dishonesty and Unethical Behavior (Honor Code)

Most institutions have an honor code. It is the responsibility of the clinical instructor to be familiar with and comply with the policy, as well as to report violations in a timely manner. Subsequently, when students choose to behave in an academically dishonest way, it becomes the educator's duty to assess whether the student can learn to think with a moral compass. If the answer is no, the student cannot behave ethically, and the student cannot graduate and practice in a health profession.

Altering charts or failing to report a mistake may result in patients experiencing negative outcomes. At times these aberrant behaviors may be a symptom of a more serious problem, such as chemical dependence, which may contribute to unsafe patient care. Reporting guidelines and testing of students for chemical usage may be covered by both agency and educational institution policies. For healthcare professionals, it is crucial that this moral development be examined for entry-level practice.

Safety

Safety in the clinical setting is imperative and is receiving unprecedented attention on several fronts. Due to the ethical imperative of "first, do no harm," the integration of quality and safety content into the clinical curriculum is paramount. Safety issues related to patient care center on near misses and adverse events, and require healthcare professionals to comply with a code of ethics. Reporting, investigating causal systems failures, and revealing the primary error to the physician and possibly the patient is a primary role of the healthcare professional (Tingle, 2017). It is the instructor's responsibility to assess each student's preparation for delivering safe patient care prior to the beginning of the clinical experience. If the instructor

determines that the student is inadequately prepared, he or she may choose to dismiss the student from the clinical setting to prevent a breach in patient safety.

A breach in patient safety is commonly a critical point for failure in the clinical course. An example of this type of breach of safety is a student coming inadequately prepared for medication administration. In addition, safety starts with clinical assignments. Seibert (2014) developed a way to expand this experience away from the bedside by utilizing practice-based learning activities focused on patient safety. Medication administration is an opportunity for the student to incorporate theory into practice. It is incumbent upon the clinical instructor to document and provide feedback to the student who has had a breach of patient safety. The clinical instructor must also follow agency guidelines for reporting such incidents.

Evaluation of Clinical Learning

The purpose of evaluation is to help the student grow in his or her profession. Traditionally, evaluation has been seen as a negative or punitive act, and thus may be viewed as adversarial between the student and faculty member. This, however, is not the case, because evaluation is an opportunity for growth. The evaluation of clinical performance should not be subjective, because it is based on a standardized evaluation tool, and the instructor must collect data sufficient to weigh the evaluation against the behavioral outcomes over time.

Even though the instructor should have given oral and written feedback during the clinical day, a formal midterm and final evaluation of the student's performance are necessary to provide formative feedback and act as a mechanism for grade assignment. The purpose of formative evaluation is to provide specific and detailed feedback to the student and observe his or her ability or inability to integrate this feedback into his or her clinical practice. One of the goals of this formative evaluation is to allow students the opportunity to internalize the processes of self-reflection and self-discovery in their personal practice. It is hoped that this ongoing communication between students and instructor will promote insight into the strengths and weaknesses of each student's professional practice. Clinical evaluation tools should be standardized within a learning program. As an example, Paravicini and Peterson (2015) published a miniclinical evaluation tool to utilize when evaluating chiropractic students in a postgraduate program.

Sample formats for midterm evaluations, as shown in **FIGURES 21-4** and **21-5**, can be utilized to provide specific formative feedback on clinical performance. Figure 21-4 is a narrative response tool where the instructor details areas of strengths and weaknesses to this point in the clinical experience. Figure 21-5 is an example of a tool that describes specific behavioral outcomes that the student must display to be a safe and effective care provider. Often, once they see a letter grade, students ask, "What can I do to improve my grade?" By receiving a list of outcome behaviors, the student has the opportunity to incorporate them into his or her practice. "Be specific" was a common phrase used by a colleague during midterm evaluations.

BAYLOR UNIVERSITY, LOUISE HERRINGTON SCHOOL OF NURSING

Nursing 3425 Level II Clinical

Faculty:

Student Midterm Progress Report

Student: **[Student Name]**

Preparation for clinical experiences:

Assessment skills

Analysis *(application of physiologic and pathophysiologic concepts to clinical practice)*

Planning for care

Implementation of nursing interventions

Medications/IVs knowledge and administration

Patient/family education

Communication skills

Evaluation of care

Professionalism

Student signature: **Date:**

FIGURE 21-4 Student midterm progress report.

Courtesy of Judy Howden, RN, PhD

Description

Expected Clinical Performance Behaviors

The following behaviors are examples of the expectations of students in Practicum III, and are based on the Baylor

The following behaviors are examples of the expectations of students in Practicum III, and are based on the Baylor University Louise Herrington School of Nursing (BULHSON) Clinical Performance Evaluation tool.

Assessment

1. **Collects data through appropriate physical assessment techniques**
   a. Assessment data is collected independently by student and reflects consistent application of principles taught in NUR 3314.
   b. Techniques and equipment are used correctly throughout collection of assessment data.
   c. Student demonstrates awareness of any deficiencies he or she may have in physical assessment skills and seeks opportunities/assistance to remedy these deficiencies.
   d. Physical assessment skills reflect an in-depth knowledge of anatomy and physiology.
   e. Physical assessment data collections are adapted correctly/appropriately for the client in the pediatric and psych settings.
2. **Collects data (subjective and objective) from available resources**
   a. All references/resources utilized for practicum experiences/written work are from appropriate, practice-specific professional nursing texts, journal articles, or resources recommended by faculty. References are recent (within past 5 years) and reflect current research.
   b. All references/resources used for practicum experiences/written work are specific to needs of assigned clients/families.
   c. Student uses agency policies and procedures as guidelines for data collection.
   d. Advanced interviewing skills are used to collect in-depth data from the client/family.
   e. Before utilizing data from staff, student will validate those findings in assessment of the client/family.
   f. Data collection from the chart reflects in-depth understanding of information recorded.
   g. All pertinent diagnostic/lab/screening values are noted and analyzed. Results not on chart are obtained from computer or lab via phone.
   h. The student is aware of all current medical and nursing orders for the patient.
   i. The student continuously assesses the patient/family environment.
   j. The student demonstrates an awareness of the nursing unit environment in terms of where supplies, equipment, and resources are located.
3. **Documents assessment data in a clear and organized manner**
   a. All documentation of data is obtained from student's own assessment.
   b. Documentation of assessment data is thorough and is entered in the chart in a timely/correct manner using charting standards for agency.
   c. The student takes the initiative to chart data on all unit-specific and client-specific flow sheets.
4. **Shows evidence of pre-clinical preparation**
   a. Student consistently has required database/worksheet completed prior to the beginning of each clinical day.
   b. Student can verbalize to instructor an appropriate plan of nursing care specific to the patient/family at the beginning of the clinical day.
   c. Student demonstrates in-depth knowledge of physiologic and pathophysiologic concepts applicable to assigned client.
   d. Student demonstrates knowledge of all medications (routine, one-time, as needed) ordered for the client or that the client has recently received at the beginning of the clinical day. Student only has to look up newly ordered medications during the practicum day.
   e. Student demonstrates preparedness for nursing procedures that he/she may perform for the patient.

f. Student has reviewed appropriate resources; that is, information from Baylor School of Nursing skills lab (NUR 3414), Medical City procedure manuals, skills discussed in required or reserved materials specific to this course, or other resources as designated by the instructor.

g. Student takes the initiative to obtain information from staff nurse (during report) needed to care for client/family.

h. Student comes prepared for clinical day with needed equipment.

Analysis

1. **Clinical decision making reflects an understanding of the relationships of assessment data to the client's problem/diagnosis**
   a. Student can verbalize or describe in written work an in-depth understanding of client/family condition/status based on accurate synthesis of data collected in relation to nursing theory base.
   b. Student takes initiative during the clinical day to discuss with instructor the meaning of assessment findings and implications for clinical decisions. Student can analyze situation with minimal cues from instructor.
2. **Identifies priorities requiring nursing actions based on assessment and determines when reassessment is indicated**
   a. Student consistently verbalizes in clinical setting, or documents in written work, the most important client/family needs that require nursing action. This is based on sound nursing theory and nursing assessment/reassessment data, and incorporates collaboration with client/family.
3. **Formulates nursing diagnosis based on assessment data**
   a. All nursing diagnoses are based on active client/family problems that are pertinent while student is present in the clinical setting.
   b. Student utilizes appropriate format for writing nursing diagnoses, as taught in NUR 3310.
   c. Etiology portions of the nursing diagnoses are always based on problems that can be alleviated with nursing interventions.
   d. Student's written work or verbalization demonstrates accurate assessment data to support the diagnoses.
   e. Student comes prepared for the clinical day with appropriate nursing diagnoses as required.

Planning

1. **Formulates appropriate and measurable goals for self and client**
   a. Student verbalizes at the beginning of or during the clinical day (or includes in written work) measurable client/family goals based on data analysis. As data analysis fluctuates or changes, student can revise patient/family goals. Goals formulated by the student are realistic and achievable during the time period the student cares for the family.
   b. Student can consistently verbalize or document in written work personal goals that will enhance nursing care and contribute to own professional growth. Student takes initiative to actively achieve these goals.
2. **Plans care in a systematic, logical, organized manner**
   a. The student is able to articulate an in-depth plan of holistic nursing care to the instructor at any time during the clinical day. This is also consistently reflected in written work.
   b. The plan of care is flexible enough to meet patient/family needs in a timely manner and coincides with plans/activities of other healthcare personnel.
   c. The student is able to consistently verbalize rationale for each nursing activity within the plan of care.
   d. All plans of care are consistent with procedural guidelines for specific nursing units at the agency.
3. **Plans health teaching based on identified learning needs and readiness of client**

a. The student can independently interview client/family to determine/assess actual learning needs and plan to meet those needs.

b. Patients/families under the student's care are consistently evaluated for readiness and understanding before nursing care activities are performed.

c. The student demonstrates the ability to develop in-depth teaching plans for specific client/family learning needs, based on concepts taught in NUR 3222.

d. Patient/family health teaching is an ongoing process during the care provided by the student.

e. The student demonstrates preparation for anticipated client/family learning needs.

f. All health teaching is based on current nursing theory and is planned at an appropriate developmental stage/knowledge base of the client/family.

g. The student keeps the instructor informed of planned or incidental health teaching the instructor can observe.

h. Student uses agency resources (computer programs, videotapes, teaching manuals) with clients and families.

4. **Communicates clearly regarding nursing care plan (NCP) with all appropriate individuals**

a. The family is informed by the student of his/her plan of care at the beginning of the shift and on an ongoing basis. The client and/or family is informed of the student's scope of responsibility.

b. The student informs the staff nurse of all assessment and care he/she will provide at the beginning of and throughout the clinical day.

c. The student takes initiative on the unit to enhance learning experiences without compromising assigned patient care.

d. The student consistently takes initiative to keep the staff and instructor informed of the plan of nursing care and changes in that plan.

Implementation

1. **Utilizes effective and appropriate verbal/nonverbal communication skills**

a. Student communication with clients/families is consistently goal-oriented.

b. Student demonstrates advanced skill in establishing rapport and effective communication with client/families who have complex/complicated interactive behaviors.

c. Student is aware of and able to modify personal barriers/behaviors that can interfere with therapeutic communication.

d. Student is able to maintain a level of objectivity while establishing rapport and trust with client/family.

e. Student demonstrates behavior that promotes confidence of the patient/family in the student's skills.

f. Student is able to continue therapeutic communication as appropriate with client/family in the presence of nurse, instructor, physician, or other health team members.

2. **Provides direct patient care in a safe, accurate, organized manner**

a. Student's care consistently provides for client safety. The student demonstrates anticipation of patient behaviors that could compromise health/safety and plans care accordingly.

b. All care provided reflects the nursing diagnosis and patient/family needs and is based on appropriate nursing theory.

c. The student demonstrates an ability to anticipate supplies/equipment, etc., needed for care and has items needed readily available.

d. The student demonstrates critical thinking skills in carrying out nursing care in a logical, patient-centered manner.

e. The student consistently calculates medication and intravenous (IV) fluid dosages correctly without

e. The student consistently calculates medication and intravenous (IV) fluid dosages correctly without assistance and in a timely manner. The student can determine safe dosage ranges without assistance.

f. The student notifies the instructor of all procedures for which the instructor needs to be present.

g. The student assumes responsibility for keeping the patient's environment orderly, safe, equipped with needed supplies, and esthetically appropriate.

3. **Administers medications safely according to established procedure**

   a. Student consistently observes "5 rights" in administering all medications, IV solutions, etc.

   b. Student notifies instructor of all medications to be administered.

   c. Student verbalizes to instructor, without prompting, the following information regarding medications the patient has recently received, medications the student is administering, or those the patient has ordered:

      i. Classification of drug

      ii. Purpose of medication for patient

      iii. Safe and correct dose

      iv. How drug acts/pharmacology of drug

      v. Potential drug interactions

      vi. Pertinent side effects the patient may experience and how the student will manage potential side effects

      vii. How the drug will be administered; that is, drip rate, type of syringe to be used, how client currently takes medication, etc.

      viii. Client/family teaching that will be needed regarding medication

      ix. Nursing implications for administration of drug

      x. Student's plan for monitoring drug effectiveness and side effects

      xi. Developmental considerations of medication

   d. Student demonstrates proficiency in all aspects of medication administration and documentation.

4. **Communicates accurately verbally and in writing (charting and reporting)**

   a. Student's charting provides thorough documentation of nursing care provided. The charting consistently reflects action taken when assessment is abnormal.

   b. All health teaching is consistently documented on appropriate forms.

   c. All charting reflects appropriate medical/nursing abbreviations, correct grammar, and correct spelling.

   d. Student consistently takes initiative to keep staff nurse informed of nursing interventions, patient/family status, etc. Student reviews his/her charting with staff nurse when reporting off.

   e. Student consistently reports off to appropriate staff nurse without being reminded.

   f. Student immediately reports to new nurse if there is a change in the patient's primary nurse assignment during the clinical day.

   g. The student's documentation follows agencies charting procedures.

5. **Collaborates with client/family/health team and other appropriate individuals**

   a. Student consistently informs nurse and instructor at outset and throughout shift of his/her plan for care, medication administration, charting, and referral needs.

   b. The student takes the initiative to discuss clarification of medical orders with the appropriate nurse and physician.

   c. The student takes the initiative as appropriate to consult with other health team members (e.g., physician, social worker, child life specialist, dietitian, etc.) to validate his/her plan of care.

d. The student provides nursing care in which the client and family are active participants.
e. Care provided by the student consistently reflects an integration of individual family member needs to promote family growth.

Evaluation

1. **Uses evaluation appropriately in the nursing process (utilizes data to validate if identified goals are met)**
   a. Student consistently evaluates the results of the care provided in relation to the outcome criteria established for the patient/family goals. Student documents all data regarding outcomes.
   b. Student demonstrates objectivity in evaluation process.
2. **Evaluates effectiveness of specific interventions**
   a. Student consistently observes for side effects of and patient response to all medications and therapies the patient is receiving.
   b. Individual nursing actions are evaluated and documented on a consistent basis.
   c. Client/family response to care provided is observed and documented.
   d. Evaluation and documentation of client/family education is in measurable terms.
3. **Develops alternate interventions and goals when appropriate**
   a. The student demonstrates awareness of and planning for differing outcomes. The student can verbalize in advance alternate nursing interventions for these outcomes.
   b. Student demonstrates the proper course of action that should be taken if the client experiences ineffective response or adverse reaction to (1) specific therapies (e.g., medications, IV therapy, blood products, etc.), or (2) normal process of adaptation.
   c. The student can implement alternate interventions while demonstrating flexibility, objectivity, timely organization, and professionalism.

Professional Behaviors

1. The student demonstrates promptness in attendance at all clinical experiences, post-conferences, and seminars.
2. The student consistently demonstrates honesty and integrity in the provision of care and his/her clinical performance.
3. The student will adhere to professional behaviors as listed in the NUR 4435 syllabus.
4. The student's behavior in the clinical setting consistently reflects maturity; responsibility for own actions; and respect for patients, staff, instructors, and peers.
5. The student assumes responsibility for adherence to verbal and written guidelines set forth by individual faculty members in the pediatric, psych, and community settings.
6. The student consistently demonstrates professional behavior and a pleasant demeanor despite personal problems/concerns/issues.

FIGURE 21-5 Expected clinical performance behaviors.

Courtesy of Judy Howden, RN, PhD

She often wrote “increase specificity” on assignments, and the students would question what that meant. By providing specific examples, the instructor helped students understand what to do differently before repeating the assignment.

Anecdotal notes are an important means by which the clinical instructor can provide specific details regarding the student’s performance that will require remediation, as well as documenting areas of superior performance. Quance (2016) studied nursing students’ perceptions of anecdotal notes and found that students valued both verbal and anecdotal feedback and wanted to receive the feedback before the next clinical experience.

The final clinical evaluation allows the instructor to analyze and deliver to students the progress of their clinical performance over time. This summative event prepares students to move forward in their program with guided input regarding their current state of practice. Assigning a grade plays an important role in determining whether competencies have been met during directly supervised clinical experiences. Although the tools are standardized, it is important for the clinical instructor to individualize his or her evaluation comments.

Edgecombe and Bowden (2009) remind us that “[l]earning outcomes [are] expressed as both intrinsic and extrinsic” (p. 97). The summative evaluation will examine students’ ability to meet the course objectives that were imposed by the program curriculum. The intrinsic objectives of each student’s personal need to learn upon exposure to nursing practice in the clinical environment should also be documented and discussed. To prepare for final clinical evaluations, an appointment time should be scheduled, which is agreed on with both the faculty member and each student. The meeting place should be private because the evaluation content and conversation should remain confidential. When a student arrives for the evaluation, a copy of the completed tool is provided for the student to read and sign, following any discussion of reflective practice, clarification of evaluative comments, and an opportunity for self-appraisal on the part of the student. When meeting with students to give midterm and final evaluations, it is a good practice to have two clinically based faculty members present. This could be two faculty members who have simultaneously taught the student during the evaluation period, or two faculty members from the same content domain. This practice validates for the student the significance of the evaluation comments and provides for physical and emotional safety of the primary instructor in case the evaluation becomes emotionally charged.

Learning contracts or clinical practice warning forms are documents used by clinical instructors to delineate unsafe clinical practice or a breach in professional practice. These contracts become a part of the evaluation process and typically include a remediation plan. The purpose of these learning contracts is to provide additional structure and clear communication as to what the student must do to be

successful in the clinical course. Orientation for clinical faculty assists in their providing effective clinical instruction. For example, use of a clinical warning form to document inadequate, unsafe student performance may help with optimal formative and summative evaluation of a struggling student, in that it creates a paper trail for legal purposes and an educational wake-up call for the student. For a sample document regarding safety in the clinical setting, refer to **FIGURE 21-6**. For an example of how to record a breach in professional behavior, refer to **FIGURE 21-7**.

BAYLOR UNIVERSITY LOUISE HERRINGTON SCHOOL OF NURSING STANDARDS OF SAFE CLINICAL PRACTICE

In all clinical situations students are expected to demonstrate responsibility and accountability as professional nurses with the ultimate goal being safe patient care. The Baylor University Louise Herrington School of Nursing (LHSON) believes that this goal will be attained if each student's daily clinical practice is guided by the Standards of Safe Clinical Practice that always includes, but is not limited to, the following behaviors.

The student will:

1. Know and conform to the Texas Nursing Practice Act and Texas Board of Nursing rules and regulations as well as all federal, state, or local laws, rules, or regulations.
2. Adhere to the American Nurses Association (ANA) Code of Ethics.
3. Adhere to Health Information Portability and Accountability Act (HIPAA) and institutional privacy practices.
4. Prepare for clinical learning assignments according to course requirements and as determined for the specific clinical setting.
5. Practice within the boundaries of the nursing student role as established by the LHSON and the assigned agencies.
6. Provide nursing care required to promote health and prevent illness or further complications.
7. Demonstrate the application of previously learned skills and principles in a safe manner while providing nursing care.
8. Administer medications and/or treatments in a safe manner according to guidelines provided by LHSON and the assigned clinical agency.
9. Promptly report significant client information in a clear, accurate, and complete oral or written manner to the appropriate person(s).
10. Comply with institutional policies and procedures when implementing nursing care.
11. Meet the clinical expectations as outlined in the course syllabus and the LHSON Clinical Performance Evaluation Tool.

I have read the Baylor University Louise Herrington School of Nursing Standards of Safe Clinical Practice, Texas Nursing Practice Act Rules 217.11 and 217.12, ANA Code of Ethics, HIPAA, and clinical course syllabus. I understand that these standards are expectations that guide my clinical practice and will be incorporated into the evaluation of my clinical performance in all clinical courses. Failure to meet these standards may result in my removal from the clinical area, which may result in clinical and course failure.

Student signature and date: _____

Student printed name: _____

FIGURE 21-6 Clinical safety contract.

Description

Baylor University Louise Herrington School of Nursing Professional Behaviors Student Counseling Record

Student: **Instructor:**
Date: **Course:**

Data Record and Statement of the Problem
Noncompliance with course expectations and performance standards for NXXXX, level XX related to professional behaviors

Date and time of occurrence: [Faculty comments added here.]

Description of occurrence: [Faculty comments added here.]

Course Expectations and Performance Standards
As professionals, students are expected to demonstrate professional behaviors as listed in the course syllabus.

- Project a positive image through the use of language, accountability, behavior, and appearance.
- Demonstrate professional behaviors at all times during the clinical experience (arrives on time, respects client confidentiality, assumes responsibility for own actions, is in appropriate uniform with pertinent equipment, etc.).
- Demonstrate an active role in own learning process (shows interest in learning experience, seeks out learning opportunities, and asks pertinent questions).

Student Goals
The student will adhere to professional behaviors. [Faculty comments added here.]

Student Responsibilities
1. The student will review professional behaviors in the NUR XXXX syllabus, Level XXX Clinical Evaluation Tool, LHSON Student Information Guide, and Baylor University Student Policies and Procedures found at http://www.baylor.edu/student_policies.
2. The student will implement chain of command as necessary.

Faculty/Instructor Responsibilities
The instructor will continue to be available during clinical and business hours to answer any questions concerning the clinical experience, which includes, but is not limited to, professional behaviors.

Evaluation
Failure to demonstrate any of the clinical professional behaviors outlined in the NUR XXXX syllabus, Level XXX Clinical Performance Evaluation Tool, LHSON Student Information Guide, Baylor University Student Policies and Procedures, and/or this Student Counseling Record may result in the lowering of the numerical grade and/or a failure of the course.

Instructor Comments

Student Signature: _____ Date: _____
Instructor Signature: _____ Date: _____

THE ORIGINAL COPY OF THIS FORM MUST BE GIVEN TO THE UNDERGRADUATE PROGRAM DIRECTOR WITHIN 24 HOURS OF COMPLETION.

FIGURE 21-7 Student counseling record.

Description

Writing and delivering the learning contract to the student who is not performing at an acceptable level should not be a contentious process, but it should be presented in a clear and compassionate manner. The clinical instructor cannot ensure success solely through the use of the contract, but is responsible for designing the plan for success. The learning contract outlines the roles both instructor and student play in any additional remediation sessions that may take place outside the clinical setting. Part of the process for implementing the learning contract is to provide the student with feedback during each clinical experience. This may be referred to as meeting or not meeting the terms of the contract. If safety issues are not remediated, the student may not be allowed to continue in the clinical setting, which may result in a course failure.

Nurse educators need to be fully present with students who are at risk of failing clinical courses in ways that foster personal and professional growth, rather than distancing themselves. This is not easy work. As educators, we are inclined to disconnect from students to protect our own vulnerability, particularly when performance issues arise (Frelin, 2015). Ultimately the student must display the outcome behaviors necessary for success in the course, which are directly related to the standardized final clinical evaluation tool. The learning contract is signed by both clinical instructor and student, and a copy is placed in the student's academic file.

Clinical Practice Failure

Clinical practice failure is the lack of clinical competence and the inability of the student to meet the course objectives. Issues such as unsafe clinical practice, unprofessional behaviors, poor attendance, inability to implement appropriate interventions, falsification of patient records, omissions in documentation, nontherapeutic communication, and errors in medication administration are all examples of critical elements of practice that may result in clinical practice failure. Some clinical practice failures indicate that the student needs more exposure or time in the clinical setting to be successful.

There are implications for clinical instructors as well as their students when clinical practice failures occur. From the student's perspective, the failure may result in a wake-up call that leads to revising his or her strategies for success throughout the remainder of the clinical experiences. A second outcome for the student may be the revelation that the particular health profession is not for him or her, at which time he or she may choose to revise his or her degree plan. At other times, the student may become angry and blame his or her failure on the clinical instructor. This student reaction will have implications for the clinical instructor, as he or she may

become a part of an appeals process.

Clinical Practice Success

The ultimate goal of clinical teaching is clinical practice success for the student. This means the student has met the objectives of the course and is ready to progress in the program or into the workforce. Creating supportive clinical learning environments, utilizing interprofessional mentoring, infusing evidence-based practice at the bedside, honing interpersonal skills with patients and families, and incorporating reflective practice on a daily basis are all pillars that provide the foundation for the clinical professional to focus on and overcome challenges that are constantly present in the ever-changing healthcare environment. Students who have inherited a passion for lifelong learning from their clinical instructors will be well equipped and resilient to meet the demands as they grow in their professional roles.

Conclusion: Light at the End of the Tunnel

The outcomes of our teaching experience directly advance our chosen healthcare profession. It is continually rewarding to write letters of recommendation for students as they enter the clinical practice arena and prepare for graduate school. The ebb and flow of the academic calendar can provide a predictable schedule for those who like a beginning and ending point to their work. The clinical practice day may be unpredictable and the generation of learners may change, but clinical teaching still provides a stimulating and rewarding practice field.

Discussion Questions

1. What are the key components of a healthcare professional’s clinical teaching role?
2. What tools can a clinical instructor utilize to evaluate a student’s clinical decision making?
3. How can the keeping of anecdotal notes by the clinical instructor affect the summative evaluation process?

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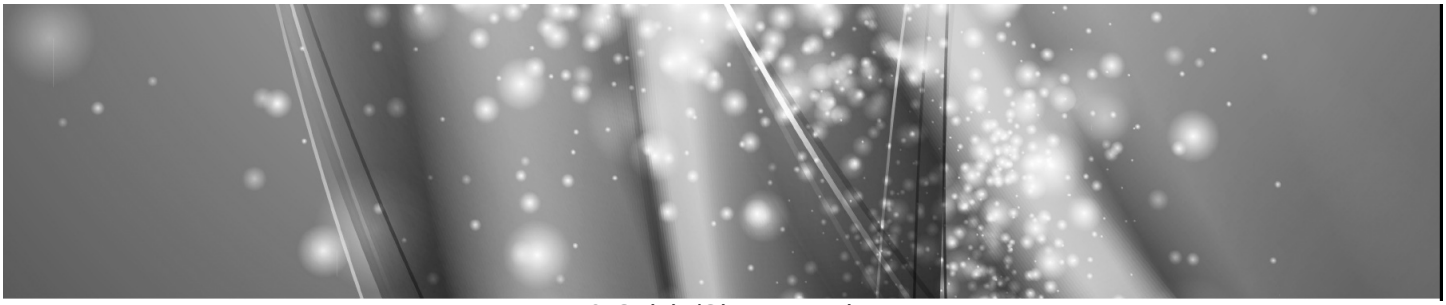
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CHAPTER 22

Clinical Preceptorships

Felita Wash-White and Debra Hagler

Introduction

A clinical preceptorship experience provides an opportunity for students, new graduate clinicians, experienced clinicians changing settings, or others (i.e., resource, float pool, or travel nurses) to begin socialization and role transition with the guidance of an experienced staff member. This experiential teaching and learning methodology provides clear benefits to the learner, preceptor, school, and healthcare organization.

Definition and Purposes

The term *preceptor* first appeared in the nursing literature in the mid-1970s (Peirce, 1991). To precept has been defined as to command or direct, and more recently, to mentor and instruct (Merriam-Webster, 2018; Irwin, Bliss, & Poole, 2018). The clinical healthcare preceptor teaches, coaches, and supervises (Ward & McComb, 2017b; Rodriguez-Garcia, Medina-Moya, Gonzalez-Pascual, & Cardenete-Reyes, 2018). *Preceptorship* denotes an experiential teaching model lasting a designated period of time, during which an experienced clinician or *preceptor* enters into a one-on-one relationship with a novice clinician learner (the *student, preceptee,* or *orientee*). The purpose of the preceptorship is to facilitate and evaluate the preceptee's transition to a competent practitioner (Ward & McComb, 2017b; Rodriguez-Garcia et al., 2018; Nielsen et al., 2017).

Health professions education has always relied on practice-based apprenticeships. Irwin et al. (2018) describe a current nursing education model designed to prepare a professional who is confident, competent, and reflects nursing care steeped in evidence and advocacy. During the preceptorship, the preceptor teaches the art of professional practice through role modelling, information sharing, coaching, and direction.

Preceptorship is used to facilitate the role transition of novice clinicians or of experienced clinicians new to a patient population or setting. A preceptorship can support student learning based on specific academic program objectives and goals: students can be engaged in learning with a preceptor during a clinical, management, education, or research practicum. This guided experience offers the learner the opportunity to apply previously acquired knowledge in an experiential manner while safely integrating knowledge and experiences for future reference (Benner, Tanner, & Chesla, 1996).

Prelicensure nursing students' preceptorship experiences typically take place within a clinical setting during the final one or two semesters of the academic program. At this level of education, students are expected to apply, analyze, and synthesize theoretical knowledge. These high-level thinking skills are honed through in-depth study of a specific patient population, application of evidence-based research, and critical thinking and clinical reasoning related to the clinical practice area. In addition, precepted clinical experiences provide an opportunity for students to demonstrate authentic leadership and practice communication and collaboration skills. Observing others in teamwork can help students understand organizational behavior as well as gain perspectives on current ethical, legal, economic, and political issues.

During a preceptorship, a partnership is formed over time in which both the preceptor and the preceptee contribute to the outcome (Ward & McComb, 2017a). The partnership may transition into an ongoing exchange between the preceptor and

the learner in a mutually trusting, supportive environment. The preceptor strives to create a supportive learning and working climate by offering information, direction, and feedback, while the preceptee offers insight about personal goals and learning needs. During the preceptorship, both the student and the senior clinician learn the rules, language, and behaviors of the work environment as a team (Rebeiro, Edward, Chapman, & Evans, 2015; Ward & McComb, 2017b; Valizadeh, Borimnejad, Rahmani, Gholizadeh, & Shahbazi, 2016).

A preceptorship can serve as a period of discovery and transition for both the new nurse graduate and the experienced nurse. Unrealistic perceptions of the nursing role have been associated with increased attrition in nursing programs nationally and internationally and higher than normal turnover rates for practicing nurses (Schuler, 2016). The preceptorship is the opportune time for the novice to learn the “real-world” of health care. It is the first step in the transition to practice for novice nursing students and supports socialization into a new role for the advanced practice student. The preceptorship experience differs from spend-the-day shadowing experiences or informally paired relationships that are typically geared toward providing a broad exposure to the healthcare environment or understanding of the clinician role. It also differs from the mentor–mentee experience, which is generally a longer-term mutually supportive and collaborative relationship designed to promote career growth and development (Schuler, 2016; Rebeiro et al., 2015).

Theoretical Foundations

Experiential learning in clinical practice is an integral part of undergraduate nursing education. This type of learning involves integration of theory through the involvement of nursing students in real-life environments and situations (Kamolo, Vernon, & Toffoli, 2017). Students are expected to develop and apply cognitive skills (clinical reasoning, critical thinking, and problem solving) and practice professional affective behaviors while increasing proficiency in the psychomotor domain. The expected outcome is for students to provide safe and high-quality patient care (Kamolo et al., 2017).

Nursing clinical competence requires clinical reasoning, critical thinking, decision making, psychomotor skills, and problem solving. Moreover, as noted by the seminal work of Benner (1984), clinical competence develops over time as the student nurse progresses through various levels of proficiency (Wu, Enskar, Siang Lee, & Wang, 2015). Competencies are behaviors that reveal mastery of decision making, responsibility, and knowledge transfer. Clinical preceptorship involves a collaboration among the student, preceptor, and educator to help the student develop or strengthen competencies and safe practice.

Students in clinical education can engage in a realistic view of how professionals manage team roles and complex situations (Hendricks, DeMeester, Stephenson, &

Welch, 2016). Clinical education also models learning within a situated experiential process. The situated cognition theory is based on principles from anthropology, sociology, and cognitive sciences. A major claim of the theory is that the knowledge a learner acquires is situated within activities that are socially, physically, or culturally based. The acquisition of knowledge cannot be separated from the context in which the knowledge is obtained, so a student should have the opportunity to learn in the same context in which the concepts and skills eventually will be used (Brown, Collins, & Duguid, 1989). In this view, instructors should create an environment of full immersion where students learn skills, new ideas, and behaviors in the realistic context in which those proficiencies will be used. Preceptors serve as guides in the immersion environment.

Socialization, the process by which a person acquires and internalizes new knowledge and skills, is also very important in the role transition of student nurse to novice nurse. Socialization is part of the transition from previous roles to new roles and from familiar to unfamiliar work environments. Socialization occurs through the observation and practice of behaviors, language, and attitudes. Exposure to staff stories and reflections of their own work experiences can impact student learning, competence, and confidence. Socialization proves important to the development of students' professional behavior and interpersonal relationships, and to the success of the clinical learning experience (Rebeiro et al., 2015). The socialization period involves learning about work systems, staff roles, and employer expectations. Nielsen et al. (2017) notes the themes of: "being together," "doing together," and "getting along together" as key elements for preceptorship success and socialization in a complex and authentic clinical working environment (Nielsen et al., 2017; Ward & McComb, 2017a).

Preceptees may experience decreased confidence in their abilities to perform skills and think critically during a transition period. For experienced clinicians entering a new practice site, the loss of self-confidence is particularly distressing. Throughout the transition, the preceptee begins to leave behind previously learned beliefs and behaviors and integrate new standards and expectations into practice. As noted by Irwin, Bliss, & Poole (2018), Kramer described a difficult process known as *reality shock*, a period in which the learner begins to recognize variances and inconsistencies of the new environment in comparison to the old environment. Students transitioning to the professional role are exposed to the realities and contradictions of the real world, as compared to the previously known and ordered world of academia. The preceptee may question the value of what was learned as well as the ethics of what is observed in the workplace. Learning to mesh the academic and work environments in a way that is acceptable for the learner may be difficult and emotionally stressful, as familiar support and social systems are left behind. The work of learning, performing in a new role, balancing new and old roles, and making new meanings shape an arduous process.

Communication and feedback are the backbone of the preceptor–preceptee relationship. Communication requires mutual trust, respect, and time. It is critical that an initial meeting between the learner and the preceptor include a discussion of their experiences, expectations, and goals for the relationship, as well as their personal, work, learning, teaching, and communication styles. Open, honest, compassionate, and timely feedback sets the stage for a successful relationship.

The expectation of a preceptor is to be a teacher, counselor, clinician, and guide through a complex transition (Ward & McComb, 2017a). A safe, supportive, and informative environment is vital during this period (Rebeiro et al., 2015). While the key relationship is between preceptor and preceptee, there are also important roles for supportive faculty and unit staff. Faculty, managers, and clinical liaisons meet with preceptors in advance to describe, update, and integrate learning outcomes with the course or orientation program objectives. Faculty and organization leaders should give careful consideration to how preceptors can be supported and recognized in their roles.

Clinical Teaching Models

The primary goal of nursing clinical education is to contribute to the students' acquisition of skills, competencies, and professional socialization. Only through clinical practice can the individual observe, practice, and achieve higher-level clinical competence, clinical reasoning, and critical-thinking skills. There is a noted variance in requirements for numbers of student clinical hours across schools and programs. This divergence in requirements reflects differences in clinical education curricula and models (Rebeiro et al., 2015).

Academic programs use a variety of clinical education models, including a preceptorship model, a clinical facilitation model, a mentorship model, a traditional learning model (TLM), a practice-education partnership model (PEP), a hybrid learning model (HLM), collaborative models, and a hub and spoke model (Forber et al., 2016; Hendricks et al., 2016; Rebeiro et al., 2015). The same school may use different models for different courses or academic programs, or may use the same model consistently. See **TABLE 22-1** for a summary of clinical education models.

TABLE 22-1 Comparison of Clinical Teaching Models

Clinical Teaching Model	Description
Preceptorship Model	A one-to-one teaching relationship with a senior professional who provides orientation, supervision, and guidance to a new graduate, student, or transitioning employee.
The Traditional Learning Model (TLM)	Adjunct faculty supervise the care. Staff nurses are not directly responsible to teach or mentor students.
Clinical Facilitation Model	Very similar to the TLM. A professional funded by the educational program directly supervises a group of students.
Mentorship Model	Involves a longer-term one-on-one relationship and commitment between the preceptor and the student or preceptee.
The Practice-Education Partnership Model (PEP)	Faculty-trained mentors lead the PEP. Staff-nurse preceptors each directly supervise one to two students in the clinical setting.
Hybrid Learning Model (HLM)	The HLM incorporates aspects of TLM and PEP. A faculty member directly supervises approximately half the students while also mentoring staff nurse preceptors, who work with one to two students.
Collaborative Model	Similar to PEP and dedicated education units (DEUs), where students have clinical rotations on specific units where all staff are trained and engaged in student learning and support.

Hub and Spoke Model	Students in one unit “hub” have a series of clinical experiences “spokes” away from the unit to follow the patient care journey or transitions within the clinical rotation.

Data from Rebeiro et al., 2015; Hendricks et al., 2016; Forber et al., 2016.

Despite the diverse approaches to clinical education or supervision, common themes across models include the central role of interpersonal relationships, consistency and continuity in clinical education delivery and communication, and the aspect of clinical duration or time. There is still limited data about how specific clinical models inform student learning outcomes and stakeholder perceptions (Hendricks et al., 2016). Because of the importance of clinical learning, clinical models need further investigation.

The Precepting Process

Types of Learners

Whether an individual involved in the precepted experience is a student, new graduate, experienced clinician, or temporary visitor, an adult learner actively participates on some level in identifying individual learning needs and designing or choosing learning experiences intended to meet those needs. The precepted experience may take place in a complex and dynamic clinical environment with the preceptor facilitating the learning. Student learning in the authentic clinical environment is sometimes dependent on chance and opportunity. The experience is enhanced for learners who exhibit well-developed adult learning characteristics such as self-regulation, willingness to share life experiences, active engagement, openness to learning opportunities, high expectations, and a problem-centered approach to learning.

Preceptorships have specific, defining attributes of being: (1) one-on-one relationships, (2) embedded within somewhat of a formalized program, (3) in the process of evolving over time, and (4) methodical ways of facilitating practical experiences. These attributes guide the implementation of the formal clinical educational process and lead to effective learning outcomes for the student (Ward & McComb, 2017b).

Conditions for Learning

Oermann, Shellenbarger, and Gaberson (2018) describe how preceptors benefit students in terms of the student's ability to integrate classroom theoretical knowledge with actual clinical practice in a healthcare organization. In addition, the preceptor can provide individualized attention and guidance to improve the learner's clinical competence and confidence. Schools also benefit from preceptorship experiences, because students depend less on faculty members when preceptors serve in the clinical educator role. In this model, a faculty member can more effectively manage a group of students through collaborative relationships with preceptors.

From the healthcare agency perspective, preceptorship rotations may align with the organization's mission, such as a commitment to educating future clinicians. In addition, preceptorships may facilitate recruitment of employees when the learner develops a relationship with the organization and staff. The supportive relationship between an orientee and a preceptor may also promote new employee recruitment, job satisfaction, and retention (Hendricks, DeMeester, Stephenson, & Welch, 2016; Oermann, Shellenbarger, & Gaberson, 2018).

Rules and Regulations

Clinical education relies heavily on the staff nurses who assume the preceptor role. Regulatory processes are intended to promote public safety by protecting the preceptors, the students, the faculty, and most importantly, the patient. Professional credentialing and government regulatory organizations have widely acknowledged the use of the preceptorship model in developing role-specific competencies. Forde-Johnston (2017) suggests that professional nursing and governing bodies should explore the use of national minimum standards for preceptor roles. Yet, there have been few standardized guidelines for curricula to prepare preceptors (AACNa, 2018: L'Ecuyer, von der Lancken, Malloy, Meyer, & Hyde, 2018).

L'Ecuyer et al. (2018) reviewed the National Council of State Boards of Nursing (NCSBN) rules and regulation documents and the language pertaining to the use of preceptors in the clinical education of undergraduate nursing students for all 50 states, the District of Columbia, and the U.S. territories. They reviewed three major areas: (1) description of preceptor qualifications and role responsibilities, (2) description of faculty expectations, and (3) role responsibilities, and ratios of preceptor-to-student and faculty-to-student. Findings included a lack of specificity, depth, and consistency to the mention of preceptors in nursing education guidelines. Although some states aligned with the 2012 NCSBN model rules, there was room for improvement. Few formalized regulations for preceptor qualifications, preparation, training, or role responsibilities were standardized. Fourteen states and two territories clearly defined the term *preceptor*. Only 18 documents from the 38 boards of nursing reviewed contained criteria for preceptors. Nine states had no mention of preceptors at all. The preceptor qualification most often (29 states) specified in the United States was holding a current RN license. Based on these findings, the researchers proposed a minimum set of items to be included in the state board of nursing rules and regulations concerning preceptors in clinical settings. They also suggested that states without regulatory measures might benefit from reviewing other state statutes and drafting new rules and regulations to address gaps.

Similar inconsistencies for preceptors are reflected on a global level. In the United Kingdom, preceptors are RNs with a minimum of 1 year of experience, and in Taiwan RNs are required to have at least 3 years of clinical experience plus 10 hours of continuing education (L'Ecuyer et al., 2018).

Resources

Preceptorship relationships must be monitored, nurtured, and supported. Preceptors need the tools to accomplish their substantial responsibilities. Support comes in the form of many useful resources and tools to help both preceptor and preceptee.

Although the preceptorship experience may take place in any organization that delivers health care, it is important to ensure that the clinical environment matches the goals of the experience from the program and the student/orientee perspectives. The optimal length of the experience depends on the goals to be achieved. The experience must be long enough to provide the varied clinical experiences to support achievement of course or orientation objectives. The clinical environment should be one in which the novice feels safe enough to ask questions and take risks. The preceptor and learner will benefit from the contact and guidance of a faculty member or clinical educator, clinical specialist, or manager. Preceptors should be aware of a student's goals and objectives or an orientee's competency expectations to facilitate planning, track achievements, and record performance.

Organizations that provide clinical placements to student clinicians or new employees should plan to provide qualified staff as preceptors. Depending on the staff mix in each clinical area, there may not be an adequate supply of interested, committed, and educationally prepared staff to serve in the preceptor role. This is often true if the unit or department welcomes groups of students and new staff at the same time, creating competition for patient assignments. Staff may view the role of preceptor with related teaching and evaluation responsibilities as added work. A lack of engagement from staff preceptors could be an off-putting aspect for students or new hires in a unit. Preceptorships require commitment on the part of the unit or department manager, clinical specialists, clinical educators, and program faculty to create a learning environment that supports staff in their roles as preceptors (Rodriguez-Garcia et al., 2018).

The Precepting Method

The preceptor model is appropriate for a wide range of prelicensure and graduate health professional programs as it helps to bridge the gap between the classroom (didactic) and the clinical area (Fressola & Patterson, 2017). The faculty member functions as the liaison between the preceptor, the student, and the clinical site. The preceptor is an experienced professional with clinical expertise in the area. Preceptors, through their role modelling, help prepare student nurses with a variety of skills they will need to function as health professionals. Sharing clear expectations for the preceptorship experience further contributes to a successful experience.

Faculty should provide an overview of expectations, course objectives, and student learning outcomes to the preceptor. New graduate or experienced clinicians should come with expectations for the experience and be prepared to discuss them. The preceptor, working with faculty members, unit-based leaders, or clinical partners, should also develop a set of goals and expectations for the precepting experience. The preceptor should be oriented to the preceptor role, course objectives, clinical teaching techniques, conflict resolution strategies, and assessment and evaluation protocols of students. During the initial meeting between the preceptor and the preceptee, goals and expectations for the experience should be shared and reworked into a mutually agreed-upon plan with time frames for achievement.

Role of the Preceptor

Preceptors play a critical role in the transition of student learners. As learner advocates, preceptors have the crucial role of bridging between academia and “real-world” patient/nursing care. They must be the collaborators who are supporting, directing, motivating, facilitating, problem-solving, trouble-shooting, monitoring, and assessing (Wu et al., 2015).

Effective precepting requires an individual who is committed to nurturing and teaching the next generation of professionals—someone who is both caring and clinically competent. The preceptor strives to create a safe and meaningful interactive relationship with the student. On occasion, preceptors are selected based on their availability, convenience, and clinical abilities, but an outstanding clinician does not always translate into a skillful preceptor.

There are four criteria for selecting a qualified preceptor. The first criterion in selecting a preceptor should be the clinician’s interest in and willingness to assume the role in addition to patient care responsibilities. The second criterion is the preceptor’s ability to form positive relationships with others. The preceptor–preceptee relationship must include trust and understanding if learning is to take place. Involving the potential preceptor in the interview process for a new staff

member and having a manager or clinical specialist match a preceptor and preceptee based on factors such as communication, learning needs, and teaching styles can be helpful (Forber et al., 2016; DeMeester et al., 2017; Ward & McComb, 2017b). Leaders can facilitate this trusting relationship by providing time for goal-setting, discussion, reflection, and feedback throughout the experience.

Clinical knowledge, skill, and ability are the components of the third criterion for choosing an ideal preceptor. A practitioner with a deep understanding of the patient population helps to promote safety. Benner and colleagues (1996) state that the competent level practitioner often provides the best guidance for the new clinician. The competent practitioner is adept at assessing and diagnosing patient needs in a step-by-step fashion. This attention to detail and use of a logical and orderly process are useful when teaching the student or novice practitioner. Proficient or expert level clinicians have a breadth of knowledge and intuition not possessed by the competent practitioner, but their skill may prove to be too abstract for the novice, and therefore they may not be the best choices to serve as preceptors. As a task-focused learner, the novice is comfortable with the concrete instructions of the competent practitioner.

The ability to listen and communicate with respect describes the fourth criterion for the preceptor. During the transition from student/orientee to practitioner, the new information, new experiences, and new responsibilities may be overwhelming. Learners may experience a range of emotions, from excitement and eagerness to anger and frustration, during the transition period. The preceptor will need to be attuned to these reactions and adapt the learning experience accordingly. To manage this, the preceptor will need to be able to listen closely and assess the needs of the learner, much as the preceptor assesses the needs of the patient.

Role modelling patient care skills, from interpersonal interactions to assessment and diagnosis, and finally to intervention and evaluation, is the primary method of teaching. Ongoing explanations for each action inform the learner of the reasoning for the choices the preceptor makes. In addition to modeling practice at the bedside, the preceptor models skills in communication and decision making with the patient, family, and interdisciplinary team.

As the experience progresses, the preceptor instructs the learner in providing direct patient care, using technology, interacting with the multidisciplinary team, and accessing the resources available within the work environment.

The preceptor may coach the preceptee by role-playing interactions before they occur. For instance, the preceptor may have the preceptee practice reviewing the plan for participating in patient care rounds before they occur or practice giving a clinician-to-clinician report before the shift ends. The skill of the preceptor is called into action, including knowing when to hover close by the preceptee and when to allow the learner to practice independently. As the patient dynamic changes, so will the choices the preceptor makes relative to the autonomy of the novice. When the patient’s condition is acute or changes unexpectedly, the preceptor works closely

with the learner to provide care, make assessments, and plan with other members of the healthcare team. When the patient is well-known to the preceptor and learner, with a stable or improved condition, the preceptor may choose to review the plan of care with the learner and then observe and evaluate the learner's ability to implement the plan.

Along with the responsibility for teaching at the bedside, the preceptor introduces and socializes the preceptee to the work environment to assist in the transition from student or orientee to professional clinician. The preceptor introduces the preceptee to the culture of the unit, the values of the staff, the formal and informal roles occupied by members of the staff, and the formal and informal rules by which the unit functions. Preceptors explain basics such as how the schedule works and how to manage the hospital's communication system, as well as how to cope with the realities of the healthcare environment.

The preceptor becomes a guide to the learner who has left behind familiar environments and support systems and must form a new and stable base on which to grow as a clinician.

When working with new clinicians, the preceptor, with support from unit leadership, should attempt to carve out time for reflection. While this is challenging in a fast-paced clinical environment, it does serve several important purposes. Time away from the clamor of the unit allows the preceptor and learner to review the patient experience and to discuss in greater depth how and why specific patient care decisions were made. Perhaps most importantly, this time provides a safe space for the learner to reflect on thoughts and feelings about what has occurred with the patient, how care was performed, and what learning can be applied to future care.

Through these discussions, the relationship between preceptor and preceptee is built, trust is developed, and communication is enhanced. This is vital for later discussions, as the pair evaluate the success of the practicum or process of orientation and each person's part in the process.

Role of the Preceptee

The preceptee is an active participant in the preceptorship experience and must assume a co-leadership role in ensuring the success of the experience. In addition to initially sharing goals for the experience, the learner is responsible for informing the preceptor when the goals are not being met, when new lessons are not clear, or when he or she is uncomfortable with a new skill. Feedback from the learner helps the preceptor adapt and adjust the experience in a meaningful way that leads to a successful outcome. Without feedback from the learner, the preceptor will be making assumptions, which may not always be accurate. The learner is also accountable for following through on the suggestions and recommendations made by the preceptor. This may include practicing a skill, researching an unfamiliar aspect of clinical care,

or reading a suggested article or chapter about a unique patient condition.

Nursing scholars posit that there is a discrepancy between nursing students' clinical experiences and the "ideal" of what happens in the reality of nursing practice. Many beginning nursing students have a limited understanding and awareness of the nursing role. The difference between "ideal" role perception and the reality of nursing practice can result in role discrepancy and a difficult transition for the novice nurse in a professional capacity (Schuler, 2016).

The Role of Faculty and Unit Leaders

A strong collaborative partnership between academic faculty and service providers, including unit leadership and staff, is a critical factor in ensuring a successful clinical experience for students. The role played by faculty and unit leadership will vary depending on the level of experience of both the preceptor and the preceptee. If the preceptor is new to the role, then the faculty or unit leader will play a mentoring role in the process and may have to provide more guidance to the preceptor. As the preceptor gains experience in the role, faculty and unit leaders may need to meet with the preceptor and preceptee less frequently to monitor the process or consult on complex issues that the preceptor is unable to solve independently. Regardless of the experience level of the preceptor, the faculty or unit leadership must maintain open communication and monitor the experience to ensure that objectives are met, and intervene if issues arise in the preceptor–preceptee relationship. Such support can be offered periodically throughout the preceptorship in direct discussions, and by text, phone, or e-mail when specific questions or concerns arise.

The role of faculty instructor is to provide the leadership and guidance that both students and clinical preceptors need to have a fulfilling learning experience. This may be further elaborated with physical visits (if not already on-site) to the nursing units to discuss the learning goals, review clinical progress, and provide much needed emotional support. Nurse leaders in healthcare organizations are crucial to the sustainability of preceptor programs by providing formal support and promoting the time and space needed to develop the professional relationship significant in the preceptor–preceptee roles. The continuity of preceptorships is a vehicle for organizational growth, streamlined onboarding processes, new nurse preparedness, confidence, and increased retention (Ward & McComb, 2017a).

Evaluating the Precepted Clinical Experience

The evaluation process for a preceptorship program should be continuous and provide evidence to inform curriculum, instructional, and administration changes. Programs should be monitored closely throughout each segment of the preceptorship cycle and during transitions of key stakeholders or policies. Ideally, evaluation of a specific preceptorship should be an ongoing formative process, part of the daily communication between preceptor and preceptee. Discussion and feedback about skill performance, assessment and diagnosis, and bedside interactions should be part of the regular communication each day. By incorporating this process into the routine, feedback becomes a respectful, helpful activity that moves the learning continuously forward.

Competency-based tools, timelines, and lists of objectives can serve as valuable guidelines for discussions. If goals have been set at the beginning of the precepting experience, discussions can be based on how closely the experience has come to meeting those goals. Asking simple questions, such as “What did you do well today?” “Is there anything you would do differently?” and “How close are you to reaching each goal?” provides a basis for self-reflection and allows the preceptor to evaluate the learner’s understanding of his or her performance. The preceptor can then compare observations of the preceptee’s performance with the learner’s self-assessment and provide constructive feedback to support or improve the preceptee’s performance.

If the preceptorship experience is only evaluated after it ends, the learner will not benefit from the preceptor’s suggestions and recommendations, because they were not provided in a time-sensitive or event-sensitive manner. As the orientation is nearing the end of its prescribed timeline, the burden of evaluation becomes more acute. The American Association of Colleges of Nursing and the American Association of Critical-Care Nurses have used survey data and focus groups to determine lists of core competencies for evaluation (AACNa, 2018; AACNb, 2018). Important generic competencies identified include basic knowledge application, assessment, technical skill attainment, time management, critical thinking, and communication. For the new clinician, such evaluation tools most often follow a competency-based format that covers the various aspects of caring for a specific patient population, including skill acquisition, problem solving, and decision making. For the student, evaluation tools generally focus on goal attainment and the overall clinical behaviors. Preceptors may use a self-evaluation model focusing on the various aspects of the preceptor role, or they may receive feedback from the preceptee, faculty, or unit leaders using a more inclusive method.

Preceptors have listed a lack of basic knowledge, clinical reasoning, or critical

thinking followed by the inability to perform frequently taught and demonstrated skills as the most concerning general indicators of a preceptee's lack of readiness for practice. Specific behaviors that raise concerns include an inability to develop organizational skills, an apparent lack of interest in engaging with patients, and an unwillingness to participate in self-reflection or critical self-assessment (Kamolo et al., 2017; Valizadeh et al., 2016; Wu et al., 2015). Active and timely faculty or unit leadership involvement can help the preceptor manage some of the perceived burden for the outcome of the experience.

Impact on Student Learning

Wu et al. (2015) provide a summary of students' perceptions of clinical experiences in four major themes: a fear of harming patients, a desire to help people, a need to integrate theory and clinical practice, and a desire to master psychomotor skills. Preceptors possessing a strong familiarity with the principles of teaching and learning can be effective in helping students manage their concerns and reach learning goals.

Challenges in Preceptorship Learning

Establishing a successful partnership in clinical learning environments requires consistent, interested, capable preceptors. On the other side of the equation, there must be an engaged, participative preceptee. Potential problems can arise because of factors related to the preceptor, the learner, or the process. Although clinicians chosen to be preceptors are typically well prepared to care for patients, they must also be knowledgeable regarding the principles of adult education and adult learning, learning styles, planning and implementing learning experiences, reality shock, and the principles of evaluation and constructive feedback. Faculty, managers, clinical specialists, and staff educators can provide opportunities for advanced education in these areas to prepare clinicians to serve in the preceptor role.

A common challenge faced by preceptors is unfamiliarity with specific schools' curricula. Staff in teaching hospitals may precept students from several different schools and health professions through the week, which can be confusing. Providing clear summaries of student goals for review at the beginning of every shift can help busy staff reorient to the individual learner's competencies and learning needs.

Nursing students have expressed issues with learning and evaluation to include anxiety over the assessment, receiving negative feedback, and insufficient guidance by the preceptor (Wu et al., 2015). The challenges described by students and new graduates during this transition include being able to set priorities, organize patient care needs, acquire time management skills, and communicate with physicians while sometimes lacking confidence in their performance, and struggling with dependence and independence in the preceptor–preceptee relationship. The issue of independent practice is a challenge for preceptors as well as preceptees. An event that can be managed by a preceptee in one instance may require the direct involvement of the preceptor in another case because of the impact of individual patient characteristics. This seeming inconsistency in preceptor behavior may contribute to the preceptee's issues of confidence and highlights the need for open, honest communication.

There are many potential causes for conflicts between a preceptor and a preceptee, but some arise when there is a clash of values and beliefs between different age groups. Differing worldviews, personal motivating factors, preferred work environments, perceptions of work–life balance, and individual strengths and differences can create conflicts between a preceptor of one generation and a preceptee of another. Awareness and understanding of these different generational values, behaviors, and expectations is the first step in working toward a successful preceptor–preceptee relationship. Integration of this information into preceptor preparation programs is key to assisting with the teaching and learning challenges created by a multigenerational workforce.

Most often, the student or new orientee has less clinical knowledge and skill than

the more experienced preceptor. The preceptor must consider the rights of the patients and adhere to the ethical standard of beneficence, the duty to help, to produce beneficial outcomes, or at least to do no harm within the context of the teaching and learning process (Oermann et al., 2018). Patients must be aware that a learner is involved in their care as part of informed consent, and preceptors should ensure that the learner has demonstrated the knowledge and skill to provide care safely prior to doing so independently.

Recognizing the Preceptor’s Contribution

Recognition for clinicians who are preceptors can take many forms. Schools may appoint preceptors to adjunct faculty status, provide access to continuing education programs, provide certificates of appreciation or award receptions, and offer free or reduced tuition for selected courses. Although these recognition and reward efforts may have a budgetary impact on the academic institution, benefits to the school may include recruitment of preceptors to enroll in academic programs.

Healthcare organizations may provide incentives for staff who are preceptors, including certificates of appreciation, awards, luncheons, preferred scheduling or assignments, or pay differentials. Again, these methods of recognizing staff for the role as preceptor may have a budget impact, but also may encourage staff to participate in this key role and contribute to job satisfaction and retention. Jones, Simpson, and Hendricks (2017) note that nonmaterial benefits had greater relative importance than material rewards for staff in their decisions to serve as preceptors. These benefits included sharing knowledge and improved clinical decision making and autonomy, which lead to enhanced patient care and work satisfaction.

Conclusion

Preceptorships are an integral part of nursing education. Clearly defined role requirements and responsibilities during the preceptorship improve the quality of student learning experiences. Adding structure to preceptor and preceptee preparation may advance the development of preceptors as clinical educators and facilitate the transition of novice health professionals into their new roles. See **BOX 22-1** for reflections from the experiences of preceptees and preceptors.

BOX 22-1 Reflections on the Precepted Experience: Narratives from Preceptees and Preceptors

How My Preceptor Guided Me

As a recent preceptee, I can tell you what my preceptor did. The first day I just followed her. After that, for a couple of weeks we tag-teamed the whole team of patients. She'd show me how she likes to get organized for the day and then we'd go together to do things, with me doing all the treatments/assessments/med passes, etc., and my preceptor there to supervise and support me. Then I started having three or so patients on my own for a week. The last week of orientation, I cared for all the patients and my preceptor was just there to answer questions. When we had downtime, my preceptor reviewed items in the orientation book and on the computer system.

The preceptor I had both pushed me past my limits, making me feel safe, pathetic, and confident all at one time. I think as I was getting close to managing a full load, she assigned one day where I just administered meds and completed all the charting. The next day, I did everything except give the meds. After that, I was able to put it all together.

For reflection: How did this narrative compare to your experience as a new graduate in a health profession?

A Painful Preceptorship

As a nurse changing clinical areas, I had an experience with preceptors that makes my stomach hurt when I think about it. I really, really, really wanted to be an operating room nurse. When I transferred to the OR, I had a different preceptor every day. Of course, each new preceptor said that everything the last preceptor taught me was wrong and I had to learn the new preceptor's way. When I brought up questions about the policies or current standards, I met resistance, and had a few preceptors complain over my not already knowing things that I felt they should have been teaching me about. There were stories about me going around the unit that seemed to have only a grain of truth to them. One day, I was even met in the hallway with the greeting of "What are you doing here? I heard you were on the way out." I chose to leave that hospital not sure of my skills, with my self-esteem in the toilet. Tomorrow, I start working in a new hospital. I hope my preceptors there can teach in positive ways with constructive feedback, clear communication, and not continual criticism.

For reflection: What aspects of this individual's experience could have been facilitated for better learning?

The Novice Preceptor

A couple of weeks ago, I found out that I would be assigned as a preceptor for the first time. I work on a med/surg unit where each nurse cares for an average of four to six patients with the help of a patient care tech. I wondered how soon I should have the new graduate nurse take responsibility for a patient. How long do I wait to add a second patient? Do I keep the focus on the patients that I have assigned to the nurse, or do we partner to see the other patients and do hands-on skills for all of them? I would have liked to hear how everyone else coordinates precepting a new nurse.

This is what I did. I let the first day be a total "follow me and see what I do" day. I made sure to show the

new nurse around the unit and provide introductions to other staff and team members. I used this day to show our charting system, basic everyday tasks, admissions and discharges. To keep this day from becoming only observation, I let the preceptee handle some of the workload, such as noting and beginning new orders, administering medications, performing head-to-toe assessments on patients I have already seen, checking charts for orders, and IV initiation/care. Based on that experience, the preceptee and I decided together if they were ready to take a patient assignment the next day.

During the next day of orientation, I incorporated a patient discharge and an admission. The preceptee was able to practice with the paperwork while only having one assigned patient at a time. Once again, I monitored how well the admission went, and answered any questions. The next thing I did was assign one low acuity patient, and a higher acuity patient to see how adaptive the orientee's skills were, and where further help was needed. After that, we talked about how comfortable the orientee felt taking on another patient. This was a dialogue from both of our perspectives.

For reflection: What kind of preparation and support would be helpful for someone beginning to take on the preceptor role?

The Experienced Preceptor Helping Students Integrate Knowledge

I try to gauge the student's knowledge, motivation, and skill level. There are many ways of doing that. We can discuss patient problems and things to look for with patient responses. Sometimes this works very well and other times it is "like pulling teeth" to the student to participate. Another way is to directly ask the student to talk through a scenario about the patient care before it is carried out. "Tell me how you will go about this task . . ." (assessing heart sounds, venipuncture, taking vital signs, zeroing an arterial line, teaching about nutrition, etc.).

Many students and new nurses are receptive to the chance to discuss and apply their knowledge, while others seem uncomfortable or resistant. I think that it is important for a preceptor to be patient and kind, willing to explain the process or procedure in minute detail. I like to ask questions that make the student think about what is going on with patient diagnosis and care delivery. I believe that preceptors should keep trying to communicate at different levels to make difficult concepts seem easier.

I also think that preceptors should be personable, approachable, and have a positive attitude that supports and not hinders the learning process. Everyone is not meant to be a preceptor, even though individuals may be very knowledgeable. The precepted experience is one that focuses new learning, attitudes, psychosocial issues, and behaviors in a progressive environment that fosters quality care and mental health of patients, families, the nursing student, and the staff.

For reflection: What can preceptors learn from one another about supporting student development?

From New Graduate Nurse to Preceptor and Nurse Educator

After I graduated from nursing school, I took my first job in a busy cardiac progressive care unit. I worked with some of the most intelligent nurses and physicians, but I was afraid I would never be able to match their level of expertise and I simply wasn't smart enough to be there. I hoped that whoever had the task of precepting me would be patient and understanding.

One day, after providing comfort care for a man with end-stage COPD who died, I excused myself from the unit and cried. Later, I remember feeling as though I should have been stronger and not cried. I assumed that it was because of my lack of experience, but my preceptor assured me that caring doesn't take experience, it only requires the ability to care.

My preceptor was a brilliant no-nonsense nurse who supported me and protected me, whether she was just making sure I submitted my schedule on time or she was standing up for me when I wasn't as quick as the more experienced nurses. She gave me advice, and she was always encouraging. I remember asking, as I neared the end of my orientation, "How will I be able to do all of this on my own?" My preceptor replied, "You'll never be alone." Twelve years later, I'm a nursing educator. I continue to use those lessons, and now I get to share some of them with you. Here is a short list.

- A nurse's voice for the patient is stronger than the nurse's insecurities. If you don't know something, it's important to ask for help. Speaking up when you don't know the answer can save someone's life.
- Each shift, identify another nurse as your go-to teammate—someone you're comfortable approaching to ask questions. And become familiar with your hospital's policies and how to access them. This will guide

your safe practice and provide a consistent resource when the answers seem difficult to find.

- As nurses, we focus on patient-centered care first, but don't forget timely documentation. Time management and staying organized are important in nursing. Having checkpoints throughout the shift will help keep you organized and in communication with the healthcare team.
- Never forget about your patient's perspective. Lying in that bed is a person who is scared, in pain, and perhaps frustrated because they want to return home to their family. Think about how patients are relying on you to be a voice and advocate.
- Please be kind to the nurses that you precept. Don't forget the emotions and fears you experienced when beginning your first nursing job. Supporting new nurses and new colleagues goes a long way to helping ease their transitions.

For reflection: What early support and experiences might help a new student or staff member develop expertise and become an effective preceptor or educator in the future?

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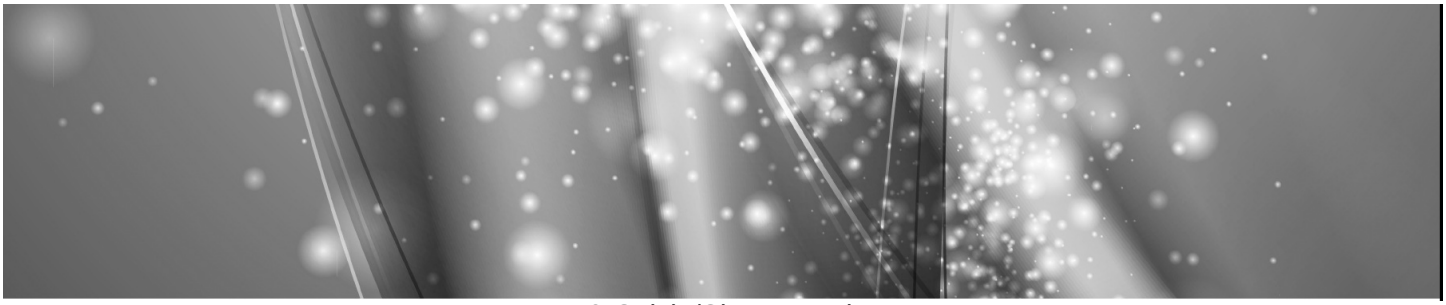
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CHAPTER 23

Service Learning

Hendrika Maltby and Jason Garbarino

Introduction

Students in health professions are expected to acquire skills, solve problems, and prepare for future employment in a variety of disciplines. Many programs also require students to actively reflect on their practice—what went well, what did not, and how to improve future practice. These aspects of experiential learning and reflection, common to many clinical learning activities, are two of the components of service learning. The involvement of a community agency as a true partner in accomplishing specific agency needs and enriching student learning adds the third component that differentiates service learning from other clinical experiences (McGahee, Bravo, Simmons, & Reid, 2018; Schmidt & Brown, 2016; Thomas & Smith 2017). Meeting students' learning objectives, formal reflection on the experience, and meeting the needs of community partners are the three components of service learning. This chapter describes the use of service learning in health professions education.

Definition and Purpose

Service learning is “a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection” (Seifer, 1998, p. 274). This definition has since been accepted by a plethora of authors/researchers. The Community-Campus Partnerships for Health (CCPH, 2013) goes on to state:

> Students engaged in service-learning provide community service in response to community-identified concerns and learn about the context in which service is provided, the connection between their service and their academic coursework, and their roles as citizens.

Healthcare professional students have discovered that there are many opportunities to work with communities in enhancing health, as well as to work with each other. Pierangeli and Lenhart (2018) describe an interprofessional service learning experience where public health and nursing students worked together with community agencies providing services to the homeless. In another study, social work and engineering students collaborated with a Guatemalan-based nongovernment organization (NGO) and Engineers Without Borders to bring clean water to a rural community in Guatemala (Matthew et al., 2017).

The purpose of service learning is to involve students in the community and connect this experience to the learning objectives in a course. Service learning by students can “encourage personal and interpersonal development and an understanding of social responsibility” (Thomas & Smith, 2017).

Theoretical Foundations

John Dewey was one of the first champions of service learning in the early 1900s, when service and educational goals were connected (Schmidt & Brown, 2016). Over the years, various U.S. presidents have seen the valuable implications of service learning and have established a variety of organizations that provide service to communities, such as the Peace Corps (https://www.peacecorps.gov/), AmeriCorps VISTA volunteers (https://www.nationalservice.gov/programs/americorps/americorps-programs/americorps-vista), the Foster Grandparents program (https://www.nationalservice.gov/build-your-capacity/grants/funding-opportunities/2018/2018-foster-grandparent-program-and-senior), and the Office of National Service (https://www.nationalservice.gov/). The Health Professions Schools in Service to the Nations program, a Pew Health Professions Commission-sponsored national demonstration project of service learning, was launched in 1995 (Seifer, 1998).

Seifer (1998) clarifies differences between service learning, traditional clinical education, and volunteerism. In service learning, there is a balance between service and learning objectives and an emphasis on reciprocal learning, the development of citizenship skills and achievement of social change, reflective practice, addressing of community-identified needs, and the integral involvement of community partners. Seifer emphasizes that service learning is not required volunteerism, which lacks reciprocity and reflection and may not be connected to course objectives.

The Institute of Medicine (IOM; 2003) proposed a set of five core competencies for health professionals in the 21st century: “provide patient-centered care; work in interdisciplinary teams; employ evidence-based practice; apply quality improvement; and utilize informatics” (pp. 45–46). Increasingly, these competencies are being operationalized through community partnerships and interprofessional education (IPE) with service learning (Portney, Johnson, & Knab, 2017; Zomorodi et al., 2018). In addition, interprofessional service learning provides disciplines with vital practice in working together. Using service learning in the health professions supports the development of new perceptions and insights as described in cognitive learning theories in the opening chapter of this book. Devising a variety of teaching strategies to complement student learning styles is necessary to enhance this development. Students in health professions are traditionally practice oriented and action driven, which relates to the adult learning principles of Knowles (1975) in recognizing the meaning or usefulness of the information learned. Cultural understanding can be a key element of this learning, as students work with a variety of populations. Service learning allows the student to practice and implement classroom learning objectives while providing meaningful benefits to a community.

Types of Learners

Service learning is suitable for any level of student in any health professional program. Students engage in service learning in multiple settings nationally and abroad. Nordon-Craft et al. (2017) describe using service learning in a course for physical therapy students to enhance the students' ability to assess and mitigate fall risks in older adults. Working with physical therapy students in Taiwan, Hou et al. (2018) employed service learning in a camp for children with cerebral palsy to foster participation in activities and student development of professional attributes such as cultural competency and teamwork. Zalenski, Granovsky, and Courage (2016) describe a legacy project between medical students and palliative care patients, which resulted in valuable reflective experiences for patients and their families, as well as learning experiences for the students. Miller et al. (2017) provided a service learning opportunity for internal medicine residents with senior housing units. The medicine residents and senior residents reported a shared mutual benefit: The internal medicine residents reported an improved ability to communicate effectively with older adults, and the older adults felt they better understood relevant health topics.

Medicine, nursing, and pharmacy students worked in interdisciplinary teams to address health disparities through a service learning experience in a community in Arkansas (McElfish et al., 2018). The students indicated that they had "positive changes in knowledge, attitudes and behaviors related to working with other cultures and other health professionals" (p. 219). Johnson and Howell (2017) described a service learning and IPE program for pharmacy, medicine, physical therapy, and nursing students within an Ecuadorian community. Similar to the work of McElfish et al., these students also showed "better interprofessional collaborations to achieve better patient outcomes" (p. 253).

Nursing has a long-standing history of service learning. George (2015) states that service learning activities "are a way for schools of nursing to have a more visible presence in the community" (p. 21). Taylor, Pruitt, and Fasolino (2017) add that service learning prepares "nursing students to work with diverse populations in diverse settings . . . promotes social responsibility and has the potential to significantly influence health disparities" (p. 562). Gardner and Emory (2018) describe a partnership between undergraduate nursing students and a community-based organization that provides services to the homeless. Following the project, students better understood the challenges of being homeless. In addition, nursing students provided important services to this vulnerable population. Students increased their cultural awareness, communication skills, and community health nursing skills through participation in this experience (Ezeonwu, Berkowitz, & Vlasses, 2013). At the graduate nursing level, Bryant-Moore et al. (2018) describe how service learning allowed nursing students to "fully engage with multicultural

communities to gain a broader understanding of health disparities and social determinants of health” (p. 473). The nursing students worked in a rural area with a community agency to discover the effects of school consolidation, which included long bus rides, safety concerns on the bus, and community anger and distrust.

Conditions for Learning

Service learning courses can be placed anywhere in the curriculum, and students can work in groups or as individuals. Students can be assigned to work in a multitude of diverse settings with a vast array of community participants: individuals who have diabetes, residents at senior living facilities, people who are homeless, employees at local health departments, or members of a community-based organization—in fact, almost anywhere and with a variety of community partners. The learning environment becomes very broad when it is no longer bound by classroom walls. The first step is to build partnerships with community agencies that match the course goals and objectives. Many universities have community engagement offices that offer support for faculty, students, and communities. At the University of Vermont (UVM), there is a Community-University Partnerships and Service Learning (CUPS) office. This office staff trains faculty in the pedagogy and practice of service learning, helping to provide students with access to over 100 service learning courses a year. The course faculty and students partner with over 200 organizations every year to offer technical, logistical, educational, design, and clinical support, applying the tools of their discipline to concrete and real issues. The CUPS office maintains relationships with the community partners, and supports students to continue engaging in communities throughout their time at UVM (http://www.uvm.edu/partnerships/).

Hart (2015) and George (2015) outline how to engage the community and the learner, and how to make an impact with service learning. Prerequisites include teaching students what service learning is and how it differs from volunteerism. Course goals and objectives need to be matched to community needs (Hart, 2015). Outlining reflection requirements and how to incorporate this component is essential because reflection helps students to connect the service to course objectives and to understand why service is important. Reflection can be done in a variety of ways, such as in-class writing assignments, portfolios, final papers, presentations, and journals (George, 2015).

Resources

Resources required for successful implementation of service learning vary, depending on the partnerships. Many placements are able to provide necessary supplies for projects, whereas others may rely on students to provide the materials they need. For example, the agency may be able to fund clinics (e.g., screening for tuberculosis, influenza immunizations, cholesterol); other funding may be found through other sources such as Area Health Education Centers (AHECs) or the college/university. AHECs were begun by the U.S. government in the late 1970s “to address health staffing distribution and the quality of primary care through community-based initiatives designed to encourage universities and educators to look beyond institutions to partnerships that promote solutions which meet community health needs” (University of Vermont, College of Medicine, 2013). Research grant funding can also be obtained to incorporate service learning into the curriculum and to evaluate partnerships.

One of the major required resources is time, particularly when developing new partnerships (George, 2015). Service learning partners can be found anywhere. This may be through a partnership-type office at the educational institution (such as CUPS at UVM) that keeps a list of partners and their needs (e.g., a town planning office looking for geography students). The Engagement Scholarship Consortium (2018, https://engagementscholarship.org/) provides a great deal of information on engaging communities at universities across the country. Faculty members may have community contacts via other courses, clinical experiences, service, or research in which they are involved. It is important that selected partners make a shared time commitment with the course faculty to ensure they can actively participate in planning as well as be available to address logistical concerns as they arise. Communities and community agencies will need time to collaborate both with the faculty and the students. They will need to understand the course objectives, what value students can add to addressing community needs, and the role of each partner. “The community agency, faculty, administrators, and students must hold a shared vision and goals for success to occur” (Hart, 2015, p. 78).

Students also need to plan for time to provide the service. For example, a three-credit-hour course takes about nine hours of preparation time for students outside of class; therefore, the service can be a part of the nine hours. Time can range from 10 to 15 hours over a semester to a concentrated 90 to 135 hours in a few weeks. The assignments for the course can also incorporate the service learning projects.

Using the Method

Health is not achieved in a vacuum. It requires the efforts of the individual, family, group, university, and community working in partnership. Service learning works to address the needs identified by a community partner. Therefore, one of the first essential steps is to identify a partner. This can be done over a summer, during the semester prior to the service learning, or at the beginning of the course. Depending on the scope and size of class, service learning may require multiple partners. Maurana, Beck, and Newton (1998) have outlined some lasting principles of good partnerships, including common goals, mutual trust and respect, building on strengths, clear communication, and continuous feedback. They list three key themes in building successful partnerships: “1. Always remember that community members are experts in their community; 2. Promise less and deliver more; and 3. Be committed for the long haul” (p. 51). Partnerships can become one of the ongoing strengths of the course and can be utilized each time the course is offered.

Once the partner has been identified, the contract can be as informal as a verbal agreement (“students will help . . .”) or can be a formal written memo of understanding (MOU) agreement outlining the roles and responsibilities of faculty, students, and partners. MOUs serve as an effective contract for all parties (instructor, students, and community partners) to sign so they are aware of each other’s roles and responsibilities. Instructors who are considering implementing service learning should investigate their school’s requirements for MOUs or contracts with community agencies. If data from or about individuals will be collected as part of the project, approval should be sought in advance from the Institutional Review Board.

The course syllabus should explain that service learning is incorporated as part of the course. A growing number of universities nationwide have specific designations for service learning courses. The demonstrated value in service learning has some universities requiring students to take a service learning designated course prior to graduation. Heffernan (2001) describes six models of service learning (**BOX 23-1**), which are still relevant today. The model of service learning chosen for the course will depend on the goals and objectives that students need to meet.

BOX 23-1 Models of Service Learning

1. Pure service learning where the service is the course content.
2. Discipline-based service learning that makes the link between content and experience explicit.
3. Problem-based service learning in which students may act as consultants.
4. Capstone courses usually offered to students in their final year.
5. Service internships—intense experiences with regular and ongoing reflection.

6. Community-based action research (or community-based participatory research) using research to act as an advocate for the community.

Data from Heffernan, K. (2001). *Fundamentals of service-learning course construction*. Providence, RI: Campus Compact

Decisions about the partners and models of service learning lead to other information that should be included in the syllabus. How are the students going to engage with the community partner? Will students work individually or in groups? Will the partner be a guest speaker in the class? Will students meet partners on their own, or will the faculty arrange formal meetings? Will projects be outlined in the syllabus, or will the partner and student(s) decide on this together? Will the projects be presented, and to whom? How will the work be evaluated? Agreements about these answers will provide a strong foundation on which to build service learning.

Reflection

Unlike the more controlled classroom setting, a variety of anticipated and unanticipated challenges and experiences may arise throughout the service learning. For example, students working with vulnerable populations like those who are homeless may experience a strong emotional response to the experience. Consequently, reflection is a vital component to service learning. Reflection can be completed in a variety of ways. In most service learning programs, students are asked to complete written reflections of their experience. This can serve as a therapeutic contemplation of the experience, cueing the instructor into what the students learned and their key takeaways. In addition to written reflection, students can be asked to reflect on their service learning via verbal debriefing. This can take place directly following the service learning or later in the classroom setting. Students should be provided with an outlet to share their experiences confidentially and among their peers who may have had similar experiences and be experiencing similar emotions. For larger sized courses, teaching assistants may oversee students, run debriefings, and grade reflections.

The reflection on service in conjunction with the course objectives has to be clear. How are these reflections going to be done (e.g., in-class writing assignments that are announced or unannounced, verbal debriefings, final paper)? How will they be graded? Are there specific criteria to be used? Will students have a grading rubric? Schmidt and Brown (2016) provide suggestions for strategies to facilitate meaningful reflection. These include what needs to be addressed to encourage reflection; how to reflect (reading, writing, doing, telling); and how to grade reflections. Grading rubrics are recommended. **BOX 23-2** provides examples of grading rubrics.

BOX 23-2 Example Grading Rubrics for Reflection

Public Health Nursing (undergraduate-level), study-abroad course:

1. **Clinical Reflection Journal**
   You will keep a written journal throughout your trip while in the country. During the trip, explore your thoughts, feelings, judgments, and evaluate your experience. Use the “What, So What, Now What” model listed at the end of the syllabus to direct your daily entries. Be sure that most entries connect to public health nursing domains and competencies.
   Criteria for passing
   - Daily entries are made
   - The “What, So What, Now What” model is used.
   - Entries are connected to public health nursing domains and competencies
2. **Final Reflection**
   Your final reflection of the trip and your “lessons learned” will consist of an overall impression of the experience. Reread your journal, analyze what you learned, and propose how you can use this in your future nursing role. Please give yourself a week at home to be able to process the experience before

writing this final reflection.

Criteria for passing

- Overall impression expressed
- Lessons learned discussed
- Connections to future nursing role made

Public Health Nursing (graduate-level), on-campus course:

Reflections

Questions based on readings, lectures, and clinical will be posted as a reflection under Course Materials on a class day. Responses are to be submitted via the learning management system and will be due by midnight Wednesday or midnight Saturday.

Criteria for satisfactory

- 500–750 words maximum
- Question is answered
- Linked to readings/lectures (with references)
- Linked to clinical

Finally, how will reciprocity be accomplished? Evaluations by and of all partners (the community, the students, the faculty) will be important. These can be formal or informal. Showcasing service learning projects during class presentations or a campus-wide poster presentation contributes to reciprocity by recognizing the work of the students and the partners.

International Service Learning

Another option for service learning is during study abroad: immersion experiences of living and learning in another culture. This has several advantages, including increased student awareness of their own beliefs, values, practices, and behaviors and how those affect care; ability to learn from diverse clients and provide culturally appropriate care; and ability to cope with factors affecting health and living conditions (Johnson & Howell, 2017; Maltby, de Vries-Erich, & Lund, 2016). A number of authors have described study abroad experiences (Gan, 2018; Johnson & Howell, 2017; Matthew et al., 2017) and readers are encouraged to further explore the literature concerning these experiences.

Service learning during study-abroad experiences requires a long-term commitment (at least 5 years) for both learning and service with a partner outside of the country. Chisholm (2003) outlines three enduring principles for international partnerships: trust, mutuality of benefit, and open communication. Trust entails being clear about goals, budgets, and limitations and includes being sure that promises made can be kept. There must be a benefit for both partners (inherent in service learning). Open and complete communication is essential, ranging from the formal evaluation plans to the more informal check-ins. Adaptability is indispensable in the process. All principles of service learning still hold for international experiences, including linking community needs, students' learning objectives, and formal reflection on the experience.

There are some organizations that can help. One is the International Service

Learning (ISL) organization (http://www.islonline.org/), which organizes medical and educational teams of primarily student volunteers to provide services for the underserved populations of Central and South America, Mexico, and Africa. The goal of ISL is to partner student and professional teams from developed countries with service opportunities in developing countries. Another is the International Partnership for Service-Learning and Leadership (http://www.ipsl.org) that links academic programs and volunteer service, giving students a fully integrated study abroad experience. IPSL promotes the theory and practice of service learning and development and promotion of service learning in institutions of higher education around the world. Faculty interested in this type of experience for their students are encouraged to contact their office of international education (or equivalent), as it will provide logistical support. Many times it is the faculty themselves who have contacts in another country for study-abroad opportunities.

Potential Problems

Teaching in, and the facilitation of, a service learning course takes time, so a major potential problem is lack of faculty time. Time is required to form partnerships, prepare students, and involve partners in the design and implementation of the course. The aforementioned MOU is a helpful tool for understanding roles and responsibilities. Detailed information should be in the course syllabus, and class time must be devoted to describing service learning, reflection, and the process of partnership. It is recommended that faculty teach only one service learning course at a time because of the intense effort required.

Lack of involvement of community partners in the design and implementation of the service learning projects can be a potential problem. As one of the components of service learning is reciprocity, involvement of community partners is mandatory. This can be remedied by clear and open communication. Regular contact with faculty is necessary so that issues can be dealt with early. At the completion of the service learning, the course instructors and community partners should plan to meet to debrief the experience and formulate strategies for future improvement and collaboration.

Another potential issue that has arisen for faculty members is presenting service learning and the associated community-based participatory research work as evidence for promotion and tenure. There are now a number of resources available to faculty to support the academic role value of this work with communities and students. A good resource for faculty is the Community-Campus Partnerships for Health Tenure Guide (https://www.ccphealth.org/resources/the-community-engaged-scholarship-review-promotion-tenure-package/). Faculties and college/university administrators have become much clearer about how service learning and community-based work can be recognized and used to support tenure and promotion.

Conclusion

Service learning provides students the opportunity to develop transferable skills. Hart (2015) calls service learning “one of the most effective methodologies for student engagement to apply education to practice as well as grow in leadership and civic opportunities in the community” (p. 77). Service learning fits well with the goals of health professional education and can provide students opportunities for interprofessional practice and communication. Students need to get out of the classroom and become more involved in the community and with each other to make knowledge come alive. This strategy can provide students with insight into community conditions, both at home and abroad. Community collaboration is lived, not just talked about in the classroom.

TEACHING EXAMPLES

Interprofessional Gerontology (undergraduate); Jason Garbarino DNP, RN-BC, CNL and Radcliffe L. Romeyn, EdM, CAS

At UVM, service learning is incorporated into an undergraduate interprofessional course in gerontology. This activity enables students to engage with older adults who reside at various local assisted-living facilities. The Aging Is Very Personal (AIVP) service learning activity intends to provide mutual benefit for both the student participants and residents at various senior living facilities within Burlington, Vermont.

In addition to learning from older adults, students are paired to collaborate with an interprofessional peer. Over the course of four weeks, the student pairs complete a total of four interviews with an assigned community senior volunteer. Currently the classroom and service learning experience is open to students majoring in nursing, communication sciences and disorders, exercise and movement science, and health sciences. In future years, additional student majors across campus will be recruited from majors such as education, sociology, nutrition, and social services. Following the weekly interview, students participate in weekly debrief sessions led predominantly by graduate-level teaching assistants from a variety of disciplines. Debrief sessions serve to openly reflect on their experience with their peers. In addition to the group debrief sessions, students are required to complete a written reflection on their experience. On the final day of the experience, students write a thank-you letter containing biographical information to their senior community partner for a keepsake.

For the students, it serves as direct insight into the lived, personalized experience of aging among community seniors. Students practice communication skills, exercise their creativity, and gain an understanding of the multitude of diverse needs within this population. Most students report an increased comfort and interest in working with older adults. Older adults who volunteer to participate in the activity are provided with the opportunity to speak to and actively engage with students of a younger generation and provide vital wisdom that will greatly impact their future as individuals and healthcare providers. They also report joy and value in learning about the daily lives and experiences of the younger generation.

Public Health Nursing (undergraduate and Direct Entry Program for Nursing); Hendrika Maltby PhD, RN, FACN

Another example of a service learning project at UVM is one in which we partnered with Support and Services at Home (SASH), which “coordinates the resources of social-service agencies, community health providers and nonprofit housing organizations to support Vermonters who choose to live independently at home” (https://sashvt.org/learn/). The housing organizations can have up to 200 residents, mostly in apartment buildings but they can be condominiums. A request by the SASH coordinator to nursing faculty

resulted in a health fair project for five of the SASH housing units. Initial meetings were held with nursing faculty, SASH coordinators, and wellness nurses. Topics of interest were selected by SASH and dates/times for the health fairs were scheduled.

Nursing students were involved in all aspects of the health fair: planning, marketing, budgeting, organizing and purchasing, implementation, and evaluation. There were usually five topics with a small group (2–3) of students per topic. Topics could include arthritis, hypertension, bowel habits, immunizations, sexuality, depression, vision, etc. Each small group completed a Health Fair Organizer for their topic (**BOX 23-3**).

Outreach to the community was made for donations from area businesses for giveaways (e.g., first aid kits, cheese, water bottles, sunscreen, sunglasses, teddy bears, magnifiers). Not only was information about the topic (including handouts) and giveaways provided, participants were also engaged in activities. For example, chair yoga demonstrations; special glasses that enabled participants to "see" what glaucoma "looked like," and blood pressure checks. Each participant was given a raffle ticket at the end of the event for prizes such as a food basket, plants, and grocery store gift certificates.

A pair of nursing students were tasked with greeting participants to provide direction and then assisted participants in completing a 10-item evaluation of the health fair before they left. Overall, participants enjoyed the health fair, learned something new, and appreciated the handouts and giveaways, especially the food!

During the debriefing sessions, students discovered that not only had they learned about the topics, but they were able to better interact with older adults about sensitive issues. They also learned that health fairs were more than posters and handouts; finding out what people know about a topic and then adding to that knowledge was essential. SASH was able to follow up with participants and found them much more able to discuss their care. The posters that the students had done were given to SASH and were used throughout the year. Resources that the students had found were also useful for SASH as some were new. SASH hoped that the partnership with nursing would continue in the future.

BOX 23-3 Health Fair Organizer

This will need to be completed prior to any intervention. The first health fair presentation is on [DATE], therefore this outline needs to be completed by [DATE].

1. Targeted community assessment: age, gender, length of time in residence (can be community-level stats), health literacy.
2. What is the evidence base (problem, intervention) for this population? Be sure to use epidemiologic and academic research.
3. What are two learning outcomes (objectives) for your population about your topic?
4. Learning/teaching strategies. Why are these appropriate for your population? What evidence is available that these are effective strategies?
   a. Activity
   b. Poster
   c. Donations of food
   d. Raffle
   e. Giveaways
5. Evaluation: must be outlined prior to presentation, that is, how are you going to evaluate the health fair? Please develop a spreadsheet that you can use during the health fair.
   a. Process evaluation: Process evaluation is a type of formative evaluation that assesses the type, quantity, and quality of program activities or services.
   b. Outcome evaluation: Outcome evaluation can focus on short- and long-term program objectives. Appropriate measures demonstrate changes in health conditions, quality of life, and behaviors. These are based on the objectives.
   c. Impact evaluation: Impact evaluation assesses a program's effect on participants. Appropriate measures include changes in awareness, knowledge, attitudes, behaviors, and/or skills (Types of Evaluation in Health Promotion and Disease Prevention Programs, Rural Health Information Hub. https://www.ruralhealthinfo.org/community-health/health-promotion/4/types-of-evaluation).

Discussion Questions

1. How would you add service learning to one of the courses that you teach? Think about who would be a partner, how the partner would be engaged in the process, what students would be involved, and how many hours students would have to compete this activity. Outline the benefits for the community partner and the students.
2. What type(s) of student reflection would you utilize in your prospective service learning activity?
3. What resources and supports are available within your academic organization?
4. How could service learning help to incorporate interprofessional education and practice into your classroom experience?

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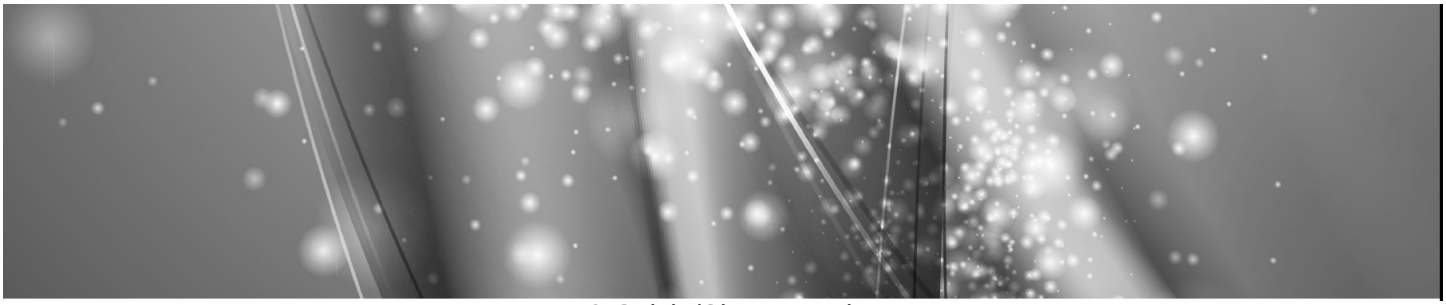
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CHAPTER 24

Engaging Students in Global Health Endeavors

Lori A. Spies

Introduction

Now more than ever, global issues and interconnectedness have an impact on healthcare professionals, and students in the health disciplines are seeking relevant experiences (Berger & Paul, 2017; Browne & Fetherston, 2018). Global experiences are offered at more than 85% of U.S. institutions (Whalen, 2015). During 2017–2018, 323,727 students from the United States took a study abroad course (Institute of International Education, 2018). Students are globally engaged through a range of activities. Study abroad, service learning, joining faculty in global capacity-building activities, collaborating on scholarly projects or discipline-specific missions can all be a part of the healthcare student's learning experience.

The access to travel and number of people venturing to remote parts of the world bring motivation to seek knowledge in distant lands (Strange & Gibson, 2017; Wise, Schuessler, Cody, & Davison, 2017). Healthcare students seek new challenges and ways to learn and engage in the world because today global health is local health. There is an increase in the movement of people transiently on vacations, for adventure travel, and for longer durations or permanently through migration and immigration; all of these factors require expanded health knowledge. There is an ever-increasing refugee population that requires specialized health care. Increasing students' knowledge of working cross-culturally, enhancing their awareness of global health, and expanding their view of themselves as global leaders and citizens of the world are potential outcomes of a well-crafted global student experience (Lasker et al., 2018; Wise et al., 2017).

The growing mobility of people all over the world impacts the delivery of health care in a myriad of ways. The diversity of society necessitates new skills. This chapter provides information on how to craft global learning experiences for healthcare students to prepare them for changing healthcare needs. The focus of this chapter is on describing the types of global student experiences that can be developed and incorporated into existing educational programs. Elements such as student safety, costs, and housing are considered, among others, and informational resources and checklists are included.

Definition and Purposes

There is huge variation in types of global experience and terms used. The terms *global* and *international* are used interchangeably in the general press, but how they are defined is important to include when engaging students. Originating from public health, the term *international health* is generally used when speaking of work in other countries, but the term *global health* is used in issues related to the provision of health care that crosses borders (Koplan et al., 2009). During an international health-related learning experience, global health skills which are locally applicable can be developed in students (Browne & Fetherston, 2018; Lasker et al., 2018).

There are many reasons to provide students with an out-of-country opportunity. A global learning experience can foster cultural acumen to prepare students to address the increasingly diverse population in the United States. Working well cross-culturally is a skill that can enhance patient care and help improve outcomes. The myriad of cultures present in a typical healthcare setting calls for more than memorized rudimentary knowledge of a few cultures. A holistic approach includes acknowledging differences and interacting respectfully to accomplish mutually agreeable goals; this is ideally developed in the global experience. Cultural navigation skills can be developed and refined through students' global experiences which incorporate intentional cross-cultural interaction (Browne & Fetherston, 2018; Strange & Gibson, 2017).There is an increasing need for healthcare students to become—and remain—aware of conditions previously unseen or uncommon in the United States. The febrile patient from East Asia may have malaria; the musculoskeletal issue in the African patient may be related to childhood polio. There has been an increase in vector-borne diseases such as dengue and chikungunya, previously seen primarily in tropical regions but now found in the United States as well due to global climate change (WHO, n.d.). Exposure to the Zika virus during pregnancy is a concern relevant to the immigrant and the returned traveler alike (CDC, 2018). The importance of understanding global health was tragically illustrated by the cases of Ebola in Dallas, Texas, in 2014. Guiding students in global experiences can help them be more cognizant of the interconnected nature of health on a small planet.

Students across all disciplines are seeking ways to have international experiences (Strange & Gibson, 2017; Whalen, 2015). Universities are expanding their global presence, exchange programs are increasing, international research is expanding, faculty development partnerships are emerging, and mission and service learning opportunities are readily available (Berger & Paul, 2017; Institute of International Education, 2018). The ready access to travel information and personal knowledge of people who have had global experiences has piqued student interest in global engagement. However, turning awareness and interest into enriching learning global experiences is a multifaceted task.

Theoretical Rationale

Global endeavors, almost by definition, are rooted in experiential learning theory (ELT). The requirement to be able to comprehend and apply knowledge is a clear need in health care. A key construct of ELT is that learning is a process and results from the interaction of a person with his or her environment (Kolb, 2014; Strange & Gibson, 2017). Placing a student in an international setting manipulates the usual environment and orchestrates a relevant opportunity. The in-country experience can epitomize ELT's cycle of "experiencing, reflecting, thinking and acting" (Kolb, 2014, p. 56). Learning through global endeavors reflects ELT in the processes of preparation, travel, being in-country, and, importantly, reflecting on the process as an unfolding experience that continues to provide insight after returning home (Strange & Gibson, 2017). The consideration of that which is new and the challenges of being outside of one's comfort zone require resolution of conflict and are drivers of the learning process (Kolb, 2014). The health-related global experience can be strengthened by the inclusion of theory that considers culture and intentional incorporation of reflective practice.

Cultural intelligence is the ability to adapt to cross-cultural scenarios, and to collaborate using skills well derived from a constellation of cognitive and behavioral abilities is enhanced by global experiences (Nguyen, Jefferies, & Rojas, 2018; Ott & Michailova, 2018). Cultural humility theory is one of many approaches to enhancing reflection and cultivation of sensitivity to those from other cultures (Foronda, Baptiste, Reinholdt, & Ousman, 2016; Tervalon & Murray-Garcia, 1998). It focuses on awareness of one's personal perspective on culture in relation to others rather than on the mastery of a list of cultural skills. Cultural humility stresses cultural parity and the acceptance of cultural differences, and is applicable across professional experiences. Placing personal culture in the context of "one of many" rather than regarding it as the superior or even the normal way characterizes cultural humility (Foronda et al., 2016; Lasker et al., 2018; Tervalon & Murray-Garcia, 1998).

Although attaining true cultural competence is outside the scope of the vast majority of educational global experiences, the students preparing to travel internationally will need concrete details about the practices of the destination. More important, however, is the development of an appropriate approach to cross-cultural interactions (Lasker et al., 2018). Global experiences can provide structured interactions and planned reflections to raise awareness of cultural preconceived thoughts and expectation. Cultural skill acquisition can be linked to diverse theories, and program organizers should consider what would best mesh with the specific program or institution. To be culturally humble requires a reflective attitude about one's personal culture and belief in the cultural parity of all those with whom one interacts (Foronda et al., 2016; Isaacson, 2014; Lasker et al., 2018). A good practice is to design the global experience following tenets of ELT and cultural humility.

During each phase of planning, ELT and cultural humility can be incorporated to lead to a learning experience that enriches students after graduation and throughout their professions.

Crafting the Global Experience

Creating a student global experience is a multifaceted process with a plethora of variables. Leaders of global endeavors need to accept that although every detail is planned, and contingency strategies are outlined, inevitably there will be change. It is important to take exquisite care in the details, but equally important to be able to be flexible as the experience unfolds.

Orchestrating a global endeavor from start to finish provides an opportunity for experiential learning for the faculty. Developing and leading any sort of global experience for students is labor intensive and requires content and cultural expertise (Berger & Paul, 2017). A study abroad course incorporates all the usual required course preparation, as well as the additional international trip planning, student recruiting, and university approval seeking. During the time out of the country, the faculty will need to be available to the student(s) around the clock, requiring more time than a course taught in a traditional semester. Faculty who lead global endeavors usually find the effort well rewarded, but the time and attention to detail required may exceed what is expected.

Determining the learning objectives for the experience is frequently the first step. The decision can then be made about what sort of global endeavor might facilitate meeting of the learning objectives. It is important to consider objectives in the context of the academic program and institution's learning environment (Wise et al., 2017). Broad educational goals can enhance the development of knowledge and skills, cultivate cultural acumen, and enrich and expand worldviews (Giedt, Gokcek, & Ghosh, 2015). Prioritizing student learning and adopting standards of good practice do not dictate the type of trip but can guide the development of the experience (Whalen, 2015). Objectives can be derived from the course and from the cultural experiences anticipated (Wise et al., 2017). Learning priorities can be focused on clinical skill and knowledge acquisition in addition to the attainment of discipline-encouraged cultural competency (American Association of Colleges of Nursing [AACN], 2008, 2011). Pre-trip preparation and in-country experiences can subsequently be developed to facilitate achievement of the objectives.

Examples of global experience include mission, study abroad, and research. Each is likely to have specific institutional requirements and processes for approval. The destination should be selected to meet the learning objectives and to be consistent with the type of experience sought. With those two components in place, the details of student orientations, assignments, and outcomes can be delineated. It is recommended the course faculty contact the appropriate office at the academic institution early in the process for guidance on all aspects of the course and travel. Travel arrangements and safety plans can be formulated early in the process and updated as the time approaches. Appropriate "on the ground" contacts should be cultivated, and long-term engagement can be considered from the outset. This

process ideally begins a year or more before the global experience is launched.

Types of Experiences for Global Learners

Common categories of student global experiences include study abroad, mission, and research- and project-directed initiatives. Each category has many permutations and specific details to be attended to. Consistent across innovative teaching modalities is the principle that the desired learning outcome must be well thought out and carefully outlined (Strange & Gibson, 2017). Setting the learning, service, or research goals and determining the desired outcomes will help determine which type of activity will best meet the curricular needs. There are many ways to get students involved in learning experiences, which include international involvement. Begin by becoming familiar with format options at the host and destination institutions to determine which type of global endeavor best meets your students' learning needs.

Study Abroad

Study abroad is a general term for learning that can be implemented in several ways. It can be the exchange between universities of students for a semester or year of study. Study abroad can range from short-term faculty led trip to a yearlong-term plan. Each type has benefits and obstacles to overcome. To achieve the benefits of a cultural immersion, shorter study abroad courses require additional intentionality in planning to facilitate interactions and opportunities for reflection (Strange & Gibson, 2017; Williams, 2017). Courses can be designed with time allotted for regional travel and exploration (Wise et al., 2017). A *study tour* is a variation of study abroad involving faculty-guided travel to multiple sites to expound on the course theme. A study abroad can be embedded in a course that starts and ends at the home university but requires a mandatory trip mid-semester. Students can join in-country university students for lecture, work alongside local healthcare providers for a clinical course, or participate in an independent study involving the use of local resources to expand their knowledge on a specific topic using an independent study model. Study abroad courses offer a way for students in health-related majors to develop relevant knowledge and skills, adding an enriching, albeit challenging, cross-cultural dimension.

Regardless of the type of course—didactic, clinical, or independent study—the course must be designed to work within the existing curriculum. Creating and having a study abroad course adopted into a curriculum will necessitate a broad array of support by faculty and administration. A new course will require approval from multiple curriculum committees in the school or college and at the institutional level. Students should be encouraged to check with the financial aid officer to determine if scholarships or loans can be applied to study abroad courses or expenses. Study abroad costs must also factor in required faculty time and expenses. These costs

are reflected in the tuition, trip fees, and travel expenses which each student typically pays.

Mission

Taking part in a global mission has many of the same components as study abroad. The student is expected to achieve specific goals, and objectives are clearly delineated. The mission has an added component of being consistent with an ideological perspective, often religious. Mission efforts usually do not include tuition, *nor are faculty paid for leading students on missions. Recognition of the effort involved in the mission experience may be reflected in the service portion of the annual faculty evaluation. Students may be able to count mission effort toward volunteer hours. Faculty-led student missions are often scheduled during semester breaks.*

Missions, like study abroad, involve formal university procedures. The mission experience is often funded through donations. Raising support can be included as a learning objective and part of the pre-trip orientation (Wise et al., 2017). The language surrounding missions often emphasizes the team and working to accomplish the goal of the group or mutually recognized goals. Discipline-specific mission is a model that incorporates students being on a mission and possibly receiving course credit for the work accomplished (Kennedy, n.d.). This model has been successfully used in several healthcare disciplines to provide credit for an experience that focuses on expansion of ministry in a faith-based setting.

Scholarship

Scholarship can be embedded in both mission and study abroad trips. It is also possible to focus a trip on developing scholarship in students and global collaborative partners, and finding opportunities for faculty research.

Research

International research is increasingly common across health disciplines (Giedt et al., 2015). Planning for students to join faculty in research projects is a way to garner student interest and develop research, cross-cultural, and often interprofessional skills. Collaboratively building meaningful research capacity can be a faculty and student cooperative undertaking. Conducting research with a faculty member is an ideal learning experience, paving the way to early involvement in scholarly activities while cultivating an expanded worldview and cultural humility. An important component of successful international research is the mutually beneficial nature of the endeavor. Faculty and students from both countries should be able to provide meaningful input as to how best to achieve shared scholarly goals (Spies, Garner,

Prater, & Riley, 2015).

Student and Faculty Projects

Related to research but broader in reach is having the student experience be project focused. Students and faculty can collaborate with in-country partners to implement evidence-based projects. Students' understanding of the application of research is cultivated and enhanced through carefully selected projects. These projects should meet a need in the country while expanding participants' skill sets. Engaging students and faculty from both countries provides an avenue for directed cultural interaction. Examples of student translational research projects include initiatives such as a menstrual hygiene management program implemented at a clinic in rural Ethiopia or a breastfeeding education initiative outside of Hyderabad, India. The implementation of a student scholarly project typically necessitates more than one visit to the country. The increased expense of money and time is rewarded by a deeper level of cultural awareness and the opportunity to contribute in a sustainable manner.

Service Learning

Service learning is another well-established way for students to be engaged globally. For more information on service learning and best practices, please refer to Chapter 23.

Country Selection

Selecting the type of format of the global endeavor should be concurrently explored with the location where the experience will take place. There are many facets to consider when choosing a destination, and being aware of your institution's policies and protocols will help in the process. Approval of the destination, like having a course approved, can involve communicating with multiple people within the institutions before final arrangements are established. Working with your institution's center for international education or global endeavors office early in the planning will help avoid putting time and effort into plans and preparations which may eventually not be approved.

Contacting the faculty and programs in other departments to select a suitable destination can be helpful. A well-established education or business department relationship might be an ideal connection and easily expanded to include a healthcare-related endeavor. Where is work being done that is most relevant to the learning goals of the program? A faculty member with strong connections can make introductions and share contacts to begin the planning of a robust global experience.

Safety

Safety should be considered early when selecting a region of the world. The U.S. Department of State has a website for current travel warnings (http://Travel.State.Gov), and it is prudent to check this source early in the selection process. Few new programs in the United States will be approved if the U.S. government has placed limits on tourist and business interaction in the destination.

Language

Language may be a key component in the selection of a location. Courses are often designed to develop language skills in healthcare students. Language may be perceived as a barrier, but interpreters are widely available—and learning to work with an interpreter is a useful skill in students' clinical practices after graduation. Interpreters may also be able to function as cultural guides and provide helpful insight.

Timing

The amount of time that can be allotted to travel and staying at the destination is a significant consideration. Thirty-six hours of travel to arrive at a remote location may not be practical for an eight-day endeavor. Jet lag and how it will impact effort on arrival and on the way home should also be factored into the schedule. A trip of equal length in the same time zone may provide significantly more productive time than traveling across multiple time zones. Experienced travelers allow one day for each hour of time difference on the return trip for full recovery. This is rarely an option for a global experience planned during the academic year. Keep the time change and jet lag adjustment in mind when examining what will be expected of students and faculty on their return; this is a part of choosing the location and selecting the dates of the trip.

Cost

Aside from tuition, the next predictably largest expense is likely to be airfare. Trip budgets vary widely: study abroad in Hong Kong will cost significantly more than a research trip to Mexico. Total costs affect who elects to participate and often the viability of the entire trip (Whatley, 2017). A quick conversation with a travel agent or exploration of costs on travel websites may rule out some potential destinations. Students and faculty will need the estimated cost to be as accurate as possible. Faculty costs are usually subsumed in the students' trip fees (Wise et al., 2017). It behooves the planner to estimate with a margin of error. Costs can rise unexpectedly; however, if actual costs are less than expected, a special team dinner

or gift for the host can be arranged. Some global endeavors include all meals and every excursion, whereas other leaders arrange for optional excursions and certain meals to be separately funded. This is decided by the team leader, but the details and expectations must be clearly conveyed to all participants.

Housing

Housing selection is designed to promote team building, provide reflective time, and/or enhance cultural engagement. The cost of room and board varies significantly. Considering alternatives to hotel rooms, such as renting a house or apartments, may also provide more flexibility in cost. Staying with host families makes a trip more affordable while enhancing the cultural immersion experience. Dormitory rooms at universities may be available inexpensively during the summer semester. Accommodations can be selected due to proximity to planned experiences or cultural exposure. The availability of a shared living area may be beneficial when planning meetings and serve to enhance team communication.

Global Learning Experiences

Assignments are incorporated to take advantage of the multifaceted opportunities present in the global setting. Learning objectives from both the course and the global experience should be considered in crafting each assignment. Guest lectures from local university professors, community workers, and health professionals will augment information provided by course faculty (Browne & Fetherston, 2018). Contacting hospitals, schools, and professional organizations can provide diverse in-country experts as speakers.

Teaching projects to deliver in-country can be developed based on, and derived from, students' cultural preparation about the destination and the target audience (Strange & Gibson, 2017; Wise et al., 2017). Reading and communication with in-country contacts provides information on possible topics. For example, graduate nursing students are required to develop continuing education for clinicians. The students may be surprised to learn the topics most needed might not be what they anticipated; desired topics could be something commonly known to healthcare providers in the United States, such as diabetes or breast cancer. Assessing the in-country learning need helps students apprehend the knowledge of topics, such as the significant increase in chronic disease in developing countries, in an especially meaningful way. Preparing a workshop requires students to become familiar with the usual in-country care and available resources. Preparing and leading a culturally appropriate workshop increases comfort with the clinical topics, enriches cultural interaction, and deepens the understanding of health disparities and the provision of health care in environments of scarcity.

Journaling is a particularly useful tool that faculty can adapt to encourage

reflective practice and enhance learning (Savicki & Price, 2015; Williams, 2017). The process of reflective practice and journaling can be in a paper notebook, a series of short writing assignments, or an electronic blog. Reflective practice can allow students to track their cultural and clinical learning experiences (Browne & Fetherston, 2018; Savicki & Price, 2015). Carefully designed critical reflection can target deeper exploration of key objectives and solidify experiential learning (Browne & Fetherston, 2018; Kolb, 2014).

Assigning students a topical paper focusing on a clinical or cultural issue provides a rich learning opportunity. A case study assignment, with the review of the literature completed prior to departure, enhances baseline knowledge. Scholarship is cultivated by requiring students to work with faculty and prepare a manuscript to be submitted for publication.

Clinical visits can be an important part of global experiential learning. Touring hospitals and clinics can provide insight into the usual standard of care and cultural norms. The use of traditional medicine in a modern hospital in Asia can provide the healthcare student with an expanded worldview. The philosophical and cultural differences of health care are brought to life when seeing acupuncture and herbal treatments being used one floor away from a Western-style intensive care unit.

Clinical participation may be arranged through local contacts (Browne & Fetherston, 2018; Wise et al., 2017). Arranging for students to shadow a provider for a portion of the day brings insight into the local professional standards and practice. Seeking permission and obtaining local approval for students' clinical experience is best navigated by an in-country contact. Faculty and students should make themselves aware of licensure and practice rules before they travel. Students and faculty must often submit copies of licensure, degrees, and transcripts before entry into clinical sites is permitted. An important standard is students' activity must remain within their skill set and scope of practice. Ethically, students should not be allowed to take on tasks they are not prepared for, or use clinical skills they could not perform in the United States and for which they have not obtained competency through their healthcare education program.

Introducing students from both countries via social media before the trip is one way to enhance the experience and cultural exchange. By building on those contacts, student interactions may be planned to increase students' personal cultural interactions, and local activities may be safely explored. Increasing cultural interaction in daily activities, in addition to excursions to healthcare facilities and historical sites, enhances the development of cultural awareness and humility (Houghton, 2014; Savicki & Price, 2015; Wise et al., 2017).

Learners: Recruiting and Cultivating Interest

Students have multiple demands on their time. Developing interest and participation in study abroad or mission trips can be challenging, especially if it is a new endeavor. Plan to get the details in front of those students who are most likely to be interested. It is a good idea to have students exposed to information about the global opportunities on several occasions. Encourage students early in their programs to think about where they can best include a global activity in their degree plan. If multiple options are available, provide snapshot information in a single brochure with contact e-mails of the point person(s). The information should include approximate cost and when the experience is held. Students will want to know if the experience is for credit and what the course expectations are.

Highlighting the main activities of a trip is a useful tool in cultivating interest. Studying traditional Chinese medicine in Hong Kong or working to provide physical therapy in an orphanage will draw student attention. Student interest is piqued by the clinical or didactic focus of the course or trip, but also by the culture and environment in which it takes place. Drawing students' attention to the need in an area is also helpful. The shocking statistics about maternal infant morbidity may drive a student to want to be a part of a team going to India to teach about delayed cord clamping. As awareness of needs is raised, students can identify the gaps they wish to fill in their global endeavors (Houghton, 2014).

Student Selection

Student selection is typically a multistep process, with participation criteria set prior to recruitment. This can include the student's current GPA, travel experience, health status, and completion of certain prerequisite courses. Fragile health, pregnancy, or certain preexisting conditions will be cause for exclusion. During recruitment, students are given a specific application deadline. In addition to demographic information on the application, students will usually provide answers to essay questions generally geared to determine why they are interested in the trip. Each student should be interviewed by the team leader and at least one additional person. For a larger team, a committee will be helpful in selecting participants. The process of determining who joins the team can be difficult. Revisiting the demand of the course and making the importance of interpersonal interaction a priority in selection can enhance flexibility (Wise et al., 2017). If a second team sponsor or faculty member is needed, sometimes recruiting can expand to alumni and graduate students who are further along in the program.

Pre-Trip

The pre-trip phase of the experience is largely focused on creating a cohesive group and sharing information. Frequent meetings will help to establish the team and provide a venue to share the large amount of information that must be transmitted. It would be difficult to overstate the importance of meeting regularly to prepare students for the experience (Wise et al., 2017). Safety, expectations, country orientation, and travel and packing-related information can be provided to students. Printed handouts and additional online resources can provide students ready access to course, culture, and country information. Guidelines to assist in developing a credit-based study abroad course are found at the end of this chapter.

Orientation Topics

Safety

The faculty or team sponsor should work closely with institutional global endeavors and risk management departments. Safety includes considering political and weather conditions and food and travel safety. Travel and liability waivers will be needed, and travel insurance will be required. Universities typically have mechanisms in place to assure travelers are safe, the trips are registered, contact information is available, and itinerary and emergency contact information has been shared.

Travel health information and resources should be provided. Required immunizations and routine food precautions should be reviewed. This information is readily available from the Centers for Disease Control and Prevention. Directions on how to handle money in public and rules for behavior should all be discussed in detail. The level of information and structure is determined by the level of risk. In some settings, it is prudent for the student never to leave the guest house unattended; in other locations, a courtesy text to the faculty may be required. The rules regarding student behavior must be clearly explained and the ramifications identified. An example: “If you leave the compound without permission from your instructor in person, you will be sent home on the next flight at your own expense.” These matters are reviewed during orientation; the student is asked to sign an agreement and is provided a copy.

Students are required to provide their emergency contact with a detailed itinerary. Team leaders, and in some cases all participants, will be required to have a working phone. A phone tree can be prepared, but leaders would be prudent to clearly convey to students that emergency situations are not to be texted, tweeted, or posted until the team leader has made official contact.

Country

Students should be provided basic information about the country where the global

experience will occur. Exposure to online resources allows independent exploration of country-specific information. Providing a map increases students' geographical awareness, and the corresponding weather information is helpful in deciding what to pack. The student should be aware of defining historical events, key geographical features, and key facets of the economy. Information about government, economic, and healthcare systems increases student understanding of the complex and interconnected nature of global health care. The student must be aware of relevant health information, such as the leading causes of morbidity and mortality, and the usual population access to healthcare providers. The specific information shared will be determined by the destination and the objectives.

Culture

There are many ways to educate students about working cross-culturally, and many theoretical approaches to culture can be incorporated into the planning and implementation of the global experience. Pre-trip information about culture has the purpose of providing student information about both the destination culture and guidelines for cultural skill acquisition.

How the destination culture impacts daily work can be explored from several perspectives. Questions such as What are the usual birth practices? and How does the culture view illness? can be presented as homework and brought into reflective discussions (Williams, 2017). Students may be made aware of cultural issues by lecture or assigned reading. The level of comfort that students have working cross-culturally and their experience in travel can be assessed and used as a guide (Nguyen et al., 2018; Strange & Gibson, 2017).

Packing

Students will almost certainly be limited in the amount of luggage they can take. The airlines have specific and clear guidelines on their websites about weight and size limitations. It is also prudent to review what cannot go in the carry-on or checked bags. Checking the Transportation Security Administration website can clarify the items on the most current "no fly" list. This should be emphasized with all travelers. Students should also be made aware if it is an expectation that a portion of their allotment is for team supplies. For a clinical trip, a packing day for the entire team to sort donated supplies and weigh suitcases is helpful.

What to pack presents a challenge as well. Students will benefit from clear guidelines for what they will be expected to wear while touring, while in the clinical setting, while in the classroom, and during downtime. Consideration of the cultural norms of dress, depending on the destination, is crucial. The clinic may require a lab jacket; women may be expected to always wear long skirts; head coverings may be the norm. A faculty-determined uniform of a school collared shirt and khaki pants or

skirts to wear on clinical tours may streamline packing. A schedule with clothing requirements and a packing checklist may be helpful. A travel checklist for the supervising faculty appears at the end of this chapter.

The In-Country Experience

Every global endeavor provides unique opportunities. Before arriving at the destination, the faculty leader has carefully developed the course and itinerary. Students are oriented to the course and to travel, and provided with information and resources about the country, culture, and course. The in-country global learning experience incorporates the global learning assignments and is augmented by what is available in the destination.

A typical day in a study abroad course begins with a morning student and faculty meeting. Depending on the type of course, the morning may be used for a lecture from a partner university, or perhaps for a clinical experience in a dental clinic, physical therapy department, or hospital inpatient area. Lunch with in-country students or professional colleagues provides an opportunity to develop relationships and explore cultural norms. The afternoon might include a cultural excursion related to course content or a community outreach activity. Activities are selected to augment learning. Opportunities such as participating in local feeding programs, providing community education on dental health, and working with physical therapists in an orphanage can enhance student learning in-country. Students can attend professional meetings, tour local facilities, and shadow providers as they make in-home follow-up visits. The list of options is endless.

Students will gain insight into the local culture by interacting away from the clinical settings as well. Being a guest in someone's home for tea, eating in a local market, shopping in the grocery store, visiting a temple, and simply walking in the community will raise cultural awareness.

Communication

While in the country, faculty and students should meet face-to-face frequently and at regularly scheduled times. Twice-daily meetings circumvent issues on short trips. A morning meeting during or after breakfast provides an opportunity to review the day's schedule and answer questions. Students should be reminded about appropriate attire and required equipment. This is also a good time to verify students have identification, the address of the hotel, and a working phone with them, and to reinforce other safety concerns. An evening meeting is an opportunity to hear about the successes of the day, address any concerns, and make adjustments as needed. Student input is helpful, but limiting the number of choices the students make for the group will help eliminate grumbling and discord. Allow time each evening for reflective journaling; for this activity, supplying topic prompts is helpful (Williams, 2017). The journaling then becomes a natural segue into relaxed free time.

Frequent meetings also provide an avenue to revisit pre-trip teaching. It is often necessary to reinforce warnings about avoiding tap water and uncooked foods.

Encouraging students to rest and stay hydrated is a good idea. Charging students with caring for one another, watching out for safety issues, or even synchronizing taking antimalarial medication helps the team work together. Rules about taking photographs and posting information to social media must be clear before the trip and emphasized during the experience. A typical rule is that no photographs are to be taken without the subject's consent and no photographs taken in the clinical setting may be posted to any social media site. Designating a daily student photographer and incorporating photo sharing into the evening debriefing eliminates multiple duplicate photos. A blog without public access provides a place to post updates and share photographs. Establishing a person to update the blog, either for the trip or daily, helps with information sharing. The faculty should make a habit of reviewing the blog each day.

Post-Trip Debriefing and Follow-Up

Debriefing is an important component of many experiential learning experiences. It provides an opportunity for students and faculty to examine and evaluate the global experience. Structured debriefing can be used to enhance students' global learning experiences and assist them in relating their experience in other countries to their profession at home. The debriefing can include informal sharing of pictures and memories and/or a guided consideration of experiences. This can refer to and reinforce issues evoked by the reflective journaling, helping to bring closure or to provide resources for additional contemplation.

Setting the date for debriefing prior to departure can overcome the distracted business and activity that inevitably follows a return from a trip. Opportunities for the returning students to share information with students, staff, faculty, and the community can be scheduled separately from the debriefing, but can be used as a time to share pictures and key thoughts and begin recruiting for the next trip.

Conclusion

Many students preparing to be healthcare professionals are interested in and can benefit from a global experience. Faculty efforts to incorporate an international experience into the curriculum can be well rewarded in student learning. Time taken to identify desired learning outcomes and incorporate experiential learning and activities to facilitate growth is usually time well spent. Activities can be crafted to develop skills, knowledge, and confidence in providing health care. Students can benefit from being part of an international partnership that contributes sustainably to global health care. International experiences provide opportunities for students to work with interpreters; teach clinical topics; learn about new countries, diseases, and ways of providing health care; and gain personal insight which enhances cross-cultural acumen. Careful planning and appropriate follow-up can create life-changing experiences for both faculty and students.

Resources

Travel

Transportation Security Administration: https://www.tsa.gov

U.S. passports and international travel: http://travel.state.gov/content/travel/en.html

The World Factbook: https://www.cia.gov/library/publications/the-world-factbook

Health

Centers for Disease Control and Prevention: Travelers' Health: https://wwwnc.cdc.gov/travel/

World Health Organization International Travel and Health: http://www.who.int/ith/en

Global Learning

Consortium of Universities for Global Health (CUGH): https://www.cugh.org

National League for Nursing (NLN) *Faculty Preparation for Global Experiences Toolkit:* http://www.nln.org/docs/default-source/default-document-library/toolkit_facprepglobexp5a3fb25c78366c709642ff00005f0421.pdf

The Forum on Education Abroad. Standards of Good Practice: https://forumea.org/resources/standards-of-good-practice/

The National Organization of Nurse Practitioner Faculty (NONPF). Faculty Resources: International Experiences Guidelines: https://www.nonpf.org/page/19

Cultural Competence

American Association of Colleges of Nursing (AACN). Tool kit of resources for cultural competent education for baccalaureate nurses: http://www.aacn.nche.edu/education-resources/toolkit.pdf

American Association of Colleges of Nursing (AACN). Tool kit for graduate cultural competence: http://www.aacn.nche.edu/education-resources/Cultural_Competency_Toolkit_Grad.pdf

Study Abroad: Guidelines for Developing a For-Credit, Elective Study Abroad Program for Students

The use of recommendations based on the collective wisdom of experienced faculty who have participated in experiential learning can provide a rubric for successful study abroad courses. Whether the program is in the beginning stages of development or has been functioning for many years, working with diverse and international populations presents challenges for faculty and student learning. The following guidelines may provide a rubric for structure, evaluation, and outcomes.

Create a proposal with the following:

Goals and objectives of proposed program

Location—distance, safety, costs, local interest and support for program, easy accessibility; collaborate with study abroad office

Experiences for students and faculty—clinical experiences, participation in cultural activities, local language lessons

Safety plan—political safety and stability, environmental safety (climate, local disease threats), health insurance and local health care available for participants, emergency evacuation plan

Student prerequisites—skills, language background, grade point average, orientation, disciplinary rules

Number of faculty needed

Number of students expected (interest survey given to students may yield a more precise idea)

Transportation—round trip to destination, as well as local transportation

Estimated costs

Obtain support from appropriate university leaders that may include the university's president, provost, dean, department chairs, and whoever else may have to approve the endeavor. Seed money may be needed to investigate the program feasibility and development. Gifts may also be required in some cultures to facilitate appointments for key people in the local proposed site.

Make a preparation visit to the proposed location.

If possible, arrange transportation and housing as you would expect to with

students. Stay in a hotel or with a local family as you would expect students to, to see how the experience would be for students. Always ask permission to take pictures to show the university administrators as well as prospective students.

Keep a detailed record book of all costs encountered. This will help in designing a course with an accurate price to reflect real costs.

An in-country contact person or organization that can coordinate arrangements can be used. This will generally require a placement fee per student. Often the local university has such a person, or a designated faculty or administrator may be able to facilitate logistical arrangements such as housing and transportation. In-country contacts can help identify suitable cultural attractions. Visit several homes or hotels for proposed housing and get specifics with prices.

Consider local language lessons to enhance student language and culture acquisition. Reasonably priced hourly lessons may be available through a local university or language school.

If it is possible meet with the minister of health (or equivalent person of high rank in the community) to discuss the students' participation in caring for local patients within a healthcare setting (hospitals or clinics). Specifically discuss student roles, supervision by faculty, dress codes, hours of work, and length of stay, among other issues. If it is culturally appropriate, get a written contract. Ask which types of supplies or equipment are needed for the purpose of donations in the future. After the meeting send a follow-up e-mail and thank-you note to the person for giving his or her time and attention. Note: Students working within a different culture and language should not administer medications because of safety issues, nor should students engage in activity they would not be permitted to do in their clinical sites in their home country.

Recruit students.

Prior to recruitment, make all decisions about transportation, tuition, housing, food, cultural sites, donations, health insurance, availability of scholarships, and other factors, and prepare a formal budget. Decide how much it will cost per student for the entire package.

Create a brochure for the course/trip with detailed specifics of costs, inclusions, dates, course credits, prerequisites, and other information, and print flyers for a recruitment session. Several recruitment sessions may be necessary to contact all available students who may be interested in the program. Arrange a date, time, and location for the recruitments, and order food. If possible, bring photos or present a PowerPoint slideshow with pictures of the area. Obtain a list of interested students with names and e-mail contacts, and provide a way for students to sign up for the course. If the university already has other study abroad programs in place, they may be extremely helpful in planning your

program.

Collect all fees prior to departure. Assemble supplies or equipment donations. Pack donations and send boxes with students to avoid mailing costs and possible theft of items.

A mandatory orientation program should be held prior to departure. Make sure students have all necessary passports, visas, and vaccinations. Host an event with food that includes family or friends who are interested in the trip details. Review and give written handouts relating a typical day, dress and behavior codes, and health guidance (including what to eat and which medications to bring). Include a list of what to pack, identifying the weight and number limitations for luggage. State where to meet at the airport and at what time. Emphasize the safety and health plan. Review rules and regulations. Pass out the course syllabus and review pre-trip readings available. Encourage students to bring small gifts for their host family and nurse mentors at their location.

Have students review and sign a code of behavior while studying in the location. Include the following:

No alcohol or drug use is permitted.

Dress codes and rules for expected behavior with family, faculty, and all members of the local community are to be written and enforced.

No leaving of the city, under any circumstances, without permission of faculty.

All students will stay all night with their host family, with no exceptions.

Students will always follow the faculty's instructions and are subject to being sent home, incurring their own extra expenses, if they do not follow expected guidelines.

Students will fail the course if they do not meet the behavior criteria as instructed by faculty.

Plan and document the experience while at the location.

Plan an orientation with local health administration for tours and work assignments, to give donations of supplies, and offer to pay for snacks served. Bring a gift for key health administrator contacts.

Keep a daily journal of visits, contacts, phone numbers, and e-mail addresses; costs; problems to be solved; and daily agenda.

Make student assignments with local agency administrators. Give students

preferences when possible according to their previous experiences and language abilities.

Make local community contacts on your own time. Meet the directors of all hospitals, clinics, housing, group excursions, and language centers. Bring small gifts or take them for coffee and pastries when meeting with them. Emphasize how much you appreciate the help that they are giving to you.

Make friends in the local community with merchants, taxi drivers, restaurant owners, and other service providers, and if relationships are successful, bring students to them. Often you will receive a group discount on tickets, transportation, food, and other items with these relationships.

Participate in all student activities. Take local language classes with students and assist with supervision in hospitals, in clinics, and on all cultural excursions. Find out about other activities in the community that may interest students.

Checklist for Supervising Faculty

Code of behavior signed by all participants.

Review health precautions, arrange travel health insurance that will cover emergency evacuation.

Review safety precautions for money (under-the-clothing money bags for traveling) and locking up valuables such as passports, money, credit cards, and cameras.

Review food- and hygiene-related safety.

Give frequent reminders about health and safety topics for students.

Always watch luggage and carry-ons at airports. Things may disappear very quickly, especially in developing countries, if they are valuable and unattended. Use a team sticker or ribbon to identify luggage of all group members easily.

Be prepared to deal with culture shock. Language, customs, and in some locations tremendous, never-before-seen poverty can overwhelm faculty and students. Many poor people, including those begging in the streets, can be overwhelming. Developing a way to give to the community will begin to address the overwhelming feelings of frustration.

Have students always travel in groups and always carry information with them regarding where they are staying and contact information for reaching faculty

24/7.

Always be available to students 24/7. This is not like the responsibility of a classroom on campus.

Discussion Questions

1. What might hinder student acquisition of cultural skills on a global experience?
2. What type of global endeavor would programmatically be a good fit for your academic program?
3. What institutional barriers to creating a global endeavor might be anticipated?

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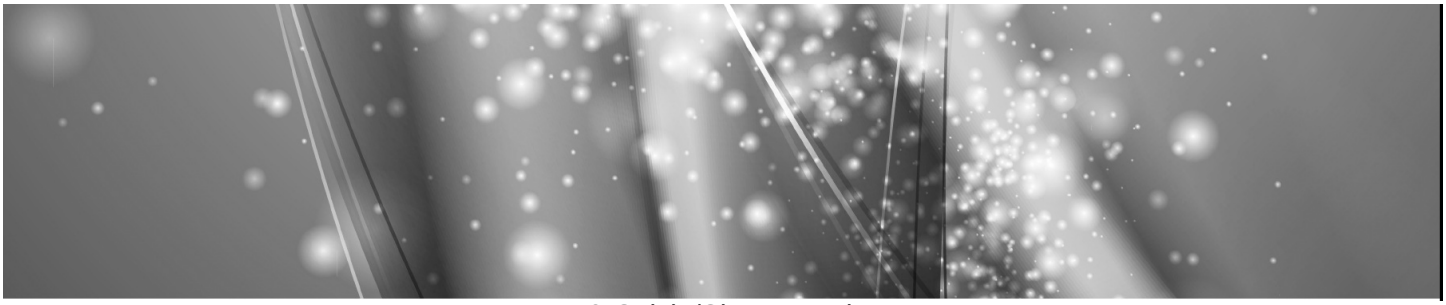


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SECTION VI

Evaluation

The final section of this text presents components of a key aspect of any educational program: evaluation. Evaluation is an essential part of the teaching–learning process. Educators most often think of evaluation at the microlevel in the forms of testing, assignments, and clinical performance. These microlevel forms of measurement link to evaluation at the course, program, and school levels. Appraisals that reflect the school and program quality are essential for accreditation or endorsement by related professional organizations. Chapters in this section describe innovative approaches to evaluating learning, processes for providing useful feedback, and approaches for undertaking program evaluation.



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CHAPTER 25

Concept Mapping: A Meaningful Learning Tool to Promote Conceptual Understanding and Clinical Reasoning

Gregory G. Passmore

Introduction

Instruction can be described as existing on a continuum from teacher-centered/content-oriented to student-centered/learner-oriented actions (Passmore, Owen, & Prabakaran, 2011). Various models of this continuum exist in health professions instruction, eliciting reactive to proactive student behavior and participation and passive to active involvement of the instructor in learning. Traditionally, curricula for health professions instruction have been developed to meet the behavioral learning outcomes desired by national accrediting and credentialing bodies. These traditional curricula often are content centered to meet these desired outcomes. However, the current healthcare environment is demanding graduates who can think critically and problem solve in a variety of clinical practice areas (Daley & Torre, 2010; Novak & Cañas, 2008; Passmore, 2014; Passmore et al., 2011; Rendas, Fonseca, & Rosado-Pinto, 2006; Wheeler & Collins, 2003). Critical thinking, problem solving, and clinical reasoning are poorly served by most content-centered instruction. Educational theorists such as Novak and Gowin (1984) believe that the key to successful critical thinking and problem solving is methods of instruction centered in cognitivist/constructivist meaningful learning, to promote active processing of concepts leading to problem-solving skills (also see the chapter on clinical reasoning).

The key to meaningful learning is that learning is an individual, cognitive process, in which each learner must construct his or her own understanding of concepts, relationships, and procedures. For a student to accomplish this style of learning, a learner would have to mentally integrate the new information acquired during learning activities into what the learner already knows, or differentiate what the learner knows to accommodate the new information (Ausubel, Novak, & Hanesian, 1978; Novak & Cañas, 2008; Novak & Gowin, 1984; Passmore, 2014; West, Park, Pomeroy, & Sandoval, 2002).

Meaningful learning, then, is how the student organizes, saves, and retrieves information or knowledge in a relational fashion. Meaningful learning is based on the premise that knowledge is bundled in packets called *concepts* (defined as recognized regularities in events or objects) and recalled from memory based on how the concepts are attached to one another. New information is nonarbitrarily attached to concepts already familiar to the learner through linkages that the learner identifies as meaningful. In contrast to rote learning, the outcome of meaningful learning is that the new information is transferred into long-term memory through a meaningful linkage, thus enabling the retrieval needed for critical thinking and problem solving (Novak & Cañas, 2008). The purpose of instruction is for the student to develop a knowledge base within the discipline, but also to be able to acquire new knowledge as the discipline changes with advancements in technology and practice. Students who are taught how to learn meaningfully by the nonarbitrary assimilation

of new concepts and procedures into their knowledge structure, or by accommodating their knowledge structures to accept the new information, should be able to meet the discipline's needs today and tomorrow. Learning can be facilitated by using graphic organizers (Nesbit & Adesope, 2006). Graphic organizers are non-prose, visual representations of the learning content using lines, arrows, and spatial positioning of the content. Content represented by flowcharts, graphs, and timelines are common uses of graphic organizers. One learning intervention that teachers can use to identify an individual's unique knowledge structure of a topic or process is a graphic organizer of topical concepts commonly known as a *concept map*. Concept maps provide both teacher and student a guide on which to base further learning (Ausubel, Novak, & Hanesian, 1978; Novak & Cañas, 2008; Novak & Gowin, 1984).

Definition and Purposes

A *concept map* is a concise, two-dimensional, schematic representation of the collection of concepts and linking relationships in a student's knowledge set of a topic or process. Two or more concepts and their linking relationships become meaningful statements about some object or event a person is trying to define, classify, or purpose. It is the identification of the linking relationship between concepts in a concept map that makes this graphic organizer unique and separates the concept map from other less communicative organizing techniques, such as outlines, nursing process care plans, or flowcharts. Concept maps can be used by individual students and groups as tools for learning, by teachers and students for remediation, and by teachers for assessment (Adler, Wilson, & Coulter, 2008; Dansereau & Cross, 1990; Hsu & Hsieh, 2005; Novak & Gowin, 1984; Passmore, 2014; West, Park, Pomeroy, & Sandoval, 2002).

Concept maps have been used as a learning intervention for individuals and groups in traditional didactic and distance courses, in laboratories, in clinical courses, and in critical-thinking and problem-solving courses, with the emphasis in the healthcare literature on clinic, critical thinking, and problem solving (Daley & Torre, 2010). By creating concept maps, students learn that the conceptual understanding they gain in their didactic coursework has a procedural counterpart in their laboratory and/or clinical application courses and clerkships (Hunter-Revell, 2012; Passmore, 1998, 2014). In essence, using concept maps as a meaningful learning intervention helps students to develop a more complete and meaningful understanding of the theoretical knowledge they gain didactically and to bridge the gap between the theoretical knowledge and the procedural knowledge they gain in the laboratory and the clinic (Hicks-Moore, 2005; Passmore, 1998). Further, the concept map's visual interpretation of an individual's knowledge structure can simplify discussion and lead to enhanced understanding between individuals, either in groups or by providing an opportunity between teacher and student for misconception remediation (Dansereau & Cross, 1990; Novak & Cañas, 2008; Passmore, 1998). Additionally, the concept map lends itself to quantitative and qualitative assessment using rubrics such as the one developed by Novak and Gowin (1984), allowing a teacher and the student to measure the extent of the knowledge represented by the concept map.

Theoretical Rationale

The continuum of learning theories begins with the behaviorist theory, where learning is confirmed by specific behavioral responses to specific stimuli; passes through the cognitivist theory, where learning is confirmed by the behavioral and mental solutions to specific stimuli; and ends with the constructivist theory, where learning is individualized and based on the stimuli as they are presented. More simply, this continuum might be described as moving from rote learning or memorization through meaningful learning and problem solving to autonomous learning and invention (Novak & Cañas, 2008; Passmore 2014; Passmore et al., 2011).

The shortcomings of behaviorist learning theory applied to students in the health professions can be seen in the example of the student who correctly performs a healthcare protocol in clinical practice, but who fails when he or she is exposed to variations in the protocol or patients. If the student has been conditioned to respond to certain stimuli in the protocol, when the learning stimuli are different, the learner may not be able to respond appropriately until he or she has memorized all possible variations of the protocol.

Further, the student taught using cognitivist learning theories and given the same set of variations in clinical protocols as previously mentioned understands the need for or existence of the variations. This student does not see the required variations as an impediment to accomplishing the task, since he or she has developed a mental schema that allows for the processing of critical-thinking and problem-solving strategies that come with meaningful learning.

Students taught in the constructivist learning environment may or may not be able to accomplish a health professions–associated task. Constructivist learning theory supports creativity in problem solving because it asks the student to approach the problem from different perspectives where knowledge of previous protocols may be advantageous, but not necessary. However, by its definition, a protocol establishes a set of procedures used to carry out a task. Reinventing that set of procedures every time the task is required would be inefficient and time-consuming, and it is a weakness with constructivist learning in situations where conformity is essential and divergent thinking may cause problems.

The cognitive psychologist David Ausubel (1968) summed up the purpose of learning interventions as actions designed to “ascertain this [what the student already knows] and teach him accordingly” (p. vi). The fundamental idea in Ausubel’s cognitive psychology is that learning takes place either by the assimilation of new concepts into existing conceptual or cognitive structures held by the learner or by accommodation of the learner’s cognitive structure to the new concept (also see Chapter 1). Thus, personal knowledge is typically constructed like a house or a car, and not usually discovered like oil or a new planet.

The learning theory that is utilized in instruction is the one that best meets the outcomes of the learning objectives, the type of learning task, and the student's level of competence. In the health professions, this leads to instruction that both meets the predicated curricular objectives of accrediting agencies and promotes meaningful learning to best meet the needs of the student. Instruction is provided for the student to develop a knowledge base within the discipline. However, the student has to be able to learn new knowledge as the discipline changes with advancements in technology and practice. Rote learning will provide most students with a body of facts, such as lab values, anatomy and physiology, and even some clinical protocols. However, students who are taught how to learn meaningfully by the nonarbitrary assimilation of new information or new concepts and procedures into their knowledge structure have been shown to be better critical thinkers/problem solvers, and thus should be able to more completely meet their discipline's needs and challenges (Daley & Torre, 2010; Passmore, 2014; Passmore et al., 2011; Wheeler & Collins, 2003).

How the student organizes and recalls knowledge is the key to meaningful learning. Meaningful learning is based on the premise that knowledge is bundled in concept packets and recalled from memory based on how the concepts are attached or linked to one another when stored in long-term memory. Concept maps are two-dimensional graphic representations or organizers of multiple concepts designed to help students recall and structure their knowledge in relational maps. It is this process of identifying or naming the linking relationships between concepts in the map that makes this graphic organizer an effective learning intervention (Novak & Cañas, 2008). Well-developed concept maps also display cross-links. These are linking relationships between concepts in different levels or conceptual clusters of the concept map and are an important characteristic of concept maps. Cross-links help students see how a concept or process in one domain of knowledge represented on the map is related to a concept in another domain shown on the map, indicating a deeper level of understanding (Angelo & Cross, 1993; Dansereau & Cross, 1990; Novak & Cañas, 2008; Passmore, 1998).

Meaningful learning requires the learner to become an active participant in the learning process. The process of creating a concept map, by identifying relevant concepts and the relationships between them, is an active learning process. Meaningful learning strategies, such as concept mapping, allow learners to actively organize their knowledge structures into powerful, integrated patterns. A concept map becomes a concise, visual interpretation of an individual's knowledge structure (Angelo & Cross, 1993; Dansereau & Cross, 1990; Novak & Cañas, 2008; Novak & Gowin, 1984; Passmore, 1998). Whereas rote memorization is typically static, concept mapping supports the growth of the individual's knowledge structure. **FIGURE 25-1** represents a student concept map depicting understanding of fundamental radiation safety concepts before (a) and after (b) multiple teacher–student

remediation activities. Note that a relational linking term exists between concepts, and the post-remediations map has several levels of hierarchies and clusters of understanding. This pair of maps shows how a student's understanding can grow following instruction, laboratory, or remediation.

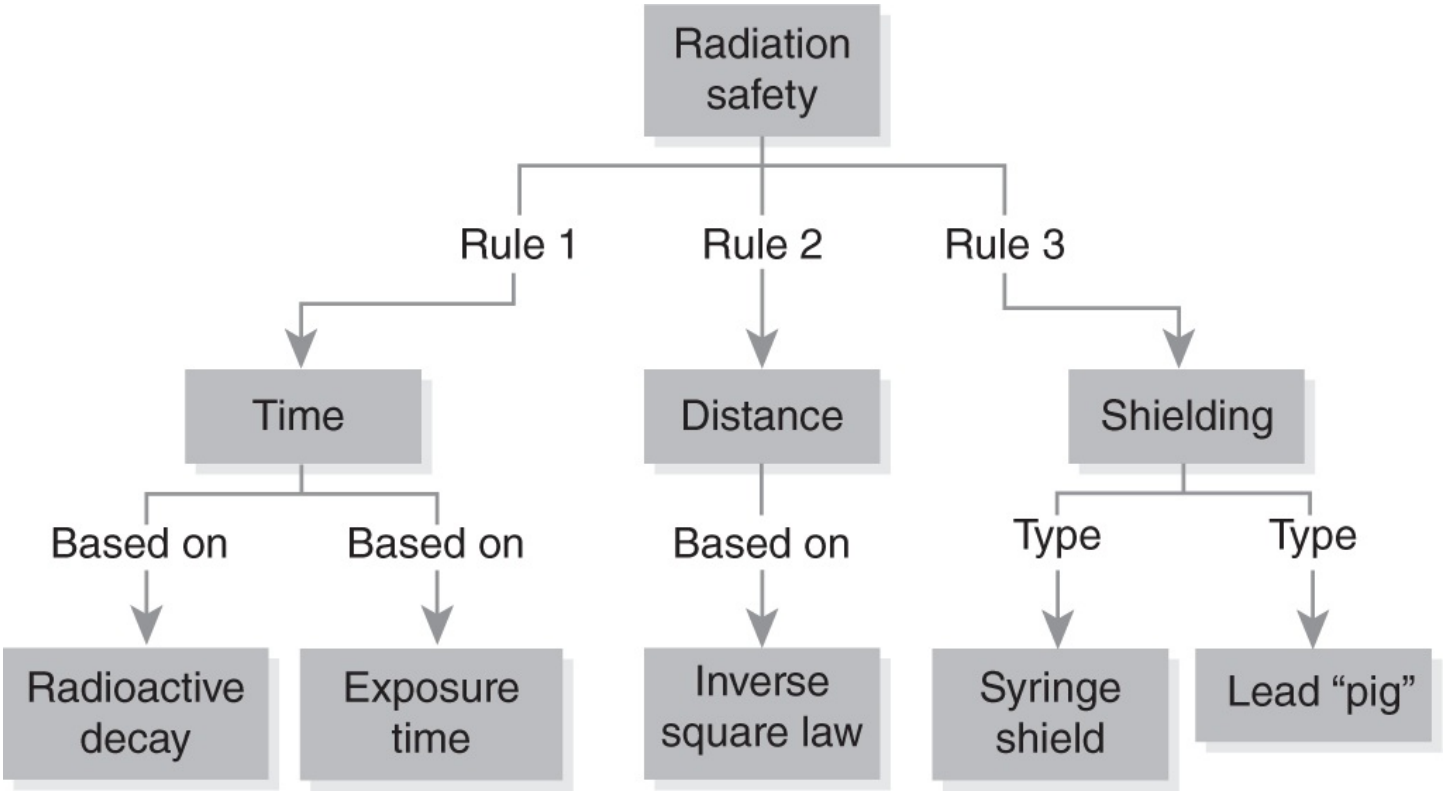


FIGURE 25-1A Student concept map depicting understanding of fundamental radiation safety concepts prior to remediation.

Description Description

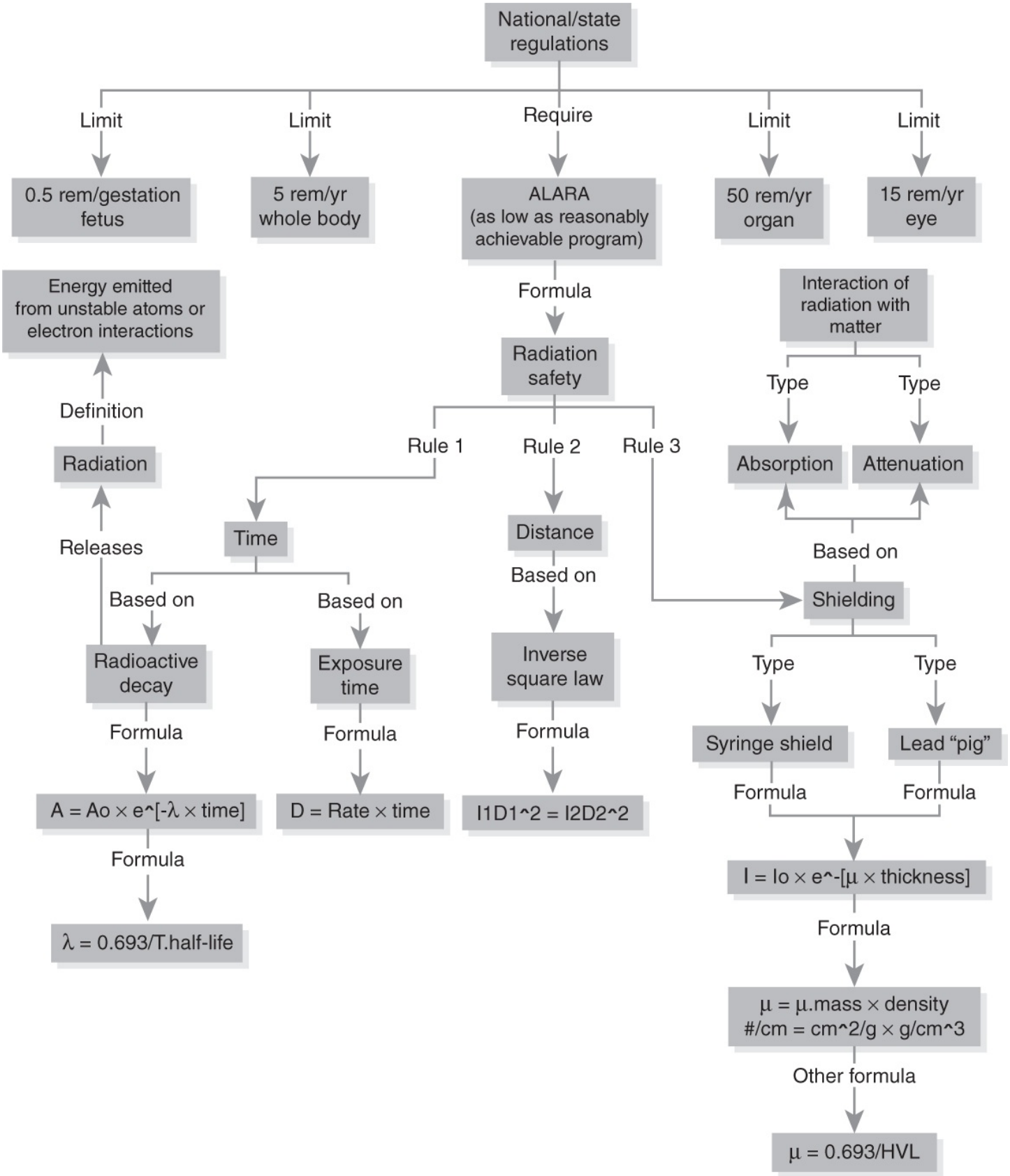


FIGURE 25-1B After remediation: Student concept map depicting understanding of fundamental radiation safety concepts.

Terminology Key: rem = unit of dose equivalent (J/kg); HVL = half-value layer measure of attenuation in linear dimension units (e.g., mm); D = dose or amount of energy deposited in matter (J/kg); Drate = rate of energy deposited in matter (J/kg/unit time); μ = linear attenuation coefficient derived from the ratio of the ln2/HVL; T = half-life, the time required for a radioactive sample to decay to one-half the sample's original activity; λ =

radioactive decay constant derived from the ratio of the ln2/T; inverse square law = I = radiation intensity, D = distance from source from which radiation intensity was measured or for which it is to be calculated.

Conditions

Concept maps have been used as guides to instruction, meaningful learning organizers, misconception remediation facilitators, and assessment tools across all levels of education. Construction of concept maps requires reflection on the part of the individual constructing the map, whether student or teacher (Novak & Gowin, 1984). Individuals with a penchant for rote learning activities and assessments should be given the opportunity to familiarize themselves with the processes of map construction. Teachers and students who focus more on memorization rather than deep understanding have expressed state anxiety in using mapping activities. Passmore found some attitudinal resistance in his longitudinal study of radiologic science students; however, these feelings of resistance seem to abate with long-term use (Passmore, 1998). Concept maps have been used successfully in the academic environment, the business environment, and the military environment (Novak & Cañas, 2008).

Implementation

Concept mapping has to be taught to students, researchers, or clinicians when the method is intended to be utilized in the classroom, laboratory, or clinic (Adler et al., 2008; Novak & Cañas, 2008; Mok et al., 2014; Novak & Gowin, 1984; Passmore, 2008). This is a process activity, and it should be treated just like any other process, with stepwise instruction and practice (Gagne, 1985). Passmore (2008) uses a 2- to 4-hour workshop to introduce the mapping process to health professions students and teachers. Because the audience for this workshop is discipline diverse, the workshop is initiated by having participants identify concepts and relationships from a general list of biologic and sociology concepts and relationships (Dansereau & Cross, 1990). The workshop concludes with participants (in small-group units) developing a concept map from a two-paragraph description of the information-processing model of memory using long-term and short-term memory, using a skeleton map as a starting point. In this instructional process, it is important to begin with a limited domain of knowledge that is familiar to the student. This creates a context that will help determine the structure of the concept map. Although experienced map makers may employ topical, broad-scope maps, novice map makers should be provided with a clear, specific domain, root concepts or skeleton map, and/or focus question around which they can develop their maps (Cañas, Novak, & Reiska, 2012; Novak & Cañas, 2008; Passmore, 2008).

The next step is for the map maker to list the key concepts in the domain. From this list, the map is developed with the most general concepts at the top and the most specific concepts at the bottom. One technique for identifying subordinate concepts from the superordinate, general concept is to ask descriptive questions

about the general concept (Dansereau & Cross, 1990), such as questions of types, characteristics, and parts that pertain to the general concept; or questions of process, such as what leads to the general concept or what follows.

Once this list is generated, map construction can begin, typically with a preliminary map. In the preliminary map, the concepts can be positioned in a fashion that is unique to the map maker. Lines are drawn between concepts and labeled with a few relational words that describe the relationship between the concepts. As this map develops, the maker usually sees that the most organized fashion for the map is with the most general, superordinate concept at the top with the subordinate concepts clustered beneath. However, whereas these hierarchical maps seem intuitive in science-based fields, this may not be the case in all disciplines. Many maps start with the most general concept as a central node, and the subordinate concepts radiate out and beneath the central concept (Dansereau & Cross, 1990; Passmore, 2004). Dynamic or cyclic maps can also be generated as the discipline requires to indicate temporal distributions in the conceptual structures, such as the assessment, evaluation, and follow-up process involved in many patient care activities (Dansereau & Cross, 1990; Safayeni, Derbentseva, & Cañas, 2005).

One notable aspect of concept maps that makes the intervention such a powerful, meaningful learning tool is that cross-links between subordinate concepts or clusters of concepts should be sought and labeled, as these indicate a deeper understanding of the relationships in any domain. Another feature that may be added to concept maps is specific examples of events or objects that help to clarify the meaning of a given concept. These early drafts are followed by subsequent drafts until the final draft is reached, which the map maker feels explains his or her understanding of the response to the initial question or domain. Revisions using pencil and paper can be somewhat cumbersome and time-consuming. There are software packages available that allow for frequent revisions, but these may be a little restrictive compared to pencil-and-paper mapping activities (Novak & Cañas, 2008). The revisions also provide an orderly sequence of iterations between working memory and long-term memory, using the map as the scaffold or template to build knowledge frameworks. The concept maps can now be used as an individual study guide, as a collaborative group discussion format, as a basis from which misconceptions can be identified and remediated prior to testing (Figure 25-1), and as a form of assessment (**FIGURE 25-2**; Abel & Freeze, 2006; Adler et al., 2008; All & Huycke, 2007; Daley & Torre, 2010; Gomes Dias-Coelho, Cavalheiro, & Siqueira-Batista, 2011; Gonzalez, Palencia, Umana, Galindo, & Villafrade, 2008; Hinck et al., 2006; Hsu & Hsieh, 2005; Novak & Gowin, 1984; Passmore et al., 2011; Passmore, 2014; Wang et al., 2017; West et al., 2002; West, Pomeroy, Park, Gerstenberger, & Sandoval, 2000).

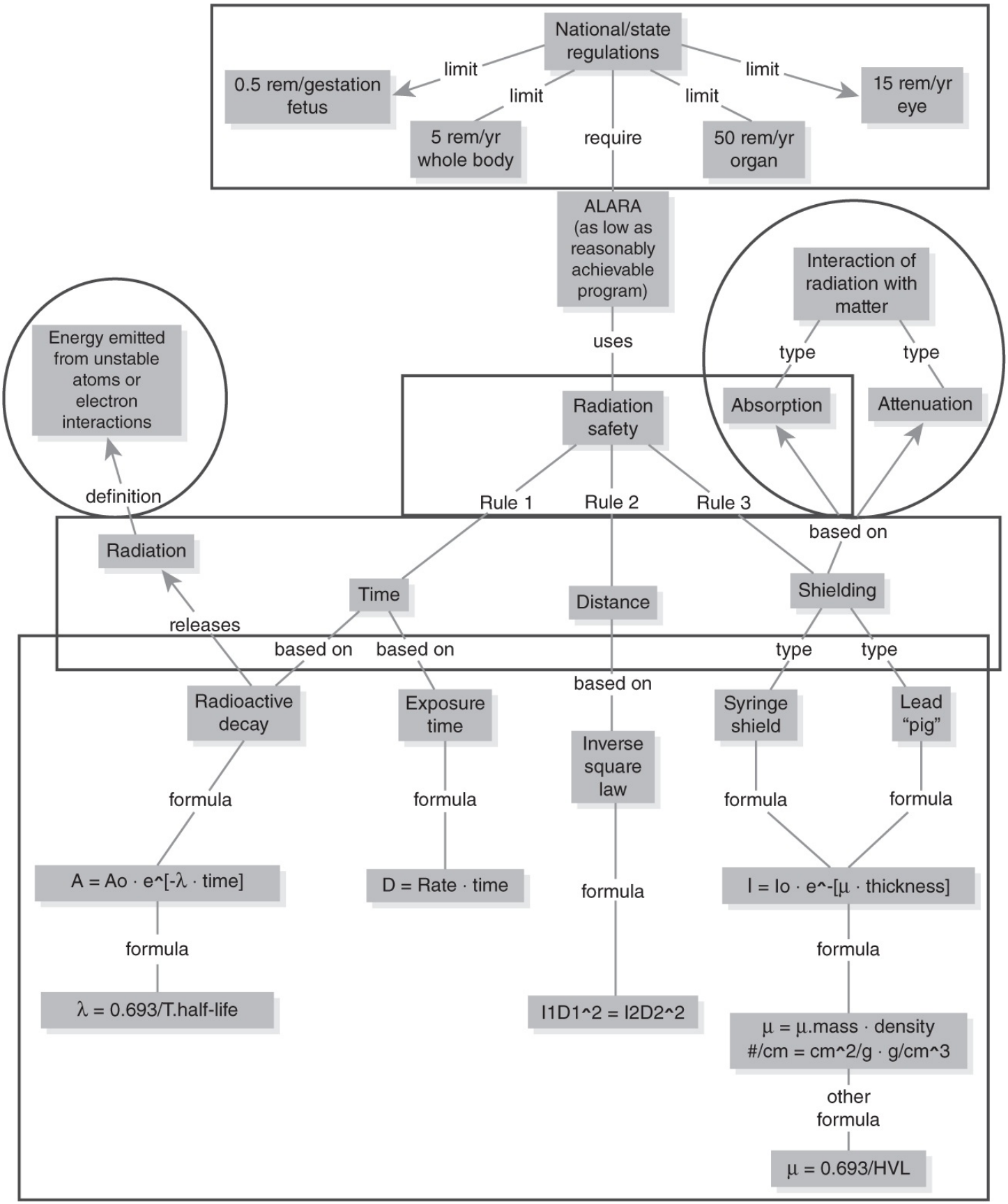


FIGURE 25-2 The scoring process applied to Figure 25-1b.

Note that a relational linking term exists between concepts, and the post-remediation map has several levels of hierarchies and clusters of understanding. Each map was scored based on the rubric described here. This map shows how a student's increased understanding following instruction, laboratory, or remediation can be quantified in place of other formal or summative assessments.

Score: 28 conceptual links = 1 point each; 1 definition = 1 point; 4 levels of hierarchy = 10 points each; 1 supporting cluster = 10 points; = 79 points

Terminology Key: rem = unit of dose equivalent (J/kg); HVL = half-value layer measure of attenuation in linear dimension units (e.g., mm); D = dose or amount of energy deposited in matter (J/kg); Drate = rate of energy deposited in matter (J/kg/unit time); μ-linear attenuation coefficient derived from the ratio of the ln2/HVL; T = half-life, the time required for a radioactive sample to decay to one-half the sample's original activity; λ-radioactive decay constant derived from the ratio of the ln2/T; inverse square law = I = radiation intensity, D = distance from source from which radiation intensity was measured or for which it is to be calculated.

Description

Types of Learners

The physical construction of concept maps as a learning intervention has been shown to facilitate meaningful learning by enabling students from elementary school through college and graduate school to actively seek and develop conceptual relationships. Researchers have shown the utility of concept mapping as a learning and evaluation tool in multiple educational environments, including expository lecture, laboratory, critical thinking, problem solving, cooperative group learning, clinical, case study analysis, patient care planning, and distance learning (Daley & Torre, 2010; Novak & Cañas, 2008; Passmore, 2014; Passmore et al., 2011; Preszler, 2004).

Research into multiple intelligences (Gardner, 1983) and learning styles (Kolb & Kolb, 2005) has been well accepted and draws attention to the wide range of differences in student abilities for various types of learning and performances. Concept mapping, being a form of graphic organizer, would seem to fit well with those individuals who rely on visual/spatial techniques for learning. Other forms of learning preferences, such as verbal/auditory and tactile, can also benefit from generating concept maps. If learning style preferences are long-term learner adaptations to facilitate learning, then activities that enhance meaningful learning should be adapted to just as readily, given time and practice, irrespective of the learning style (Laight, 2004; Novak & Cañas, 2008).

Using the Method

Concept maps can be used for a variety of educational processes from the perspective of the teacher and the student, in the form of knowledge acquisition/structuring template, critical-thinking/problem-solving intervention, misconception remediation guide, meaningful-learning/authentic-assessment template, research/project-planning guide, and curriculum-planning guide. These tasks are applied in several different curriculum models to include lecture/laboratory, critical thinking/problem solving, cooperative learning, clinical processes, case study analysis, case/care planning, distance-learning environments, and post-professional continuing education (Cañas et al., 2003; Daley & Torre, 2010).

Student Uses of Concept Maps

Meaningful Learning from Lecture/Laboratory Curriculum

Concept maps can be used as meaningful learning tools within a lecture-based course. Students can map lectures and textbook passages to gain a meaningful understanding of the material presented. Students can use concept mapping to organize and integrate multiple concepts and as a template for growing their conceptual understanding. As a meaningful learning activity, students can document their existing knowledge, gain new understandings, and then relate the new information to what they already know. In addition, students can detect areas where there are misconceptions, expressed as dissatisfaction with their own cognitive structures in trying to connect concepts in a meaningful and organized way. Whether self-determined or discovered through study group or teacher–student interaction, misconceptions provide an opportunity for remediation, a process in which student misconceptions are replaced with more scientifically valid concepts and relationships, which is discussed more fully in the “Teacher Uses of Concept Maps” section later in this chapter (Daley & Torre, 2010; Novak & Cañas, 2008; Novak & Gowin, 1984; Passmore, 1998). Concept maps also can be used in other study methods, such as distance learning and laboratory. Distance learning demands communication between students and teachers, as well as between students. Concept maps make excellent vehicles for long-distance discussion between individuals, to include misconception remediation activities (Coffey & Cañas, 2000; Novak & Cañas, 2008; Passmore, 2014;Passmore et al., 2011).

Additionally, concept maps used in the laboratory will help students understand the relationships between the concepts that are driving the procedures the students are following. Many laboratory study guides provide the conceptual understanding required for purposeful learning in a laboratory protocol. However, unless the student

is acting on the information in a meaningful fashion, the student may miss the understanding and simply follow the procedure. Having students construct a relational concept map can help them identify how the laboratory procedures are derived from the theoretical and conceptual basis. Concept maps used this way will tend to have a descriptive component as well as a dynamic, procedural component, thus giving students access to “Why is the procedure done this way?” instead of “It is done this way” encountered so often in laboratory and clinical practice (Dansereau & Cross, 1990; Hicks-Moore, 2005; Novak & Gowin, 1984; Safayeni et al., 2005).

One goal of radiologic science physics teaching traditionally has been to help students become proficient problem solvers. Several studies point out that traditional methods of applying formulas to sets of problems fail to encourage concept development; thus, the student has no knowledge base (appropriate memory) from which to draw the needed information and procedures to develop a solution set (Glynn, Yeany, & Britton, 1991; Passmore, 1998; Prankratius, 1990; Roth & Roychoudhury, 1993). Prankratius (1990) compared concept mapping groups to nonconcept mapping groups in physics instruction and concluded that the groups that often performed concept mapping scored significantly higher on a problem-solving assessment than traditionally instructed groups that relied on practice alone.

Meaningful learning also involves the affective or motivational-emotional aspects of learning (Novak and Gowin, 1984; Passmore, 1996). In a study of collaborative group learning in an online environment, Wang et al. (2017) found that concept mapping groups spent less time performing information exchange activities, and more time in higher cognitive levels of learning activities, such as disputation, monitoring, and reflection, when compared to the nonconcept mapping groups. Further, the concept mapping groups reported positive motivation and less anxiety associated with completing the learning exercises. The authors conclude then that the concept mapping groups’ interactions at the higher cognitive levels, while collaborating on their concept maps, had the additional benefits of reducing group anxiety when compared to the nonconcept mapping groups.

Meaningful Learning from Critical Thinking/Problem-Based Learning Curriculum

Meaningful learning activities, such as concept mapping, promote higher levels of thinking and help the teacher and student develop problem-solving, critical-thinking, and decision-making skills in less time than the traditional novice–mentor learning environment (Ferrario, 2004). Students in a problem-based learning (PBL) program use their concept maps to identify the student-generated informational learning opportunities that emerge during case study. Additionally, each PBL group can create a concept map of a model specific to the case study. A case-specific concept map would have the students incorporate basic science concepts, clinical science

concepts, procedural concepts, and student-generated hypotheses into a case-specific model of the case study that would potentially include multiple cross-linkages and layers (Dansereau & Cross, 1990). Giddens (2006) based a curriculum development activity for graduate student nurses on using concept maps as a guide to critical thinking and deeper understanding. Attitudinal outcomes were positive, as participants felt that the mapping activity led to discussions of content and theory. These were possible after organizing, analyzing, and communicating interrelationships among concepts identified in the mapping process. Hicks-Moore and Pastirik (2006) quantified critical thinking in a study to assess the level of critical thinking with concept maps. Their results indicate that critical thinking was enhanced by developing concept maps. Some methodologies purport to compare concept maps pre- and post-learning content to affirm that concept mapping can facilitate learning in the critical-thinking curriculum. Daley, Shaw, Balistrieri, Glasenapp, and Piacentine (1999) found a significant increase in mapping scores (see “Concept Maps as Assessment Tools”) for the clinical constructs of relationships among the clients, pathophysiologic factors, pharmacologic factors, and therapeutic nursing interventions. Hsu (2004) used concept maps of clinical cases as part of a problem-based learning clinical curriculum. Concept mapping scores for the PBL concept mapping group were greater than those for the non-PBL group. Other educator groups use concept mapping as a teaching tool but gauge the student’s critical-thinking abilities using pre- and posttest standardized tests of critical thinking. Outcomes suggest that concept mapping is effective in increasing critical-thinking scores over the course of the curriculum (Aein & Aliakbari, 2017; Kusoom & Charuwanno, 2017; Sinatra-Wilhelm, 2012; Yue et al. 2017). (See the chapter on problem-based learning.)

Meaningful Learning from Clinical Curriculum

Students in clinical courses, to include community health care, preventive medicine, allied health sciences, and healthcare delivery, can use concept mapping when learning important concepts and procedures that are the basis for their clinical rotations or clerkships. As described previously in the “Meaningful Learning from Lecture/Laboratory Curriculum” section, the concept map processes used for meaningful learning of basic science knowledge also can be used for meaningful learning of clinical procedures, ensuring that students understand the science behind the procedures they are learning and enhancing students’ understanding in both the declarative or conceptual and the procedural knowledge bases.

One example of this process applied clinically is in clinical care plans that incorporate concept maps as part of the critical-thinking and problem-solving process. Concept mapping encourages a patient-centered focus in a comprehensive care environment (Abel & Freeze, 2006; Atay & Karabacak, 2012; Hinck et al., 2006;

Novak & Gowin, 1984; Passmore, 1998; Weiss & Levison, 2000; Wheeler & Collins, 2003). **FIGURE 25-3** is an example of a nuclear medicine technology student's clinical protocol concept map for Tc-99m Bone Scintigraphy—Bone Scan developed after remediation sessions involving both the teacher and the student (see the following subsection on "Teacher Uses of Concept Maps*:* Concept Maps as Misconception Remediation Tools"). Significant to this clinical protocol map is the organization of both the conceptual knowledge required for the bone scan as well as the procedural knowledge required for completing the study. This particular organization is a variation of Gowin's vee diagram (Afamasaga-Fuata'i, 2004; Novak & Gowin, 1984; Passmore, 1998; Roth & Roychoudhury, 1993), a meaningful learning tool designed to help the learner "see" the relationship between the conceptual knowledge he or she possesses going into the laboratory and the procedural knowledge produced during the laboratory experience, used here to represent clinical activity. Note in Figure 25-3 how the conceptual nature of the bone scan study aligns to the left side of the figure, and the dynamic procedural nature of the bone scan study aligns to the right side of the figure. The cross-links between the right and left sides indicate relationships where protocol actions are relationally explained through the conceptual knowledge base. The interplay between concepts and procedures may be categorized differently depending on discipline needs. Abel and Freeze (2006) describe the use of clinical concept maps by nursing students with relational concept maps indicating the interplay between pathophysiological and psychosocial characteristics as part of a nursing care plan.

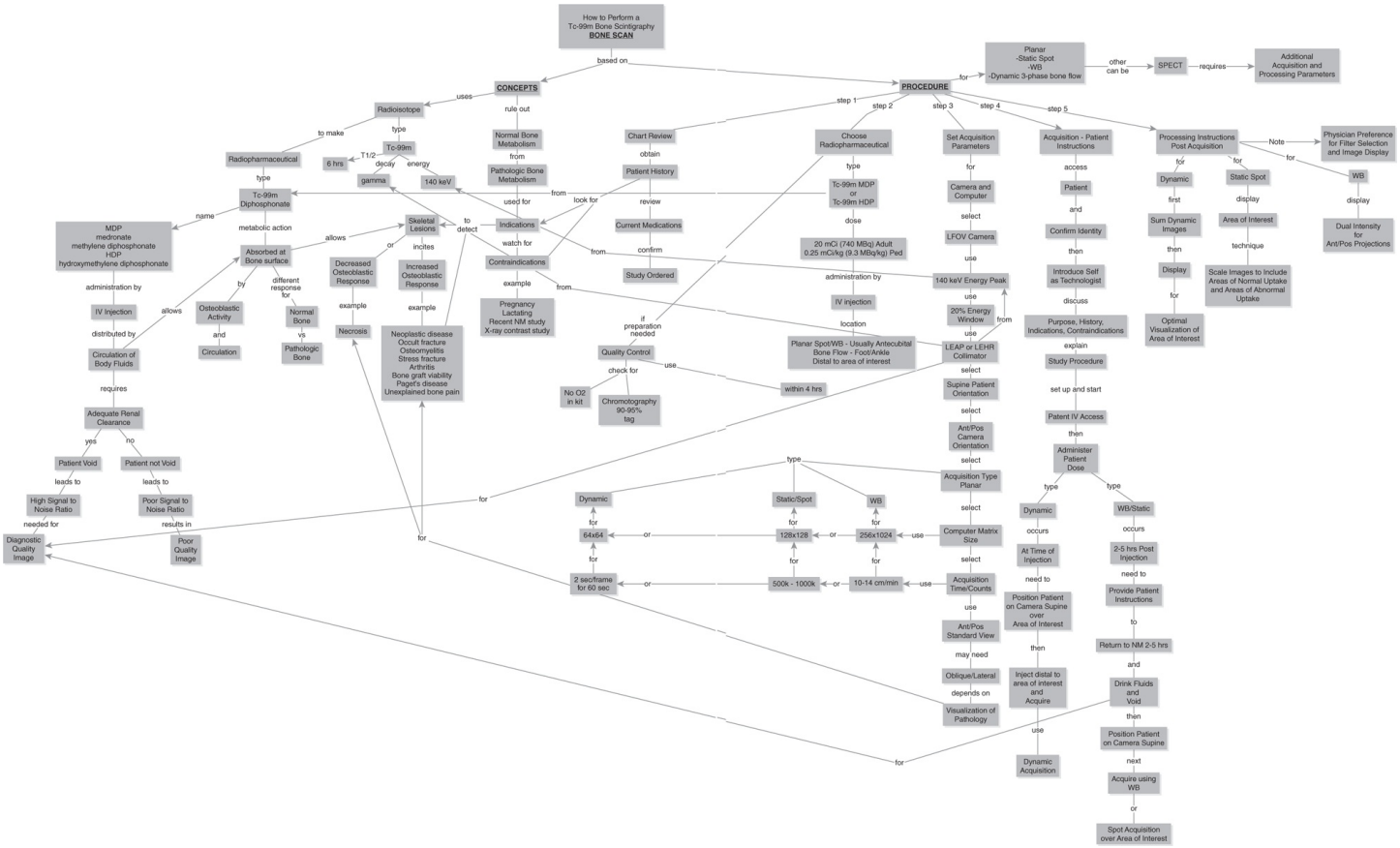


FIGURE 25-3 Postremediation student concept map depicting both conceptual and procedural knowledge structures used to perform a Tc-99m bone scan in the nuclear medicine clinic. Relationships between the two domains indicate interplay required to understand processes.

Description

Some teachers prefer to use hub-and-spoke, radially oriented maps for protocol representation, as in the manner of Dansereau and Cross (1990). Schuster (2000) describes transforming a traditional four-column patient care plan into a radial map with the pathology at the center and the nursing care plan with patient response to treatments radiating away from the center. This version of a clinical care concept map also was used by Hill (2006) as a platform for teacher–student conferences when planning nursing interventions and assessments. Derbentseva, Safayeni, and Cañas (2007) compared dynamic thinking with cyclic map relationships versus traditional hierarchical maps that use dynamic quantifiers in the concept in an undergraduate science course environment. Although there were no statistical differences between the cyclic and hierarchical maps in number of dynamic relationships, students found the cyclic concept map more interesting.

Adema-Hannes and Parzen (2005) report using student-generated clinical concept maps as misconception remediation/assessment tools with the additional benefit of replacing tedious care plan paperwork. Students rated their clinical reasoning as improved, versus no change, due to their newfound ability to organize their thoughts to link lab values, medications, pathophysiology, and plan to address

patient care issues.

Meaningful Learning from Medical Residency Curriculum

Medical school programs consist of medical program education followed by a long period of residency training. A longitudinal use of concept maps is seen in medical residents' use of maps made during early clinical experiences as a basis for meaningful learning of new concepts encountered during residency training. These individually unique concept maps can serve as a means for integrating the new knowledge acquired during residency training with the knowledge achieved and meaningfully learned during medical school (West et al., 2002; West et al., 2000). Bixler, Brown, Way, Ledford, and Mahan (2015) examined the use of group concept mapping with an objective of improving critical thinking as measured by a standardized critical-thinking score. Fourth-year medical students in an allopathic course were given skeleton maps and asked to complete them as part of the learning material. Pre- and post-instruction knowledge tests and pre- and post-concept mapping critical-thinking scores indicated the mapping students had higher scores on these outcomes measures, although the critical-thinking change scores were not statistically significant. The authors do state that expecting to significantly improve critical-thinking scores in a four-week elective course in a group of strong critical thinkers may not be a reasonable objective, indicating that the time frame may have been too short. This again points to the training and experience that using concept maps requires.

Meaningful Learning from the Post-Professional Curriculum

For healthcare professionals, learning does not stop upon completion of professional training. New knowledge emerges with increasing frequency, a fact not lost on the certification/registry boards that require either recertification every few years or continuous education every year. Thus, healthcare professionals are obligated to gain a meaningful understanding of the new science and care concepts developed in their discipline, and to integrate these new concepts with prior concepts retained in long-term memory. Concept mapping can be used as a meaningful learning strategy for knowledge identification in this lifelong, often self-directed, post-professional learning environment (Cañas et al., 2003). This premise also applies to professionals in internship programs, individuals who are neither "novice" nor "expert." Pilcher (2009) describes her single group study using concept maps instead of a multiple-choice instrument to establish a baseline knowledge in NICU high-risk neonatal care. Following the 6-week internship, a post-test concept map was used to indicate

learning. Each concept map used a focus problem to initiate the mapping process. The post-internship concept maps contained an average 97.1% increase in appropriate responses to the focus problems. Previous groups using the multiple-choice instrument only saw increases of less than 30% in appropriate responses. The concept maps were seen as a successful learning intervention as they elicited more appropriate responses in a high-risk care area.

Teacher Uses of Concept Maps

Concept Maps as Planning Tools

Teachers can make a concept map to use as a teaching guide to help organize a lecture. This helps the teacher identify what he or she feels is important for students to understand. Also, this strategy promotes a conceptual flow in the lecture. Giddens (2006) used concept mapping in a group activity to promote critical thinking about curriculum design. Graduate student nurses were asked to develop nursing curricula while working in groups. The activity generated much discussion and problem solving within the groups, and positive affective outcomes were noted. Additionally, participants claimed that the concept mapping activity provided a guide that led to group discussions concerning related reading assignments. A deeper understanding was the most cited outcome of these discussions.

Daley and Torre (2010) report on a research effort in which teacher-generated concept maps were used to augment didactic learning materials. However, caution suggests that complete teacher maps should not be shared with students. Concept maps are individually unique; expert maps are either so complex that the learning objectives and concepts are difficult for the viewer to identify, or are too simplistic. Also, the action of a teacher handing out a teacher-prepared concept map sets up the condition for students to memorize the map by rote, which does little in helping them to cognitively understand or integrate the material (Cañas et al., 2012; Novak, personal communication, September 3, 2012). However, it has been shown that a skeleton map of a few main concepts and initial relationships may be given as a guide to help students see the organization and integration of the important concepts, allowing students to build or expand on these maps, which will negate rote memorization and encourage meaningful learning (Novak & Cañas, 2008).

To study the effects of learning styles on group concept maps, Stoyanov et al. (2017) examined the learning styles of group/collaborative concept mappers along the traits of adaptation and innovation in an effort to establish guidelines for managing diversity in group settings. Group map configuration scores (see “Concept Maps as Assessment Tools”) and learning style indicator scores were shown to correlate with strong tendencies for adaptation and innovation, but not for moderate “bridgers.” The more adaptive map makers preferred to focus on problem solving from well-established structures or protocols, whereas the more innovative preferred

to approach problems from the periphery, in less traditional ways. Group concept maps with widely dispersed configurations would point to a large discrepancy between cognitive styles. The suggestion then is to show awareness of cognitive style when planning group mapping activities or reviewing shared or group concept maps as indicators of shared cognition.

Concept Maps as Assessment Tools

Concept maps are a tool for teachers wanting a more authentic or meaningful evaluation than standardized achievement tests. Meaningful learning activities such as concept mapping should be followed by meaningful evaluation, and using the student-generated concept map as the evaluation tool is one method for achieving this goal. Scoring concept maps for the validity or completeness of conceptual or procedural relationships, for what the teacher or discipline determines to be correct conceptions, for multiple levels of hierarchical structure, and for complexity described by concept differentiation and integration yields a more authentic assessment than end-of-course achievement tests, which are often oriented toward rote memorization (Abel & Freeze, 2006; Daley & Torre, 2010; Novak & Gowin, 1984; Passmore, 1998; West et al., 2002).

To use the concept map as an assessment tool, the teacher must construct a domain-specific expert concept map and compare each student's "novice" map to the "expert" map. A scoring scheme based on Novak and Gowin's (1984) suggestion follows:

1 point for each correct conceptual relationship and concept example or definition,

5 points for cross-linking relationships, and

10 points for conceptual clusters and hierarchical structure.

This process can be used as a pre- and/or post-lesson formative or summative assessment, or to assist in the remediation process discussed earlier, as the change in quantitative values attached to a student's concept map can serve as extrinsic motivators to reinforce the learning process (Abel & Freeze, 2006; Daley et al., 1999; Daley & Torre, 2010; Novak & Gowin, 1984; Passmore, 1998, 2014; West et al., 2002). Figure 25-2 shows a score associated with a student's concept map following several remediation efforts. A change in map complexity before and after instruction activity or remediation activity reflects the increase in the student's learning and can be quantified by scoring the pre-/post-activity concept maps.

Assessing concept maps through manual quantification algorithms, as described earlier, requires teacher time commitments similar to those of other manual grading techniques of student authentic assessment tools. There have been some attempts

at reducing teacher assessment effort by giving the student a central or core concept, then only scoring the significant concepts and neighboring relationships extending from the core concept (Correia & Cicuto, 2014), as these core concepts/significant concept relationships are thought to represent the significant learning from the instructional activity. Alternatively, using computer-aided data mining or pattern analysis techniques similar to those used by algorithms examining customer transactions has shown some utility (Chiu & Lin, 2012; Wie & Yue, 2017). However, irrespective of the variations in the concept map grading algorithms, all seem to compare an “expert” conceptual knowledge structure with its inherent conceptual relationships to a “novice” conceptual knowledge structure and relationships to assess student meaningful learning. Srinivasan, McElavany, Shay, Shavelson, and West (2008) caution that during the process of map assessment a person needs to consider “practice” opportunities for the concept map grader in order to obtain adequate reliability. Srinivasan’s group reported on a study using senior residents and fourth-year medical students who created concept maps on asthma and diabetes, which were subsequently scored by two of the investigators. This study reports that the concept map scores increased significantly over time ($p < 0.002$), but just as important, that it took four to five scoring occasions for the raters to achieve adequate reliability. This points to a need for the raters to have practice in scoring concept maps just as mappers need practice in developing concept maps.

The teacher should be aware that assessment of concept maps may well indicate differences in success for students who typically score well on standardized assessments. West, Pomeroy, Park, Gerstenberger, and Sandoval (2000) compared pre-/post-instruction concept map scores, noting improvement. However, the improvement in map scores did not correlate with course outcomes or standardized test scores. These observations support the differences in assessment, and achievement, between rote and meaningful learning.

Concept Maps as Misconception Remediation Tools

Having students create concept maps from a lecture can give the teacher feedback information on student misconceptions, thus prompting mentoring and/or misconception remediation. Misconceptions are identified in concept maps as a linkage between two concepts that is false or as a linkage that fails to address the main idea relating the two or more concepts (Novak & Gowin, 1984). One method of examining the student’s concepts and relationships is through a pre-instruction and post-instruction interview. Because concept maps are a concise representation of the concepts and relationships in a learner’s knowledge set, they allow teachers to quickly recognize invalid or underdeveloped knowledge claims, which would suggest a need for remediation (Novak, 1990; Novak & Gowin, 1984).

Correcting long-held misconceptions of basic science or social science

phenomena requires conceptual change. Students' dissatisfaction with their own cognitive structures in trying to connect concepts in a meaningful and organized way is a requirement in cognitive/constructivist philosophy as a first step in conceptual change, a process in which student misconceptions are replaced with more scientifically valid concepts and relationships, ideally through meaningful learning activities (Roth & Roychoudhury, 1993).

Concept Maps as Research Tools

The body of research previously cited in this chapter gives evidence over time of the utility of concept mapping as a meaningful learning tool, enabling both teacher and learner to visualize concepts and the relationships that link them together, and then communicate with each other or others in a fashion that is most effective for learning. Most of the concept mapping research studies described previously are either quasi-experimental or experimental, pre-/post-test designs, with the concept map as a cognitive research tool representing the concept mapping learning outcomes, either directly through mapping change scores, or indirectly using a standardized test, or some combination thereof. This body of research typically explores the contribution to learning that is enabled by the concept mapping activity.

It should be noted that in the field of program evaluation and planning there is a research technique also described as concept mapping, where concept maps are generated after a focus group brainstorming activity, not too dissimilar from classroom or group concept mapping exercises. However, the similarity stops there in that in program evaluation research, the group brainstorming activity is followed by a statistical grouping, cluster, or multidimensional analysis in order to quantify the composite concepts. These composite concepts are then used in preparation of questionnaires or surveys for more traditional methods of program evaluation or development. Visually, these concept maps display groups or clusters whose links are represented by the Euclidean distance of one variable cluster to another variable cluster rather than a relational condition. For example, Guichard et al. (2017) measured the cluster group distances along the axes of "Feasibility rating" and "Importance rating" in their group concept mapping study of the conditions needed to incorporate a health equity tool into public health practice. The authors stated that the cluster analysis of the focus group outcomes served to identify and prioritize the conditions for incorporation of the health equity tool into practice. Further elaboration of this technique is beyond the scope of this chapter as this technique is not directed at meaningful learning outcomes. The interested reader can find more information on using this technique in works by Hagell, Edfors, Hedin, Westergren, and Hammarlund (2016) and Kane and Trochim (2007).

Conclusion

Meaningful learning for health professions students and practitioners is an important, individual cognitive skill that can be enhanced through the use of concept mapping. Concept maps can be used by teachers, students, and postgraduate professionals to enable meaningful learning for themselves, their students, and their colleagues. Educationally oriented research using these two-dimensional graphic organizers has shown that students can benefit from drawing how they are integrating new knowledge, as well as identifying misconceptions, and from using these maps as a guide for discussion and understanding in group work, critical thinking/problem solving, and relation of conceptual knowledge to the procedural knowledge needed for clinical reasoning and performance. Teachers can use concept maps as meaningful assessments, as enablers for misconception remediation, as guides in group work, and as devices that allow for a complete lesson and/or curriculum-planning process. Professionals, too, can gain from the process of concept mapping by integrating new concepts required for current practice with previously learned concepts in a format that allows information to be recalled in a usable manner. The multiplicity of researched uses of this graphic organizer show the extent of the utility of this meaningful learning tool in helping students and professionals shift from rote learners to meaningful learners.

Discussion Questions

1. What is an advantage of using concept mapping techniques compared to an outline when designing teaching for the healthcare environment?
2. How can a teacher use the concept map as part of the assessment of student understanding of a laboratory activity?
3. When using concept maps as clinical protocol guides or care plans, the student can capture both conceptual and procedural knowledge. How does this type of mapping activity compare to and/or contrast with a purely textual protocol description or care plan?

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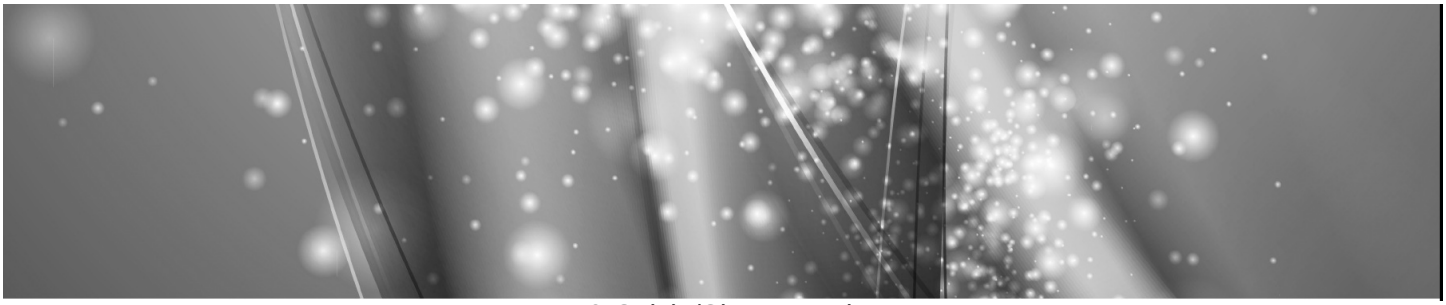
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CHAPTER 26

The Clinical Pathway: A Tool to Evaluate Clinical Learning

Martha J. Bradshaw

Introduction

The clinical pathway is a strategy that uses specific, essential evaluation criteria in unique clinical learning settings.

Definition and Purpose

The clinical pathway is an abbreviated form of clinical evaluation that provides a means for the instructor to evaluate student progress using specified criteria. Clinical pathways can be used to evaluate applied practice and clinical learning that occur in time-limited, unique care settings. Learning activities are directed toward the same clinical outcomes as would be expected in traditionally structured patient care settings. The emphasis is on application of principles in a new setting, versus gaining experience via repeated opportunities in a familiar setting. As students apply principles, they recognize the development of individual practice-based judgment and decision making, and they begin to visualize themselves as professional healthcare providers. Faculty can determine how well the student uses guided thinking and clinical reasoning in unfamiliar settings, yet at the same time provides familiar and appropriate interventions.

Theoretical Foundations

Clinical pathways, also called *critical pathways*, are used by nurses and other members of the healthcare team as a directed approach to goal-based outcomes; they are especially beneficial in quality improvement for cost-effectiveness (Broughton, 2011). Pathways are used for orientation of new nursing staff, quality improvement, evaluation and improvement of patient care interventions, and student-precepted experiences (Avery, O'Brien, Pierce, & Gazarian, 2015; Hunter & Segrott, 2010). Pathways typically are in the form of a checklist or abbreviated evaluation format tailored to the specific situation. Avery et al. (2015) point out that the use of standardized protocols, bundled care guidelines, and accompanying checklists are effective in addressing patient complications and improving outcomes. Furthermore, teamwork and communication are improved.

Most nursing literature describes pathways for use in complex patient care situations, and pathways can have a positive influence on patient mortality (Panella, 2009). Consequently, if a person thinks of clinical failure by a student as "mortality," then a pathway can be a valuable tool to avert student loss. Altmiller (2017) addresses the need to effectively evaluate behaviors in students that have a bearing on patient safety and could make the difference between a passing and failing student. The Quality and Safety Education for Nurses (QSEN) framework is valuable for teaching and evaluating competencies that lead to safety and quality improvement. Not only does incorporating QSEN into the clinical evaluation provide an objective analysis, it introduces the nursing student to professional expectations that will be seen in the workplace after graduation (Altmiller, 2017).

Clinical faculty are able to collaborate on student evaluations by examining how well the student meets outcome criteria from more than one perspective. This principle is similar to how integrated-care pathways are used in interdisciplinary clinical situations, in that student progress and achievement of outcomes are the focus. Student clinical pathways are based on the same purposes as are patient- or staff-oriented pathways: They are goal directed, clarify expectations, designed to be efficient, and effective in terms of time and energy.

Conditions

In selected situations, student clinical learning activities are one-time experiences and may deviate from the more structured patient care experiences. In addition, many clinical experiences are short-term because of decreases in hospitalization length and an emphasis on wellness programs. Examples of these clinical experiences in nursing are community health fairs, outpatient surgery, and pediatric health screenings in day-care settings. Whereas these unique clinical opportunities provide expanded observations and open up new areas of practice, onetime experiences do not always lend themselves to the achievement of established clinical learning outcomes. If the learning outcomes are not readily identified, then the clinical instructor cannot easily evaluate clinical progress based on the experience. Therefore, instructors traditionally create onetime experiences as observation-only activities, or as task-focused activities that may not represent a professional nursing approach. In doing so, many valuable learning opportunities may be lost to the students. Instructors also lose the opportunity to determine the extent to which students are able to adapt to unique settings, apply principles, and enact new roles. For these reasons, a clinical pathway should be developed for virtual learning experiences, such as with high-fidelity patient simulators. These behaviors, as part of clinical reasoning (see Chapter 6), are essential in evaluating patient safety.

The clinical pathway for student experiences enables continued learning by students and maximizes the benefits of the onetime clinical opportunities. Just as the critical pathway is an abbreviated version of a patient's plan of care, the student clinical pathway is an abbreviated version of the clinical evaluation tool. A major advantage of the pathway for both the student and course faculty is that it reduces the inconsistency or inadequacy of evaluation of onetime or isolated clinical learning opportunities. Variations in expectations and evaluation lead to variations in outcomes among students (Tanicala, Scheffer, & Roberts, 2011), and the pathway is a means to correct this problem.

At the time of the clinical experience, the student refers to the pathway as a guide for fulfilling selected roles and completing specific responsibilities. Simultaneously, the student is aware of the criteria by which evaluation will take place. Therefore, clinical time and experience is maximized. The clinical pathway makes unique clinical experiences more purposeful, thus improving student clinical learning outcomes.

Types of Learners

Whereas the clinical pathway could be used with learners of all levels, it is best used with undergraduate students who are engaged in directed clinical learning experiences. The clinical pathway offers specific learning outcomes and can include recommended or structured activities that enable the student to meet these outcomes. Students in undergraduate clinical settings generally have more faculty supervision, which creates opportunity for direct observation and evaluation. The clinical pathway is designed for intentional learning, even though students often acquire additional personal growth during the clinical experience.

The pathway also is quite suitable for students of all levels in brief clinical learning settings with a preceptor, such as a one-day event. The preceptor should not be expected to conduct an in-depth evaluation of the student, but preceptor feedback is exceedingly helpful in compiling comprehensive information on a student. Therefore, a succinct and purposeful tool such as a clinical pathway can be easily completed and provide needed information.

Resources

The basis for a clinical pathway is the learning outcomes for the course, based on professional competencies (Gaberson, 2018). Evaluation tools used by all clinical instructors are directed toward course outcomes and ultimately professional standards for practice. Instructors supervising students in selected experiences identify outcomes and expected behaviors from the evaluation tool. Gaberson (2018) points out that lengthy or complex clinical evaluation tools may actually hinder the instructor from effectively evaluating specific student competencies. Hence, a clinical pathway that focuses on very specific student outcomes may yield information that lends itself to the total clinical evaluation for that semester. Based on anticipated clinical learning opportunities, the instructor develops a clinical pathway that guides the student in what will be accomplished during the experience and the activities or behaviors the instructor expects to observe in each learner. Because the pathway is used in a one-day, onetime clinical experience, the student receives immediate feedback, rather than having to wait for the final clinical evaluation. This timeliness is appreciated by students, especially those with lower self-confidence (Koharchik & Redding, 2016). Students are told that the clinical pathway evaluation is given to the primary instructor to contribute to the final evaluation. Some education programs use portfolios, in which students compile evidence indicating which specific outcomes have been met and competencies achieved (Gaberson, 2018). The clinical pathway is an example of how students can document unique learning opportunities.

Using the Method

Implementation of an education-focused clinical pathway enables the faculty to develop student learning experiences that are directly related to the outcomes for the total clinical course. Two examples demonstrate how pathways are derived from the clinical evaluation tool and how components of the tool can be applied to more than one setting. Hearing and vision screening with school-age children can be conducted with nursing students at any level in the educational program. Such screenings have a place in a fundamentals course, a course on nursing care of children, or in a community nursing course. A more sophisticated version of the screening (to include patient referral) can be developed for nurse practitioner students.

When students are assigned to a unique, onetime clinical experience, they may have some apprehension about being responsible for patient care in a new setting. Knowing that they have only one opportunity to demonstrate competence, students benefit from the direction that a pathway provides. Many students like the opportunity to test themselves in the new setting. Time and opportunity do not permit students to meet all criteria on the standard, comprehensive course evaluation tool. To maximize the learning experience, a sample pathway (see **BOX 26-1**) was developed based on the following items from the course clinical evaluation tool:

BOX 26-1 Course Outcomes Applied to Clinical Pathways

Learning Outcomes of Clinical Pathways

Demonstrates professional behaviors and inquiry activities.
Demonstrates preparation and use of principles in screening techniques.
Assesses behaviors of patient and family/support in ambulatory surgery and provides appropriate nursing interventions.
Provides nursing interventions for a patient in the ambulatory surgery/operative unit.

Clinical Learning Outcomes of the Course

Demonstrates professional behavior and accountability.
Demonstrates preparedness for assignment.
Provides a safe environment.
Complies with the regulations of the school of nursing and clinical agency.
Performs nursing skills or interventions appropriate to the patient's health.
Demonstrates safe administration of medications.
Establishes rapport and demonstrates good communication skills.
Demonstrates collaboration with other care disciplines.
Demonstrates patient and family teaching.
Demonstrates appropriate documentation.
Maintains confidentiality and respect for others.
Completes assignments on time.
Seeks assistance/guidance appropriately.
Adapts to changing or stressful situations.
Uses clinical reasoning skills.

Demonstrates professional inquiry activities.

- Demonstrates preparation for assignment
- Performs nursing skills correctly
- Maintains professionalism
- Demonstrates professional inquiry activities

These key items also reflect important QSEN competencies regarding knowledge, skills, and attitudes (Altmiller, 2017). As you can see by the example in Box 26-1, other expectations are specified under the broad clinical outcomes. The pathway expectations are derived from the clinical evaluation tool and applied to the situation, such as communications with children or use of clinical reasoning. The expectations also indicate specific behaviors related to the clinical activity that must be demonstrated by the student, such as the ability to complete vision screening.

Additional information that leaves no room for guesswork regarding preparation and professional behaviors is provided in the pathway for the student. Also, the standard for acceptable behavior (pass) is indicated as part of the directions, so that in the event a student demonstrates unacceptable behaviors, he or she has a clear understanding of how the final evaluation was determined (see **BOX 26-2**).

BOX 26-2 Clinical Pathway: Hearing and Vision Screening

The clinical pathway identifies the specific nursing activities that will enable the student to meet the objectives for this onetime clinical experience. The student will be evaluated based on the completion of items on this pathway. A student who fails this clinical pathway (i.e., fails to pass at least 8 of the 12 items [66%] on the clinical pathway) has failed the clinical day.

Objectives and Student Nursing Activities

Demonstrates preparation and use of principles in screening techniques:
- Attends clinical experience promptly, appropriately attired, and with own supplies.
- Establishes a positive working relationship with patient(s).
- Initiates and completes screening in a timely manner.
- Correctly follows the sequence of steps in the screening assessment(s).
- Shows familiarity with equipment, screening criteria, and documentation.
- Individualizes assessments as needed based on unique attributes of each patient.

Demonstrates professional behaviors and inquiry activities:
- Uses principles of therapeutic and professional communications when interacting with patient(s).
- Shows appropriate level of independence and self-direction.
- Demonstrates clinical reasoning and problem-solving skills regarding screenings or patient interactions.
- Documents or reports results of screening exam.
- Seeks guidance or advice from instructor as needed.
- Discusses screening results and/or patient responses with the instructor and fellow students.

Student Preparation

Complete check off on hearing and vision screening equipment in the skills lab. If needed, practice again before clinical experience.

You are permitted to bring your Hearing and Vision (H&V) booklet or some guidelines written on a card. This does not take the place of preparation and familiarity with the procedure. If you make too many references to the guidelines, your instructor will consider you unprepared. Bring these pathway sheets to give to your instructor.

In developing the pathway, the focus is on outcomes (student learning), not processes (tasks or activities). Therefore, the instructor may designate specified activities or behaviors that direct the student to the outcomes; not all behaviors must be seen in order to attain the goal. Furthermore, other, unanticipated activities related to the patient situation that enable the student to meet the outcomes may present themselves. In addition, the clinical learning experience is an opportunity for students to see how the QSEN-based competencies affect future professional growth (Koharchik & Redding, 2016).

An evaluation sheet provides feedback to the student regarding the experience and serves as the evaluation measure and anecdotal record for the instructor. Information regarding clinical activities and evaluation is found in the clinical section of the course syllabus. In that section is the detailed information indicating that the onetime activity is a clinical day of equal importance to a day caring for a hospitalized patient. Clinical instructors use the information from the pathway when formulating a final clinical evaluation report on each student.

BOX 26-3 is a clinical pathway developed for use with nursing students in an ambulatory surgery unit. In addition to typical nursing activities related to an operative experience, an emphasis of this experience includes patient and caregiver interaction, alleviation of anxiety, provision of information about the procedure, and presentation of postoperative teaching prior to discharge. The ambulatory surgery pathway also is constructed to indicate to the students what the expectations are for patient care. Prior to use of the pathway, students may be unsure of what they are permitted to do, and thus miss many learning opportunities.

BOX 26-3 Clinical Pathway: Ambulatory Surgery Experience

For this onetime clinical experience, the clinical pathway identifies the specific nursing care activities on which the student will be evaluated. Items on this pathway will enable the student to meet the objectives for the ambulatory surgery experience for NUR 3102 (listed next). A student who fails the ambulatory surgery experience (i.e., receives a failing evaluation on two of the three sections of the clinical pathway) has failed a clinical day.

Objectives and Student Nursing Activities

Assesses behaviors of patient and family/support in ambulatory surgery and provides appropriate nursing interventions:

- Introduces self to patient and family/support person; establishes a working relationship.
- Identifies behaviors related to hospitalization and surgery; discusses conclusions regarding behaviors with instructor, giving specific examples.
- Indicates how patient behaviors influence preoperative, surgical, and postoperative periods.

Gives specific examples of family/support coping abilities.
Makes conclusions and interventions that are correctly based on the patient's developmental level.

Provides nursing interventions for a patient in the ambulatory surgery/operative unit:

Demonstrates preparedness regarding knowledge of surgical procedure; discusses procedure and pertinent information with the instructor.
Reviews the patient's health history, lab, and other data as available on unit.
Teams with staff RN to provide care for the patient.
Conducts assessments, including vital signs, in a timely manner, using the correct technique.
Recognizes comfort and safety needs, specific for operative patients.
Provides interventions promptly.
Administers medications, based on the "five rights" and according to the school of nursing guidelines.
Practices professional therapeutic communication skills in the areas of teaching, reassurance, and collaboration.

Demonstrates professional behaviors and inquiry activities:

Selects appropriate priorities for patient and family/support.
Conducts self in dignified, professional manner, including conversation and general appearance.
Shows organization and good use of time.
Demonstrates initiative to be involved in patient care and to further own learning.
Evaluates outcomes of the patient's surgical experience; discusses patient responses and readiness for discharge/transfer with instructor.

Ambulatory Surgery Experience Clinical Pathway: Evaluation

Note: The student must receive a passing evaluation for at least two of the objectives to receive a passing grade for this clinical day.

Assess behaviors of patient and family/support in ambulatory surgery and provide appropriate nursing interventions.

Pass/Fail Comments:

Provide nursing interventions for a patient in the ambulatory surgery/operative unit.

Pass/Fail Comments:

Demonstrate professional behaviors and inquiry activities.

Pass/Fail Comments:

Instructor Date

Because the ambulatory surgery pathway is broader in scope, it uses both basic care items (same as in Box 26-1) and specific items:

- Provides a safe environment.
- Establishes good rapport and maintains good communication.
- Recognizes skill and knowledge limitations and seeks assistance appropriately.
- Demonstrates the safe administration of medications.
- Uses clinical reasoning in decision making and applies various problem-solving methods

For this clinical experience, the student may be evaluated either by a different instructor or by a staff preceptor. Evaluation information is shared with the clinical instructor, added to other evaluation data, and used as part of the final course evaluation. One advantage of including the pathway in total course evaluation is that

it provides the instructor with a glimpse of behavior patterns in a student, regardless of setting. In the event the pathway does not provide beneficial evaluative feedback, the faculty must determine if the clinical experience and learning opportunities cannot be measured the way the pathway was constructed, or if the course evaluation tool should be revised to better reflect student learning outcomes.

Potential Issues

Any difficulties encountered in using the clinical pathway are related to the nature of this evaluation measure. It is intended to evaluate the student in a onetime experience, based on selected criteria. Potential issues with this method include:

- Inability of the instructor to observe and evaluate all behaviors. The type of clinical activity and spontaneous events govern the student's participation in care and types of care provided.
- The new environment may have a negative effect on students' behavior. Some students adapt more quickly than others to working in new settings. This is especially true of more experienced students and field-independent students who are able to sort out and select relevant information about the clinical setting. Students who are less able to adapt are therefore hampered in their performance and may appear to be weak in clinical judgment or nursing skills. An advantage of the clinical pathway is that the focused clinical assignment may enable the student to better perform in the structured environment. This is one approach the instructor can use to encourage independence and self-confidence (Koharchik & Redding, 2016).
- It is easy to "rubber-stamp" evaluation remarks. For the instructor who has 40 or 50 students progressing through the onetime experience, the evaluation remarks become repetitive and tiresome. Instructors must endeavor to make individual comments that are an accurate description of the student. Remarks that reflect abilities in other clinical settings will validate the student's total clinical evaluation.

To some instructors, the clinical pathway may be seen as too behavioral. In some cases, this is the intent of the pathway: to evaluate psychomotor skills. An immunization pathway is an example of psychomotor evaluation. The clinical pathway can be constructed in such a way as to provide opportunities for the student to use clinical reasoning and problem-solving abilities in ways that the instructor can readily observe and evaluate. An example is priority setting and decision making related to immediate patient care needs. This is an advantage of the pathway in that it facilitates evaluation in spontaneous situations.

Conclusion

Clinical pathways are a means by which an instructor can objectively and effectively evaluate student learning and progress toward clinical outcomes. An advantage to use of pathways in onetime experiences is that the pathway serves as a criterion-based frame of reference for both the student and the instructor, because the criteria are the same as for other clinical experiences in that course. The faculty member thus has an objective measure of student learning and performance, and the student always knows the measure on which he or she will be evaluated.

Clinical pathways are limited to brief experiences and are not designed to show professional growth and progress in learning over time. However, a pathway could be designed to appraise clinical reasoning and professional behaviors associated with spontaneous incidents, such as a problem patient. Nurse educators can use pathways as a creative means to address student performance in a variety of situations.

Discussion Questions

1. Discuss the strategy of having a student develop his or her personalized learning objectives to add to a clinical pathway.
2. When using a clinical pathway, is there too much emphasis on psychomotor skills?
3. If a student receives a weak/failing evaluation for a onetime experience, to what extent should that factor into the full clinical evaluation course grade?

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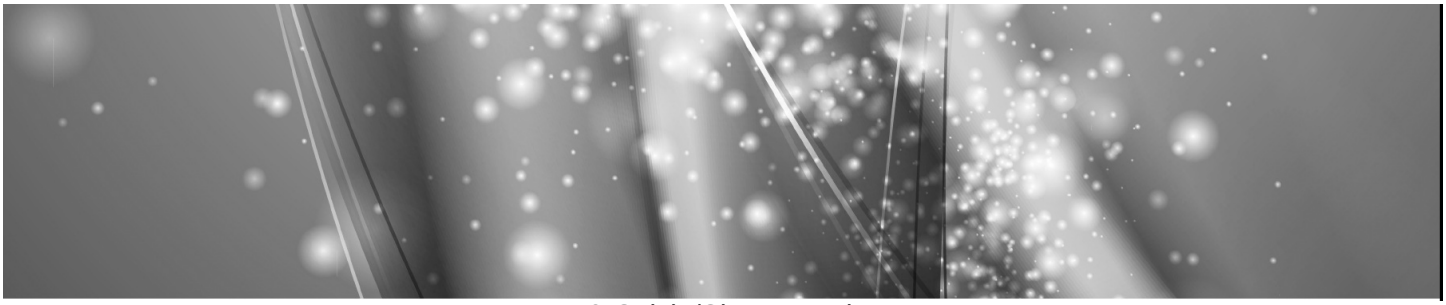
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CHAPTER 27

Truth or Consequences: The Significance of Giving and Receiving Evaluation Feedback

Lyn S. Prater and Stephanie S. Allen

Introduction

Feedback is an essential component in health professionals' practice and is a significant attribute in both professional education and practice settings. As valuable as feedback is, many educators struggle with giving and receiving feedback and thus do not benefit from its intended purposes. This chapter addresses the use of feedback in both practice and academic settings. Purposes of feedback are explained, types of relationships seen with feedback are explored, and the characteristics of effective feedback are delineated. Recommendations for giving and receiving feedback are presented, with the goal being growth of the healthcare professional.

Definition and Purpose

Feedback has many purposes and benefits. In didactic settings, feedback to students is typically given on exams, quizzes, papers, and projects. The feedback is often in a numerical form, is objective, and is compiled into a course grade. In applied practice settings, feedback is derived from information or behaviors that have taken place in the past and is used for advisory purposes and ongoing development. A primary aim of feedback is to explain the differences between expected and actual behaviors (Prayson & Rowe, 2016).

Feedback also is used for evaluative purposes tied to advancement. This could be for job retention, promotion, or advancement in the academic setting. Novices to the profession need to understand that evaluative feedback will be an ongoing component of their professional careers. Feedback that is student centered is used to bring awareness of commendable behavior as well as areas for correction. In Scott's (2014) study, finding out what students understood about feedback was an important step in increasing student satisfaction with the feedback provided. Scott points out that "there is no widely agreed scholarly definition of 'feedback'" (p. 49). Implicit in the word *feedback* is an exchange of information that has occurred or will occur between two parties. One party has recognized behavior that is worthy of comment and wishes to give or "feed" this information to the other party. The intended goal of feedback is for the receiver of feedback to be able to improve performance (O'Donovan, Rust, & Price, 2016). Feedback that is clear, descriptive, balanced, and well-timed can provide beneficial insights to the recipient, thus allowing for self-reflection and contributing to potential changes in behavior.

Recipients can learn from effective feedback. It is important that students take in and accept feedback and thus take responsibility for their behaviors. Giles, Gilbert, and McNeill (2014) found that nursing students wished to be engaged with the feedback process, and have indicated that helpful written feedback enhances their learning. Nursing students also reported that absent or inadequate feedback hindered their learning. In a qualitative study by Nottingham and Henning (2014), athletic training students reported a strong association between correct and incorrect behavior from the feedback they received. The benefits of feedback for the giver include enriched interpersonal communication, while the process allows the giver to formally capture the state of an individual at one point in time and use that as a basis for ongoing evaluation and guiding future decisions.

The individual who is the recipient of feedback often perceives the process as critical, derogatory, or judgmental. These feelings likely are genuine, as a result of an encounter with one or more persons who do not know how to provide feedback appropriately. The feedback process and the mind-set it creates must be addressed, because feedback should have numerous positive outcomes for the receiver. These may include increasing motivation, improving interpersonal relationships, and

validating competence. By incorporating feedback into daily practice, direct care providers can enhance the quality of care delivered to patients. By applying best practices in the giving and receiving of feedback, leaders can better guide and support others. Effective feedback enhances self-esteem and self-confidence, which in turn strengthen assertiveness and promote action. Thus, feedback can be very empowering.

Theoretical Foundations

To understand how feedback shapes and supports learning outcomes, classic learning theories must be considered. Behavioral scientists describe feedback as a way of reinforcing or modifying behavior. Cognitive theorists focus on how information is acquired, processed, and stored, while humanists view learning as self-actualization with a focus on personal goals and stress the importance of engaging the individual as a partner in the encounter (see Chapter 1). Constructivists and social theorists believe learning is a function of experiences and social interactions. Therefore, various perspectives should be considered throughout the feedback process.

Feedback is most effective when the theoretical foundations are employed in combination with strategies and approaches tailored to an individualized context. Contextual strategies and individualized approaches begin with respectful consideration for the dignity of the recipient, while at the same time adhering to the professional standard(s) and context of the necessary feedback. In some instances, the delicate nature of the content creates reluctance and procrastination on the part of the giver, which inhibits the feedback process. It is a moral imperative for the giver of feedback to assume the professional responsibility and provide feedback based on the principles described by Duffy (2013; see the “Using the Method” section). Ultimately, it should encourage the giver to remember that initiating this type of feedback is geared toward benefiting the recipient.

In some instances, assertiveness is required on the part of the giver to initiate needed feedback. Simultaneously, the giver must keep in mind the delicate balance of maintaining the recipient’s self-esteem while upholding best practice. Assertiveness is an interpersonal behavior that contributes to more effective ongoing feedback. The research of Unal (2012) pointed out that there is a positive relationship between assertiveness and self-esteem. The more opportunities a person has for strengthening self-esteem, the more assertive that person becomes. The giver of feedback must utilize the appropriate communication techniques, being assertive and not aggressive, angry, or demeaning. By showing a respectful and supportive attitude, along with providing specific and detailed information, the feedback is received positively and usually increases self-awareness in the recipient. This self-awareness allows the learner to experience growth in the areas of interpersonal communication, safe patient care delivery, and the development of successful relationships with patients, families, and colleagues.

In addition to the theory base on feedback as associated with clinical evaluation, the report from the Institute of Medicine (IOM, 2010) redirected the emphasis of student clinical evaluation to better meet industry standards. The report called for health education programs to better integrate patient safety core competencies in the measurement of student performance. The goal of these recommendations for

students, instructors, and programs is the delivery of high-quality care (IOM, 2010). The IOM report focused on nursing because it is the largest workforce group in the health professions, but the recommendations apply to all health professions programs.

Relationships

When considering the individuals involved, the nature of the feedback that is given and received depends on the relationship of the individuals. The three most common relationships where feedback occurs are authoritarian, developmental, and lateral. When giving feedback, it is an essential component of the relationship to acknowledge the human capital of an individual. In their study regarding feedback and clinical practice improvement, Calleja, Harvey, Fox, and Carmichael (2016) found that there was a link between positive student/staff relationships and positive learning outcomes, and conversely a negative relationship causes a barrier to learning and student engagement.

Authoritarian

The first encounter a health professions student may have with professional feedback is as an entry-level student. Professional disciplines utilize feedback for instructional and role development purposes. The roles of faculty member or instructor and student automatically create this authoritarian relationship where the power differential places the student in a position of vulnerability and perceived helplessness. The faculty member collects the data that comprise the evaluative feedback. The student must listen and receive the feedback given and recognize that it is more than part of receiving a grade—it is part of the professional growth process. The faculty member has the obligation to give specific and timely feedback, which affords the student the opportunity to learn and grow in the professional role (Plakht, Shiyocich, Nusbaum, & Raizer, 2013). This also is an opportunity for the faculty member to be a role model for open and clear dialogue as a component of feedback related to safe professional practice. Because she or he is the established professional in the relationship, it is imperative that the faculty member promote a culture of trust and respect. If the foundation for feedback has been well established, the student is more likely to see feedback as a constructive component of her or his professional development during the transition into professional practice.

Developmental

A prototype of a developmental relationship is that of a mentor and protégé or preceptor and preceptee. In a relationship of this nature, an individual with experience and insight shepherds and oversees the novice in the selected role. This

relationship is different from one of authority in that there is a vested interest in outcome versus reward. The goal of the relationship is that the protégé or preceptee will become a part of the team as the preceptor's colleague; thus, the focus of the relationship is on the development of the preceptee into the designated role. For giving feedback, Halford (2017) suggests several guidelines that can be helpful to the preceptor, mentor, or instructor. These include creating a safe environment, remaining positive, giving specific examples, giving the feedback in a timely manner, and remaining civil and kind in your presentation. Kowalski (2017b) further expands these guidelines and helps operationalize them for the nursing profession, providing examples of how to structure the feedback for the most impact on the receiver.

Nurse educators often use the technique of peer coaching, an adult learning approach for skill proficiency and patient safety. Vae, Engstrom, Martensson, and Lofmark (2018) found with their study of student and preceptor dyads that "if the student's self-efficacy is to be improved, the feeling of mastery and feedback on strengths are of the utmost importance" (p. 17). Staff engaged in the formal process of precepting students in a capstone clinical internship are invaluable in student professional development. The quality of the feedback that preceptors provide to both students and the faculty instructors is critical to the final summative evaluation.

A unique feature of the association of preceptor–preceptee is the reciprocity of the relationship, where the responsibility is shared by both parties. According to Vae and colleagues (2018), effective feedback on the part of the preceptor is constructive, supportive, and shared in a summary at the end of the assessment discussions. The preceptee has the obligation to make self assessments about the types and quality of the developmental experiences while progressing through the orientation. As the preceptee achieves independence in the role, she or he gains a greater sense of empowerment, which results in a sense of personal satisfaction in both the preceptor and the preceptee (Giles et al., 2014). The preceptor–preceptee relationship and the quality and timeliness of feedback serve as a bridge for the new graduate's transition into practice.

Lateral

In a lateral relationship, peers have the responsibility to provide feedback for the purpose of supportive or corrective action, to promote or sustain the integrity of a healthy work environment. This feedback is purposeful in nature, may be formal or informal, and often occurs only when the situation requires. For example, in the practice setting, one nurse or student may observe another breaking sterile technique and recognize that action and feedback are needed. In the academic setting, a faculty member may realize that a colleague needs advice and feedback on test construction. In both examples, one person is aware that he or she needs to give feedback to another and must do so utilizing the key principles of effective

feedback. Depending on the nature of the problem and the outcome of the feedback, the two individuals may find benefit when entering into a mentor–protégé relationship. In this relationship, the components of human capital can be supported.

Many evaluative situations call for input from more than one peer. This can be problematic when the peers have not gathered periodic or thorough evidence. At times, the peers or preceptors are reluctant to give the constructive feedback that is important for growth but may be perceived as negative or critical. This commonly occurs in the preceptor–student relationship because the preceptor does not want to discourage the emerging professional. Calleja et al. (2016) found that time, along with a supportive and positive relationship between staff and students, significantly impacted a student's ability to learn. Regardless of the type of relationship, key points to remember when giving and receiving feedback are that it is social in nature and is best accomplished face-to-face. Creating a positive, open atmosphere for feedback generates trust and collegiality. The desired outcome of giving and receiving effective feedback is personal and professional growth.

Types of Learners

Whereas feedback is useful in a myriad of work and academic settings, the focus of this chapter is on feedback as it relates to students and learning achievement. Because all students are the recipients of feedback, it is incumbent on instructors to acknowledge that not all learners are the same: Each will respond differently to the feedback process. Students arrive in the clinical setting from many backgrounds. Some students are of traditional age, and others may be second-career adult learners; therefore, maturity levels will vary greatly. Feedback should be given in clinical courses on both the undergraduate and graduate levels. Consequently, the graduate student is not a novice in receiving feedback and may have different expectations regarding the timing, depth, amount of feedback given, and the opportunity to respond.

Academically strong students often have high expectations of themselves and are comfortable with eliciting feedback to improve their work. In some cases, their expectations are not congruent with their performance, so the feedback process can be challenging for both instructor and student. Many programs typically have a cadre of students who fall into the statistically “average” academic category. It is easy for these students to blend in with the large group, and, often due to age and level of academic achievement, they may not elicit feedback. For these reasons, the instructor must be careful not to overlook providing individualized attention and feedback to help each student reach her or his full potential.

Academically challenged students present complex issues related to feedback and evaluation. For example, students previously undiagnosed with learning disorders may discover during their first clinical rotation that they may not be suited to an applied practice profession. It may be that such a student lacks particular mental capabilities, such as executive functions, to be successful. In the healthcare professions, essential executive functions are the ability to plan patient care, set personal or patient goals, be flexible, and take in and monitor feedback in self and others (Bradshaw & Salzer, 2003). A student with a spatial recognition problem will have great difficulty with psychomotor skills, and faculty need to be sensitive to this because this may be a neurocognitive problem and not just awkwardness. Feedback regarding poor performance based on newly discovered deficits can be very disheartening to a student who wishes to be part of a health profession.

More often, academically weak students are those who lack the background and are unable to acquire and/or transfer the learning from theory to practice. Some students lack the prerequisite foundation before entering the health professions program. Other students have personal issues that interfere with their ability to meet the requirements of the academic program. In these circumstances, the feedback session may call for a discussion regarding a change in personal strategies, such as adjusting priorities, time management, or altering the program progression plan.

Adult learners, many of whom are second-degree students, enter a health professions program with career and personal goals and have high expectations of themselves and the program they have chosen (Lara, Mogensen, & Markuns, 2016; Payne, 2013). Frequently, these students approach clinical learning experiences in a planned and purposeful manner, similar to their previous work or domestic situations. Whereas many students are strongly competent in their abilities, some are anxious due to their self-imposed pressure to succeed. In some situations, adult learners in a new learning environment appear overconfident, and may be resistant to constructive feedback in their desire to appear successful. Conducting a feedback session for these students calls for a special consideration of the perspectives of adult learners and may require additional preparation.

Self-directed learners are individuals who know what they want to learn or accomplish and how to achieve it. Unfortunately, this process that they have used effectively in the past can become a liability in the healthcare setting. More frequent monitoring and immediate feedback are called for by the instructor. This will guide learners in comprehending and adhering to the boundaries of their student role. Regardless of the type or personal characteristics of the student, the principles and processes of providing feedback are universally applied. When feedback is given well, students are apt to recognize it as such, respond positively, and act on the feedback.

Conditions for Giving Feedback (Where, When, and Why)

When giving feedback, the context is just as important as the content. The *context* is the circumstance in which feedback is required. The context for feedback includes the setting (environmental) and skill in delivery (personal).

Environmental

In the practice setting, it may be in the best interest of patient safety for the preceptor or instructor to intervene immediately, withdrawing from the situation to provide critical feedback. To preserve the receiver's privacy, the preceptor or instructor should make every effort to find a location where the conversation cannot be overheard. This may have to be a less-than-ideal location, such as a supply closet, but it will suffice as long as it is private. A planned feedback session is typically held in a prearranged location such as a conference room or private office. In both situations, whenever possible, every effort should be made to reduce or eliminate extraneous noise and control as many distractions as possible. Good lighting, ambient room temperature, and ample personal body space must be taken into consideration. Regarding the seating arrangement, efforts should be made to minimize authoritarian or intimidating barriers. For example, whereas chairs placed opposite each other across a large desk may inhibit engagement, two chairs placed at the corner of a conference table may be more conducive for engagement. There is definitely an art in setting the stage to give effective feedback (Manion, 2016).

Personal

Even though the giver of feedback may intend to communicate a positive, supportive, and developmental message, it may not be viewed as such by the receiver. In an effort to maximize the intended benefit of the message, the giver must consider body language, verbal and nonverbal characteristics. A landmark study by Mehrabian and Ferris (1967) pointed out that only 7% of a message's meaning is actually conveyed by the words that are used; 93% of the meaning of any communication is relayed by the speaker's tone of voice and body language. Therefore, the giver of feedback must engage the conversation by making eye contact, speaking in a neutral or welcoming tone of voice, and assessing for behaviors that validate engagement has occurred. This research also supports the importance of giving feedback face-to-face, rather than through e-mail or even a telephone call. Electronic communications are not linear, and the intent can be interpreted differently by all parties involved. Thus, the perceived meaning can be

altered based on the receiver's interpretation (O'Donovan, Rust, & Price 2015.

Appropriate body language includes staying focused on the recipient. This means neither one of you answers a cell phone, e-mail messages, or text during the feedback session. Be aware of restless motions such as finger tapping, leg moving, or rocking. Subtle body language such as the raising of eyebrows or turning of the head may communicate doubt or dissatisfaction to the receiver. Demonstrating active listening helps recipients feel supported and conveys that what they have to say is important. In addition, the giver of the feedback should be aware of subtle body-language signs coming from the recipient. An individual who has lost eye contact, begins to appear restless, is distracted, or falls silent indicates diminished engagement. The art of reading these signs will help the giver redirect or validate the message being conveyed. This is a skill that develops with practice over time.

For someone who is new to giving feedback, there are several ways to attain constructive feedback skills. Suggestions are seeking opportunities to shadow a more experienced role model, practicing giving feedback with colleagues, and taking a course or attending a conference on providing feedback or dealing with difficult conversations (Duffy, 2013).

Using the Method

Prompt Feedback Versus Bad Practice

The impetus for a feedback session begins with a decision to provide information based on observed behaviors. Whether giving negative or positive feedback, an effective feedback session should be conducted in a planned and purposeful manner. Contained in this section are general recommendations to be followed when giving feedback, keeping in mind the goal of benefiting the recipient while maintaining that person's dignity and self-esteem. It is important to note that each session is highly individualized and can be unpredictable. Reluctance to initiate feedback may stem from previous experiences that did not reach the intended outcome. These negative results could be based on a lack of preparation on the part of the giver or lack of readiness on the part of the recipient to hear and accept feedback. Therefore, a well-planned and well-conducted feedback session provides a higher likelihood of attaining the intended outcome. Duffy (2013) has defined five principles for providing constructive feedback: Gather and compile information, set realistic goals, gauge expectations of feedback, act on information gathered, and be specific.

Preparing

When an instructor determines that a feedback session is warranted, that individual is obligated to initiate a conference with the intended recipient. The conference may occur either spontaneously or as a planned session. By providing feedback in a timely manner, the instructor capitalizes on the "teachable moment" in which the context and behaviors are still fresh. Because this is an isolated incident, this type of feedback calls for minimal planning and information gathering. Spontaneous feedback often occurs in lateral relationships and is seen with the preceptor–preceptee relationship as well as in clinical instruction with students. (See **BOX 27-1** for an example of how to initiate this type of conversation.)

BOX 27-1 Sample Statements for Initiating Feedback

The reason I want to meet with you today is because . . . .
I think now that some time has passed, let's debrief on how things have gone and what you could do differently next time
I think you know we are meeting for …
You may not be aware that …
It has come to my attention that …
Let's step outside for just a moment …
Let's go in here; I'd like to give you some feedback about …

Whether spontaneous conversation or planned conference, the what, where, when, and how must be considered. This supports the value of maintaining the recipient's privacy and self-esteem. The giver of feedback should always remember: "Praise in public; coach in private." Based on the information gathered, the goals and outcomes for the session can be predetermined. Planning includes considering strategies that will most effectively meet these goals and outcomes. For example, using a reflective discussion strategy may encourage the recipient of feedback to reflect on the context and behaviors in a meaningful way. To bring this about, planning should include thoughtful consideration about the needed amount of time and the pace of the conversation. The giver must take into account that periods of quiet reflection and response by the recipient will be needed. As an outcome of the session, the giver also needs to prepare recommendations for the next steps.

The giver of feedback notifies the recipient of the need for a conference and seeks a mutually agreed-upon time and location. In the event the recipient demands an immediate meeting, best practice calls for the person initiating the feedback session to consider the nature of the request. The person giving feedback must maintain control of the situation. Giving feedback as close to the actual event will have the greatest effect, and the importance of student participation in the feedback process along with the negative impact of the absence of feedback was reinforced in the work of Adamson and colleagues (2018).

Presenting the Matter Under Discussion

There is an art to presenting the information related to the matter at hand. The feedback session begins with an explanation of the purpose for the session, with an emphasis on the session being an opportunity for growth. The information must be clear, current, factual, and presented in an objective manner. The giver must remember to guard body language, maintain a level tone of voice, and be genuine in delivery.

The giver of feedback reviews roles and responsibilities for both parties and ties them to the purpose of the current meeting. As an example, a preceptor may say, "I have a professional obligation to give you feedback . . .," or a faculty member may say, "Part of my teaching role is to provide specific feedback about your documentation . . ." The giver of feedback can help the recipient view the session as collegial and beneficial by conveying a positive intent.

Many disciplines endorse use of the "sandwich approach" for giving feedback: Begin with positive comments, address problematic areas, and end with positive or encouraging remarks (Manion, 2016; Kowalski, 2017a). Adamson et al. (2018) discovered that motivational aspects of feedback were important and encouraged students to take more initiative for their own learning. Once all the information has been presented, the giver should seek validation on the information given. This

verification provides the foundation for discussion on the recipient's perspective. Doing so allows an opportunity for the recipient to assume ownership of the topic and express additional concerns, both of which can be very empowering for the individual. At the same time, the giver may glean additional insights from what the receiver shares. More detailed discussion then can ensue regarding future plans. This may include a specific new behavior, outlining corrective action, or providing the resources necessary to accomplish the desired targets.

Planning for Improvement, Growth, Autonomy, and Independence

The endpoint of the discussion must allow time for planning steps/actions for improvement. This often is addressed in a discussion encompassing, What can be done differently next time? The plan should include mutually agreed-upon goals with a delineation of role responsibilities. A defined time frame, follow-up, and review of achievements should occur before alternate plans are developed. It is crucial that summaries of the feedback session and plan be documented (Duffy, 2013).

Often the written plan includes both parties' signatures. The need to obtain the signatures varies depending on the relationship of the parties in the feedback session. In a developmental relationship (preceptor–preceptee), the feedback session may have been conducted with no printed documentation. If so, the preceptor should inform the preceptee that she or he will summarize their discussion, make contact with the preceptee for the purpose of communication, and present the plan in writing. Two copies should be available so that each party can retain the information. The benefit for the preceptee is that she or he can have the printed plan available for reference. The benefit for the preceptor is in having a reference source for follow-up and evaluation.

In an authoritarian relationship, the formal evaluation may be on a preprinted document and the developmental plan added during discussion. Consequently, the documented information can be signed at the conclusion of the meeting. Typically, these signed documents are owned and housed by the institution, yet are available for review by either party at any time. In both situations, the giver of feedback, who is obtaining the signatures, must inform the feedback recipient signee that the signature indicates only that the recipient has read the document, and does not imply agreement with the content of the document.

Potential Issues

Matching the Learner and the Learning Experience

At times, the instructor may discover that the student and the clinical placement and/or preceptor are not a good match. Debriefing and addressing the issues first with the student and then with the preceptor is a priority for resolution of the issue. Or, change in patient status may create a challenging learning environment. In both situations, the important cycle of feedback exists; the instructor must obtain feedback from the appropriate sources and process the information before giving feedback to the student.

Conversely, a situation may be discovered in which a student has been placed in a clinical setting that is not challenging enough, or a preceptor does not give beneficial evaluative feedback. Based on feedback and observation, it may be necessary to adjust the student assignment to create a more challenging learning experience. This can be done by adding another patient to the present assignment, if feasible, or by giving the student a more challenging patient assignment in the future.

As mentioned previously, the quality of feedback from the preceptor to the instructor is essential to the final summative evaluation. Consequently, not receiving the desired type of feedback can have a negative effect. Often preceptors are reluctant to provide negative feedback, for fear of damaging the preceptor–student relationship and discouraging students in their academic progress. Furthermore, if the potential exists for the student as a new graduate, negative feedback comments could impair the formation of a future peer relationship. A proactive approach for avoiding a problematic feedback experience is to provide either formal or informal education to the preceptor about the evaluation.

Trust, Triangulation, and Transparency

Essential to the outcome is a trusting relationship between the giver and the receiver of feedback. The giver trusts that the recipient will hear the feedback in the spirit in which it is intended, within the framework of the professional discipline, and will take appropriate actions as a result. The recipient trusts the giver to provide honest, objective, and timely feedback that is supported by evidence. Both parties trust that the conversation will be kept confidential and nonjudgmental and will have mutual benefits. Therefore, both parties are accountable for the integrity of the process and the results.

Triangulation occurs when the recipient of feedback vents disappointments, frustrations, and other emotions to a third party. Sometimes this triangulation is an effort to obtain support or validation, and sometimes this triangulation is a strategy

intended to weaken or demean the giver of feedback. Another form of triangulation occurs when feedback is not given directly to the person who could best benefit from it but is shared with a third party instead. When any triangulation occurs, it destroys the intended purposes of feedback: open, honest, and direct communication, with discussion and plans for growth. Triangulation also contributes to a culture of mistrust that is counterproductive to professional relationships and communication. Trust must be maintained; a no-tolerance policy against triangulation must be adopted, and transparency must be a cornerstone of open communication in the feedback process.

Feedback as Part of a Clinical Grade

Every program uses a different system for grading the clinical student. One of the purposes of feedback is to assign a clinical course grade, so programs must have a standard tool and grading system used consistently in all courses. There is debate about the advantages and disadvantages of the pass-fail system versus the numeric grading system. Any clinical evaluation tool must contain expected clinical behaviors that are tied to course objectives and program outcomes. The pass-fail grading system is a very black-and-white system, even though it measures whether students are safe in the clinical arena, whether students can apply knowledge to practice, and whether students understand their professional roles and responsibilities. Nurse educators find the decision to pass or fail a student difficult, and a clear perspective on clinical evaluation is needed for a pass/fail system to be optimal (DeBrew & Lewallen, 2014). Consequently, the pass-fail system may be best suited for introductory courses such as the skills lab and not junior- and senior-level clinical courses.

A benefit of the numeric or letter grading system for the instructor is that the tool provides performance categories to indicate the level or quality of student achievement. (See the chapter on crafting the clinical experience.) Based on accumulated anecdotal information, it is recommended that the instructor develop a method to provide feedback based on each clinical experience. This ongoing feedback may prevent the problem of a contentious final evaluation session. The biggest disadvantage to a graded evaluation method is the subjectivity among instructors regarding their interpretation of the performance indicators. Many instructors struggle with whether student performance is B level or C level. Some instructors operating under “wishful thinking” may assign an introductory student a low grade in hopes that the student will improve, rather than actually failing the student.

Regardless of which system of grading is utilized, it is imperative that the instructor maintain ongoing anecdotal documentation of student performance. The more descriptive the instructor can be with these anecdotal notes, the more helpful it

is for student growth. In addition, well-documented student behaviors provide helpful, supportive evidence in the event of a grade appeal.

What to Do When a Feedback Session Does Not Go Well

If a student begins to argue during the feedback session, the instructor must stay objective, focusing on the expected behaviors and performance standards. A repeated review of the anecdotal notes may be needed. In some instances, students who are receiving a less-than-desired grade may be silent throughout the feedback session or cry. After reflecting on the feedback session, the student may contact the instructor at a later time and request a meeting for grade reconsideration. This is when the due process begins. Every school or program will have a designated method through which to handle appeals, but regardless of the system, peer faculty support is essential. Although no one wishes to engage in a grade appeal, this due process allows all parties to be heard fairly and the evidence at hand to be given careful consideration.

Additional Challenges

There are instances in which a member of the workforce is compelled to give feedback to a senior leader in the organization. Such feedback may be prompted by safety concerns, lack of adherence to policies or procedures, personnel issues, or lack of academic integrity. This encounter can be most effective when utilizing the steps of the feedback process, accompanied by an expression of unbiased concern. Recognizing that the senior leader is a busy administrator, the giver of feedback must make the message succinct and to the point. Part of this message may be that there is a barrier to meeting organizational goals. This will stimulate the leader's attention and open the door for the presentation of evidence. It is the leader's decision on whom to include in the resolution of the problem. ***Leaders beware***: The compelling nature of the evidence obligates you to act on it. To close this feedback loop with the member of the workforce, the leader must communicate the decisions made or actions taken.

Conclusion

Professionals utilize the feedback process in many ways, often with the goal of promoting growth in the profession. The role a person plays as a giver or receiver of feedback is affected by relationship or professional status. The approach should be highly individualized and coupled with best practices to accomplish the intended outcomes. Despite best intentions and efforts on the part of the giver of feedback, the human element cannot be overlooked; therefore, unintended outcomes and consequences may occur. These consequences can be either positive or negative. Validation or confirmation that the message was heard by the receiver is a key step for the sender throughout the feedback process. Feedback contributes to professional insight and development. Therefore, feedback should occur in an atmosphere of diplomacy, honesty, and compassion.

Discussion Questions

1. There are three common relationships that must be taken into consideration during the feedback process. How should this process be adjusted for the individuals involved based on these three common relationships?
2. What is the unique feature that affects effective feedback in the preceptor–preceptee relationship? How is this different from the mentor–protégé relationship?
3. What is a leader’s role when receiving feedback regarding safety, lack of adherence to policies, or academic honesty?

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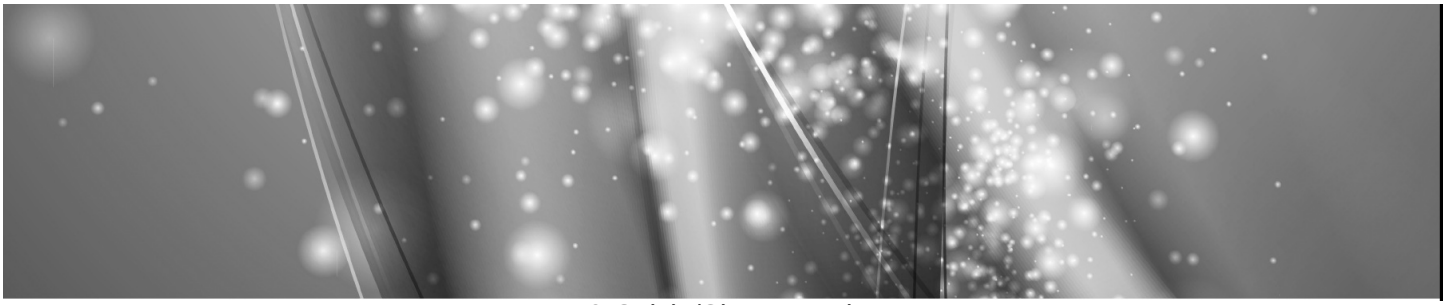
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CHAPTER 28

Program Evaluation

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Evaluation is a process that critically examines a program. It involves collecting and analyzing information about a program's activities, characteristics, and outcomes. Its purpose is to make judgments about a program, to improve its effectiveness, and/or to inform programming decisions.

—**Michael Quinn Patton** (1987)

Introduction

This chapter will not transform its reader into an evaluator. The goal of this chapter is to introduce and reinforce basic perspectives, concepts, and standards related to program evaluation as a conduit for enhancing the current capacity of health professions educators to become aware of and uphold its quality, integrity, and usefulness—regardless of the complexity of effort or professional discipline.

There are many reasons for nursing and related health professions education programs to engage in program evaluation. The need to optimize the quality of health professions programs coupled with the continued growth of new programs and delivery methods makes systematic and ongoing program evaluation vital to all health-related disciplines and levels of education. Nursing and other health professions programs have unique requirements—yet, there are enough commonalities to engage in a discussion of program evaluation applicable to a wide variety of programs and their respective health professions disciplines.

It is important from the onset of this discussion to differentiate program-level from individual-level evaluation. Learner (individual-level) evaluation, discussed in a variety of ways in previous chapters, is not addressed here. Program-level assessment and evaluation is not about evaluating individual students or an individual faculty's teaching effectiveness (Berkley Center for Teaching & Learning, 2018). Without a doubt, evaluating student learning is part of program evaluation, but when taking a holistic approach to evaluation, the measure of a program does not rest solely on students, but rather on all the elements that come together to create an environment that enables and promotes learning. This chapter focuses on these program-level considerations and the aggregation of individual-level data that requires a dynamic, systematic, and long-term process to track multiple contributing factors and outcome measurements.

Defining Program Evaluation

There are numerous definitions of *program evaluation* in the literature (Chen, 2005; Davidson, 2005; Fink, 2005; McNamara, 2006; Mertz, 2007). The common theme in the definitions is that of program evaluation being a process of collecting data to determine the effectiveness of a selected program and to make decisions, using sound methodology, to improve the program's effectiveness. This includes an emphasis on systematic methods in collecting data to include process and outcome evaluations (Parker, Burrows, Nash, & Rosenblum, 2011). Without examining outcomes, it is easy to go along with the same behaviors and processes, not knowing whether they are effective. Hence, program evaluation is important to colleges and universities to ensure that the day-to-day practices are leading to the desired outcomes (Lewallen, 2015).

Finding Value in Program Evaluation

As early as the 1940s, Ralph Tyler described a summative evaluation behavioral objective model examining whether educational learning experiences produced the desired educational outcomes (Tyler, 1949). In the 1980s, Stufflebeam (1983) advocated for also including the use of formative evaluation by assessing the process of program implementation. In the 1980s, in response to requirements by the U.S. Department of Education, accrediting bodies began mandating outcomes assessment for programs in order to ensure a continuous process of quality improvement and demonstrate accountability (Haleem et al., 2010; Sauter, Gillespie, & Knepp, 2012). In today's higher education reality, the scrutiny of program effectiveness is on everyone's minds, and the ability to make informed decisions about program effectiveness is essential (Boland, 2015). Yet, time for program evaluation does not just happen.

On a day-today basis, "more urgent" things will always come up. There are both internal (from within a parent institution, academic unit, and/or program) and external (from external bodies) drivers for program evaluation. Because external drivers are imposed by external bodies (e.g., licensing, regulatory, and/or accreditation), they may be perceived as more urgent than internal drivers (Lewallen, 2015). Quite simply, if the results of program evaluation are not going be used as part of an ongoing evidence-based decision-making process, there is little value in evaluating a program's resources. A first step in successful program evaluation is to understand its importance.

There are many benefits to conducting program evaluation—both to the members of the program and to outside stakeholders such as administrators, accreditation boards, and grant funders. The members of the program benefit by gaining self-understanding and self-accountability and having a way to show the accomplishments of the program. Also, knowledge gained shows program strengths and identifies ineffective practices, which can be helpful to program faculty and staff. In academic health-related programs and other programs, administrators such as deans, provosts, and presidents are keenly interested in the success of the university's programs, as this success leads to credibility and visibility. The primary purpose of evaluation is to provide stakeholders with data for decision-making regarding program improvement and measurement of outcomes. Data collected in a program evaluation can also be used for strategic planning and can substantiate requests for increased resources by demonstrating need and/or providing evidence of effectiveness.

Program Evaluation Perspectives

Evaluation systematically generates knowledge that can support learning, quality improvement, and good judgment in decision making. Evaluation is not just a metric—it is a process (Boxer & Goldfarb, 2011). As a program evaluates itself systematically, the findings of an ongoing in-depth examination can help a program recognize prospective directions. As a form of a *learning* and *change* process, evaluation is intended to lead to actionable information of benefit to its key stakeholders.

Nursing and health educational programs are offered for diverse audiences in many different and sometimes nontraditional settings (Anema, 2018a, p. 106). Program evaluation has existed as a ubiquitous requirement in health professions programs for decades. Educational effectiveness and public accountability are mandated by individuals and groups with a stake in the educational process, that is, *stakeholders* who are affected by a program and/or its evaluation (Yarbrough, Shulha, Hopson, & Caruthers, 2011). Integrating the standards and criteria required by this broad spectrum of stakeholders presents a very real challenge (Suhayda & Miller, 2006)

All too often, faculty and administrators think of program evaluation only in terms of accreditation (Oermann, 2017b). Program evaluation is often considered as activities that program administrators and faculty know they have to do but do not like to think about, are frequently perceived as extra work and tasks not associated with day-to-day program operations, and, consequently are often given a low priority (Lewallen, 2015).

Evaluation practices should not be limited to merely addressing accreditation and/or regulatory agency expectations. This narrow view of program evaluation constrains the depth and breadth of the contributions of evaluation in developing and revising programs on a continuous basis, as established by stakeholders and decision makers (Boland, 2015). A broader perspective of program evaluation reveals it as an opportunity to engage in a process that can be leveraged as a catalyst for program change, improvement, and meaningful use of findings by a variety of stakeholders (Saewert, 2017).

Underlying effective program evaluation is evaluative thinking (i.e., dialogue, reflection, learning, and improvement), a way of thinking about what results are expected, how results can be achieved, and what data or evidence are needed to inform future actions.

> Evaluative thinking is about understanding—using a systematic process of collecting and analyzing data instead of a set of disorganized, random opinions—and telling the story about your strategy, initiative, or program. It is based on the belief that a systematice process is valuable and necessary.

> This involved identifying assumptions about what you think works and doesn't work and why; posing thoughtful questions about what you expect to see differently during and after you implement your effort; pursuing deeper understanding through reflection and dialogue; communicating what was learned without underestimation or exaggeration; and making informed decisions in preparation for action. (W. K. Kellogg Foundation, 2011, p. 16.)

Program evaluation helps stakeholders answer specific questions or make decisions about specific programs and their components. As such, program evaluation reflects a systematic investigation of the quality of programs, projects, subprograms, subprojects, and/or any of their components or elements, together or singly—for purposes of decision-making judgments, conclusions, findings, new knowledge, organization development, and capacity building in response to the needs of identified stakeholders, leading to improvement and/or accountability in the users' programs and systems, which ultimately contributes to organization or social value (Yarbrough et al., 2011) Within this context, program evaluation is defined as "a systematic operation of varying complexity involving data collection, observations and analyses, and culminating in a value judgment with regard to quality" (Mizikaci, 2006, p. 40). Health professions program administrators and faculty are responsible for assessing the program effectiveness (Moore, 2018) with the goal of better understanding how the program is working (Durning, Hemmer, & Pangaro, 2007).

Examining the Context for Program Evaluation

To effectively conduct an all-inclusive program evaluation, the context in which the program occurs must be examined. Program evaluation has moved to the forefront of importance especially in the educational arena in today's world of increased accountability (Boland, 2015). Nursing and other professional health professions programs exist within larger health and education contexts that continue to change dramatically and political environments in which significant pieces of legislation may affect the work environment of newly graduated students. Changes mandated by law also affect faculty members who are charged with adopting new systems and technologies in their teaching to prepare students to enter an ever-evolving professional world. Within these contexts, the public wants academic institutions as well as healthcare systems to demonstrate measurable outcomes of their work. These contexts affect the goals and essential resources of nursing and other professional health sciences programs. Simultaneously, professional health education programs also exist within the context of academia: strategic plans; institutional mission and vision statements; accreditation standards; tenure concerns; faculty shortages; teaching versus research mentalities; high-stakes conversations about online education, including blended courses, fully online programs, and massive open online courses (MOOCs); as well as changing student demographics, dynamics, and expectations. Consequently, academic institutions and healthcare facilities are required to be accountable to their stakeholders and can no longer only be judged solely by reputation and resources. It is an equally important imperative to create an environment of cooperation and cohesiveness among the evaluation audience in order to implement the plan (Reed & Riley, 1979).

Theories of Program Evaluation

Theory provides an explanation as to why we do something: in this case, evaluate. It positions us to examine our practice and revise it as guided by the knowledge gained through the assessment of that practice. Theory also plays a valuable role in shaping our thinking about how to approach and carry out meaningful evaluation (Boland, 2015). Program evaluation has matured as both theory and method in response to societal needs and requirements for productivity and efficiency. Embedding the need for accountability has pushed the science of evaluation into a publicly credible field, seeded by specific theories and nurtured by models (Boland, 2015).

Historically, philosophically, and theoretically, evaluation is rooted in various divergent but often complementary thinking (Boland, 2015). The evolution of evaluation has progressed into a broadly based applied science in which both applicability and utility are of value to various disciplines. The versatility of evaluation allows for stakeholders to respond to calls for accountability, especially in the areas of program productivity and quality, assessment of learning, impact of teaching on learning outcomes, and determinations of best educational practices (Boland, 2015).

Program evaluation provides faculty and staff an opportunity to have a data-driven discussion on program environment, student and faculty needs, policies and procedures, and educational outcomes and impact (Berkley Center for Teaching & Learning, 2018). Evaluation is an evidence-based judgment process, and a theoretical framework serves as a scaffold for evaluation as a program articulates to itself what it wants to know and why, and what it wants to measure and how (Gard, Flannigan, & Cluskey, 2004). Although there are many theoretical frameworks and perspectives of evaluation and program evaluation, there is one constant—program evaluation is a systematic and planned process (Oermann, 2017b).

It is important to recognize how diverse program elements affect its quality as program evaluation data go beyond individual courses and include faculty, environmental, financial, institutional support, clinical facilities, and other elements that constitute quality education (Anema, 2018b). The potential of program evaluation is in its capacity to reveal program strengths and potential limitations, and recommend improvements (Berkley Center for Teaching & Learning, 2018).

Frameworks for Program Evaluation

Evaluation is doing something for a reason—there are questions to be answered (Reed & Riley, 1979). Evaluation models used in higher education are relevant to guiding a person's thinking as to how to approach evaluation and what the outcome of evaluation should be, chosen for their ability to generate findings that address desired goals (Boland, 2015). Not every aspect of a program's resources should or can be evaluated at once. Gard et al. (2004) recommend that any evaluation process start with the following four clear and practical questions:

- What do we want to know?
- Why do we want to know it?
- What should we measure?
- How should we measure it?

Once these questions have been answered, a more in-depth theoretical model can be chosen as a framework, or aspects of multiple frameworks can be combined into a customized model to best evaluate the program's resources. The literature is full of potential frameworks, and one should be chosen based on what aspect of the program is being evaluated; some focus on simulations (Jeffries, 2005), and others focus on online or distance education curricula (Avery, Cohen, & Walker, 2008), while many take a systematic approach (Gard et al., 2004; Hamner & Bentley, 2003; Kalb, 2009; Matthiesen & Wilhelm, 2006). When developing or adopting a framework, the aspirational goals of the program should be considered as well.

Evaluation models should be a part of any new program design, and not an afterthought once the program has been implemented; however, there is no set nomenclature for program evaluation models (Boland, 2015, p. 280). Evaluation models used in higher education, relevant to guiding one's thinking as to how to approach evaluation and what the outcome of evaluation should be, are chosen for their ability to generate findings that address desired goals (Boland, 2015).

Culture of Program Evaluation

Inherent in any quality improvement initiative is a culture that supports evaluation. Although program evaluation is necessary for understanding and improving educational programs, it is frequently surrounded by a climate of unease and perplexity (Sarnecky, 1990). Promoting and building a culture in which evaluation plays an important role is critical to sustaining evaluation activities in the life of the institution and the various disciplines and programs housed within it. Institutions and programs need to build an environment in which decisions are based on valid information collected using accepted research practices (Boland, 2015). Administrators in academe provide the vision and leadership for the educational program (Keating, 2015, p. 360). Support for a culture of program evaluation (Suhayda & Miller, 2006, p. 200) originates with academic deans and permeates throughout a program's faculty. Academic and program administration must foster an environment of ongoing quality improvement. Administrators in academe provide the vision and leadership for the educational program, but the importance of faculty members' participation in the evaluation of the curriculum and the program through their input into specific areas and needs for assessment, the collection of data, data analyses, and the formulation of recommendations for decision making regarding the program cannot be overstated. A nursing faculty has valuable input into evaluation processes owing to the necessity, in part, for meeting professional accreditation and organizations' standards and criteria (Keating, 2015).

Needed support includes a commitment to provide the personnel, time, expertise, and data access required for program evaluation. This support and commitment stimulates a climate of openness and willingness in which to share and critically review data, then respond to concerns that may arise in a nonthreatening and nonpunitive manner. Program evaluation must not only be viewed but operationalized as an ongoing, systematic process integrated into the fabric of the academic unit, program, and its governing committee structures. Shared awareness and responsiveness to program expectations and performance importantly include the processes by which these are measured. Program evaluation is ultimately most effective when an organization embraces a culture of data-driven decisions for continuous quality improvement based on data that are meaningful, credible, and optimized for objectivity. An organization that is serious about creating an environment that uses the results of an evaluation for program improvement will encourage the implementation of recommendations based on the findings.

Standards and Process of Program Evaluation

As with any form of evaluation, the program should choose highly regarded and relevant standards as a measure against which to compare itself, and this self-reported perspective should be incorporated into future changes to the program. Evidence-based decisions are a driving force in health care and healthcare education today. Ensuring that the same evidence-based mind-set is also applied to programs being used to educate and prepare the next generation of healthcare providers is a natural and essential element. Health professions programs that teach evidence-based practice must also draw on the same principles to inform their practices.

Internal/external standards, regulations, and guidelines will influence nursing/health program evaluation (Anema, 2018a, p. 107). Much of the literature on program evaluation agrees that accreditation visits are often the catalyst for ongoing program evaluation (Gard et al., 2004; Hamner & Bentley, 2003; Jeffries, 2005; Suhayda & Miller, 2006), and a programmatic evaluation will often be led by a committee of invested faculty and administrators. This approach helps to ensure that the process garners support and buy-in from the larger department, and that the self-report and evaluation plan work within the academic calendar and accreditation schedules, rather than attempting to work independently from them.

As a program initiates an evaluation process, it is essential to connect to the departmental, school, and institutional strategic planning processes so that the evaluation has a clear purpose and it is able to clearly connect the work of a single program to the mission, vision, and strategic plan of the larger academic unit and institution. Nursing and other health professions programs are a subsystem of—and interdependent with—the institution/agency (Anema, 2018a). Correspondingly, a program must fit with the mission and philosophy of the larger entity.

Conclusion

Evidence-based decisions are a driving force in health care and health professions education. Making decisions based on valid evidence ensures that we continue to provide sustainable relevant educational programming through the continuous quality improvement process of program evaluation (Boland, 2015). Quite simply, if the results of program evaluation are not going to be used as part of an ongoing evidence-based decision-making process, there is little value in evaluating a program's structures, processes, and outcomes. For meaningful use to occur, program evaluation must be understandable, relevant, meaningful, credible, and focused on actions or decisions leading to program- and organizational-level learning and improvement (Saewert, 2017). Optimal program evaluation is accomplished through assigning value to evaluation, making sound evaluative judgments, putting evaluation principles into practice, and meeting evaluation standards (Saewert, 2017). Recognizing and enacting a person's individual accountability for program evaluation will make the difference between it being a real vehicle for program improvement or merely a mountain of paperwork (Hamner & Bentley, 2003). For program evaluation to be useful, it must be attended to regularly and systematically (Lewallen, 2015).

Program evaluation in nursing and health professions education is only as useful as the people associated with the program and their willingness to plan for evaluation endeavors, implement the plan, receive and acknowledge the data collected, make decisions based on those data, and engage in evaluation of the plan for program evaluation (Reed & Riley, 1979). Program evaluation examines the past and present; however, the findings and recommendations can inform future opportunities, even as events outside a program continue to evolve and shape expectations. Evidence-based decisions are an undeniable and driving force in health care and healthcare education today. Ensuring that an evidence-based mind-set is also applied to program evaluation is expected and necessary.

Discussion Questions

1. Which regulatory bodies require recurrent program evaluation for schools in your health discipline?
2. If you were planning program evaluation for a school of health professions, who would you identify as potential internal and external stakeholders?
3. What roles do school administrators, faculty members, and students have in providing data for a program evaluation?
4. What factors could encourage administrators and faculty members to make changes based on evaluation data?

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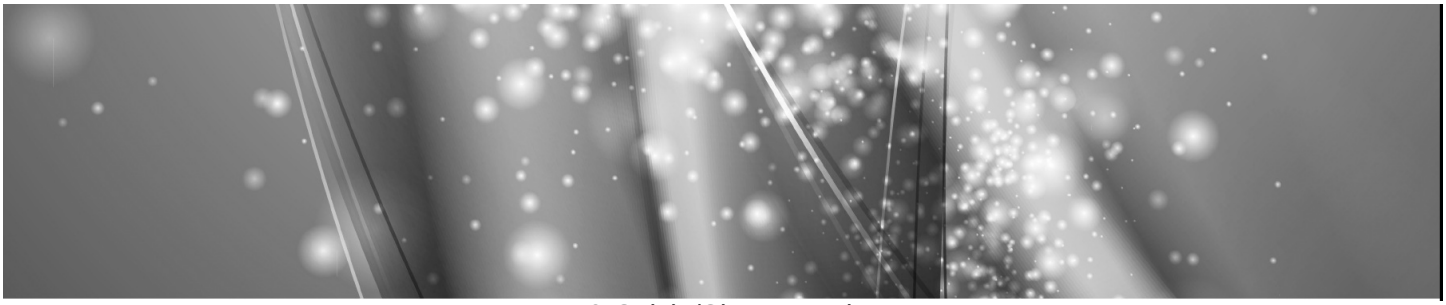
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Substitution: Direct tool substitute, no functional change. Augmentation: Direct tool substitute, functional improvement. Modification: Supports significant learning redesigns. Redefinition: Opens up new opportunities, previously inconceivable. Substitution and augmentation fall under enhancement, and modification and redefinition fall under transformation.

Back to Figure

The tool consists of entry fields for date and subject or topic on the top. Text reads, “Evaluate each speaker using the following scale: Superior equals 5; Excellent equals 4; Good equals 3; Fair equals 2; and below standard equals 1.” This is followed by three columns, with the first and the third columns consisting of the grading scale for teams A and B, respectively. The second column lists the following categories, based on which the debaters are graded: bibliography; overview of the problem by debater 1 or 2; representing side of debate by debater 1 or 2; opening remarks; resolution plan; response to opposing team.

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The stages are as follows. 1. Identify the who, what, why, and how of the scenario. 2. Go “into the field.” 3. Supplementary data. 4. Double-check the scenario. 5. Integrate and evaluate. 6. Revisit, revise, and refine. Stage 4 leads to stages 1, 2, and 3.

Back to Figure

Learning is situated in the context of people or community, activity or participation, and ingredients or tools and artifacts that interact amongst each other. Principles. 1. Thinking and learning as measures of knowledge make sense only within particular situations. 2. People act and construct meaning within communities of practice. 3. Knowledge depends on the use of a variety of artifacts and tools. 4. Situation makes sense within a historical context. People: Within a community, considering

history, culture, and patterns of relationships. Activity or participation: That is authentic, such as high-fidelity simulation. Ingredients or tools and artifacts: Such as objects, technology, languages, images, and prior knowledge.

Back to Figure

Background leads to context or design, which results in simulation experience. In a simulation experience, the facilitator designs educational strategies, and is a dynamic interaction with participants. The factors included in the experience are experiential, interactive, collaborative, learner centered, and environment of trust. The experience leads to outcomes for system, patient, and participant.

Back to Figure

The simulated patient, with simulator controls, is in the center of the room. A-V console, supply cart, and monitor and ventilator are in one side of the room, and storage with medical gases is in the opposite side. Simulator hardware and secondary monitor are in another side of the room. Video camera is installed near the storage.

Back to Figure

There are four phases in the model: noticing, interpreting, responding, and reflecting. Noticing: Expectations lead to initial grasp. Interpreting: Initial grasp leads to interpretation such as reasoning patterns, analytical, intuitive, and narrative. Responding: Interpretation leads to action, and then to outcomes. Reflecting: Reflection-in-action leads to outcomes and reflection-on-action and clinical learning, which results in context, background, and relationship.

Back to Figure

PHD nursing staff or support: RNs all patient care staff will ultimately

maintain responsibility for patients. Nursing staff will show a positive attitude and willingness to mentor students and be role models. Nursing staff will share objective observations regarding students' clinical performance with faculty. Provide cooperation to promote the success of the student clinical rotation. Designate an individual on unit as a student contact. RNs may observe students do procedures with patients only after instructors have checked off students. NPD is the department responsible for coordinating all student affiliation educational rotations; any changes of rotation must be approved by NPD. Maintain professional and courteous behavior with instructors and students. Maintain standards of patient care. NPD provides orientation for faculty and students to hospital and assigned units. Nursing staff provides orientation on the assigned unit. Recommend a maximum faculty-to-student ratio of 1 to 10. NPD provides an evaluation tool for completion by students and gives results to staff. PHD requires faculty and nursing students to be vaccinated for HBV. Nursing institution and instructor: Faculty must always be on assigned units and be available for students' learning experience. Faculty must be proficient and qualified in the area of teaching experience clinical assignment. Disseminate and post clinical assignments, such as length, dates, hours of clinical experience, and phone or pager numbers as appropriate for each service area or unit and NPD, include student or faculty names and numbers. Arrange own conference space as needed. Supervise students' first time using clinical skills with patients on units. Notify unit personnel and NPD of student objectives for the learning experiences in writing. Clinical assignment changes must be approved by NPD. Seek information from RNs about student performance. Provide NPD with proof of malpractice or liability insurance and CPR certification of both faculty and students prior to the beginning of the semester, or the day of orientation. Provide NPD with Texas Nursing Registration number of each faculty member assigned to PHD. Maintain professionalism and courtesy with both staff and students. Obtain approval from NPD for any faculty or substitute on the clinical schedule throughout the rotation. Conduct end-of-semester PHD

evaluation with students regarding the learning experience at PHD and return to NPD. Be vaccinated for HBV; the series of injections must begin prior to the beginning of the semester and proof must be provided to NPD. Maintain confidentiality of patient information. Students: Responsible for action with patients. Responsible for reporting to the nursing staff information concerning patients. Be prepared for clinical assignments; show initiative in learning and work as a partner with the staff nurse. Exhibit professional and courteous behavior with patients and staff. Notify the unit if unable to be onsite for the assigned day. Always report or check out with the RN assigned to patients before leaving the unit either for a break or for the conclusion of the clinical day. Complete end-of-semester PHD evaluation regarding the learning experience at PHD. Be vaccinated for HBV; the series of injections must begin prior to the beginning of the semester and proof must be provided to NPD. Maintain confidentiality of patient information.

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The pediatric anecdotal notes form consists of three entry fields: absences, makeup work, and name. This is followed by a table divided into two sections. The first section has five columns for weeks 1 through 5. The second section shows the following five columns: family assessment, Denver developmental screening test, physiological, psych, social, and spiritual.

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The entry fields at the top of the clinical evaluation daily data form are student, date, and unit. The entry fields that follow are as follows. Assessment: Interactions, use of time, activities, use of standardized clinical tools, thoroughness and depth in assessment, evidence of preclinical prep, level of thrp. comm. tech., adapts to comm to pt’s state, presentation of data at post conference, and name, action, dosage, S E, S E obs, Nsg. implic, and lab for meds. Analysis: Level of clinical decision

making, and ID of Nsg Dx, interventions, and priorities. Planning: Realistic and measureable goals, can formulate an in-depth plan of care, and takes initiative in planning pt or family education based on specific needs. Implementation: Ability to thrp. comm., awareness of specialty standards of practice, communicates accurately verbally and in writing, collaborates, and nursing actions evident today. Evaluation: Evaluates care provided and client outcomes. Evaluates all interventions for client and family response. Develops alternative interventions and goals when needs not or partially met. Professional behaviors: Arrived on time, compliance with dress code, self-initiative or self-direction, shows interest in learning, seeks out learning experiences, asks pertinent questions, supportive and respectful of peers, respects client confidentiality, and assumes responsibility for actions. Comments.

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The entry fields in the report are as follows. Student: [Student Name]. Preparation for clinical experiences. Assessment skills. Analysis or application of physiologic and pathophysiologic concepts to clinical practice. Planning for care. Implementation of nursing interventions. Medications or IVs knowledge and administration. Patient and family education. Communication skills. Evaluation of care. Professionalism. Student signature. Date.

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Expected Clinical Performance Behaviors. The following behaviors are examples of the expectations of students in Practicum 3, and are based on the Baylor University Louise Herrington School of Nursing, BULHSON Clinical Performance Evaluation tool. Assessment. 1. Collects data through appropriate physical assessment techniques. a. Assessment data is collected independently by student and reflects consistent application of principles taught in NUR 3314. b. Techniques and equipment are used correctly throughout collection of assessment data.

c. Student demonstrates awareness of any deficiencies he or she may have in physical assessment skills and seeks opportunities or assistance to remedy these deficiencies. d. Physical assessment skills reflect an in-depth knowledge of anatomy and physiology. e. Physical assessment data collections are adapted correctly or appropriately for the client in the pediatric and psych settings. 2. Collects data, subjective and objective, from available resources. a. All references or resources utilized for practicum experiences or written work are from appropriate, practice-specific professional nursing texts, journal articles, or resources recommended by faculty. References are recent, within past 5 years, and reflect current research. b. All references or resources used for practicum experiences or written work are specific to needs of assigned clients or families. c. Student uses agency policies and procedures as guidelines for data collection. d. Advanced interviewing skills are used to collect in-depth data from the client or family. e. Before utilizing data from staff, student will validate those findings in assessment of the client or family. f. Data collection from the chart reflects in-depth understanding of information recorded. g. All pertinent diagnostic, lab, and screening values are noted and analyzed. Results not on chart are obtained from computer or lab via phone. h. The student is aware of all current medical and nursing orders for the patient. i. The student continuously assesses the patient and family environment. j. The student demonstrates an awareness of the nursing unit environment in terms of where supplies, equipment, and resources are located. 3. Documents assessment data in a clear and organized manner. a. All documentation of data is obtained from student's own assessment. b. Documentation of assessment data is thorough and is entered in the chart in a timely or correct manner using charting standards for agency. c. The student takes the initiative to chart data on all unit-specific and client-specific flow sheets. 4. Shows evidence of pre-clinical preparation a. Student consistently has required database or worksheet completed prior to the beginning of each clinical day. b. Student can verbalize to instructor an appropriate plan of nursing care specific to the patient and family at the beginning of the clinical day. c.

Student demonstrates in-depth knowledge of physiologic and pathophysiologic concepts applicable to assigned client. d. Student demonstrates knowledge of all medications, routine, one-time, as needed, ordered for the client or that the client has recently received at the beginning of the clinical day. Student only has to look up newly ordered medications during the practicum day.

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e. Student demonstrates preparedness for nursing procedures that he or she may perform for the patient. f. Student has reviewed appropriate resources; that is, information from Baylor School of Nursing skills lab, NUR 3414, Medical City procedure manuals, skills discussed in required or reserved materials specific to this course, or other resources as designated by the instructor. g. Student takes the initiative to obtain information from staff nurse, during report, needed to care for client and family. h. Student comes prepared for clinical day with needed equipment. Analysis 1. Clinical decision making reflects an understanding of the relationships of assessment data to the client's problem and diagnosis. a. Student can verbalize or describe in written work an in-depth understanding of client and family condition or status based on accurate synthesis of data collected in relation to nursing theory base. b. Student takes initiative during the clinical day to discuss with instructor the meaning of assessment findings and implications for clinical decisions. Student can analyze situation with minimal cues from instructor. 2. Identifies priorities requiring nursing actions based on assessment and determines when reassessment is indicated a. Student consistently verbalizes in clinical setting, or documents in written work, the most important client and family needs that require nursing action. This is based on sound nursing theory and nursing assessment and reassessment data, and incorporates collaboration with client and family. 3. Formulates nursing diagnosis based on assessment data. a. All nursing diagnoses are based on active client and family problems that are

pertinent while student is present in the clinical setting. b. Student utilizes appropriate format for writing nursing diagnoses, as taught in NUR 3310. c. Etiology portions of the nursing diagnoses are always based on problems that can be alleviated with nursing interventions. d. Student's written work or verbalization demonstrates accurate assessment data to support the diagnoses. e. Student comes prepared for the clinical day with appropriate nursing diagnoses as required. Planning. 1. Formulates appropriate and measurable goals for self and client a. Student verbalizes at the beginning of or during the clinical day, or includes in written work, measurable client and family goals based on data analysis. As data analysis fluctuates or changes, student can revise patient and family goals. Goals formulated by the student are realistic and achievable during the time period the student cares for the family. b. Student can consistently verbalize or document in written work personal goals that will enhance nursing care and contribute to own professional growth. Student takes initiative to actively achieve these goals. 2. Plans care in a systematic, logical, organized manner. a. The student is able to articulate an in-depth plan of holistic nursing care to the instructor at any time during the clinical day. This is also consistently reflected in written work. b. The plan of care is flexible enough to meet patient and family needs in a timely manner and coincides with plans and activities of other healthcare personnel. c. The student is able to consistently verbalize rationale for each nursing activity within the plan of care. d. All plans of care are consistent with procedural guidelines for specific nursing units at the agency.

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3. Plans health teaching based on identified learning needs and readiness of client. a. The student can independently interview client and family to determine and assess actual learning needs and plan to meet those needs. b. Patients and families under the student's care are consistently evaluated for readiness and understanding before nursing

care activities are performed. c. The student demonstrates the ability to develop in-depth teaching plans for specific client and family learning needs, based on concepts taught in NUR 3222. d. Patient and family health teaching is an ongoing process during the care provided by the student. e. The student demonstrates preparation for anticipated client and family learning needs. f. All health teaching is based on current nursing theory and is planned at an appropriate developmental stage and knowledge base of the client and family. g. The student keeps the instructor informed of planned or incidental health teaching the instructor can observe. h. Student uses agency resources, computer programs, videotapes, teaching manuals, with clients and families. 4. Communicates clearly regarding nursing care plan, NCP, with all appropriate individuals. a. The family is informed by the student of his or her plan of care at the beginning of the shift and on an ongoing basis. The client and or family is informed of the student's scope of responsibility. b. The student informs the staff nurse of all assessment and care he or she will provide at the beginning of and throughout the clinical day. c. The student takes initiative on the unit to enhance learning experiences without compromising assigned patient care. d. The student consistently takes initiative to keep the staff and instructor informed of the plan of nursing care and changes in that plan. Implementation. 1. Utilizes effective and appropriate verbal and nonverbal communication skills. a. Student communication with clients and families is consistently goal-oriented. b. Student demonstrates advanced skill in establishing rapport and effective communication with client and families who have complex and complicated interactive behaviors. c. Student is aware of and able to modify personal barriers and behaviors that can interfere with therapeutic communication. d. Student is able to maintain a level of objectivity while establishing rapport and trust with client and family. e. Student demonstrates behavior that promotes confidence of the patient and family in the student's skills. f. Student is able to continue therapeutic communication as appropriate with client and family in the presence of nurse, instructor, physician, or other health team members. 2. Provides

direct patient care in a safe, accurate, organized manner. a. Student's care consistently provides for client safety. The student demonstrates anticipation of patient behaviors that could compromise health and safety and plans care accordingly. b. All care provided reflects the nursing diagnosis and patient and family needs and is based on appropriate nursing theory. c. The student demonstrates an ability to anticipate supplies and equipment, etcetera, needed for care and has items needed readily available. d. The student demonstrates critical thinking skills in carrying out nursing care in a logical, patient-centered manner.

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e. The student consistently calculates medication and intravenous, IV, fluid dosages correctly without assistance and in a timely manner. The student can determine safe dosage ranges without assistance. f. The student notifies the instructor of all procedures for which the instructor needs to be present. g. The student assumes responsibility for keeping the patient's environment orderly, safe, equipped with needed supplies, and esthetically appropriate. 3. Administers medications safely according to established procedure. a. Student consistently observes "5 rights" in administering all medications, IV solutions, etc. b. Student notifies instructor of all medications to be administered. c. Student verbalizes to instructor, without prompting, the following information regarding medications the patient has recently received, medications the student is administering, or those the patient has ordered: i. Classification of drug; ii. Purpose of medication for patient; iii. Safe and correct dose; iv. How drug acts or pharmacology of drug; v. Potential drug interactions; vi. Pertinent side effects the patient may experience and how the student will manage potential side effects; vii. How the drug will be administered; that is, drip rate, type of syringe to be used, how client currently takes medication, etcetera; viii. Client and family teaching that will be needed regarding medication; ix. Nursing implications for administration of drug; x. Student's plan for monitoring drug effectiveness and side effects; xi.

Developmental considerations of medication. d. Student demonstrates proficiency in all aspects of medication administration and documentation. 4. Communicates accurately verbally and in writing, charting and reporting. a. Student's charting provides thorough documentation of nursing care provided. The charting consistently reflects action taken when assessment is abnormal. b. All health teaching is consistently documented on appropriate forms. c. All charting reflects appropriate medical and nursing abbreviations, correct grammar, and correct spelling. d. Student consistently takes initiative to keep staff nurse informed of nursing interventions, patient and family status, etcetera Student reviews his or her charting with staff nurse when reporting off. e. Student consistently reports off to appropriate staff nurse without being reminded. f. Student immediately reports to new nurse if there is a change in the patient's primary nurse assignment during the clinical day. g. The student's documentation follows agencies charting procedures. 5. Collaborates with client, family, and health team and other appropriate individuals. a. Student consistently informs nurse and instructor at outset and throughout shift of his or her plan for care, medication administration, charting, and referral needs. b. The student takes the initiative to discuss clarification of medical orders with the appropriate nurse and physician. c. The student takes the initiative as appropriate to consult with other health team members, example, physician, social worker, child life specialist, dietitian, etcetera, to validate his or her plan of care.

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d. The student provides nursing care in which the client and family are active participants. e. Care provided by the student consistently reflects an integration of individual family member needs to promote family growth. Evaluation. 1. Uses evaluation appropriately in the nursing process, utilizes data to validate if identified goals are met. a. Student consistently evaluates the results of the care provided in relation to the outcome criteria established for the patient and family goals. Student

documents all data regarding outcomes. b. Student demonstrates objectivity in evaluation process. 2. Evaluates effectiveness of specific interventions. a. Student consistently observes for side effects of and patient response to all medications and therapies the patient is receiving. b. Individual nursing actions are evaluated and documented on a consistent basis. c. Client and family response to care provided is observed and documented. d. Evaluation and documentation of client and family education is in measurable terms. 3. Develops alternate interventions and goals when appropriate. a. The student demonstrates awareness of and planning for differing outcomes. The student can verbalize in advance alternate nursing interventions for these outcomes. b. Student demonstrates the proper course of action that should be taken if the client experiences ineffective response or adverse reaction to 1. specific therapies example, medications, IV therapy, blood products, etcetera, or 2. normal process of adaptation. c. The student can implement alternate interventions while demonstrating flexibility, objectivity, timely organization, and professionalism. Professional Behaviors. 1. The student demonstrates promptness in attendance at all clinical experiences, post-conferences, and seminars. 2. The student consistently demonstrates honesty and integrity in the provision of care and his or her clinical performance. 3. The student will adhere to professional behaviors as listed in the NUR 4435 syllabus. 4. The student’s behavior in the clinical setting consistently reflects maturity; responsibility for own actions; and respect for patients, staff, instructors, and peers. 5. The student assumes responsibility for adherence to verbal and written guidelines set forth by individual faculty members in the pediatric, psych, and community settings. 6. The student consistently demonstrates professional behavior and a pleasant demeanor despite personal problems or concerns or issues.

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Baylor University Louise Herrington School of Nursing Standards of safe

clinical practice. The student will: 1. Know and conform to the Texas Nursing Practice Act and Texas Board of Nursing rules and regulations as well as all federal, state, or local laws, rules, or regulations. 2. Adhere to the American Nurses Association, ANA, Code of Ethics. 3. Adhere to Health Information Portability and Accountability Act, HIPAA, and institutional privacy practices. 4. Prepare for clinical learning assignments according to course requirements and as determined for the specific clinical setting. 5. Practice within the boundaries of the nursing student role as established by the LHSON and the assigned agencies. 6. Provide nursing care required to promote health and prevent illness or further complications. 7. Demonstrate the application of previously learned skills and principles in a safe manner while providing nursing care. 8. Administer medications and or treatments in a safe manner according to guidelines provided by LHSON and the assigned clinical agency. 9. Promptly report significant client information in a clear, accurate, and complete oral or written manner to the appropriate person(s). 10. Comply with institutional policies and procedures when implementing nursing care. 11. Meet the clinical expectations as outlined in the course syllabus and the LHSON Clinical Performance Evaluation Tool. I have read the Baylor University Louise Herrington School of Nursing Standards of Safe Clinical Practice, Texas Nursing Practice Act Rules 217.11 and 217.12, ANA Code of Ethics, HIPAA, and clinical course syllabus. I understand that these standards are expectations that guide my clinical practice and will be incorporated into the evaluation of my clinical performance in all clinical courses. Failure to meet these standards may result in my removal from the clinical area, which may result in clinical and course failure. Student signature and date, and student printed name.

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Baylor University Louise Herrington School of Nursing Professional Behaviors Student Counseling Record. Student: Instructor: Date: Course: Data Record and Statement of the Problem. Noncompliance with course

expectations and performance standards for NXXXX, level XX related to professional behaviors. Date and time of occurrence: [Faculty comments added here.]. Description of occurrence: [Faculty comments added here.]. Course Expectations and Performance Standards. As professionals, students are expected to demonstrate professional behaviors as listed in the course syllabus. Project a positive image through the use of language, accountability, behavior, and appearance. Demonstrate professional behaviors at all times during the clinical experience, arrives on time, with pertinent equipment, etcetera. Demonstrate an active role in own learning process, shows interest in learning experience, seeks out learning opportunities, and asks pertinent questions. Student Goals. The student will adhere to professional behaviors. [Faculty comments added here.]. Student Responsibilities. 1. The student will review professional behaviors in the NUR XXXX syllabus, Level XXX Clinical Evaluation Tool, LHSON Student Information Guide, and Baylor University Student Policies and Procedures found at http://www.baylor.edu/student_policies. 2. The student will implement chain of command as necessary. Faculty and Instructor Responsibilities. The instructor will continue to be available during clinical and business hours to answer any questions concerning the clinical experience, which includes, but is not limited to, professional behaviors. Evaluation. Failure to demonstrate any of the clinical professional behaviors outlined in the NUR XXXX syllabus, Level XXX Clinical Performance Evaluation Tool, LHSON Student Information Guide, Baylor University Student Policies and Procedures, and/or this Student Counseling Record may result in the lowering of the numerical grade and/or a failure of the course. Instructor Comments. Student Signature. Date. Instructor Signature. Date. The original copy of this form must be given to the undergraduate program director within 24 hours of completion.

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There are three branches from radiation safety. Rule 1: Time based on

radioactive decay and exposure time. Rule 2: Distance based on inverse square law. Rule 3: Shield type, such as syringe shield and lead pig.

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National and state regulations limit 0.5 rem per gestation fetus, 5 rem per year for whole body, 50 rem per year organ, and 15 rem per year eye. They require as low as reasonably achievable program or ALARA, which has a formula for radiation safety. Rule 1: Time based on radioactive decay and exposure time. Radioactive decay releases radiation, defined as the energy emitted from unstable atoms or electron interactions. Radioactive decay formulae: A equals A o times e to the power of lambda times time. lambda equals 0.693 over T half-life. Exposure time formula: D equals D rate times time. Rule 2: Distance based on inverse square law. Formula: I 1 D 1 squared equals I 2 D 2 squared. Interaction of radiation with matter, based on types absorption and attenuation. Shielding based on absorption and attenuation, and type, such as syringe shield and lead pig. Formula: I equals I o times e to the power mu times thickness. Mu equals mass times density. Hashtag over c m equals c m squared over g times g over c m cubed. Other formula: mu equals 0.693 per H V L.

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National and state regulations limit 0.5 rem per gestation fetus, 5 rem per year for whole body, 50 rem per year organ, and 15 rem per year eye. They require as low as reasonably achievable program or ALARA, which has a formula for radiation safety. Rule 1: Time based on radioactive decay and exposure time. Radioactive decay releases radiation, defined as the energy emitted from unstable atoms or electron interactions. Radioactive decay formulae: A equals A o times e to the power of lambda times time. lambda equals 0.693 over T half-life. Exposure time formula: D equals D rate times time. Rule 2: Distance based on inverse square law. Formula: I 1 D 1 squared equals I 2 D 2 squared. Interaction of

radiation with matter, based on types absorption and attenuation. Shielding based on absorption and attenuation, and type, such as syringe shield and lead pig. Formula: I equals I o times e to the power mu times thickness. Mu equals mass times density. Hashtag over c m equals c m squared over g times g over c m cubed. Other formula: mu equals 0.693 per H V L. The limitations of regulations, and the radiation safety, its rules, and their formula are boxed. The definition of attenuation and the basis of shielding are encircled.

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The scan is based on concepts and procedures. Concepts uses radioisotope to make radiopharmaceutical type T c 99 m diphosphonate for absorption at bone surface by osteoblastic activity and circulation, and a different response for normal bone versus pathologic bone. The name of the diphosphonate is MDP medronate methylene diphosphonate and HDP hydroxymethylene diphosphonate administration by IV injection distribution by circulation of body fluids. When there is adequate renal clearance, patient is void, which results in high signal to noise ratio needed for diagnostic quality image. Otherwise, the patient is not void, resulting in low signal to noise ratio, leading to poor quality image. Circulation of body fluids leads to allows absorption at bone surface, which allows skeletal lesions. Skeletal lesions incite decreased osteoblastic response, example necrosis. The lesions incite increased osteoblastic response, example neoplastic disease, occult fracture, osteomyelitis, stress fracture, arthritis, bone graft viability, Paget’s disease, and unexplained bone pain. Radioisotope type is T c 99 m, whose half-life is 6 hours, decays into gamma rays, and its energy is 140 kilo electron volts. Concepts rule out normal bone metabolism from pathologic bone metabolism used for indications to watch for contraindications, example pregnancy, lactating, recent NM study, and x-ray contrast study. The indications also detect osteoblastic response, example neoplastic disease, occult fracture, osteomyelitis, stress fracture,

arthritis, bone graft viability, Paget’s disease, and unexplained bone pain. The procedure is for planar static spot, WB, and dynamic 3-phase bone flow, other can be SPECT, and requires additional acquisition and processing parameters. Step 1: With chart review, obtain patient history to look for indications and contraindications, and review current medications to confirm study ordered. Step 2: Choose radiopharmaceutical type T c 99 m MDP or T c 99 m HDP with dose 20 millicurie or 740 megabecquerel for adult, 0.25 millicurie per kilogram or 9.3 megabecquerel per kilogram for pediatrics. The administration is by IV injection, and the location is at planar spot WB, usually antecubital, bone flow foot or ankle, and distal to area of interest. If preparation is needed, conduct quality control to check for no oxygen in kit, and chromatography of 90 to 95 percent tag. After quality control, use within 4 hours. Step 3: Set acquisition parameters for camera and computer. Select LFOV camera, use 140 kilo electron volts energy peak, 20 percent energy window, and LEAP or LEHR collimator. Select supine patient orientation, anterior posterior camera orientation, acquisition type planar, computer matrix size, acquisition time or counts, anterior or posterior standard view, may need oblique or lateral, and depends on visualization of pathology. The types are Dynamic, static spot, and W B. Computer matrix size: Use W B for 256 by 1024, static spot for 128 by 128, or dynamic for 64 by 64. Acquisition time counts: Use W B for 10 to 14 centimeters per minute, static or spot for 500 k to 1000 k, and 2 seconds per frame for 60 seconds for dynamic. Step 4: Acquisition patient instructions access patient and confirm identity, then introduce self as technologist, discuss purpose, history, indications, and contraindications, explain study procedure, set up and start patient IV access, then administer patient dose. Dynamic type occurs at time of injection, and need to position patient on camera supine over area of interest, then inject distal to area of interest and acquire by using dynamic acquisition. W B static type occurs 2 to 5 hours post injection and need to provide patient instructions to return to NM 2 to 5 hours, and drink fluids and void, then position patient on camera supine. Next, acquire using WB or spot

acquisition over area of interest. Drin fluids for necrosis, neoplastic disease, occult fracture, osteomyelitis, stress fracture, arthritis, bone graft viability, Paget’s disease, and unexplained bone pain. Step 5: Processing instructions post acquisition. For dynamic, first sum dynamic images, then display for optimal visualization area of interest. For static spot, display area of interest technique, then scale images to include areas of normal uptake and areas of abnormal uptake. For WB, display dual intensity for anterior posterior projections. Note: Physician preference for filter selection and image display.

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There are five rows: healthcare professions, scientific method, nursing, medicine, and physical therapy. Row entries are as follows. Row 1: Clinical reasoning model; Scientific process; Nursing process; SNAPPS; The physical therapy clinical reasoning and reflection tool, PT-CRT. Row 2, recognition: Identify the clinical situation and collect relevant data; Define the problem, gather information or data; Assessment or data collection, such as history taking, physical assessment, results of diagnostic tests; Summarize briefly the history and findings; Initial data gathering or interview. Row 3, appraisal: Analyze findings and formulate conclusions; Analyze the information or data; Nursing diagnostics, consider assessment database and identify problems, choose nursing diagnosis; Narrow the differential to two or three relevant possibilities; Generate initial hypothesis. Row 4, formulate actions: Develop interdisciplinary strategies to resolve clinical situation; Develop solutions, make a decision; Planning, such as determining desired outcomes, and choosing interventions to achieve those outcomes; Analyze the differential by comparing and contrasting the possibilities; Probe the preceptor by asking questions about uncertainties, difficulties, or alternative approaches; Examine, evaluate, plan of care.

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There are five rows: healthcare professions, scientific method, nursing, medicine, and physical therapy. Row entries are as follows. Row 1, implement actions: Accomplish strategies using interdisciplinary collaboration; Implement the decision; Implementation by carrying out the interventions; Plan management for the patient's medical issues; Interventions. Row 2, clinical judgment: Evaluate decisions and outcomes and revise strategies as needed; Evaluate the decision; Evaluation by assessing the result of the interventions, determining if outcomes have been achieved, revising the plan if outcomes are not being met, and terminating interventions no longer needed; Select a case-related issue for self-directed learning; Reexamination or outcomes.

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There are six columns: goals for learning, as evidenced by, experiences, online, face-to-face, and blend. Row entries are as follows. Row 1. Goals for learning: what graduates will know, understand, be able to do. As evidenced by: products of student work that correlate with the goal. Experiences: course experiences that will generate this evidence. Online: experiences most suited to online learning OL. Face-to-face: experiences most suited to f2f. Blend: integration or synergy between OL and f2f. Row 2. Goals for learning: Become aware of historical influences in the areas of health care, nursing research, and the nursing profession that have influenced the current-day nursing profession. As evidenced by: Discussion posts relate readings that discuss historical issues to their nursing practice. Experiences: View movie. Sentimental Nurses Need Not Apply. Lecture or discussion on historical issues—timeline. Face-to-face: Week 1. Viewing movie. Classroom lecture or discussion. Row 3. Goals for learning: Explore the application of a theory from nursing and one other discipline and explain how they can be used in nursing practice and research. As evidenced by: Following guidance from the instructor, select one nursing theorist and one theory from another discipline and search the literature for two to three articles and an appropriate website for each

theory that include use in practice and research. Post the resources to the discussion board with a short explanation of key points and how they have been used. Experiences: Theory and theorist lecture will introduce students to basic areas to explore. Online: Nursing theory podcast. Face-to-face: Part 2 of Week 1. Lecture introducing nursing theory and theories from other disciplines. Classroom discussion. Blend: Week 2 Online. Assignment to find website and articles for one nursing theorist and one additional theorist.

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Row entries are as follows. Row 1. Goals for learning: Understand basic elements of quantitative and qualitative research design. As evidenced by: Submit two 6- to 8-page papers, one critiquing a qualitative research article and one critiquing a quantitative research article; papers will follow guidelines that include analyzing the basic elements of the research design. Experiences: Textbook readings, research examples. Online: Discussion posts. Face-to-face: Week 3 Session 1. Quantitative research concepts. Week 3 Session 2. Qualitative research concepts. Classroom discussion. Blend: Prior to Week 3 Online. View “Reading a Research Article” PowerPoint and paper; select one research article and compare each section with each section of the PowerPoint and paper. Discussion posts in week 3 following the class session. Row 2. Goals for learning: Recognize the responsibilities of the professional nurse to advance nursing through research critique and utilization. As evidenced by: Critiques of quantitative and qualitative research studies. Select two articles and disseminate to the class. Experiences: Textbook readings and lecture regarding critiquing. Online: Exploring web and articles online. Face-to-face: Week 3 Concepts of Critiquing. Classroom discussion. Blend: Posting resources online. Week 4. Quantitative paper due. Week 5. Qualitative paper due. Row 3. Goals for learning: Consider the role of the nurse in formulating research questions and contributing to conduct and dissemination of research findings. As evidenced by: Discussion

posts show evidence of dissemination of research findings. Experiences: Textbook readings. Evidence-based practice examples. Online: Online literature search. Face-to-face: Weeks 4 and 5. None. Blend: Discussion posts. Row 4. Goals for learning: Apply principles of evidence-based practice and research utilization as related to clinical practice issues. As evidenced by: Presentation identifying evidence-based practice with references and recommendations for practice. Experiences: Textbook examples and literature review. Course wrap-up. Online: Online literature search. Develop PowerPoint presentation. Face-to-face: Student presentations and discussion. Course wrap-up and evaluation. Blend: None.

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