

Introduction

Planning for instruction begins with thinking about content. Before making decisions about *how* to teach, instructors need to decide *what* to teach. We'll begin by considering content in terms of the wide variety of subject matter taught in schools, the types of knowledge needed by students, and

the importance of considering diversity. In addition, we'll focus on standards that guide teachers in selecting what to teach their students. Finally, we'll talk about preparing to teach content by deciding how to organize content for teaching.

1-1 Thinking about What Students Need to Learn

We'll begin by examining the types of subjects that are typically taught in schools.

1-1a Subject Matter

Teachers make decisions about what their students should learn based on standards, district guidelines, and individual needs. Certainly, everyone agrees that students need to learn reading, writing, and arithmetic, as well as science and social studies. Often, art, music, and health and fitness are also taught in school, although they seem to be cut first during budget crunches. Many teachers today teach a wide assortment of additional subjects and skills, such as social and emotional skills, cognitive behavioral skills, vocational skills, and technology. Another perspective teachers need to consider is emphasizing critical thinking skills and learning strategies so that students become lifelong learners.

The following are some examples of skills and knowledge by subject area that are taught routinely in schools today:

- *Academics*—recognizing letters, knowing the structure of plant cells, finding the circumference of a circle, understanding how organisms adapt to change
- *Learning strategies*—completing an assignment calendar, reading for comprehension, using prewriting planning techniques
- *Critical thinking skills*—identifying facts and opinions, recognizing stereotyping, exploring problems and solutions using different perspectives
- *Social and emotional skills*—taking no for an answer, joining in activities, dealing with embarrassment

- *Arts*—appreciating baroque music, using a variety of visual arts media and techniques, analyzing and evaluating the elements of dance
- *Health and fitness*—bandaging a cut, understanding the effects of drugs, exercising aerobically, planning and implementing fitness goals
- *Life skills*—making a bed, riding the city bus independently, budgeting
- *Cognitive behavior skills*—interpersonal problem solving, controlling angry outbursts
- *Vocational skills*—finding a career of interest, fixing car engines, searching for jobs, applying for jobs, interviewing for jobs
- *Technology skills*—evaluating websites for bias, creating spreadsheets, keyboarding

Societal pressures sometimes overwhelm teachers as they feel compelled to teach everything from responsible credit card use and safe sex to healthy eating and honesty.

1-1b Types of Knowledge: Declarative and Procedural

We can think about content in terms of types of knowledge as well as types of subject matter. Knowledge can be categorized as knowing *about* something and knowing *how to do* something. These types of knowledge are called **declarative knowledge** and **procedural knowledge**, respectively. Naming the parts of a lawn mower is an example of declarative knowledge, whereas knowing how to start a lawn mower is an example of procedural knowledge. Knowing the history of the development of the scientific method is declarative knowledge, and knowing how to use the scientific method is procedural knowledge. Understanding the concept of standard units of measurement is declarative, and measuring objects is procedural. Both

types of knowledge are important and complement each other. Your students need to learn both.

Declarative Knowledge

Three kinds of information are considered declarative knowledge: facts, concepts, and principles.

A *fact* is something that is true or indisputable. For example, it is fact that red and yellow make up orange, 10 is a multiple of 5, and 18-year-olds may vote. Other examples of factual information include labels (e.g., the parts of a volcano), names (e.g., of states and capitals), and words and their definitions (Smith and Ragan 2005).

Concepts are objects, events, actions, or situations that share a set of defining characteristics (Howell and Nolet 2000). Furniture and democracy are both concepts. Triangle is also a concept; their defining characteristic is that all triangles have three sides and three angles. Examples of triangles include isosceles, equilateral, right, and so on. (See Chapter 18 for more information on concepts.)

Principles are relational rules that prescribe the relationship between two or more concepts. They are often described in the form of if-then, cause-effect, or “rule of thumb” relationships. Principles can be very simple or highly complex. The following are examples of principles: round up numbers five or higher, voting is both a right and a responsibility, and thunder is caused as air heats and expands to varying degrees along the path of lightning.

Procedural Knowledge

Whereas declarative knowledge means to know or know *about* something, procedural knowledge refers to knowing *how to do* something. Knowing the steps or methods to follow or the processes, strategies, or specific skills to use are all procedural knowledge. Knowing how to change a flat tire, to cut with scissors, to proofread, to multiply fractions, to write a five-paragraph essay, to resist peer pressure, or to register to vote are all examples of procedural knowledge. This type of knowledge involves bringing together various subtasks to complete a whole procedure (Howell and Nolet 2000).

Obviously, both declarative and procedural knowledge are extremely important, and they are directly connected. Typically, one must know basic facts before using them. For example, students

need to know the steps of the reading comprehension strategy before they use them in their content reading. However, it is possible to memorize and use the steps to divide fractions, for example, without understanding the underlying concepts. It is very important to determine in advance what type of knowledge you are asking the students to learn. This is key in determining how to best organize the content for teaching.

1-2 Thinking about Diversity Responsive Content

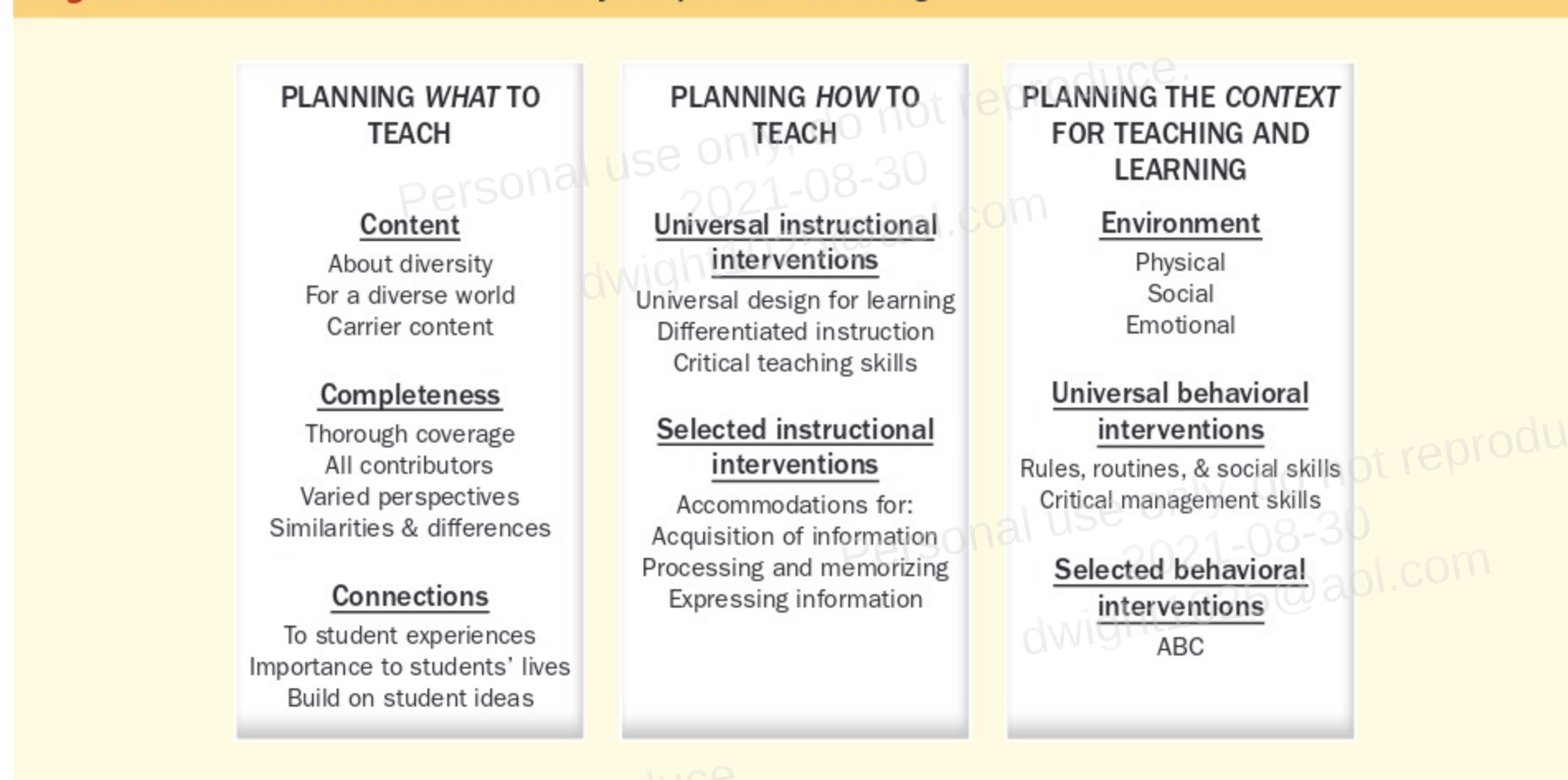
When thinking about what students need to learn, you also need to consider content that reflects the diversity of the world and the diversity in your classroom. You may find it helpful to use the content section of the diversity responsive teaching framework (see Figure 1.1 as you think about what you want to teach your students). This information is intended to support teachers in creating a **diversity responsive curriculum**—that is, one that is inclusive and engaging. When working toward creating a diversity responsive curriculum, consider the following three goals to help structure your decisions: (1) teach content about diversity, (2) teach content that is complete and inclusive, and (3) connect the content taught to students’ lives (Irvine and Armento 2001). Teacher Checklist 1.1 is an overview of key elements for responding to diversity in what you teach. You can use it as a guide when you are developing lesson and activity plans.

We’ll discuss each of the items in the checklist in turn, with a focus on cultural diversity. Then we’ll focus briefly on skill diversity.

1-2a Content about Diversity

Teachers can teach directly about the diversity of individuals, groups, cultures, traditions, beliefs, values, perspectives, and so on (see Photo 1.1). These topics can be made into lessons, activities, and units. For example, teachers can select diversity responsive content by teaching lessons and activities on any of the following: deaf culture; the art, music, and literature of Mexico; the civil rights movement; female athletes; or different kinds of families. (See Teaching Plan 3 in the Appendix as an example.)

Teachers can also select objectives that focus on developing skills for a diverse world. For example,

Figure 1.1 A Framework for Diversity Responsive Teaching**TEACHER CHECKLIST 1.1****Responding to Diversity in What You Teach**

- ✓ Can I teach about diversity directly in my current lesson or activity?
- ✓ Are there additional objectives I could include that relate to developing skills for living in a diverse world?
- ✓ Is there a way I can infuse content about diversity while teaching other knowledge/skills?
- ✓ What perspectives need to be considered in my lesson or activity?
- ✓ Have I emphasized similarities among people, rather than focusing only on differences?
- ✓ Are there ways to connect my lesson to my students' experiences?
- ✓ Have I made connections between the content and my students' cultural backgrounds?

Professional Resource Download

**Photo 1.1** Diversity responsive content can be the focus of a lesson. For example, this class created art in response to a unit on Martin Luther King, Jr.

when you plan to have students work in small groups or with a partner, you can write objectives for the skills they need to work together effectively. Some examples of important skills for a diverse world are social action skills, perspective taking,

recognizing stereotypes, empathy, cross-cultural communication including sign language, collaboration, conflict resolution, and so on. All of these skills are designed to help students respond to diversity inside and outside of school in a respectful, accepting manner. (See Teaching Plan 1 as an example.)

Teachers can also consider using *carrier content* related to diversity when teaching any subject matter. Incorporating diversity content while teaching other knowledge or skills helps to engage or inform students. For example, if you are teaching

reading comprehension skills, you could choose a story about a family that is homeless. Reading comprehension is your primary objective. The content about homelessness is carrier content. As another example, if fishing is an important cultural aspect of the community in which you teach, write math problems with content about fishing (e.g., “If you caught 300 pounds of cod per day . . .”). This material carries the knowledge or skills you are teaching, informs students about a diversity-related topic, and, potentially, engages students in your class who are from the same background (in these examples, those who are also homeless or those whose families fish). (See Teaching Plans 6 and 9 as examples.)

1-2b Content That Is Complete and Inclusive

A second goal to help structure decisions about curriculum is providing completeness (Irvine and Armento 2001). Make sure to include all voices and perspectives when teaching subjects such as history, literature, art, music, math, and science. Include all important, relevant contributors such as historical figures, writers, artists, scientists, mathematicians, and so on from all backgrounds: different genders, races or ethnicities, abilities, classes, and sexual orientations.

Consider these examples. You aren’t going to include a Central American author in your literature curriculum just because you have Latino students in your class this year; however, you should always include the important contributors from all kinds of backgrounds. If you are teaching about environmental issues, logging, fishing, whaling, or hunting, bring in the various and often contentious points of view on these topics. Include Native American and European settler perspectives when teaching U.S. history. When teaching about governing, investigate a variety of ways to govern, such as by the wisdom of elders, by consensus, and by majority vote.

Also, emphasize similarities; avoid focusing only on differences. Look for common themes in folk tales, such as wise animal stories or children who do not obey their parents. Present folk tales of the same story from different cultures. Point out commonalities like caring and sharing among different types of families. Show similarities in the occasions for celebrations (e.g., spring, harvest, independence) among cultures.

The most important thing to remember is to be thorough in your coverage of topics. The idea is to teach completely for everyone’s benefit so that all students can be fully educated.

1-2c Content That Is Connected to Students’ Lives

The third thing to think about when planning topics is how to make connections between the topics and the students. Select examples, images, and metaphors connected to students’ experiences and cultural backgrounds (Irvine and Armento 2001). Use examples that show the importance of the content to students’ lives. Build on student ideas and examples. For example, when teaching the topic of discrimination, activate the students’ background knowledge by having them discuss their own experiences of being discriminated against as young people, people with disabilities, or people of color. If teaching fractions, begin by creating an experience such as dividing a cookie in half to share with a friend. When teaching how to find places on a map with latitude/longitude, show where Eric’s great-grandpa was born in Sweden and where Nina visited her cousins in Guatemala.

To find these connections, you will need to learn about your students’ cultural backgrounds and about the community in which you teach. You may use books, articles, and Internet sites to gain general information. To learn specifically about your students and community, spend time with students’ families, read the local newspaper, attend community events, and get to know everyone at school. Find out about your students’ daily experiences, who is important in their lives, the problems they face, and what gives them joy. To summarize, considering these three categories related to curriculum (content, completeness, and connections) will help you be a diversity responsive teacher in *what* you teach.

1-2d Considering Skill Diversity

When planning what to teach, you’ll also want to consider **skill diversity**. Your class will include students with disabilities or who simply have fewer academic skills than others. If students have fallen behind in the curriculum, there is no time for fluff and filler, so be sure that you are teaching the most important knowledge and skills. Teach what is most

generalizable. Consider the possibility that you need to teach more lessons and fewer activities and reexamine the rationale for your planned activities.

In addition, if students need to be motivated, engage them by using content based on their interests. Offer choices to students when possible. For example, allow students to read articles from the sports pages to practice reading skills. Teach students to take charge of their learning by setting and monitoring their own learning goals.

Help students learn the skills that will allow them to learn more efficiently. Teach learning strategies along with teaching content areas, such as working on active reading strategies in the social studies textbook. Teach school survival and task-related skills such as study skills, test-taking skills, problem-solving skills, and organizational skills. Teach students the skills they need to be successful in various teaching models and methods such as discussion, peer interaction skills, and skills for staying focused and for dealing with challenges and frustration.

In summary, when thinking about content, consider what your students need to learn in terms of subject matter, types of knowledge, and diversity. The possibilities of what to teach seem nearly endless. Obviously, you want to teach the most important content to your students. Fortunately, there is help in selecting what to teach.

1-3 Guidance in Choosing What to Teach

Teachers aren't expected (or allowed) to make all of the decisions about what to teach. They receive guidance in selecting content from a variety of sources. These include state standards, common core state standards, and standards developed by professional organizations. In addition, teachers are guided by district curricula and, in the case of students with disabilities, individualized education programs (IEPs).

1-3a State Standards

State standards are a valuable and necessary source for giving direction to teacher planning. All 50 states have a set of standards that provide a description of what students across the state will learn as they progress through the K-12 public school system. The standards are meant to guide the general curriculum.

They were developed in an attempt to raise student achievement levels and to standardize the learning expectations for all students in the state. The standards appear as sets of goals in content areas such as reading, mathematics, and the arts and describe what students will accomplish in each area. State tests, given at various grade levels, measure student progress in relation to these standards.

The Individuals with Disabilities Education Improvement Act (IDEA) of 2004 was developed to ensure that special education also connected with state standards. Therefore, students with disabilities also have access to the higher standards of the general curriculum. This allows teachers to plan programs for these students with the state standards in mind.

State standards and goals provide focus in schools in several ways. First, they help describe the general curriculum and provide a guide for planning what to teach (King-Sears 2001). These standards ensure that students, including those with disabilities, have opportunities to prepare for the state tests and learn the content considered important enough to appear in state standards. They also serve as tools around which students, teachers, principals, and parents can communicate about learning. Example 1.1 gives an example of a standard as it applies across age levels.

EXAMPLE 1.1: STATE STANDARD

Arts Learning Standard 1: The student understands and applies arts knowledge and skills in dance, music, theatre, and visual arts.

Component 1.1: Understands and applies arts concepts and vocabulary.

(Elementary School) *Creates and experiences* artworks and/or performances in dance, music, theatre, and visual arts using arts concepts and vocabulary.

(Middle/Junior High School) *Creates, experiences, and analyzes* artworks and/or performances in dance, music, theatre, and visual arts using arts concepts and vocabulary.

(High School) *Creates, experiences, analyzes, and evaluates* artworks and/or performances in dance, music, theatre, and visual arts using arts concepts and vocabulary.

Note that all examples of state standards in this chapter come from Washington State.

State standards identify accomplishments in a given content area that are considered important for all students in the state. Generally, all lessons and activities taught will be linked to these standards. (See Chapter 2 for how to use state standards when writing objectives.)

1-3b Common Core State Standards

The **Common Core State Standards** are designed to provide an overview of what American students in grades K–12 are expected to learn. Providing a consistent set of standards across states is meant to assist teachers and parents so that they know what they need to do to help students learn. The standards are designed to relate to the real world, reflecting the knowledge and skills necessary for success. Individual states have had state standards in place for some time, of course. Whereas state standards are applicable across schools and districts within one state, the Common Core State Standards were intended to apply across schools, districts, and states. Example 1.2 is an example of a Common Core State Standard.

EXAMPLE 1.2: COMMON CORE STATE STANDARD

SPEAKING AND LISTENING

Presentation of knowledge and ideas

SL.2.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences. (2nd grade)

SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5th grade)

SL.8.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (6th grade)

SL.9-10.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. (9th–10th grades)

A goal of the Common Core State Standards has been to build on existing state standards and bring greater rigor to the standards that drive instruction and expectations in schools (NWEA 2012). The

college- and career-readiness standards that are now included in the K–12 standards are aligned with college and work expectations and were informed by top-performing countries as a way to make our students competitive in a global economy and society. The Common Core State Standards were designed to help students “develop larger cognitive structures by identifying key knowledge and skills, organizing these elements sequentially and progressively, and then infusing more cognitive complexity in the knowledge-acquisition process” (Conley 2011, p. 18). This means that students are asked to demonstrate deep conceptual understanding by applying content knowledge and skills to new situations. Porter, McMaken, Hwang, and Yang (2011, p. 109) include conjecture, investigation, evaluation, and solving nonroutine problems as examples of skills that require high-level cognitive demand.

The Common Core State Standards Initiative was a state-led effort coordinated by the National Governors Association Center (NGA Center) and the Council of Chief State School Officers (CCSSO). The standards were developed in collaboration with teachers, school administrators, and community leaders and the final standards were released in June of 2010 (Council of Chief State School Officers 2010). The initiative is not mandated, and adoption by states is voluntary. It has also been controversial. At one point, all but four states had adopted the Common Core Standards, but some states later backed out and chose to revise or replace them. Some groups oppose the Common Core Standards because of their content and some for political reasons. If a state adopts the standards, it develops its own plan for how the standards will be implemented. Specific plans are often described on state office of public instruction websites.

Clearly there can be advantages to having consistent national standards. Those who worked to develop the standards “hoped that creating national consistency in expectations would lead to better uses of student learning data, higher-quality curriculum materials, teacher-preparation programs aligned with key content standards, and research results that identify what works” (Conley 2011, p. 17). National standards can help ensure that all students receive a high-quality education no matter where they live or if they move, thus giving a guarantee to students and parents about the content they have the opportunity to learn. In addition, national standards provide guidance for teachers as they develop their long- and short-term plans for



Photo 1.2 Teachers can easily access Common Core State Standards online.

classroom instruction. (Note: It is important to recognize that standards do not tell teachers *how* to teach, but rather, *what* to teach.) Finally, having national standards can promote efficiency by saving individual states from having to develop their own standards, assessments, and curriculum guides (Porter et al. 2011).

The content areas addressed by the Common Core State Standards are as follows:

- English Language Arts and Literacy in History/Social Studies, Science, & Technical Subjects
- Mathematics (K–8 section and High School section)

For more information about the Common Core State Standards, go to the Common Core State Standards Initiative website at www.corestandards.org (see Photo 1.2).

1-3c Professional Organization Standards and Big Ideas

Other important sources in the development of classroom curricula are professional organizations such as the International Reading Association, National Council of Teachers of Mathematics, National Council of English Teachers, National Council of the Social Studies, and the National Science Teachers Association. Many of these groups have developed **professional organization standards** and/or have described the important generalizations, *enduring understandings*, or **big ideas** in their subject areas. These are meant to help teachers choose the most important content to teach and to connect and organize knowledge and skills with essential

understandings for that discipline. Following are some examples of big ideas:

- Economic systems are influenced by supply and demand.
- Patterns are everywhere.
- Geographical features affect where people settle.
- Writers try to persuade their readers to believe or act in certain ways.
- People have created different forms of government to meet their needs.
- All people have a culture that influences how they see the world.

School district curriculum guides can also aid teachers as they plan what to teach. A group of teachers within the district often develops these guides. The guides can include long- and short-term objectives and activities that teachers who helped write the guide have tried. These guides can help teachers plan lessons and activities that are related to the state standards.

Published programs can also be purchased for reading, math, social studies, social skills, study strategies, and so on. These programs usually include long- and short-term objectives and all needed materials. Teachers must be sure that such program objectives meet the needs of their students. If not, they will want to make appropriate adjustments. School district or university curriculum libraries, as well as the Internet, can be good places to start your search for published programs.

It's clear that teachers must make important decisions about what to teach. If you are a practicing teacher, you know that part of your responsibility is to figure out what your students need to learn. If you are a practicum student or student teacher, a classroom teacher who makes these curricular decisions is probably directing you. Important decisions about what to teach must ultimately be based on the learning and behavioral needs of individual students.

When teaching students with disabilities, refer to the IEPs, the most important sources of information to help teachers decide what to teach. The IEP provides teachers with a look at the individualized goals and objectives that the IEP team determined to be most important for a particular student to learn. This information can help provide a focus for planning how best to facilitate the learning of students with disabilities.

Once you have consulted the standards and other sources and have selected the content to teach, you are ready for the next step in planning to teach.

1-4 Analyzing Content

Now that you know what content you need to teach your students, you still have work to complete before you begin actual lesson planning.

1-4a Organizing Content for Teaching

Once you know what subject matter and kind of knowledge (declarative or procedural) you will be teaching, you need to determine how to best organize and teach the content.

Content Analysis

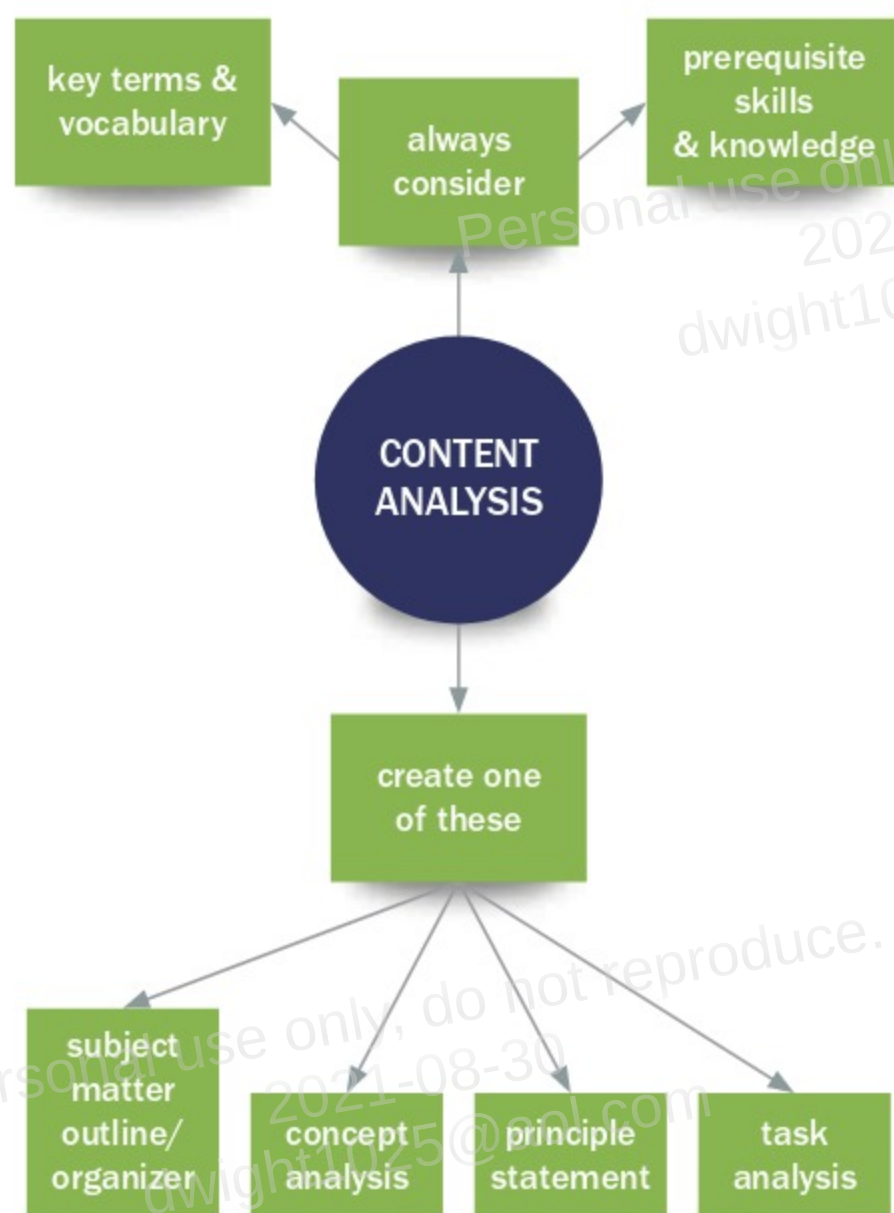
One tool you can use to help you think through how to teach is a **content analysis** (see Figure 1.2). While completing a content analysis may take time up front, it will pay off in the long run. A thorough content analysis could contain one or more of the

following: a *subject matter outline/graphic organizer*, a *concept analysis*, a *task analysis*, a *principle statement*, definitions of *key terms and vocabulary*, and a list of *prerequisite skills and knowledge*.

Organizing Declarative Knowledge The following are ways to organize declarative knowledge.

Subject matter outlines/graphic organizers systematize the specific content to be covered in the lesson. They are almost always written for lessons designed to teach specific declarative information (e.g., an informal presentation lesson on the causes of the Civil War). The body of the informal presentation lesson consists of a subject matter outline or other organizer (such as a web, chart, map, or diagram) and is used to guide the teacher's delivery of information. Example 1.3 shows a subject matter outline for a lesson on skin cancer, and Example 1.4 shows a graphic organizer for a lesson on comparing and contrasting nouns and proper nouns.

Figure 1.2 Content Analysis



EXAMPLE 1.3: SUBJECT MATTER OUTLINE

Malignant Melanoma

1. Three Types of Skin Cancer
 - a. Basal cell carcinoma
 - b. Squamous cell carcinoma
 - c. Malignant melanoma—can be fatal
2. Risk Factors of Malignant Melanomas
 - a. Sun exposure (repeated sunburns; 80 percent of damage is done during childhood)
 - b. Fair complexion (Caucasians, redheads, and blondes)
 - c. Family history (increased risk if parents or siblings have melanoma)
3. Detection: Know the A, B, C, and D of Melanoma
 - a. Asymmetrical (a line through the middle would not create equal sides; most moles and freckles are symmetrical)
 - b. Borders (abnormal mole: scalloped or notched edges, uneven border; normal mole: smooth, even border)
 - c. Color (begins with varied shades of brown, tan, or black; progresses to red, white, or blue; normal moles are an even shade of brown)
 - d. Diameter (larger than normal moles: 6 millimeters or ¼ inch in diameter; normal moles are smaller)

EXAMPLE 1.4: AN ORGANIZER: COMPARE/CONTRAST MAP

	Noun	Proper Noun
Person	Any person (e.g., girl, boy, man, woman)	A specific person (e.g., Amir, Huntley, Michelle)
Place	Any place (e.g., country, city, island)	Italy, New York, San Juan
Thing	Any thing (e.g., bicycle, car, statue)	Schwinn, Subaru, Michelangelo's David

A **concept analysis** is used when teaching concepts. It is important to conduct a concept analysis prior to teaching concepts. This type of content analysis helps teachers think through and write down exactly how they will explain the essential elements of the concept. A full concept analysis includes (1) a definition of the concept, (2) a list of the critical attributes that are distinguishing features or characteristics found in all examples, (3) a list of noncritical attributes that are nonessential characteristics not found in all examples, (4) a list of examples, (5) a list of nonexamples, and (6) a list of related concepts, if helpful. Example 1.5 shows an example of a concept analysis.

EXAMPLE 1.5: CONCEPT ANALYSIS**CONCEPT NAME: BALEEN WHALES**

- *Definition:* Baleen whales, also called whalebone or great whales, of the suborder Mysticeti, can be identified by their baleen plates, symmetrical skull, and two blow holes
- *Critical attributes:* symmetrical skull, two blow holes, baleen plates for filter feeding, feeds on zooplankton and schooling fishes
- *Noncritical attributes:* size, which ocean/sea they live in, migration, color
- *Examples:* blue whale, humpback whale, right whale, grey whale
- *Nonexamples:* sperm whale, beaked whale, beluga whale
- *Related concepts:* whale shark

A third type of content analysis is a **principle statement**. As previously defined, principles are relational rules that show the relationship between two or more concepts. See Example 1.6 for some examples of principles.

EXAMPLE 1.6: PRINCIPLES

- When water reaches 32 degrees Fahrenheit, it freezes.
- If your payment arrives late, then you will need to pay a late fee.
- When a wasp's food supply dwindles toward the end of the summer, it is more likely to sting without provocation.
- When a syllable ends in a consonant and has only one vowel, that vowel is short.
- If a pregnant mother has little or no prenatal care, then the risk of a premature birth increases.
- When effective memorization strategies are used for studying, then retention of information is usually greater.

Be sure that you plan in advance how you will explain the principle to your students. It can be difficult to correctly or accurately explain the principle spontaneously during a lesson or activity. Begin by writing out the complete principle statement; include the condition and the result or the action that needs to be taken. Next, consider carefully which words are best used as part of your explanation. Finally, be sure that you plan many and varied examples to illustrate the principle. It is important for your students to be able to apply the principle to unknown examples, not just state it (Smith and Ragan 2005).

A Special Note about Memorizing Information

Memory tasks need special planning. Generally, you would not expect students to memorize significant amounts of information (e.g., a long list of steps to follow for a reading strategy or to solve math story problems, vocabulary words, a list of states and capitals, chemical symbols, math facts) based on a single lesson. This type of information is often initially introduced in a lesson but needs to be followed by a variety of activities designed to help with memorization.

When you plan your lesson or activity, determine what new information (e.g., steps, vocabulary

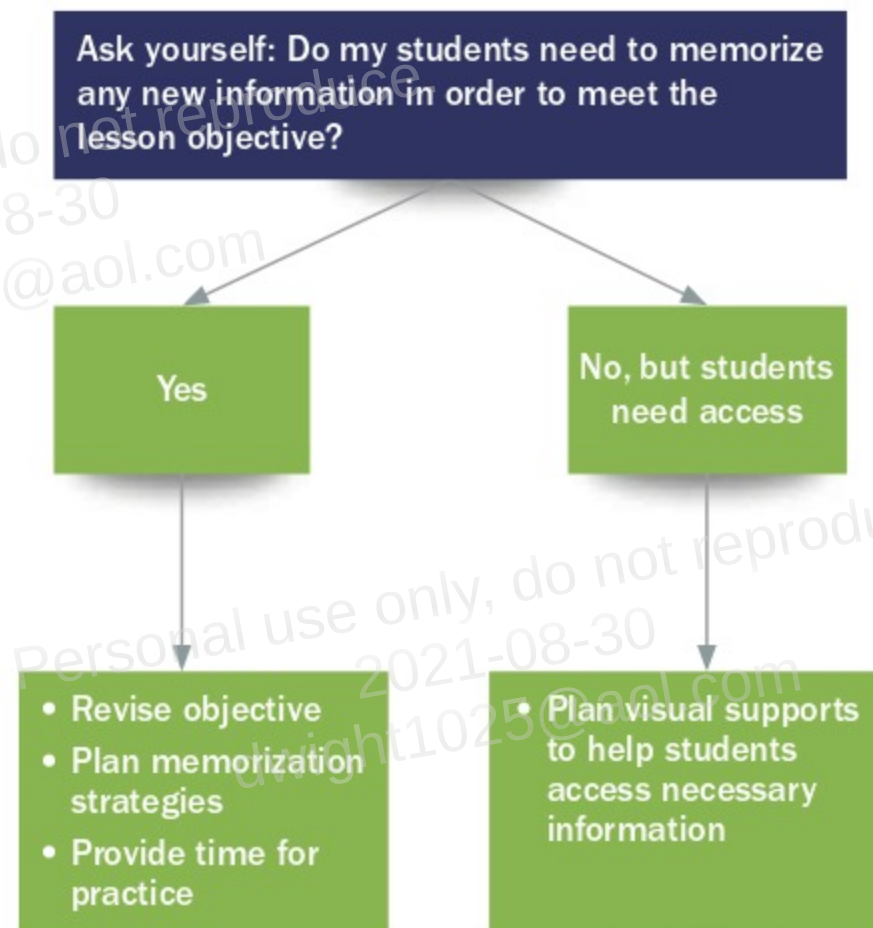
words, content facts) students will need to know in order to meet the lesson objective. Ask yourself: Do my students need to memorize this information? If you answer *NO* but you want students to be able to reference the information you will be teaching, then plan which visual supports are needed to give students access to the information (posters, slides, etc.). For example, if you are teaching a new proofreading strategy and you want the students to follow the steps but do not expect them to memorize the steps immediately, then make a poster of the steps to leave up while you teach so that the students can reference it during your instruction.

If you answer *YES*, then several things should happen. First, revise your objective to make it clear that information needs to be memorized. (See Chapter 2 for more information on objectives). Next, plan strategies to help your students memorize, such as memory devices (e.g., mnemonics), flashcard review with constant time delay (Wright 2016), cover-copy-compare (Konrad and Joseph 2014), and others depending on the content you are teaching. Finally, set aside time for an adequate number of practice opportunities. Distributed opportunities to practice followed by an evaluation work the best (Schutte et al. 2015).

For example, you want your students to memorize the steps for a proofreading strategy. First, adjust your objective: Students will correctly apply each step of the COPS proofreading strategy, *from memory*, to a given paragraph. Next, determine an appropriate memorization strategy: Use the acronym COPS for remembering to check capitalization, overall appearance, punctuation, and spelling. Finally, provide practice time for students to memorize: During the lesson opening, student pairs will repeat the words for the acronym together five times and then check each other's accuracy. Figure 1.3 gives a graphical representation of the steps required for memory tasks.

Organizing Procedural Knowledge Use a **task analysis** when you plan to teach a how-to lesson—that is, when you want your students to be able to do something at the end of the lesson that they cannot presently do (e.g., a procedure or a strategy). A *procedure* is a series of steps that leads to the completion of a task (Smith and Ragan 2005). Procedures can be academic (e.g., how to convert degrees Celsius to degrees Fahrenheit) or social (e.g., how

Figure 1.3 Special Planning for Memory Tasks



to join in a group), or they can describe a classroom routine (e.g., what to do with a late assignment).

Strategies are a subcategory of procedures. Howell and Nolet (2000) define *strategies* as procedures that students follow to combine subtasks into larger tasks. Strategies are techniques that help students learn (e.g., how to take notes from a lecture), study (e.g., how to memorize lists of items), or organize (e.g., how to maintain an assignment calendar).

A task analysis can be written in two ways, depending on the specific content to be taught. It can be written as a list of sequential steps that must be followed in order (e.g., how to do long division). It can also be written as a list of various subskills that must be completed but not necessarily in a certain order (e.g., how to write out a check). Example 1.7 includes examples of both kinds of task analyses.

EXAMPLE 1.7: TASK ANALYSES

HOW TO ALPHABETIZE TO THE FIRST LETTER

1. Underline the first letter of each word in the list.
2. If all letters are different:
 - a. Say the letters of the alphabet in order.
 - b. As you say each letter, scan the underlined letters.

(Continued from previous page)

- c. Stop each time you say the name of an underlined letter.
- d. Write the word that begins with the letter you said.
- e. Continue until all words are used.

HOW TO PROOFREAD SENTENCES

1. Skim the work and check that:
 - a. All sentences begin with a capital letter.
 - b. All sentences have an appropriate end mark (period, exclamation point, or question mark).
2. Fix any errors.

The most efficient way to conduct a task analysis is to perform the task yourself while writing the steps, including the thinking process you follow. However, you may encounter cases where the process you follow is different from the process a child or beginner would follow. Preparing a task analysis will help you plan explanations, demonstrations, and checks for understanding.

Key Terms and Vocabulary Identifying **key terms and vocabulary** to be used in a lesson is another form of content analysis. These specialized words and terms will include academic vocabulary that is critical for understanding the content and tasks. You will also need to decide on learning outcomes—that is, how students will need to use the words. In addition, think about assessing the students' prior knowledge and how to teach the words.

Write clear, student-friendly definitions of the words you select. It is important to do this in advance to avoid incorrect or incomplete definitions. Terms are not as easy to define on the spot as they would seem. Student dictionaries and textbook glossaries can be good places to start when trying to write a clear definition for a particular term.

Prerequisite Skills and Knowledge Another part of a content analysis is determining **prerequisite skills and knowledge** that students must have to be ready for a particular lesson. Sometimes, these are broad skills: being able to read is a prerequisite skill for using encyclopedias as a resource when writing reports. Sometimes, the prerequisite skills are more specific: for

example, long division requires skills in estimating, multiplying, and subtracting; using adjectives is dependent on understanding nouns; and being able to prepare food from recipes is contingent on being able to measure ingredients. It is certainly not necessary, nor desirable, to list all prerequisites. However, it is important to consider prerequisites as you plan and to choose those relevant to your students.

1-4b Choosing the Analysis

The following guidelines will help you choose the type of analysis to prepare:

- Write a *concept analysis* when you plan to teach a concept.
- Include a *task analysis* when the point of the lesson is to teach a procedure or strategy, that is, a how-to lesson.
- When teaching about a topic (i.e., declarative knowledge), a *subject matter outline* or other graphic organizer will be most beneficial.
- Write a complete *principle statement* (the condition and the result or action to be taken) when the objective of the lesson is to teach a principle.
- *Key terms and vocabulary words* are important to consider in every lesson or activity. Be sure that words are defined in terms that the students will understand.
- It is always important to consider *prerequisite skills and knowledge* as part of a content analysis. This will help you write the objective and determine whether the content is appropriate for the students you are teaching.

You will find it beneficial to spend time analyzing the subject matter you plan to teach. It is impossible to get a good result from teaching when you are not sure exactly what you want your students to learn. This knowledge links directly to what you will learn in the next chapter on writing objectives. A thorough content analysis helps you organize the content you will teach into a clear framework that benefits both you and your students. Preparing this framework also helps strengthen your understanding of the material. As you communicate the analysis to your students, you provide them with a structured way to consider the content. This can have a very positive impact on student learning and retention. (Go to the Teaching Plans in the appendix to see examples of content analyses.)