among at-risk high school students may have been at risk of failure as one criteria and then doing well in school as a second criteria.

EXAMPLE 4.8 | Criterion Sampling

I made contact visits to screen volunteers according to predetermined criteria to determine if they qualified as participants (Seidman, 1991). The first criterion was attending Internet cafes regularly, at least twice a week, to ensure that the phenomenon was a part of the adolescent's lifeworld. The secondary criterion was having experiences of certain uses of computers that are indicative of educational use. . . . Those who referred to two or more items on the list of educational uses in their descriptions were considered qualified to participate in the study.

Source: Cilesiz, S. (2009). Educational computer use in leisure contexts: A phenomenological study of adolescents' experiences at internet cafes. *American Educational Research Journal, 46*(1), 242.

Typical Case Sampling

Typical case sampling: Selecting representative participants.

In **typical case sampling** (or *model instance* sampling) the researcher investigates a person, group, or site that is "typical" or "representative" of many. This kind of sampling requires sufficient knowledge about the important characteristics of the larger "population" of interest so that there is a reasonable definition of "typical." It is like sampling the "average" elementary teacher (one with several years of experience rather than a new teacher or one nearing retirement, and a woman). Note the criteria used to select the sample in Example 4.9 to identify the "typical" adult attending community college.

EXAMPLE 4.9 | Typical Case Sampling

Interviewees of these two community colleges were identified through a purposeful sampling strategy target to adults who (a) were at least 30 years of age, (b) were in good academic standing according to their institution's criteria, (c) were in a college transfer program, and (d) had completed at least 15 hours of academic coursework beyond developmental studies.

Source: Kasworm, C. (2004). Adult student identity in an intergenerational community college classroom. *Adult Education Quarterly, 56*(1), 6–7.

Extreme Case Sampling

Extreme case sampling: Selecting unique or atypical participants.

An extreme case is one that is unique or atypical, an outlier compared to most others in the category. In education, **extreme case sampling** is often used to identify unusually successful students or schools with the intent of studying them to learn why they perform so well. Another strategy is to identify a continuum of an important characteristic and then take samples at one end of that continuum.

In the following example, extreme case sampling is based on the significant role played by homework. The sample, Example 4.10, is at one end of a continuum of the importance of homework.

EXAMPLE 4.10 Extreme-Case Sampling

This student body was selected because homework played a major role in the curriculum and because it would provide a definitive test of the effects of this academic experience.

Source: Zimmerman, B. J., & Kitsantas, A. (2005). Homework practices and academic achievement: The mediating role of self-efficacy and perceived responsibility beliefs. *Contemporary Educational Psychology, 30,* 401.

Maximum Variation Sampling

In **maximum variation sampling** (or *maximum heterogenity sampling*) individuals, groups, or cases are selected to represent both ends of a continuum of values on a characteristic of interest. For example, if it is known that there are some teachers who never use zeros when grading and others who always use zeros, sampling from both extremes would provide for maximum variation. Or, suppose a researcher has a sample of schools differing on a measure of school climate. Schools scoring extremely high and schools scoring extremely low on school climate could be selected to understand how climate is formed and its impact on students.

Maximum variation sampling: Selecting participants to represent extreme cases.

Snowball Sampling

Occasionally, qualitative researchers are in a situation in which the sampling is carried out as data are being collected. In **snowball sampling** (also called *network sampling*), the researcher begins with a few participants and then asks them to nominate or recommend others who are known to have the profile, attributes, or characteristics desired. For example, a researcher could begin interviewing a few elementary school counselors known for using play therapy and then ask them to nominate other elementary school counselors they know who also use play therapy. This kind of sampling is especially useful when the researcher has only a limited pool of initial participants. A related kind of selection of cases, *opportunistic sampling*, also occurs after the study is under way and takes advantage of including participants who are identified as being rich in the information needed.

Snowball sampling: Selecting participants from recommendations of other participants.

Critical Case Sampling

Sometimes the phenomenon of interest is illustrated by individuals, groups, or sites in unique and dramatic ways. **Critical case sampling** is used in these situations as an opportunity to learn and understand. For instance, suppose a researcher was interested in how the implementation of a particular technology initiative—say, laptop computers for all students—was impacting teaching and learning. If a single school district could be identified that had such an initiative it would be considered a critical case (Example 4.11).

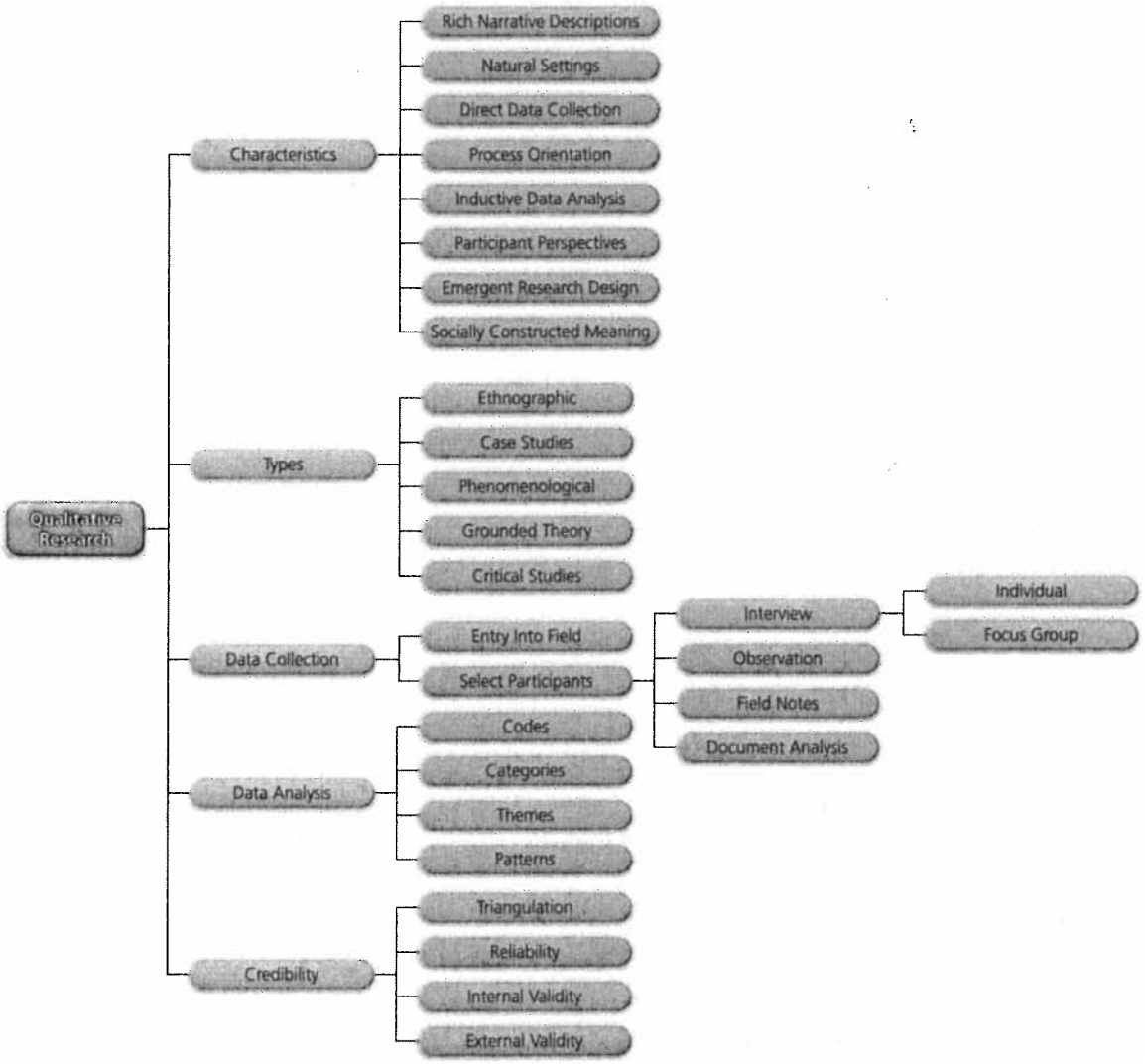
Critical case sampling: Selecting the most important participants to understand phenomena being studied.

STUDY QUESTIONS

1. Why is it necessary to use inferential statistics?
2. What is the relationship between inferential and descriptive statistics?
3. What is the difference between sampling error and measurement error?
4. How is the null hypothesis used in inferential statistics?
5. Why is it important to understand what "level of significance" means?
6. What is the difference between Type I and Type II errors?
7. Does it matter whether the null hypothesis is rejected?
8. Why is it important to distinguish between "statistical" and "practical" significance?
9. What is "effect size" used for?
10. Under what circumstances would it be appropriate to use nonparametric statistical tests?
11. Give an example of a study that would use an independent sample *t*-test.
12. Give an example of a study that would use simple ANOVA.
13. Give an example of a study that would use factorial ANOVA.
14. What does a factorial ANOVA tell us that a simple ANOVA does not?
15. Why would it be helpful to use ANCOVA rather than ANOVA?
16. Why are multivariate statistics used?
17. Give an example of a study that would use a chi-square statistical analysis.

Chapter 10

Qualitative Research Designs, Data Collection, *and* Analysis



CHAPTER ROAD MAP

This chapter is a rather abrupt change from the previous four, not only in research methods and data analysis but also philosophical assumptions about how it is best to understand what is being studied. We begin by reviewing characteristics that are common to most qualitative studies, then discuss in greater detail methods of four types of qualitative research that have different perspectives about how to gather and interpret the data. The chapter concludes with a discussion of criteria that should be used to judge the credibility of qualitative studies.

Chapter Outline	Learning Objectives
Characteristics of Qualitative Designs	• Be able to name and describe eight characteristics of qualitative research. • Know and recognize in studies the essential design features that make an investigation qualitative. • Compare and contrast qualitative with quantitative research.
Types of Qualitative Research Designs	• Be able to name and describe five major families of qualitative research designs. • Recognize qualitative research designs in published studies.
Obtaining Data from Observations	• Understand how different observer roles affect what data are gathered. • Recognize and evaluate the adequacy of field notes. • Understand why it is important to separate descriptive information from reflective information and observer comments.
Obtaining Data from Interviews	• Know different types of interviews and characteristics of each type. • Know what foci are typically used in interviews. • Understand when to use different types of interviews. • Know the differences between individual and focus group interviews.
Obtaining Data from Documents and Artifacts	• Know what constitutes documents and artifacts. • Know the difference between primary and secondary sources.
Data Analysis and Interpretation	• Understand how to code data. • Understand how codes are used to create categories and themes. • Know how patterns and models are developed and their purpose. • Be able to read and evaluate the quality of data collection and analyses.
Credibility and Quality of Qualitative Research	• Understand what credibility is and how it is established. • Understand and recognize triangulation, member checking, and other specific strategies for establishing credibility. • Be able to read qualitative research and identify procedures used for credibility.
Generalizability	• Know how generalizability in qualitative research is different from quantitative research. • Know and recognize the appropriate characteristics of transferability.

INTRODUCTION to QUALITATIVE RESEARCH

Although most empirical studies use quantitative techniques, you will also read qualitative research, which is based on a different set of assumptions and methods. It is important to remember that these methods are no less "scientific" than quantitative methods. Indeed, most qualitative researchers would maintain that their approach is scientific with respect to being systematic and rigorous. What is most different for qualitative studies are epistemological assumptions about the nature of the information that is needed to arrive at credible findings and conclusions. Researchers using a qualitative approach believe that there are multiple realities represented in participant perspectives, and that context is critical in providing an understanding of the phenomenon being investigated. In contrast, a quantitative study assumes that there is a single objective reality that can be measured. Qualitative approaches are characterized by the assumption that the researcher's biases and perspectives must be understood and included in interpreting findings, whereas in a quantitative study researcher bias is a threat to internal validity. One approach is not necessarily better than another. Each has advantages and disadvantages, strengths and weaknesses. Most educational researchers would agree that problems are best investigated by using whatever methods are most appropriate, separately or in combination; that is, we begin with a research question or problem and *then* select the methods that will provide the most credible answers.

CHARACTERISTICS of QUALITATIVE RESEARCH

In Chapter 1, qualitative research was described as a tradition of research techniques, as well as a philosophy of knowing. The term *qualitative* refers to a number of approaches that share some common characteristics. Before examining the four qualitative approaches covered in this chapter in greater detail, we will review these characteristics (summarized in Table 10.1). Finally, it is also helpful to remember that there are many terms associated with qualitative research, such as *field research*, *naturalistic*, *participant observation*, *ecological*, *constructivist*, *interpretivist*, *ethnomethodology*, and *case study*. The exact definition and use of these terms, as well as "qualitative," vary according to their disciplinary roots (anthropology, sociology, psychology, political science, and philosophy). Educational researchers are likely to use qualitative in a generic sense, as a methodology that has some or all of the following characteristics.

Natural Settings

A distinguishing characteristic of most qualitative research is that behavior is studied as it occurs naturally. There is no manipulation or control of behavior or settings, nor are there any externally imposed constraints. Rather, the setting for some qualitative research is an actual classroom, school, playground, clinic, or neighborhood. This is why qualitative research is often described as *field research*; much of it takes place out in the field or setting. For example, a qualitative

TABLE 10.1 Key Characteristics of Qualitative Research

Characteristic	Description
Natural setting	Study of behavior as it occurs naturally in specific contexts.
Direct data collection	Researcher collects data directly from source.
Rich narrative descriptions	Detailed narratives that provide in-depth understanding of contexts and behaviors.
Process orientation	Focus on why and how behaviors occur.
Inductive data analysis	Generalizations induced from synthesizing gathered information.
Participant perspectives	Focus on participants' understanding and meaning.
Socially constructed meaning	Knowledge is based on experience and social interactions with others.
Emergent research design	Research design evolves and changes as the study takes place.

approach to studying beginning teachers would be to conduct the research in a few schools and classrooms in which these individuals were teaching. In contrast, a quantitative approach might use a questionnaire to gather the perceptions, beliefs, and practices of a sample of beginning teachers. There are two reasons for conducting research in the field. Qualitative researchers believe that (1) behavior is best understood as it occurs without external constraints and control, and (2) the situational **context** is very important in understanding the behavior. The setting influences the way humans behave and, therefore, it is not possible to understand the behavior without taking into account the situational characteristics.

Context: Environment in which behavior occurs.

Direct Data Collection

In qualitative studies the investigator has a direct role in obtaining information, as either the interviewer, an observer, or as the person who studies artifacts and documents. Qualitative researchers want to obtain information directly from the source. They do this by spending a considerable amount of time in direct interaction with the settings, participants, and documents they are studying. They tend to be reluctant to use other observers or quantitative measuring techniques because the researchers are then not as "close" to the data as they need to be for a full understanding.

Rich Narrative Descriptions

Qualitative researchers approach a situation with the assumption that nothing is trivial or unimportant. Every detail that is recorded is thought to contribute to a better understanding of behavior. The descriptions are in the form of words or pictures rather than numbers, although simple numerical summaries are used in

e qualitative studies and in investigations that use both qualitative and quan-
ive methods. The intent is to provide rich descriptions that cannot be
eved by reducing pages of narration to numbers. Rather, the descriptions
ure what has been observed in the same form in which it occurred naturally.
hing escapes scrutiny or is taken for granted. The detailed approach to de-
tion is necessary to obtain a complete understanding of the setting and to ac-
tely reflect the complexity of human behavior. To accomplish these goals, the
ies may extend over a long period of time and require intense involvement,
they typically culminate in extensive written reports.

ess Orientation

litative researchers want to know how and why behavior occurs. In contrast
most quantitative studies, qualitative methods look for the *process* through
h behavior occurs, not just the outcomes or products. For example, while
titative research can document the effect of teachers' expectations on stu-
achievement, qualitative studies would be appropriate for understanding
eachers' expectations affect students' achievement and behavior. The em-
is would be on how expectations are formed and how they are played out in
ature of teacher interactions with students. The emphasis on process allows
onclusions that explain the reasons for results. For instance, suppose a state
erested in how staff development affects student achievement. A quantita-
pproach would be to simply record student behavior following the staff
lopment, whereas a qualitative inquiry would focus on how the teachers
ged as a result of the staff development and how this change affected stu-
achievement. This approach would provide a greater understanding of
it was about the staff development that was most important.

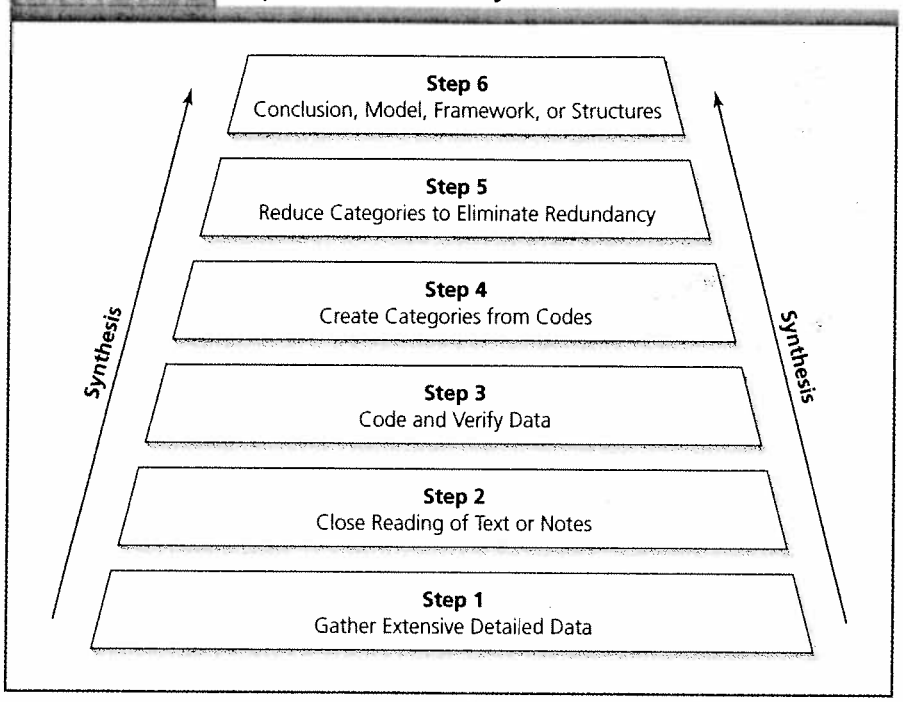
ctive Data Analysis

tative researchers do not formulate hypotheses and gather data to prove or
ve them (deduction). Rather, the data are gathered first and then synthesized
tively to generate generalizations, models, or frameworks. Conclusions are
oped from the "ground up," or "bottom up," from the detailed particulars,
than from the "top down." This approach is important because the qualita-
esearcher wants to be open to new ways of understanding. Predetermined
heses limit what data will be collected and may cause bias. The process of qual-
research is like an upside down funnel (see Figure 10.1). In the beginning, the
nay seem unconnected and too extensive to make much sense, but as the
cher works with the data, progressively more specific findings are generated.

cipant Perspectives

tative researchers try to reconstruct reality *as the participants they are study-*
it. They do not apply predetermined definitions or ideas about how people
ink or react. For example, a quantitative researcher may assume that a

FIGURE 10.1 **Steps in inductive data analysis.**



teacher's praise is interpreted by students in a certain way, whereas a qualitative researcher would be interested in how the participants (students) interpreted the praise. The goal in qualitative research is to understand participants from their point of view. In other words, the focus is on the *meaning* of events and actions as expressed by the participants. Thus, in a qualitative study of what motivates students, it would be important to focus on what the students said and did, to describe motivation using the words and actions of the students, not the researcher.

Socially Constructed Meaning

A key characteristic of qualitative research that is based on participant perspectives is the belief that participants actively construct their own reality. They develop meaning from their experiences and their own way of describing this meaning. Knowledge, then, for each individual, is built on their lived experiences and situation-specific interactions with others. Meaning is "socially constructed," arising from interactions with others. This suggests that there is no final truth or "reality" since meaning is individualistically constructed. Likewise, the meaning of different situations is individualized.

A theory of knowledge closely related to social constructivism is called interpretivisim. This theory lies at the heart of qualitative research and provides the fundamental notion of how qualitative research differs from quantitative research.

The following quote from a noted qualitative researcher describes this approach very nicely:

> Interpretivist theories are fat with the juice of human endeavor . . . with human contradiction, human emotion, human frailty. . . . [They] are derived from pure lived experience . . . replete with multiple levels of understanding; assembled from many "ingredients"; and patched together to form new patterns, new images, new languages, rather than extracting what are believed to be a priori patterns. (Lincoln, 2010, p. 6)

Emergent Research Design

As in quantitative research, qualitative researchers have a plan or design for conducting the research. The difference is that in a qualitative study researchers enter the investigation "as if they know very little about the people and places they will visit. They attempt to loosen themselves from their preconceptions" (Bogdan & Biklen, 2007, p. 54). Because of this perspective, they do not know enough to begin the study with a precise research design. As they learn about the setting, people, and other sources of information, they discover what needs to be done to fully describe and understand the phenomena being studied. Thus, a qualitative researcher will begin the study with *some* idea about what data will be collected and the procedures that will be employed, but a full account of the methods is given *retrospectively*, after all the data have been collected. The design is emergent in that it remains flexible and evolves during the study.

Before going on to more specific types of qualitative designs, I want to stress again that the above characteristics are typically present *to some degree* in any single qualitative investigation. The extent to which each characteristic is included depends on the particular design and the orientation of the researcher. In "pure" qualitative studies each of these characteristics is present, whereas in other qualitative studies only some of them are present.

We will now examine five specific qualitative approaches in greater detail. The nature of each approach has implications for the research design, types of data collection, and data analysis.

USING EDUCATIONAL RESEARCH

The highly influential *Scientific Research in Education* (Shavelson & Towne, 2002) makes a strong case for "evidence-based" policy that relies heavily on what could be considered traditional quantitative methods. It should also be pointed out, however, that the report does not distinguish between qualitative and quantitative forms of inquiry, preferring instead to contend that either method, when properly used, can contribute credible evidence on important topics and issues. What is most important is that researchers do a good job with whatever method is best matched with their question.

TYPES of QUALITATIVE RESEARCH

Ethnographic Studies

Ethnography: In-depth involvement in a culture to describe naturally occurring behavior.

An ethnographic qualitative study, or **ethnography,** is an in-depth description and interpretation of cultural patterns and meanings within a culture or social group. Ethnography has been the primary mode of study in anthropology for many years. Anthropologists have used ethnography to investigate primitive cultures, including such aspects of culture as religious beliefs, social relations, child rearing, marriage, and language. The approach to gathering data in these studies was to (1) observe the culture for weeks, months, even years; (2) interact with and interview members of the culture; and (3) analyze documents and artifacts. These three methods of gathering data—observation, interviews, and document analysis—remain the primary modes of data collection for ethnographic studies in education. Whatever the mode of data collection, the researcher engages in extensive work in the naturally occurring setting or context, the *field.* In education, this is typically the school or classroom. Only through prolonged experience in the field can the researcher obtain a complete understanding of the educational system, process, or phenomena.

A hallmark of an ethnographic study is its emphasis on culture. Culture can be defined as shared patterns of beliefs, normative expectations and behaviors, and meanings. The emphasis is on what is characteristic of a group. The key concept in culture is *shared.* What is individualistic, not repeated for others, is not culture. A group must adopt meanings and normative behaviors and expectations over time to be defined as having a culture. Though it is possible for a group to consist of two individuals, the minimum number is more typically 6–10. Regardless of how it is defined, the group must have interacted for a sufficient period of time to establish shared patterns of thinking and behavior. Of course, there is still individual variation in behavior and beliefs, but in an ethnographic study the main emphasis is on groups. For example, if observations and interviews of students at risk of failing identify common traits, such as the need for a social support system, this could be viewed as culture. A specific social support system, such as going to church, which may be true for only a few students, is not a cultural trait. In the end, educational ethnographers study specific cultural themes, such as the induction of beginning teachers, student–teacher relationships, persistence of athletes, and teacher decision making about classroom assessment and grading practices.

A description of an ethnography is illustrated in Example 10.1. In this study the groups were classrooms. Notice that there are many approaches to collecting data. This is a characteristic of ethnographic studies.

EXAMPLE 10.1 Ethnographic Study

Our methodology is aligned with Goodall's (2000) notion of new ethnography, which deals more directly with the interpersonal aspect. . . . We used autoethnography to engage in reflexivity and interpret our respective roles as instructors (Goodall, 2000). As teachers attempted to engage

students in CRP for the first time, student voices provided critical feedback. Analysis at the student level helped to authenticate whether or not the task was culturally relevant. Analysis at the teacher level allowed them to reflect and learn from their pedagogy. . . . Analysis at the teacher-researcher level allowed me to reflect upon my instruction in the professional development course. . . . This three-tiered process allowed us to describe the complexities of culturally relevant teaching in high school from the perspectives of student, teachers, and teacher research. . . . In addition to student and teacher artifacts, data sources included observations and field-notes of five of the eight teacher participants' instruction. . . . Data sources also included teachers' course reflection papers and log entries related to their CRP projects. . . . Other data sources included lesson plans, transcripts, and student artifacts.

Source: Leonard, J., Napp, C., & Adeleke, S. (2009). The complexities of culturally relevant pedagogy: A case study of two secondary mathematics teachers and their ESOL students. *The High School Journal, 93*(1), 9–10.

The first step in conducting an ethnographic study is to formulate the research problem statement. The foreshadowed questions, as discussed in Chapter 2, are initially general and are subject to change as the study is conducted. Once the research problem statement or question is established, the researcher designs data collection by determining the nature of the research site, how to enter the research site, how to select participants, how to obtain data, and how to analyze the data.

Case Studies

A **case study** is an in-depth analysis of one or more events, settings, programs, social groups, communities, individuals, or other "bounded systems" in their natural context. The case study is an investigation of one entity, which is carefully defined and characterized by time and place. The single entity could be a single school, for example, which would be a *within-site* study, or a number of schools (*multisite*). Also, in a single study there may be one or multiple cases (collective case study).

Case study: In-depth analysis of a single experience or entity.

Note in Example 10.2 how the researchers justified their use of a case study design of two student-initiated retention programs to meet the needs of underrepresented students of color.

EXAMPLE 10.2 Instrumental Case Study

We chose case study as a research method for the obvious reason that we needed to develop a holistic understanding of SIRPs [Student Initiated Retention Project]. Yin (1989) described case study research as a flexible form of inquiry best suited for studying a particular phenomenon within its natural context. Such studies . . . through the use of interviews and observations, seek to develop "thick descriptions" of the setting or phenomenon in question. . . . Accordingly, we relied on formal structured interviews, informal interviews (with key informants), observations, and key documents.

Source: Maldonado, D. E. Z., Rhoads, R., & Buenavista, T. L. (2005). The student-initiated retention project: Theoretical contributions and role of self-empowerment. *American Educational Research Journal, 42*(4), 615.

In Example 10.3 a collective case study is described in which two teachers and their classrooms in two high schools in New Zealand were investigated. A multisite case study is illustrated in Example 10.4.

EXAMPLES 10.3–10.4 Collective and Multisite Studies Case

An interpretivist-based methodology was used, and this comprised a multiple case study approach. . . . In the first case study a total of 12 one-hour lessons were observed . . . while in the second fewer lessons were observed. . . . A case study approach was used in order to facilitate a holistic, interpretive investigation of events in context with the potential to provide a more complete picture of the science curriculum students were experiencing compared to other modes of research. . . . The interpretive analysis concentrated on their [students'] perspectives of classroom reality.

Source: Hume, A., & Coll, R. K. (2009). Assessment of learning, for learning, and as learning: New Zealand case studies. *Assessment in Education: Principles*, Policy & Practice, *16*(3), 274.

This two-site, qualitative case study examined how the Chicago and Boston Public School Districts alternatively prepared new teachers through partnerships with private, nonprofit urban teacher residencies. . . . The study asked how the reform partners defined "teacher quality" and how the structure of their partnerships contributed to those meanings.

Source: Boggess, L. B. (2010). Tailoring new urban teaches for character and activism. *American Educational Research Journal*, *47*(1), 65.

Though the term *case study* has become identified as a type of qualitative research, this is typically because in-depth studies of a single entity use qualitative methods to gather data. Case studies can also be conducted with quantitative approaches. Often, both qualitative and quantitative methods are used in the same case study. In our discussion here, however, we will restrict usage of case study to qualitative research.

Once a researcher has decided on using a case study approach, the type of case study needs to be specified to determine appropriate research questions and methods. Table 10.2 summarizes several types of case studies. Each is targeted for a unique need.

Because the primary purpose of a case study is to obtain a detailed description and gain an understanding of the case, generalizability of the findings is a concern. Sometimes, researchers will try to identify a "typical" case to study. If so, they are concerned with at least some generalization to a larger group or other situations as traditionally defined. However, this is difficult in education since it is not very feasible to find a single exemplar that is representative of others. For example, doing a case study of a single classroom to investigate how a beginning teacher functions will provide in-depth descriptions of that classroom and teacher, but it is unlikely that other classrooms or teachers will be the same. The best to hope for is that the readers will come to their own conclusions regarding generalizability.

TABLE 10.2 Types of Case Studies

Type	Description
Historical organizational	Focus is on a specific organization over time, often tracing the organization's development.
Observational	Participant observation is the primary method of gathering data to study a particular entity or some aspect of the entity (such as a school or classes within a school).
Life history	A first-person narrative that is completed with one person; also referred to as an *oral history*.
Situation analysis	A specific event (e.g., how students deal with the death of a parent) is studied from different perspectives.
Multicase (collective)	Several different independent entities are studied.
Multisite	Many sites or participants are used to, in the main, develop theory.
Instrumental	Study of an entity, theme, or issue.

Research problem statements in case studies are written to focus on an in-depth description and understanding. Often there is a single central question, followed by several subquestions. For example, the questions in Example 10.5 were used in a study that examined how three middle school teachers integrated the use of laptop computers for instruction. Note how the authors emphasized the need to reconstruct the questions as the study was undertaken.

EXAMPLE 10.5 Case Study Research Questions

Before we defined specific boundaries for the study, broad areas of investigation were identified with the understanding that they would serve as guidelines for collection of data about the school community and that research questions, along with their data collection strategies, would be developed over time. After several months, two questions emerged that we felt captured the complexity of how the teachers were learning to use laptop technology in the classrooms:

1. How do participants' personal histories and beliefs about learners and learning play out within the institutional culture to influence their technology-related instructional practices?
2. How do teachers construct technology-related norms and practices with peers and students through their participation in various activity settings?

Source: Winidschitl, M., Schendel, J. M., & Ulman, J. E. (2002). Tracing teachers' use of technology in a laptop computer school: The Interplay of teacher beliefs, social dynamics, and institutional culture. *American Educational Research Journal, 39*(1), 172.

Phenomenological Studies

Phenomenological: Understanding the essence of experiences.

The purpose of conducting a **phenomenological** study is to describe and interpret the experiences of participants in order to understand the "essence" of the experience *as perceived by the participants.* The basis of phenomenology is that there are multiple ways of interpreting the same experience or event, and that the meaning of the experience to each participant is what is used as primary data. This is akin to the previously mentioned characteristic of *participant perspectives.* Though all qualitative studies have this orientation, a phenomenological study focuses much more on the consciousness of human experiences. Typically, there is a search for essential or invariant structure in the meanings given by the participants. The researcher needs to suspend, or "bracket," any preconceived ideas about the phenomenon to elicit and better understand the meanings given by the participants.

The research problem for a phenomenological study is focused on what is essential for the meaning of the event, episode, or interaction. It is also focused on understanding the participants' voice. This can be stated directly, as in "What is the essence of meaning behind student conferences with counselors?" or less directly, as in "What is the relationship between a school counselor and student really like?" Usually, there is a single, central question in the research. Several subquestions are used to orient the researcher in collecting data and framing the results.

The abstract from a phenomenological study is reproduced in Example 10.6. This study illustrates the focus on the lived, subjective experience of a small number of participants (in this case, four teachers). In the second example, Example 10.7, the excerpt describes the rationale for using phenomenology.

EXAMPLES 10.6–10.7 Phenomenological Study

This report focuses on examining alternatively prepared high school matthematics teachers' perceptions of the connections and disconnects of their program experiences and the realities of urban classrooms. Using phenomenology as the framework, a storytelling approach is employed to capture the perceptions of the teachers' experiences. This approach allows the teachers to convey their understanding of the relationship between their alternative preparation and teaching in urban classrooms.

Source: Junor Clarke, P. A., & Thomas, C. D. (2009). Teachers' perceptions of connections and disconnects between their alternative preparation and teaching in uran classrooms. *Urban Education, 44*(2), 144.

This study used a phenomenological approach to investigate the recollections of participants of an out-of-school science program. Phenomenology seeks clarification and understanding of people's perceptions and experiences, especially the meanings they give to events, concepts, and issues. . . . This process examines the experience of each participant and recognizes that these experiences have a relationship with the phenomenon (in this case the out-of-school science experience).

Source: Knapp, K. (2007). A longitudinal analysis of an out-of-school science experience. *School Science and Mathematics, 107*(2), 46.

Grounded Theory Studies

Grounded theory: Theory generated from qualitative data.

The intent of a **grounded theory** study is to discover or generate theory that explains central phenomena from the data. The theory is essentially an abstract schema, or set of propositions, that pertains to a specific experience, situation, or setting. It is the context of the phenomenon being studied that provides the basis for a grounded theory study. In this sense, the theory is "grounded" or derived from data collected in the field.

Research problems in grounded theory studies are focused on what happened to individuals, why they believe it happened as it did, and what it means to them. The questions are broad and general, such as the following:

What did you experience when you worked with a gifted student?
What did you experience when you worked with a new teacher?
How did you decide to split up the work with the mainstreamed student?
How did you feel about working with a delinquent student?

This is usually followed by subquestions related to coding of the data. For example, a study of curriculum revision in private colleges could begin with questions such as "What theory explains the curriculum change process in private colleges?" and "How does the faculty participate in the curriculum change process?" and then include subquestions such as these:

How was the change process initiated?
What were the obstacles to success of the revision?
Who were the most important people to the success of the revision?
Why were they influential?
What was the final outcome of the revision process?

Creswell (2008) identifies three types of grounded theory designs: systematic, emerging, and constructivist. The systemic approach is used extensively in education. It involves the use of rigorous procedures and techniques with careful coding categorization. The coding of data is dependent on what is suggested by the data, rather than using preexisting categories. With an emerging design the coding and categorization are less structured and prescribed. There is more flexibility in determining codes, categorization, and themes. The constructivist design focuses on the perspectives of the participants, reflecting "active" codes that emphasize how participants have changed their perceptions and insights.

A grounded theory approach is explained in Example 10.8.

EXAMPLE 10.8 Grounded Theory Study

In the present study we applied the principles of grounded theory to frame a set of factors that seem to set major challenges concerning both successful work in the school physics laboratory and also in the preparation of lessons that exploit practical work. The subject groups of the study were preservice and inservice physics teachers who participated in a school laboratory course. Our results derived from a detailed analysis of tutoring discussions between

the instructor and the participants in the course, which revealed that the challenges in practical or laboratory work consisted of the limitations of the laboratory facilities, an insufficient knowledge of physics, problems in understanding instructional approaches, and the general organization of practical work. Based on these findings, we present our recommendations on the preparation of preservice and inservice teachers for the more effective use of practical work in school science and in school physics.

Source: Nivalainen, V., Asikainen, M. A., & Sormunen, K. (2010). Preservice and inservice teachers' challenges in the planning of practical work in physics. *Journal of Science Teacher Education, 21*(4), 393.

Critical Studies

Critical studies are distinguished by a researcher role as advocate to respond to the themes and issues of marginalized individuals. These studies are focused on systems of power and control, privilege, inequity, inequality, dominance, and influence based on race, gender, and socioeconomic class. The central issue that is studied is typically the struggle of targeted groups to enhance their power and influence, emancipating them from the more dominant culture. For example, a researcher might focus on the inequitable treatment of students with learning disabilities, or students whose primary language is not English. Data would be gathered to challenge the status quo and to initiate action to ameliorate injustices. Essentially, the researcher applies a critical "lens" through which data are gathered and analyzed (e.g., feminine, gender).

A critical study is used in Example 10.9. In this case, low socioeconomic, cultural, feminist lens were used to advocate more effective mother voices.

EXAMPLE 10.9 Critical Study

This study's use of qualitative methods allowed mothers to define how they make meaning of their educational view, choices and experiences, and how these are shaped by socioeconomic and cultural factors. I also examined how the mothers perceive school contexts, policies, and other sociopolitical conditions as hindering or empowering them within an urban educational marketplace, and I learned how they used strategies to help empower themselves within this setting . . . in accordance with feminist methodological standards.

Source: Cooper, C. W. (2007). School choice as "motherwork": Valuing African-American women's educational advocacy and resistance. *International Journal of Qualitative Studies, in Education, 20*(5), 487–488.

Review and Reflect *Try identifying the key characteristics of each type of qualitative study, then give original examples of each. While knowing the different types is helpful in evaluating the quality of the research, it's most important to focus on the quality of data collection and analysis.*

TABLE 10.3 Comparison of Different Types of Qualitative Studies

	Purpose	Data Collection	Data Analysis	Reporting of Results
Ethnography	Describing a cultural group	Primarily observations and interviews	Description, analysis, interpretation	Description of cultural behavior
Case Study	In-depth analysis of single or multiple cases	Use of multiple sources of data	Descriptions, themes, assertions	In-depth description of case(s)
Phenomenology	Understanding the essence of experiences	Extended interviews with up to 10 participants	Statements, meanings, themes, general description	Description of essence of the experience from participants' perspectives
Grounded Theory	Developing a theory from field data	Interviews with 20–30 participants	Coding to constantly compare findings to themes	As a set of propositions, hypotheses, or theories
Critical Studies	Advocates for marginalized individuals	Use of multiple sources of data	Descriptions, themes, assertion, advocation	As assertions based on inequity or inequality

Source: Adapted from Creswell, 2008.

The five traditions or approaches to qualitative studies presented in this chapter are summarized and compared in Table 10.3. Remember that the different types of qualitative studies will overlap in many respects to some degree, and that the general characteristics summarized at the beginning of the chapter will apply to each type. We now move on to issues that are important in judging the quality of qualitative studies. For this purpose, all five will be considered together since the principles are pertinent to all types.

TYPES *of* DATA COLLECTION

Three major types of data collection techniques are used in qualitative research: observation, interview, and document and artifact review. Before any data collection, however, the researcher needs to identify the participants and sites, and gain entry into the field, as applicable. We'll consider briefly the identification of participants and sites, then discuss approaches for entering the field.

Identification of Sites and Sources of Data

The selection of sources of data, whether people, documents and artifacts, or events, is done purposefully. Selection of participants for qualitative studies was covered in Chapter 4. Essentially, purposeful samples (of people or documents and artifacts) are identified and used to provide the greatest amount and depth of information.

Consequently, key informants are identified and used in groups where all cannot be studied. Certain documents deserve more attention than others because they are richer and lead to greater depth of descriptions and understanding. It is

better to select a few entries for in-depth results rather than a larger number that would result in more superficial information. Sites (where data are collected) are also selected purposefully to provide rich data. Characteristics of information-rich sites are gleaned from the literature, and these characteristics provide a description of what is needed.

Internal sampling: Selection of participants, times, and documents at a site.

For an ethnographic case study, the selection of participants would be completed after identifying the site and entering the field (**internal sampling**). Sites, like participants, are selected purposefully to provide the best information related to the initial or central question. This would include the setting, where the data will be collected, time frames, and events of interest. For example, observations may be planned for researching how students respond to a computer program to help them write. There would be a need to use the most informative settings (e.g., within a classroom or computer lab), when observations should be made (e.g., morning, afternoon, beginning of the school year, days of the week, etc.), and what students would be doing during the selected times at the designated locations (e.g., actively writing with the software or revising based on feedback).

In a case study, a "group" of participants is usually identified. The group is a collection of individuals who interact with each other, share the same space, and identify with each other. Typical groups in educational case studies would be students in a classroom, athletes on a team, teachers in the same grade level or department, and learning-disabled students in a mainstreamed class. One consideration in selecting the group is size. Other factors being equal, the smaller the group, the greater the chance that the researcher's presence will change their behavior. For example, in a case study of teenage same-sex friendships in which the researcher stayed with two or three pairs of participants, it is likely that the researcher's involvement would affect the friendships. A larger number of participants makes it easier to remain unobtrusive and relatively anonymous. Of course, a larger number of participants makes it more difficult to keep detailed records on everyone; depth is sacrificed for less intrusion.

Purposive sampling for a case study is illustrated in Example 10.10, a study that investigated economically disadvantaged, high achieving urban high school students.

EXAMPLE 10.10 Purposive Sampling in a Case Study Investigation

For the purpose of this study, high ability students were defined as those demonstrating well above average potential as measured by a score above the 90th percentile using local norms on standardized intelligence or achievement tests during his or her school career. . . . The participants were recommended by the high school's guidance counselors for the study as achievers when three of the following four criteria were met: (1) identified and enrolled in an academically gifted elementary or middle school program, (2) achieved at a superior level academically as evidence by high grades, (3) nominated for the study by a teacher/counselor and (4) received various academic awards and honors.

Source: Reis, S. M., Colbert, R. D., & Jebert, T. P. (2005). Understanding resilience in diverse, talented students in an urban high school. *Roeper Review, 27*(2), 113.

The participants in a phenomenological study are selected because they have lived the experiences being investigated, are willing to share their thoughts about their experiences, and can articulate their conscious experiences. Typically, between 5 and 25 individuals will be selected for study.

The sample of participants, documents, and artifacts for a grounded theory study is based on the ability of each to contribute to the development of theory. Often, a homogeneous sample is selected first, one in which each individual has had a similar experience. Once the theory is developed, a heterogeneous sample, individuals who have had different experiences, may be selected to confirm or disconfirm tenets of the theory.

In a critical theory study, sources of data are identified to provide the most convincing advocacy among the group, issue, and event being investigated. Stories of individuals who have been marginalized are especially powerful, so participants with such stories are selected.

Entry into the Field

Whether the researcher physically goes into field settings, such as schools, or figuratively by interviewing and collecting documents and artifacts, it is important to establish an appropriate role, obtain permission, and establish an appropriate rapport. The researcher role defines the position of the investigator and his or her relationships with others. At one extreme, the researcher is a *complete outsider*, totally detached from the naturally occurring behavior and activities of the participants. There is no involvement with what occurs in the setting. The researcher is detached—comes in, gathers data, and then leaves. A *complete insider*, on the other hand, is a researcher who has an established role in the setting in which data are collected, engaging in genuine and natural participation. In between these extremes, the researcher may be labeled *insider/outsider* or *partial participant*. In ethnographic studies, it is best if the researcher is a stranger to the site. Examples of different researcher roles are presented in Table 10.4.

Qualitative researchers often change their role as data are collected. The nature and duration of different roles are determined, in part, by the situation. As situations change, roles also change. When first entering a site, the researcher might take on primarily a complete outsider role. As the study progresses, more of an insider role could develop. In studies with a limited time frame, it is difficult for the researcher to be an insider, which is why in ethnographies extended time is needed to "walk in the shoes" of the participants.

Researcher roles will vary depending on the type of qualitative study. In many ethnographies, case studies, and grounded theory approaches, the interactions are widespread but the researcher is less intrusive in collecting data. In phenomenological studies, the interaction is more intrusive, close, and personal.

In obtaining initial permission, it is best if there is an agreement that permits access to all potentially helpful sources of data. This is important since the gathering of data evolves from initial approaches as the researchers learn from current data. It is also important to be clear about how confidentiality and anonymity will be maintained.

TABLE 10.4 Examples of Researcher Roles in Collecting Data

	Complete Insider	Partial Participant	Complete Outsider
Observation	Counselor observes students participating in small groups.	Researcher from outside the school helps counselors observe small groups.	Researcher from outside the school observes students in small groups.
Interview	Principal interviews teachers in his or her school.	Researcher from outside the school interviews teachers in their school.	Researcher from outside the school interviews teachers at a university.
Document and Artifact Review	Teacher reviews memorandums concerning formative assessment practices in his or her department.	Teacher from another department reviews memorandums.	Researchers from outside the school review memorandums.

Rapport with individuals in the research site is enhanced when the researcher takes time to understand others' perspectives and shows respect for different viewpoints and personalities. Favorites should be avoided, and the researcher needs to use honest, authentic, and sincere communication. Rapport is also enhanced when the researcher is able to participate in daily activities, establish common interests, and relax and act naturally.

Observation

By observing naturally occurring behavior over many hours or days, qualitative researchers hope to obtain a rich understanding of the phenomenon being studied. In an ethnography, observation is *comprehensive* in that it is continuous and total. The quality of the results in an ethnography is often directly related to the length of the observations. It is unlikely that valid and credible data will result for this type of study from a few hours of observation.

Participant observer: Observer involved as a participant.

An important aspect of the observation is the extent to which the researcher is an active participant with the subjects. If the researcher is a genuine participant in the activity being studied, he or she is called a **participant observer.** For example, to study the life of a college freshman, the participant observer would become a college freshman, directly experiencing everything other freshmen experience. This is essentially what an anthropologist would do in conducting ethnographic research on a culture. The anthropologist would virtually become a member of the group and live just as others in the group live.

In educational research, it is rare for the investigator literally to adopt the same role as the individuals who are being studied. There may be some participation in some of the activities, but it is usually limited. The researcher interacts with the participants to establish a rapport and a relationship but does not become a member of the group. When participation is limited, the researcher is called an *observer participant.*

TABLE 10.5 Roles of the Qualitative Observer

Passive Participation	Moderate Participation	Active Participation	Complete Participation
Complete observer: Observes without becoming a part of the process in any way.	Observer participant: Identified as a researcher and does not take on the role of the participants.	Participant observer: Participates as a member of the group but is known as a researcher.	Complete participant: Participates as a member of the group and is not known as a researcher.

As illustrated in Table 10.5, you can think of the degree of participation and involvement as a continuum, ranging from a *complete participant* on one end to a *complete observer* on the other end. A **complete observer** is totally detached from the behavior of the participants who are being studied. Of course, the mere presence of an observer, whether involved or detached, may affect the behavior of those observed.

Complete observer: Observer detached from participants.

The extent of participation by an observer often changes during a study. In the beginning, the researcher may limit participation to become accepted. As the group being studied becomes comfortable with the researcher, participation increases. Another variable that affects the extent of participation is the nature of the research question. If, for example, the study is focused on the perspectives of students, then it makes sense to participate more with the students than with the teacher. On the other hand, if teacher perceptions are the focus of the study, then the researcher should take on more of an observer role.

The more the researcher is actively involved with the participants, the greater the chance that this involvement will significantly alter what occurs. Any degree of participant involvement is likely to affect the interpretation of what is observed. As a consumer, you need to look for clues indicating that researcher participation may have been an important influence on the results (e.g., emotional involvement or bias in the interpretation of what is recorded). The researcher should indicate a sensitivity for this effect and should take precautions to ensure that his or her participation does not significantly distort the observations. Some researchers will indicate their biases and personal beliefs at the outset of the study, thereby demonstrating an explicit concern with compensating for them.

Observers usually record observations as brief notes while they are observing. These brief notes are then expanded to become what are called *field notes.* **Field notes** are detailed written descriptions of what was observed, as well as the researcher's interpretations. They constitute the raw data that the researcher analyzes to address the research problem. The assumption is that nothing is trivial, so whatever is seen, heard, or experienced is recorded and considered. Observation sessions will typically last one to two hours. Longer sessions make it difficult to keep an in-depth recording of what is observed simply because there is too much data. Good observation is hard work and requires excellent listening skills.

Field notes: Detailed recordings of observed behavior.

Field notes include two kinds of information. The first type is *descriptive.* The purpose of the description is to use pictures, words, drawings, maps, and diagrams

that capture the details of what has occurred. The field notes usually include a description of the setting, what people looked like, what they said, and how they acted. The date, place, and time are recorded, as well as a description of the activities in which people were involved. Portraits of the participants are written, including their dress, mannerisms, and physical appearance. Often a description of the researcher and his or her dress and actions is included. As much detail as possible is recorded, including direct quotes or close approximations of what was said. In the description, interpretations are avoided. Thus, rather than using words such as *angry* or *effective*, the researcher would describe the specific behaviors observed. The observation is *unstructured* in the sense that there are no predetermined categories or checklists. Whatever is observed is recorded in a form that captures the perspectives of the individuals being studied.

The second kind of information in the field notes is *reflective*. These are researcher speculations, feelings, interpretations, ideas, hunches, and impressions—subjective notions related to the research. Reflections include thoughts about emerging themes and patterns, thoughts about methodological problems or issues, considerations of ethical concerns, and introspective discussions about researcher opinions, attitudes, and prejudices. It is important to keep these reflections separate from the descriptive information. In the field notes, they are often identified as *observer comments*.

Most observations result in notes about *who*, *what*, *where*, *how*, and *why* something happened. Examples of how each of these dimensions manifests itself in studies are presented in Table 10.6.

TABLE 10.6 Dimensions of Observation Foci

Observation	Description
Who is in the group?	How many students are present? What race or ethnicity is represented? What are the ages of the students? How long have they been in the school?
What is happening?	In what activities are the students involved? How long are the activities? How are students communicating? How long is the duration of their involvement? What topics are commonly discussed? Who talks and who listens? How do students behave with each other and the teacher?
Where is the class located?	What are the physical dimensions of the setting? What technology is available? Where is the class located in the school?
When does the class meet?	How long and how often do students meet to engage in the activity? When during the day do students typically engage in the activity?
Why does the class engage in the activity?	Do students agree on why the activity is important? What reasons are given for the activity? What meanings do students give the activity?

It is critical for the field notes to be accurate and extensive. You will be able to judge the level of detail provided by the excerpts the researcher uses to illustrate conclusions, and the overall amount of data analyzed.

The following example of field notes, Example 10.11, will give you some idea of the detail that is recorded. These field notes were collected as part of a study on mainstreaming learning-disabled high school students. What is reproduced here represents about *one-tenth* of the notes for an observation period of 1.5 hours. O.C. stands for observer comment.

EXAMPLE 10.11 Field Notes

I walked into Marge's class and she was standing in front of the room with more people than I had ever seen in the room save for her homeroom which is right after second period. She looked like she was talking to the class or was just about to start. She was dressed as she had been on my other visits—clean, neat, well-dressed but casual. Today she had on a striped blazer, a white blouse and dark slacks. She looked up at me, smiled and said: "Oh, I have a lot more people here now than the last time."

O.C.: This was in reference to my other visits during other periods where there are only a few students. She seems self-conscious about having such a small group of students to be responsible for. Perhaps she compares herself with the regular teachers who have classes of thirty or so.

There were two women in their late twenties sitting in the room. There was only one chair left. Marge said to me something like: "We have two visitors from the central office today. One is a vocational counselor and the other is a physical therapist," but I don't remember if those were the words. I felt embarrassed coming in late. I sat down in the only chair available next to one of the women from the central office. They had on skirts and carried their pocketbooks, much more dressed up than the teachers I've seen. They sat there and observed. . . .

I looked around the room noting the dress of some of the students. Maxine had on a black t-shirt that had some iron-on lettering on it. It was very well-done iron-on and the shirt looked expensive. She had on Levi jeans and Nike jogging sneakers. Mark is about 5'9" or 5'10". He had on a long-sleeve jersey with an alligator on the front, very stylish but his pants were wrinkled and he had on old muddy black basketball sneakers with both laces broken, one in two places. Pam had on a lilac-colored velour sweater over a button-down striped shirt. Her hair looked very well-kept and looked like she had had it styled at an expensive hair place. Jeff sat next to her in his wheelchair. He had one foot up without a shoe on it as if it were sprained.

Source: Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods* (5th ed.). Boston: Allyn & Bacon, 261–263.

Interviewing

Interviews were described in Chapter 6 as a data collection technique, ranging from structured to unstructured formats. In qualitative research, interviews are perhaps the most widely used method of collecting data. Typically, the qualitative interview is *in-depth* and either semi-structured or unstructured. An in-depth interview uses a few open-response, relatively general questions with some probes to obtain more detail. In qualitative studies, interviews can be unscheduled, consisting of informal

conversations with participants, but are more typically scheduled with a specific purpose. They can be done in person, by telephone, over the Internet, with individuals or small groups. The most commonly used format is in person, individually, or with small groups. Within these variations in format, there are specific types of qualitative interviews.

Types of Qualitative Interviewing. Qualitative interviews can be classified according to whether they are individual or small group, and by whether they are relatively structured or unstructured.

In a relatively unstructured general interview, the researcher begins with a general idea of what needs to be asked, but does not have a list of prespecified questions with precise wording. A general direction is established with the respondent and then specific questions are formulated based on what the respondent says. The respondent controls the interview, not the interviewer, and does most of the talking. The interviewer needs to be flexible and allow the respondent to control the flow of information but at the same time keep the overall focus on the research problem being investigated.

In an *informal conversational interview*, the questions emerge from the immediate context and are asked in the natural course of events spontaneously; there is no predetermination of questions, topics or phrasing, and nothing is planned ahead. For example, a researcher may meet a student in the hallway and have a conversation from which data are derived. In the *interview guide approach*, topics are selected in advance, but the researcher decides the sequence and wording of the questions during the interview, and may use preestablished prompts. For both individual and small group interviews, this approach is most common. It allows for important topics to be covered but also gives respondents freedom to emphasize other areas. One variation of the interview guide approach has a preestablished set of questions and prompts that are asked in order. Thus, all participants get the same questions in the same order. This assures extensive comments on each area, but may constrain and limit the naturalness and relevancy of the responses. This kind of interview tends to be less engaging and more formal, and reduces interviewer flexibility to probe in new and potentially important ways. Good qualitative interviewing has probes and pauses. Establishing trust, being genuine, maintaining eye contact, dressing appropriately, and connecting with the respondent are important.

One way good qualitative researchers keep the interview going with rich information is to *not ask* questions that can be answered dichotomously (e.g., yes or no). Notice how the following dichotomously answered questions can be rephrased to be more effective:

Did the teachers have difficulty in the seminar?	What did you expect teachers to have difficulties with in the seminar?
Did the teachers change?	How did the teachers change?
Did you learn anything from the workshop?	What did you learn about the teaching strategies presented in the workshop?
Were any problems identified at the committee meeting?	What problems were identified at the committee meeting?

One type of individual interview, the **key informant interview,** is used extensively in ethnographic studies. It is based on the assumption that in-depth interviews with a few "key" participants, individuals who are particularly knowledgeable and articulate, will provide insights and understandings about the problem. For example, certain students may be best able to provide information on the effect of working part-time while participating in sports. The assistant principal responsible for instruction would probably be a key informant in a study of how a new curriculum is being integrated.

Key informant interview: Interview of a few particularly knowledgeable participants.

However, the qualities that make key informants valuable also make them unrepresentative of the group. Thus, the researcher should carefully describe key informants and address the question of representativeness. Key informants should be selected after the researcher has become familiar with the setting to increase the probability that they will provide needed information truthfully. Informant bias may occur because of a person's position or values. Selecting key informants to represent the diversity of perspectives present in the setting lessens the potential for bias. As with all interviews, the skill of the interviewer is critical to gathering valid data. As a general rule, skill is directly related to training and experience—the more training and experience, the greater the skill.

In a second type of individual interview, the **life-history interview,** the researcher is interested in learning about the subject's life. The data from life histories are helpful in obtaining a historical perspective or a broad perspective on how an individual has developed. Life histories in educational research can provide insights into career development. Note in the following example how qualitative interviews were used to examine how women in athletic training positions balance work and family.

Life-history interview: Information about what has occurred throughout the participant's life.

EXAMPLE 10.12 Life-History Interviews

Using a qualitative research approach, in-depth interviews were conducted with eight female athletic trainers who are mothers. A purposeful sampling strategy was used to select participants based on consultation with the Athletic Training Women's Taskforce. A one-on-one, open-ended, semi-structured format was used, allowing time for the researcher to develop rapport and trust with the participant.

Source: Rice, L., Gilbert, W., & Bloom, G. (2001). Strategies used by division i female athletic trainers to balance family and career demands. *Journal of Athletic Training, 36*(2 Suppl), S-73.

A group interview technique that is used extensively is the **focus group interview.** A focus group is typically a 1- to 2-hour interview of 8 to 12 persons that is designed to promote interaction among the individuals and lead to a richer understanding of whatever is being studied because of what is generated in the discussion. Focus groups have been used to evaluate products in marketing research for many years. A moderator guides the discussion, based on a topic guide

Focus group interview: Group interview about a particular topic or problem.

that has been prepared in advance. The focus group technique is most useful for encouraging subjects, through their interaction with one another, to offer insights and opinions about a concept, idea, value, or other aspects of their lives about which they are knowledgeable.

Some so-called focus groups are little more than a small group discussion. To be effective, focus groups need to be conducted by someone with skill in interviewing and group dynamics. The group should be homogeneous with respect to important participant characteristics. For example, in learning about a vision for a school of education, it would be more effective to have untenured professors in one group and tenured professors in another group, alumni in a separate group, and students in a separate group. This assures that the voice of each group is clear and well-represented. If the group is mixed, one perspective may dominate, or the session may turn out to be a series of individual responses in a group setting. Typically, the session is tape-recorded and notes may be taken by a second researcher (it's difficult to conduct the interview and take notes at the same time!). My experience in conducting both individual and group interviews is that the participants don't have a concern with tape-recording, and having a verbatim record is very important for data analysis.

A focus group strategy for collecting data is illustrated in Examples 10.13 and 10.14.

EXAMPLES 10.13–10.14 | Focus Group Interviews

Three student focus groups represented Praire High's diverse student population, but the groups selected by faculty and staff were stratified by race. The "at risk" group was comprised entirely of African American and newcomer Latino students. . . . The "average" students focus group was equally divided among African American, Latino, and white students. The "honors" group was all white.

Source: Patterson, J. A., Hale, D., & Stessman, M. (2007). Cultural contradictions and school leaving: A case study of an urban high school. *High School Journal, 91*(2), 7.

The present study employed focus groups as the principal means of data collection. Focus groups are an effective method for obtaining in-depth information about a concept or issue and learning about people's experiences. . . . Instead of being directed by predetermined hypotheses or controlled by existing measures, focus groups enable participants to express themselves in their own words in an open and flexible process. . . . An experienced professional moderator facilitated all focus groups using a question route developed by the research team. The question route consisted of opening comments about the topic of stress, introductory questions to engage the participants in the topic, transition questions related to evaluations of stress, key questions on the causes of stress and coping strategies, and ending questions to summarize the discussion and confirm main points.

Source: Iwasaki, Y., & Mactavish, J. B. (2005). Ubiquitous yet unique: Perspectives of people with disabilities on stress. *Rehabilitation Counseling Bulletin, 48* (4), 196 .

Review and Reflect *Observation and interviewing are by far the most used types of data collection in qualitative research. Compare the strengths and weaknesses of each and match these to different types of qualitative studies. Are grounded theory studies stronger if they use more observation? What approach is best for critical studies? Can ethnographies be completed* without *observation? Try some interviews and observations. What makes them difficult? What skills are needed to do them well?*

Document and Artifact Analysis

The third primary method of collecting data for ethnographic studies is by reviewing documents and artifacts. **Documents** are written records. They can be virtually anything written or printed, such as yearbooks, school budgets, dropout rates, committee minutes, memos, letters, newspapers, diaries, test scores, and books. Nonprint materials, such as pictures, videotapes, memorabilia, and films, can also be used. If the documents provide firsthand information, they are *primary* sources. In a primary source the document is written in first person. It is written by someone who has had direct experience with the phenomenon, organization, or group being studied. *Secondary* sources are secondhand documents, such as descriptions of an event on the basis of what is heard from others, or a summary of more extensive primary information.

Documents: Written records.

Artifacts are archival sources that are different from documents. This would include comments in student files; record of testing results; statistical data; objects such as athletic letters, trophies, posters, and awarded plaques; bulletin boards; photographs, videos; art objects; film; physical trace evidence (e.g., wearing on the floor); e-mails; ritual objects; and sounds, smells, and tastes.

Artifacts: Archival sources different from documents.

Table 10.7 (on page 296) summarizes the strengths and weaknesses of observations, interviews, and document and artifact analysis.

The most common use of documents is to verify or support data obtained from interviews or observations. For example, teacher notes taken at the end of the school day that reflect on the successes and obstacles in using a new curriculum could be used to supplement researcher observations about implementing the new curriculum. Student essays could also be examined if written as part of the curriculum. The researcher usually finds existing documents and artifacts that have been produced, but occasionally, a researcher will ask participants to keep records or narratives as a way of producing documents. It should be clear, however, that a document is written or created as a natural outgrowth of the situation, and not in response to some kind of predetermined structure imposed by the researcher.

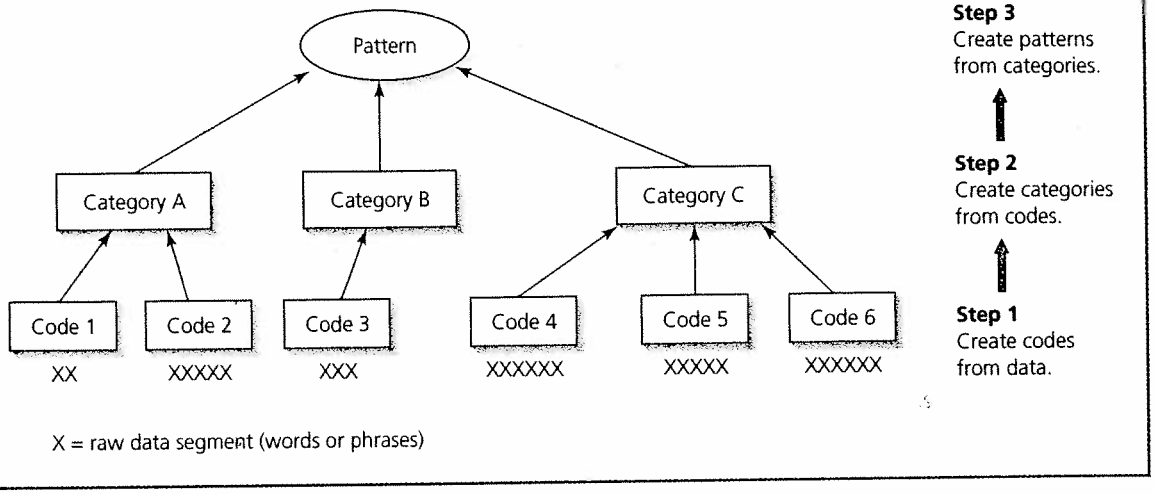
DATA ANALYSIS *and* INTERPRETATION

Observation, interview, and document and artifact analysis techniques result in a great amount of data that must be summarized and interpreted. Pages of field notes or interview transcripts must be critically examined and synthesized. The analysis is done during data collection as well as after all the data have been gathered. In many qualitative studies data collection and analysis are

TABLE 10.7 Strengths and Weaknesses of Different Types of Qualitative Data Collection

Type	Strengths	Weaknesses
Observation	• Can observe behavior in natural settings. • Observer is able to see behavior firsthand as it occurs. • Enhances understanding of the context. • Useful for gauging engagement, interest, and attitudes. • Unintended behavior can be observed. • Allows an understanding of sensitive areas that individuals may not want to discuss.	• Observer can change the behavior of the participants. • Limited to when observations are made. • Observer bias or expectations may influence what is recorded and how it is interpreted. • Labor- and resource-intensive. • May be difficult to record important behavior that occurs quickly.
Interview	• Allows researcher to control the conversation and obtain the information needed. • Facilitates verbatim transcriptions as raw data. • Good backup if observations are not possible or are impractical. • Direct interaction allows recording of nonverbal behavior that accompanies answers to questions. • Participants are able to provide historical perspective.	• Information is indirect, not naturally occurring. • Skill, biases, and expectations of the interviewer may affect results. • It may be difficult to establish rapport to obtain in-depth and authentic responses. • Participants may be uncomfortable, inarticulate, or uncooperative. • Anonymity cannot be assured, which may affect the disclosure of sensitive information.
Document and Artifact Analysis	• If unobtrusive, it will not be affected by participant awareness. • Audio-visual data provide creative sources of information. • Allows participants to share their perspectives in unique ways. • Provides data for which participants have had significant and thoughtful input. • Relatively inexpensive with fewer needed resources. • Provides alternative sources for triangulation. • Accessible when convenient for the researcher. • Provides detailed participant language and wording.	• Is not naturally occurring behavior. • Does not allow probing for additional information. • Sources may not be accurate or complete. • Data may be difficult to understand and code. • Medium may be disruptive and unnatural. • May provide incomplete or partial information.

FIGURE 10.2 **Steps in qualitative data analysis and interpretation.**



interwoven, influencing one another. The goal of the analysis is to discover patterns, ideas, explanations, and "understandings." Specific data elements have to be organized and then synthesized to derive the patterns and ideas that will form the basis of the conclusions. A thorough analysis requires three steps: organization of the data, summarizing the data as codes, and then interpreting the data to search for patterns. These steps are illustrated in Figure 10.2.

Data Organization

The first step in data analysis is to organize the data, separating it into workable units or segments. With many pages of data, simply organizing the data is quite a task. Fortunately, several computer software programs are available to record and analyze the data more efficiently.

Emic: Participant wording.

Etic: Researcher representations of emic data.

Most studies organize the data according to their source. **Emic** data contain information provided by the participants, in their own words. By capturing language, actions, expressions, terms, and explanations as communicated by the participants, the richness and depth of the findings can be summarized. **Etic** data are representations of the researcher. These representations are the researcher's interpretation of emic data. This is usually illustrated with themes or conclusions that explain trends and findings. For example, in a study of teachers' reasons for using particular grading practices, the participants might say something like "I use objective tests to show parents how grades were determined" and "I use tests that have the same type of items as the high-stakes test given at the end of the semester." These statements represent emic data. The researcher might synthesize these and call them "external pressures," which would be etic data.

Codes: Words or phrases to signify units of data.

The most common approach to organizing both emic and etic data is to read through the narratives and researcher comments and to look for words, phrases, or events that seem to stand out, and then create **codes** for these topics. The codes are then used as categories to organize the data. "Families" of codes can be applied to most studies. The families include codes related to setting and context, subjects' definitions of a setting, subjects' perspectives about other people and aspects of a setting, process changes over time, activities, events, techniques subjects use to accomplish things, and relationships and social structures. Typically, 30 to 50 codes are used. Some may be *major* codes, which tend to be broad, general categories, while others may be *subcodes*, which are divisions among the major codes. For example, in an ethnographic study of the effect of a new testing program, major codes might be time of testing, effect on teacher, effect on student, effect on school climate, effect on teacher relationships. Subcodes under effect on students could include motivational effects, effort, student preparation, student reactions after testing, student reactions after receiving scores.

Because the creation of codes is up to each researcher and is critical to the study, it is important to know something about how the codes were created. The key is for the data to suggest codes, not vice versa. Look for some kind of systematic process in the development of the codes, such as using general research questions that are stated prior to the research and that are generated during the study. Regular review of field notes to plan next steps keeps a researcher close to the data and familiar with major themes. Qualitative researchers need to write many observer comments as they are interviewing or observing or reviewing documents because these comments form the basis of important insights and categories. Sometimes playing with analogies and metaphors will provide an overview of organization of ideas.

An example of coded field notes is illustrated in Figure 10.3.

Data Summary

Organized data then need to be summarized into a much smaller number of categories or themes. This step can be arduous. Before computers, it would not be unusual to have each piece of information written on cards and sorted into piles according to different codes. Imagine a room with 30 piles of cards, each pile having 10 to 50 data elements. For example, in the aforementioned study on the effect of testing, one code is effect on students. In this pile there would be many cards that indicate observations or interview responses pertaining to effect on students. This could be something as simple as "The students moaned when testing was mentioned" to more complicated entries such as "One student came up after class and asked the teacher for more details about the testing. The student wanted to know about the difficulty of the test in comparison to classroom tests, and whether it would help to study for the test." The researcher's job in summarizing is to examine all the entries that have the same code and write a sentence or two that captures the essence of the information.

FIGURE 10.3 **Example of coded field notes.**

teachers' work

Then I went down to the teachers' lounge to see if anybody might happen to be there. I was in luck. Jill Martin sat at the first table, correcting papers; Kathy Thomas was also there, walking around and smoking. I said, "Hi Jill, hi Kathy. Okay if I join you?" "Sure," Jill said. "You and your husband have been to China, right?" I said, "Yes. Why?" Jill then turned to Kathy and said,"Have you studied China yet? Sari has slides that she can show." Kathy said to me that she was going to study world communities, even though "they" had taken them out of the sixth-grade social studies curriculum. "Now can you tell me who 'they' are?" I asked her. She said,"You know, 'them': 'they.'"

authority

autonomy

Both Jill and Kathy were upset at how "they" had mandated what the teachers could teach in their rooms. "They" turned out to be the central office who had communicated the state's revised sixth-grade social studies curriculum. The state has "taken out all the things that we think are important" from the curriculum and have substituted the theme of "economic geography" for the sixth-graders to study.

doing your own thing

Both Jill and Kathy think that "sixth-graders can't comprehend economic geography well," and think world communities of Africa and Asia are more important. They said they planned to teach what they wanted to anyway. Kathy said, "They'll come around one of these days." "Oh, Kathy, are you a rebel?" I asked. "No," she replied, "I'm just doing my own thing."

parents

After we chatted for a little while, Jill turned to me: "You're interested in what concerns us. I guess one thing is parents." She proceeded to describe a parent conference she had participated in yesterday afternoon with a child's parents and a child's psychiatrist. She said, "What really upsets me is how much responsibility they placed on me to change the child's behavior." They seemed to give lip service, she reported, to have "controls" come from the child when they said, "It's so difficult for parents to see that kids need to take responsibility for their actions."

parents

Source: Bogdan, Robert C. and Biklen, Sari Knopp (2007). Qualitative research for education: An introduction to theories and methods (5th ed., p. 188). Published by Allyn and Bacon, Boston, MA. Copyright © 2007 by Pearson Education. Reprinted by permission of the publisher.

Category: Idea that represents coded data.

A **category,** then, is formed from coded data as a more general and abstract idea that represents the meaning of similarly coded information. Some codes will be used in more than one category.

When the researcher is engaged in forming categories, a very important process occurs. This could be described as *recursive.* The recursive process involves the repeated application of a category to fit codes and data segments. This is sometimes called constant comparison, in which the researcher is continually searching for both supporting and contrary evidence about the meaning of the category. The recursive process is usually reported as part of data analysis. The recursive process is shown in Example 10.15.

EXAMPLE 10.15 Recursive Analysis

Moreover, iterative methods were used to identify themes in the participant narratives. I fully transcribed each interview and read through the transcripts several times to pinpoint salient themes, patterns and relationships. . . . I coded the transcripts while reading them, and I repeatedly reevaluated my coding scheme. I looked for consistency and contradictions with and across the mother's narratives. Furthermore, I drafted three sets of memos that captured my preliminary analysis of the individual, school-based and cross-participant findings. Once I was confident of the trustworthiness and usefulness of my coding scheme, I clustered my data by code and did a final review. Inductive analytical methods were used to confirm or disconfirm the salience of my theoretical framework.

Source: Cooper, C. W. (2008). School choice as "motherwork": Valuing African-American women's educational advocacy and resistance. *International Journal of Qualitative Studies in Education, 20*(5), 498.

As with many data analysis procedures, computer software programs are available for qualitative data storage and analysis. A good source to compare the programs is a book by Ann Lewins and Christia Silver, Using Software for Qualitative Data Analysis: A Step-by-Step Guide (Thousand Oaks, CA: SAGE, 2007). The primary advantage of such software is that it is much easier to store and organize a large amount of data, and to search for and locate segments that are similar. This is similar to content analysis, where single words or like phrases can be pulled together with a click of the mouse. It is also possible to combine text with audio and visual components, and some programs provide a mapping of relationships among codes and categories.

Author Reflection *Like quantitative software, qualitative software is becoming more available and easier to use. I have done qualitative analyses both with and without a software program, and I'm partial to not relying too much on the computer to do my work. There is something to be said about reading transcripts all the way through, from the beginning to end of a single interview, to capture the essence of what is being said. Sometimes coding and categorizing too quickly make it difficult to understand the whole from the parts. Try doing qualitative analysis both ways—see what you think and compare your conclusions with others.*

Data Interpretation

Once the data have been coded and summarized, the researcher looks for relationships among the categories and patterns that suggest generalizations, models, and conclusions. At this point the researcher interprets the findings inductively, synthesizes the information, and draws inferences. The researcher essentially reveals what he or she has found and what it means. Because so much of the analysis depends on the researcher, it is best to know the researcher's perspectives, background, and theoretical orientation. For each major finding and interpretation, it is common for the researcher to use actual quotes from participants, field notes, or documents to illustrate the point and enliven the results. It also gives the reader an opportunity to see how the researcher has been thinking and the basis for conclusions.

A study of adult self-disclosure about having a learning disability presented five themes to organize the interview data the researchers obtained. Example 10.16 is an excerpt from one theme to show how exact quotes are used. The second excerpt, Example 10.17, is from a study on the use of higher-level thinking to enhance student self-regulation. Interviews were conducted with seven teachers.

EXAMPLES 10.16–10.17 Use of Participant Quotes

In fact, 15 of the 18 interviewees offered responses that specifically referred to the stigma of their disability. For example, one adult said, "you feel terrible stupid. . . . I'm hesitant . . . the word *disability* . . . there's so many stigmas out there." A second explained, "It [disclosed learning disability] can be damaging to you." A third told us "The biggest thing I'm afraid of is people thinking I'm stupid and treating me differently, like my boyfriend's family does."

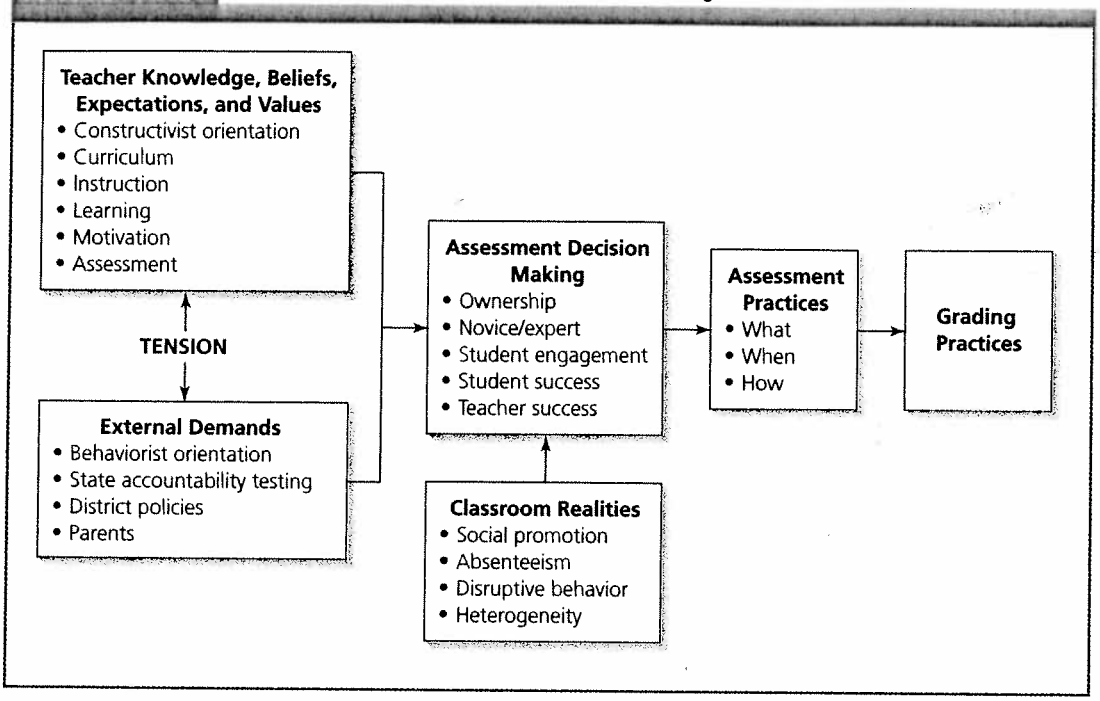
Source: Price, L. A., Gerber, P. J., Mulligan, R., & Williams, P. (2005). To be or not to be learning disabled: A preliminary report on self-disclosure and adults with learning disabilities. *Thalamus, 23*(2), 22.

Six of seven teachers interviewed for the study found writing higher-order thinking questions for reading assignments and quizzes to be initially challenging in that they had been used to prepare questions on the literal level of comprehension. As one teacher noted, "The greatest challenge I faced was maintaining the higher-order thinking skills notion when writing the questions. We've become so accustomed to asking literal questions and emphasizing the meaning of certain vocabulary words." Teachers regress just as well as students. Since students are more successful and comfortable with the literal interpretation of readings, teachers have become comfortable in asking literal questions.

Source: Cooper, J. E., Horn, S., & Strahan, D. B. (2005). If only they would do their homework: Promoting self-regulation in high school classes. *High School Journal, 88*(3), 19.

The process of pattern-seeking begins with the researcher's informed hunches and ideas as data are being collected and interpreted. Once tentative patterns are identified, additional data are examined to determine if they are consistent with that pattern. It is also common to have different researchers independently review data to see if they come up with the same patterns. This is a more deductive process, one in which there is a search for negative or discrepant data that would not support the pattern. Such a finding modifies the pattern. Pattern-seeking is also characterized by enlarging, combining, subsuming, and creating new categories that make sense logically. It is not uncommon to derive overarching models that show the relationships among several patterns in the findings visually, in the form of a diagram or chart. For example, a qualitative study of teachers' classroom assessment and grading decision making found that there were six major categories with subcategories that explained the data. Figure 10.4 identifies some of the data, codes, and categories from this study. Note how some data are used in more than one category.

FIGURE 10.4 **A model of teacher assessment in decision making.**



Source: Adapted from McMillan (2002).

CREDIBILITY

In quantitative research the criteria for credibility are based primarily on the validity and reliability of scores and on internal validity. In qualitative research somewhat different criteria are necessary because its approach, design, and data are different.

The primary criterion for evaluating qualitative studies is the *credibility* of the study. (Some qualitative researchers will use the terms *validity* or *internal validity* to refer to credibility—others won't use these quantitatively oriented terms.) **Credibility** is defined as the extent to which the data, data analysis, and conclusions are accurate and trustworthy. Are the themes and the patterns that emerge from the data plausible? Are they accurate, consistent, and meaningful? Are they authentic? How much confidence do you have in the results and conclusions?

Credibility: Accuracy and trustworthiness.

Qualitative researchers judge the credibility of a study from a holistic perspective. Creswell (2009) suggests eight procedures that can be used to enhance credibility in qualitative studies:

1. *Prolonged Engagement.* It is important for the researcher to be closely engaged with the participants and the setting to provide details for the narrative that presents the results. This suggests a need to have extensive experience and close involvement. There needs to be sufficient engagement

so that additional time in the setting or with the participants would not change the results. Think of prolonged engagement resulting in saturation—where additional observations or interviews or document review would not add new findings.

2. *Member Checking.* **Member checking** is completed when the researcher asks the participants to review interpretations and conclusions, and the participants confirm the findings. This could be accomplished by having participants review interviewer or observer conclusions about what was said or done if there is no recorded transcript. For example, an interviewer can summarize his or her notes at the end of the interview to see if the notes accurately reflect the point of view of the participants, if they are accurate. More important, the researcher can check with the participants about codes, categories, themes, patterns, and other findings to see if these are viewed by the participants as fair, reasonable, accurate, and complete. This can be accomplished by sharing drafts of final products, in writing or by interviews, and allowing participants opportunities to make comments (see Example 10.19).

Member checking: Participant review of data.

3. *Triangulation.* **Triangulation** is a technique that seeks convergence of findings, cross-validation, among different sources and methods of data collection. That is, data are collected from different individuals at different times or in different places, or several sources of data are used to see if the results are consistent. For example, if researchers are studying student engagement in a class, they could observe the students, interview the students, and ask the teacher for his or her opinion. Or the effectiveness of staff development could be judged by observing workshops and interviewing the participating teachers. If the results from each source of data point to the same conclusion, then the researcher has *triangulated* the findings (doesn't need three or more sources of data; can be done with two).

Triangulation: Compares the findings of different techniques.

Triangulation is perhaps the most widely used technique to establish credible findings. In Examples 10.18 and 10.19, the researchers used triangulation in their studies.

EXAMPLES 10.18–10.19 Triangulation

The credibility of the findings was verified through data triangulation . . . by using several sources: field notes by two persons, verbatim transcripts, multiple raters, moderator, observer, second rater, member checks the accuracy of notes, and stakeholder reviews.

Source: Gallagher, P. A., Rhodes, C. A., & Darling, S. M. (2004). Parents as professionals in early intervention: A parent educator model. *Topics in Early Childhood Special Education, 24*(1), 9.

Trustworthiness was established by first triangulating the data using multiple data sources, including teacher questionnaires, teacher interviews, and student interviews. Second, the teachers reviewed the transcribed interviews. This member-checking procedure (Creswell & Miller, 2000) permitted teachers to verify the content of the interviews and offer any

clarification of points, if needed. . . . Finally, the data were examined by and discussed with a peer debriefer trained in qualitative research.

Source: Xiang, P., Solomon, M. A., & McBride, R. E. (2006). Teachers' and students' conceptions of ability in elementary physical education. *Research Quarterly for Exercise and Sport, 77*(2), 190.

4. *Negative Case Analysis.* Actively looking for findings that present discrepant information is needed to reflect the reality that not all data will provide the same result, and to change results when justified. Presenting negative cases enhances the credibility of the study because it shows that the researchers are examining the cases in detail. In other words, it's not only fine, it's good for the researchers to present information that contradicts themes, patterns, and overall results.
5. *Peer Debriefing.* Peer debriefing is completed by asking a colleague or another person to review the study for credibility and determine if the results seem to follow from the data. Someone who is knowledgeable about the topic and qualitative analyses, but sufficiently detached to provide a fresh perspective, is preferred. That person's own biases should be reflected in his or her evaluation, which gives feedback about the selection and meaning of categories, themes, patterns, and study conclusions.
6. *External Audit.* An external audit is similar to peer debriefing. An external auditor, however, is unfamiliar with the project and provides a more objective review. Like a peer debriefer, the external auditor examines all aspects of the study to look for coherence, reasonableness, accuracy, data analysis, interpretation, and conclusions, and points out weaknesses or "threats" to credibility.
7. *Researcher Reflection.* The researcher's self-reflection of possible biases, background, and values supports the credibility of the study. It is important to know that the researcher understands how his or her own perspectives, shaped by gender, socioeconomic status, or position, will influence his or her expectations, interpretations, and conclusions. Good qualitative researchers know that their subjectivity may influence results, and direct examination of this subjectivity, through reflection, adds to credibility. This is reflected in the excerpt in Example 10.20.

EXAMPLE 10.20 Researcher Reflection

My social positionality as a Caucasian, able-bodied male may have detracted from the study because of my culturally- and socially-imposed blinders to the realities of other peoples' experiences different from my own—which may have been manifested in the classroom to an important extent without my even knowing it. Using the strategy of progressive subjectivity (Guba and Lincoln, 1989) to record my initial and on-going expectations of how I thought authority would be negotiated in the classroom, however, helped assure that I moved beyond my initial preconceptions and effectively derived the finds from the actual words and actions of participants.

Source: Brubaker, N. D. (2009). Negotiating authority in an undergraduate teacher education course: A qualitative investigation. *Teacher Education Quarterly, 36*(4), 104.

8. *Thick Descriptions.* Credible qualitative studies use detailed, in-depth, thorough, and extensive descriptions, what is sometimes described as "thick" and/or "rich." That is, there is abundant use of detail. This enhances credibility because it indicates extensive engagement with the data and an appreciation of how all information is valuable. It enables the reader to understand the complexity and realism of the site and participants. For example, a rich, detailed description of a college student commons may be needed to understand the dynamics of students meeting there for discussions with faculty. Thick descriptions include presenting verbatim language from participants and detailed field notes. The research procedures should also be described in detail.

Note in the following example how multiple methods of data collection are utilized to ensure trustworthiness and reliability (accuracy). This study took three years to complete, which surely meets the criteria of having sufficient length!

EXAMPLE 10.21 Establishing Credibility

In this study, the accuracy of the observations and the trustworthiness of this investigation were enhanced by the use of tape-recorded interviews and field notes that enabled the researcher to examine and clarify information; photography that was used to document and study specific situations and/or settings that required more than a single view; triangulation between methods; depth of detail; and continuous cross-checking for accuracy. The methods, procedures, and strategies used to ensure accuracy included: observations of informants in various settings; interviews with informants, teachers, relatives, and others; document review; and photography.

Source: Reis, S. M., Colbert, R. D., & Jebert, T. P. (2005). Understanding resilience in diverse, talented students in an urban high school. *Roeper Review, 27* (2), 113.

GENERALIZABILITY

Generalizability in qualitative studies is very different from what is used for quantitative studies. In qualitative studies, there is no intent to generalize to other participants, settings, instruments, interventions, or procedures. There is little or no emphasis on replications, except with some case study research. Qualitative researchers use the term *transferability* to get at generalizability. **Transferability** refers to the appropriateness of applying the results to other contexts and settings. It is enhanced by a thick description of the site, participants, and procedures used to collect data. This makes it easier for the person wanting to apply the results to his or her setting to know whether or not there is a good fit, if it makes sense to generalize. In qualitative research the person who wants to use findings from one study in their context, rather than the researcher of the original study, is responsible for determining generalizability.

Transferability: Application of findings to similar contexts.

the results will be useful for children in similar schools but less useful for those from schools that serve a middle or high socioeconomic level. The decision is not to dismiss the findings but to limit them to the type of subjects in the sample. As more and more research accumulates with different convenience samples, the overall credibility of the results is enhanced.

Although it is uncommon for a researcher to state explicitly that a convenience sample was used, it will be obvious from the subjects subsection of the article. If some type of probability sampling procedure was used, it will be described. Thus, in the absence of such particulars you can assume that the sample was an available one. The following examples (Examples 4.6–4.7) are typical.

EXAMPLES 4.6–4.7 Convenience Samples

Participants in this investigation were 482 undergraduate students. Student volunteers were solicited primarily from educational psychology and human developments courses at a large urban land-grant university in the mid-Atlantic United States.

Source: Buehl, M. M., & Alexander, P. A. (2005). Motivation and performance differences in students' domain-specific epistemological beliefs profiles. *American Educational Research Journal, 42*(4), 704.

Participants ($N = 39$) were adult graduate students attending a CACREP-accredited counselor training program at a comprehensive, regional university in Pennsylvania. Participants consisted of a nonprobability convenience sample of all students enrolled in one of two courses.

Source: Wilkerson, K., & Eschbach, L. (2009). Transformed school counseling: The impact of a graduate course on trainees' perceived readiness to develop comprehensive, data-driven programs. Professional School Counseling, 13(1), 4.

Quota sampling: Nonrandom sampling representative of a target population.

Quota Sampling. **Quota sampling** is used when the researcher is unable to take a probability sample but still wants a sample that is representative of the entire population. Different composite profiles of major groups in the population are identified, and then subjects are selected, nonrandomly, to represent each group. Thus, subjects are selected nonrandomly according to specific criteria. A type of quota sampling that is common in educational research is used to represent geographic areas or types of communities, such as urban, rural, and suburban. Typically, a state is divided into distinct geographic areas, and cases are selected to represent each area. As in availability and purposive sampling, there is a heavy reliance on the decisions of the researcher in selecting the sample, and appropriate caution should be used in interpreting the results.

Review and Reflect *One of the most important distinctions about quantitative sampling is the difference between sampling to generalize and sampling that may bias or otherwise seriously impact the findings. What are the major types of sampling used for generalizing to a population? Under what circumstances would it be best to use stratified random sampling? How can a convenience or available nonprobability sample be used to generalize the findings?*

TYPES of SAMPLING PROCEDURES for QUALITATIVE STUDIES

n qualitative studies participants are selected purposefully. That is, there is a rea-
on or justification for why the sample of individuals or sites will provide the best
nformation to address the research question. In **purposeful sampling** (some-
imes referred to as *purposive*, *judgment*, or *judgmental* sampling), the researcher
elects individuals or cases because they will be particularly informative about the
opic. Based on the researcher's knowledge of the population, a judgment is made
o include those cases that will be information-rich. These few cases are studied
ı depth. For example, in research on effective teaching, it may be most infor-
ıative to observe "expert" or "master" teachers rather than all teachers. To study
ffective schools, it may be most informative to interview key personnel, such as
ıe principal and teachers who have been employed in successful schools for a
umber of years. Sometimes researchers will be interested in *deviant* cases, se-
ecting individuals who do not fit an established pattern. This approach can be
sed to establish a better understanding of more common traits.

Purposeful sampling: Selection of information-rich participants.

There are a number of different purposeful sampling procedures that qualita-
ve researchers use to obtain "information-rich" individuals and sites. All of them
se nonprobability sampling. The more common types are summarized here and
ı Table 4.1.

riterion Sampling

/ith criterion (or *criteria*) sampling, the researcher selects participants on the
ısis of identified characteristics that will provide needed information. Often sev-
al criteria are used, as illustrated in Example 4.8, to ensure that participants
ıve had sufficient experience with what is being studied. The criteria are deter-
ined prior to the selection of the participants. For example, a study of resilience

ABLE 4.1 Types of Purposeful Sampling Procedures

ampling Procedure	Description
riterion	Choosing individuals with certain important characteristics.
/pical case	Choosing individuals or sites that are representative of most others.
ctreme case	Choosing individuals or sites that are unusual or atypical.
aximum variation	Choosing individuals or sites that represent extreme values of the phenomenon being studied.
ıowball	Selecting individuals based on recommendations of participants.
itical case	Choosing a dramatic illustration of the phenomenon being studied.