

Methods of Data Collection in Quantitative, Qualitative, and Mixed Research

8

Research in Real Life Data Collecting and Research Questions



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One common task of educational researchers is the evaluation of teacher professional development programs. For this, you should attempt to use an experimental research design, but what kind of data would you need to collect? That is, what “methods of data collection” would you need to use? This seemingly simple task can actually be somewhat daunting. One might think a particular standardized performance test would be the bottom line, but sometimes there is no existing test with adequate data to support its use. We might also want to develop a more localized test. We might also be concerned about the quality of the professional development. So, we would develop a questionnaire or an interview protocol asking teachers to self-report what they learned in the training, what was useful, what was not useful, and how the training might be improved. We might also want to collect data on “transfer of training,” and we decide to observe the teachers in their classrooms to see if they are applying their new knowledge. We could develop a questionnaire or an interview protocol asking if they are using what they learned, and, if they are not using their new knowledge, ask them what barriers are preventing them from using it. We could also ask the principal to evaluate the teachers’ use and command of the material through direct observation of teachers in their classrooms.

LEARNING OBJECTIVES

After reading this chapter, you should be able to

- List the six major methods of data collection.
- Explain the difference between method of data collection and research method.
- Define and explain the characteristics of each of the six methods of data collection.
- Explain the different modes of administration of the methods of data collection.
- Explain the concept of standardization.
- Explain the key characteristics of the four different types of interviews.
- Describe the four roles the researcher can take in qualitative interviewing.
- List at least five commonly used interviewing probes.
- Explain how the fundamental principle of mixed research can be applied to methods of data collection and provide an example.
- State the two “cardinal rules” of educational research mentioned in this chapter.

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We might even develop a student questionnaire to ask students about their satisfaction with the new lessons. Tests, questionnaires, interviews, and observations are some of the methods of data collection that you might use in carrying out this evaluation task.

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In Chapter 7, we introduced you to the concept of measurement (primarily for quantitative research), and we discussed the different kinds of tests that are used for collecting data in educational research. The following point made in that chapter is also quite relevant for the present chapter—if an already constructed test or other instrument of data collection is available for the topics of interest to you, you should strongly consider using that instrument because reliability and validity information will usually be available for it! If you use such an instrument that has been published in a journal article, you must give the original author and journal article full credit. If you want to use an unpublished instrument (perhaps it was mentioned in a journal article you read), then you will need to send an email to the author who constructed the instrument and ask for a copy and permission to use it. Some researchers like to always ask the original author for permission to use an instrument regardless of its publication status. Also, sometimes you will need to adapt an instrument to make it appropriate for your somewhat unique participants, and, if so, you will need to obtain permission from the person who constructed the original instrument. Finally, many standardized tests are owned by corporations, and not only will you need permission for use, but you also will have to pay for your use.

Sometimes an already developed data-collection instrument will *not* be available for your particular research needs. In this case, you must construct a new test or other type of data-collection instrument, such as a questionnaire or an interview protocol, and doing this well takes time and effort. In the next chapter, you will learn how to construct a new questionnaire if one is needed for your research study.

This chapter answers these four questions:

1. What are the six major methods of data collection?
2. What method or methods of data collection will allow me to obtain the information I need to answer my research questions?
3. What are the strengths and weaknesses of the different methods of data collection?
4. How do I use these methods of data collection in my research?

The following list shows the six most common methods of data collection used by educational researchers:

1. Tests
2. Questionnaires
3. Interviews
4. Focus groups
5. Observation
6. Constructed, secondary, and existing data

With these methods of data collection, researchers can have their participants fill out an instrument or perform a behavior designed to measure their ability or degree of skill (tests); researchers can have research participants fill out self-report instruments (questionnaires);

researchers can talk to participants in person or over the telephone (interviews); researchers can discuss issues with multiple research participants at the same time in a small-group setting (focus groups); researchers can examine how research participants act in natural and structured environments (observation); and researchers can have participants construct new data during a study, such as drawings or recordings, or use data that came from an earlier time for a different purpose than the current research problem at hand (constructed, secondary, and existing data). The strengths and weaknesses of these six methods of data collection are provided in the lecture notes for this chapter at the student companion website.

MIXING METHODS OF DATA COLLECTION

In a typical research study, researchers begin by identifying the important research problems and specific research questions that they want to address. Then they select the most appropriate **research method(s)** (experimental, correlational, ethnography, grounded theory, etc.) to help them decide on the research design and research strategy that will allow them to answer their research questions. Researchers next decide how they are going to collect their empirical research data. That is, they decide what **methods of data collection** (i.e., tests, questionnaires, interviews, focus groups, observations, constructed, secondary, and existing data) they will physically use to obtain the research data.

As you read this chapter, keep in mind the **fundamental principle of mixed research** originally defined in Chapter 2. According to this principle, thoughtful mixing of methods, procedures, and other paradigm characteristics is an excellent way to conduct high-quality research. Specifically, you should mix in a way that provides multiple (divergent and convergent) and complementary (broadly viewed) strengths and nonoverlapping weaknesses. The principle offers you one guiding “logic for mixing.” In this chapter, think about how this principle can apply to the mixing of different *methods of data collection*. For example, you might collect standardized test data and then collect qualitative interview data to provide a fuller picture of a group of teachers’ aptitude for teaching reading. As another example, a researcher might find a statistical relationship between parental social class and the likelihood of children joining the middle school band (e.g., perhaps higher social class is related to band membership). A researcher might mix into this study the collection of some focus group data from the parents and children from different social classes to explore the reasons and thinking that produce this quantitative relationship.

There are actually two kinds of mixing of the six major methods of data collection (Johnson & Turner, 2003). The first is **intermethod mixing**, which means *two or more* of the different methods of data collection are used in a research study. This is seen in the two examples in the previous paragraph. In the first example, standardized test data and qualitative interview data were mixed/combined in the study. In the second example, a structured (quantitative) questionnaire and exploratory (qualitative) focus groups were mixed/combined.

In the second kind of mixing, **intramethod mixing**, both quantitative and qualitative data are obtained through the creative use of a single method (i.e., using just *one* of the six major methods of data collection). In short, you can use a quantitative, qualitative, or a mixed version of each of the six methods of data collection. For example, a *mixed questionnaire* includes both open-ended (exploratory) questions and standardized closed-ended items; the open-ended part provides qualitative data, and the closed-ended part provides quantitative data. One way to remember these two terms is to note their roots: *Inter-* means “between” and *intra-* means “within.” Accordingly, *intermethod* mixing uses information from two (or more) data-collection methods, and *intramethod* mixing uses information collected by one data-collection method.

Mixing methods of data collection is like putting together several flawed fishing nets—each of which has a hole, a torn part, or a weak point—to construct a “new,” stronger net that works well despite the problem with each individual net. We highly recommend that you print out

Research method

Overall research design and strategy

Method of data collection

A technique for physically obtaining the data to be analyzed in a research study

Fundamental principle of mixed research

Advises researchers to thoughtfully and strategically mix or combine qualitative and quantitative research methods, approaches, procedures, concepts, and other paradigm characteristics in a way that produces an overall design with multiple (divergent and convergent) and complementary (broadly viewed) strengths and nonoverlapping weaknesses

Intermethod mixing

Use of more than one method of data collection in a research study

Intramethod mixing

Use of a single method of data collection to obtain a mixture of qualitative and quantitative data

the six tables at the book's companion website that list the strengths and weaknesses of the six major methods of data collection. You will find these tables in the lecture notes for Chapter 8. Using these tables and what you learn in this chapter, you will be able to decide how to mix and match the methods in your own research study in a way that follows the fundamental principle of mixed research.

Although our focus in this chapter is on methods of data collection, the fundamental principle of mixed research also applies to the mixing of other research ingredients, such as research methods (e.g., using mixed versions of experiments, ethnographies, grounded theory, etc.), sampling methods, and data analysis methods. Educational research is about providing solid evidence for your conclusions, and evidence is greater when you employ a logical mixing strategy. In fact, one cardinal rule in educational research is this: *Provide multiple sources of evidence*. Multiple sources of evidence will sometimes provide multiple-converging support for a single point, and at other times they will provide a fuller-diverging picture of what you are studying. In both cases, you will be glad that you used multiple methods. Here's another cardinal rule in educational research: *Rule out alternative explanations*. If you want to make a specific claim, following this rule is essential so that you can defend your claim. Carefully following these two rules, providing evidence from multiple perspectives and ruling out alternative explanations of your claims, will enable you to produce research reports that are convincing and defensible and will be taken seriously.

Remember that in this chapter we are concerned with how research data are collected from research participants (i.e., "methods of data collection"), not with the different "research methods" or research methodologies (e.g., experimental research, ethnography, case study, etc.). You will learn more about the different *research methods* in Chapters 12–17. Please note, however, that the research method called **survey research** uses questionnaires and interviews for data collection; therefore, coverage of questionnaire and interview methods of data collection in this chapter will be very important if you decide to conduct a survey research study. Having said this, questionnaires and interviews are used in many kinds of research, and not just in survey research. Now we explain the different *methods of data collection*.

See Tools and Tips 8.1 on the Student Study Site for strengths and weaknesses of the methods of data collection.

Survey research

A nonexperimental "research method" that relies on questionnaires and/or interviews for data collection

REVIEW QUESTIONS

- 8.1 *What is a method of data collection?*
- 8.2 *What are the six main methods of data collection? (Hint: The first letters make the rather awkward acronym TQIFOS.)*
- 8.3 *What are the two "cardinal rules" of educational research mentioned in this chapter?*

TESTS

Tests are commonly used in quantitative research to measure attitudes, personality, self-perceptions, aptitude, and performance of research participants. Perhaps the most common type of test is the standardized test, which is developed by psychometricians and usually includes psychometric information on reliability, validity, and reference group norms. In fact, Chapter 7 was about standardized tests, so you already know a lot about this form of test (e.g., its characteristics, the different types, and where to find already developed tests). We emphasize again that if a relevant test is already available that measures the variables of interest to you, then you should seriously consider using that test.

Although many tests are available for use (e.g., standardized tests of intelligence and personality, achievement, preschool, aptitude, and diagnostic tests), experimental researchers sometimes need to construct their own tests to measure very specific constructs that are operationalized in unique ways. An experimental researcher might design a test procedure to measure a cognitive or memory process or to measure participants' response time to a mental activity. For example, a researcher studying particular types of mathematics story problems might develop a test that deals specifically with those problem types. The point is that, when a researcher is looking at the manipulation of instructional content or context, tests usually need to be tailored to the content or task. Note that even though such "experimenter-constructed" tests are not normed for specific populations, the researcher is obliged to do his or her best to find ways to affirm the reliability and validity of the assessments.

Because you have already read a full chapter on tests (Chapter 7), we do not elaborate more on tests here, except to point out that it is possible to construct a qualitative (or mixed) version of a test. For example, in psychological testing counselors sometimes use open-ended tests such as the Rorschach test (where you examine a set of inkblots and verbalize what you "see") and the Thematic Apperception Test (where you respond to what you think about a set of pictures or cartoons). Although tests are most often viewed as a quantitative method of data collection, you can be creative as long as you think carefully about how you might construct a qualitative or mixed test. Keep in mind that, as with all methods of data collection, you may want to *mix* your test with additional methods of data collection when you conduct a research study (we called this intermethod mixing, which means the use of more than one method of data collection). For an example of mixing, you might take a look at a study by Liu et al. (2018) or another published study that interests you. These researchers used school records, peer nominations, and self-report questionnaires to determine the relationship between peer victimization and depression and children's academic achievement.

Technology and Tests

Some psychological tests have to be administered one-on-one by the researcher. However, most tests used in research can be administered in a group situation, and these tests are typically administered on computers by the researcher. A newer approach that is sometimes used entails administering the test online. For example, when all of the materials can be programmed, an experiment can be conducted over the Internet rather than in a laboratory. You should determine what mode of administration will work best and is most efficient in your research study. Advantages of computer testing are ease of administration and the ability to program complex sequences of questions. Internet testing also includes the advantage of lack of researcher effects because there is no researcher present. A key weakness of Internet testing is that you might not know, for sure, who is taking the test and what other activities the participant is engaging in that might affect his or her performance.

QUESTIONNAIRES

A **questionnaire** is a self-report data-collection instrument that each research participant completes as part of a research study. Researchers use questionnaires to obtain information about the thoughts, feelings, attitudes, beliefs, values, perceptions, personality, and behavioral intentions of research participants. In other words, researchers attempt to measure many different kinds of characteristics using questionnaires.

Because you will read a full chapter on questionnaire construction (Chapter 9), we do not elaborate on questionnaires much in this chapter. You will learn that there are quantitative (closed-ended), qualitative (open-ended), and mixed versions of questionnaires.

Questionnaire

A self-report data-collection instrument filled out by research participants

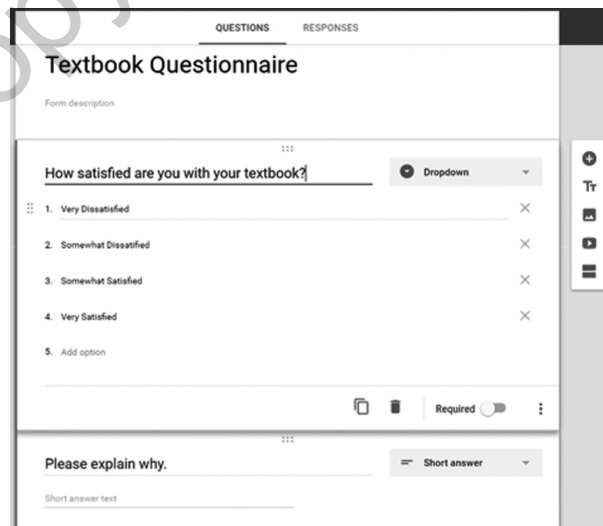
(You can see an example of a high-quality mostly quantitative questionnaire in Chapter 9, Exhibit 9.3, page 224, and a high-quality qualitative questionnaire in Chapter 9, Exhibit 9.1, pages 216–217.) As with all of the methods of data collection, remember that you will often want to mix questionnaires with other methods when you conduct a research study (i.e., inter-method mixing). A table showing the strengths and weaknesses of questionnaires is provided in the lecture notes for Chapter 8 at the companion website. Be sure to consider these when you are considering using a questionnaire singularly or in combination with other methods of data collection.

Technology and Questionnaires

Survey research often is based on questionnaires as the survey instrument. The majority of the time the questionnaire is administered online because of the many advantages of *online survey research*. In Figure 8.1, you can see a screenshot from a *free* software package that you might want to use if you conduct an Internet survey—it is called Google Forms (<https://docs.google.com/forms/u/0/>). You can use the software in writing your questionnaire, sending it out to your participants in an email, and saving the results in your Google account. Questionnaires are also used in laboratory research, and in those cases, they are usually computer administered (i.e., the participants sit at a computer and complete the battery of research instruments). Questionnaires can also be administered individually or in groups as paper-and-pencil tests—the printed-out questionnaires are completed by the participants and physically handed back to the researcher. Yet another mode of questionnaire administration is by mail—the researcher mails the survey instrument (i.e., the questionnaire) to the research participants, who fill out the questionnaires and return them in self-enclosed, addressed, stamped envelopes. Now, please take a moment to carefully examine Figure 8.2 because it shows the strengths and limitations of mail, telephone, and Internet questionnaires. Figure 8.2 also provides the names of some software packages available to help you in conducting your questionnaire-based research.

FIGURE 8.1

Free Software Called Google Forms. Use it to develop a questionnaire, email it to your recipients, and store the results in your Google account. Link: <https://www.google.com/forms/about/>



The screenshot shows a Google Form interface. At the top, there are tabs for 'QUESTIONS' and 'RESPONSES'. The form title is 'Textbook Questionnaire'. Below the title is a 'Form description' field. The first question is a dropdown menu with the text 'How satisfied are you with your textbook?'. The dropdown options are: 1. Very Dissatisfied, 2. Somewhat Dissatisfied, 3. Somewhat Satisfied, 4. Very Satisfied, and 5. Add option. Below the dropdown is a 'Required' toggle switch. The second question is a short answer question with the text 'Please explain why.' and a 'Short answer' dropdown menu. The form is displayed on a mobile device, as indicated by the navigation icons on the right side.

Source: Google and the Google logo are registered trademarks of Google LLC, used with permission.

FIGURE 8.2 Modes of Questionnaire and Interview Data Collection (Especially in Survey Research)

	Questionnaires			Interviews		
	In-Person Questionnaire	Mail Questionnaire	Internet Questionnaire	In-Person Interview	Telephone Interview	Internet Interview
Defining characteristics	<ul style="list-style-type: none"> Questionnaire is completed by participants in group situation and given to the researcher upon completion 	<ul style="list-style-type: none"> Questionnaire is mailed to participants, who must complete it and mail it back to the researcher 	<ul style="list-style-type: none"> Participants click on an internet link that takes them to the online questionnaire. Once they are finished, they click "end" and the session is finished 	<ul style="list-style-type: none"> A professionally trained interviewer goes to each participant's house (or other agreed-upon location) and interviews the participant face-to-face 	<ul style="list-style-type: none"> An interviewer reads the script from a single location and records the participants' responses into a Computer-Assisted Telephone Interview (CATI) computer system 	<ul style="list-style-type: none"> A trained interviewer interviews the participant over the Internet using Internet software
How often used?	<ul style="list-style-type: none"> Very common in experimental research 	<ul style="list-style-type: none"> Used in survey research, but less common than other survey methods (including in-person interviews) due to low response rate 	<ul style="list-style-type: none"> Most common of all survey methods used today 	<ul style="list-style-type: none"> Least common due to high cost 	<ul style="list-style-type: none"> Very popular in survey research in business and large grant-funded academic projects 	<ul style="list-style-type: none"> Less common than telephone interviews, but slowly becoming popular as researchers learn about software availability

(Continued)

FIGURE 8.2
(Continued)

	Questionnaires			Interviews		
	In-Person Questionnaire	Mail Questionnaire	Internet Questionnaire	In-Person Interview	Telephone Interview	Internet Interview
Costs	<ul style="list-style-type: none"> • Inexpensive • Key costs are making copies of the instrument and data entry • Incentives often used for motivation 	<ul style="list-style-type: none"> • Inexpensive • Only requires costs of materials, mailing, and data entry • Small incentives often used 	<ul style="list-style-type: none"> • Inexpensive • Only requires software that is sometimes free for small-scale projects (e.g., Google Forms, SurveyMonkey, JotForm, Amazon MTurk, SurveyGizmo, Qualtrics, WebSurveyor, Google Consumer Surveys, QuestionPro, etc.) 	<ul style="list-style-type: none"> • Most costly of the six modes compared here because requires extensive travel by professional interviewer • Key costs are for professional interviewers, copies of instruments, travel costs, sizable incentives, and data entry 	<ul style="list-style-type: none"> • Less expensive than in-person survey; more expensive than mail survey • Start-up cost and software are expensive if conducting without a call center • Cost of using call center is considered high by many researchers without grant funding 	<ul style="list-style-type: none"> • Inexpensive • Less expensive than telephone and mail surveys if researcher does the interviewing • Software not very expensive or free (e.g., GoToMeeting, Google Hangouts, WebEx, join.me, Adobe Connect, FreeConferenceCall.com, Highfive, Zoom, and many more) • Key costs are data transcription and qualitative analysis of open-ended questions, which takes time
Sampling	<ul style="list-style-type: none"> • Includes groups the researcher can identify and are willing to come to central location usually at a university 	<ul style="list-style-type: none"> • Includes everyone in sampling frame with a home or work mailing address 	<ul style="list-style-type: none"> • Can include everyone across the world that has access to the internet. Excludes those without internet 	<ul style="list-style-type: none"> • Includes everyone willing to let the interviewer come to their house or other agreed-upon location 	<ul style="list-style-type: none"> • Includes everyone that has a valid telephone number. (Random digit dialing locates unlisted numbers.) Excludes those without phones 	<ul style="list-style-type: none"> • Can include everyone across the world that has access to the Internet. Excludes those without internet

		Interviews				
Questionnaires		Interviews				
	In-Person Questionnaire	Mail Questionnaire	Internet Questionnaire	In-Person Interview	Telephone Interview	Internet Interview
Response rate	<ul style="list-style-type: none"> Depends on circumstance but within a subject pool, a high response rate is not uncommon 	<ul style="list-style-type: none"> Low rate of 10%–40% is typical Higher rates are expected for topics of interest to respondents 	<ul style="list-style-type: none"> Moderate rate is typical (e.g., 25%–50%) if the source is trusted Higher rates for topics of interest to respondents 	<ul style="list-style-type: none"> Highest relative response rate (e.g., 75%–80% is not uncommon) 	<ul style="list-style-type: none"> Moderately high rate of 50% is not uncommon for surveys from a highly respected source and when not selling anything 	<ul style="list-style-type: none"> Rate estimates not currently available. Moderately high rates are expected
Speed	<ul style="list-style-type: none"> Quick turnaround if participants and research facility are available 	<ul style="list-style-type: none"> Takes several weeks to send reminders and wait for responses 	<ul style="list-style-type: none"> Quick turnaround 	<ul style="list-style-type: none"> Relatively slow, unless one has a large group of interviewers able to travel to diverse locations 	<ul style="list-style-type: none"> Quick turnaround when using a professional telephone call center 	<ul style="list-style-type: none"> Can more slowly (than Internet questionnaire and telephone call centers) gain responses when being done by the researcher and his or her small team
Additional advantages	<ul style="list-style-type: none"> Researcher has control over the data collection setting 	<ul style="list-style-type: none"> Good for sensitive topics Respondents can complete the questionnaire anytime they want to It's the only way to reach certain people 	<ul style="list-style-type: none"> Can program complex question sequences Respondents can complete the questionnaire anytime they want to It's the only way to reach certain people 	<ul style="list-style-type: none"> Can probe for more information Can develop rapport with respondents Can conduct longer interviews Can personalize the interview Respondents can be at their home in their familiar environment and at a time that is highly convenient for them It's the only way to reach certain people 	<ul style="list-style-type: none"> Can probe for more information Can develop rapport with respondents Can program complex sequences of items Less interviewer bias than in-person interviews It's the only way to reach certain people 	<ul style="list-style-type: none"> Can probe for more information Can develop rapport with respondents Can personalize the interview Respondents can be at their home in their familiar environment and at a time that is convenient for them It's the only way to reach certain people

(Continued)

FIGURE 8.2
(Continued)

	Questionnaires			Interviews		
	In-Person Questionnaire	Mail Questionnaire	Internet Questionnaire	In-Person Interview	Telephone Interview	Internet Interview
Disadvantages	<ul style="list-style-type: none"> No probing 	<ul style="list-style-type: none"> No probing No one present to help if a respondent has questions Little control over who responds 	<ul style="list-style-type: none"> No probing 	<ul style="list-style-type: none"> Very expensive Interviewer error/effects may occur 	<ul style="list-style-type: none"> Interview cannot effectively last more than 15 minutes Interviewer error/effects may occur 	<ul style="list-style-type: none"> Takes a lot of time Interviewee must have computer with webcam Interviewer error/effects may occur
Special needs	<ul style="list-style-type: none"> Need a participant pool that fits the research needs Convenience samples often used in experiments Requires training in questionnaire construction and delivery 	<ul style="list-style-type: none"> Need high-quality mailing list of population relevant to research study Must send reminders Requires training in questionnaire construction 	<ul style="list-style-type: none"> Need access to Internet addresses of population relevant to research study Must send reminders Requires training in questionnaire construction 	<ul style="list-style-type: none"> Need permission to visit Need home addresses (or other place to meet) Requires interviewer training 	<ul style="list-style-type: none"> Need high-quality phone number list of population of interest to research study Might have to call back Requires interviewer training 	<ul style="list-style-type: none"> Need access to relevant Internet addresses, and must set time to meet virtually Requires interviewing expertise

INTERVIEWS

You learned in the last section that you can collect data from research participants by having them fill out a quantitative (closed-ended), qualitative (open-ended), or mixed questionnaire. Another way to collect data is to interview your research participants, to collect quantitative, qualitative, or mixed data. An **interview** is a data-collection method in which an **interviewer** (the researcher or someone working for the researcher) asks questions of an **interviewee** (the research participant). That is, the interviewer collects the data from the interviewee, who provides the data. Interviews that are done face-to-face are called **in-person interviews**; interviews conducted over the telephone are called **telephone interviews**. A major strength of interviews is that a researcher can freely use **probes** (prompts used to obtain response clarity or additional information). You can see some commonly used probes in Table 8.1.

An interview is an interpersonal encounter. It is important that you (the interviewer) establish rapport with the person you are interviewing (the interviewee). The interview should be friendly. At the same time, you must be impartial to whatever the interviewee says to you. If you react positively or negatively to the content of the interviewee's statements, you may bias the responses. It is also important that the interviewee trusts you, because without trust you are likely to obtain biased research data.

Some techniques for establishing trust and rapport are to explain who the sponsoring organization is, to explain why you are conducting the research, and to point out to the participant that his or her responses are either anonymous (no name or identification will be attached to the respondent's data) or confidential (the respondent's name or identification will be attached to the respondent's data, but the researcher will never divulge the respondent's name to anyone). You want each potential participant to understand that your research is important and that his or her participation is important for the integrity of your study. We have included in Table 8.2 a list of tips that you will find helpful if you ever need to conduct an interview.

Interview

A data-collection method in which an interviewer asks an interviewee questions

Interviewer

The person asking the questions

Interviewee

The person being asked questions

In-person interview

An interview conducted face-to-face

Telephone interview

An interview conducted over the phone

Probe

Prompt to obtain response clarity or additional information

TABLE 8.1
Commonly Used Probes and Abbreviations

Standard Interviewer's Probe	Abbreviation Used on Interview Protocol
Repeat question.	(RQ)
Anything else?	(AE or Else?)
Any other reason?	(AO?)
Any others?	(Other?)
How do you mean?	(How mean?)
Could you tell me more about your thinking on that?	(Tell more.)
Would you tell me what you have in mind?	(What in mind?)
What do you mean?	(What mean?)
Why do you feel that way?	(Why?)
Which would be closer to the way you feel?	(Which closer?)

Source: From University of Michigan Survey Research Center. (1976). *Interviewer's manual* (Rev. ed.). Ann Arbor: University of Michigan Survey Research Center.

TABLE 8.2**Tips for Conducting an Effective One-on-One Interview**

1. Make sure all interviewers are well trained.
2. Do background homework on the interviewees so that you will know a little about the people you will be interviewing.
3. Obtain informed consent from the person(s) you interview.
4. Conduct the interview in a quiet and comfortable place.
5. If possible, obtain permission and record the interview. You might also take a *few* notes during the interview.
6. Establish rapport and trust with your interviewee.
7. Be empathetic but remain neutral toward the content of what the interviewee says.
8. Use gentle nonverbal head nods and verbal “um-hms” to show your interest in what the interviewee says.
9. Be reflexive (i.e., observe the interview and monitor yourself).
10. Make sure the interviewee is doing most of the talking, not you.
11. Be sensitive to gender, age, and cultural differences between you and the interviewee.
12. Be clear and make sure the interviewee understands exactly what you are asking.
13. Provide sufficient time for the interviewee to answer each question.
14. Maintain control of the interview and keep the interview focused.
15. Utilize probes and follow-up questions to gain clarity and depth of responses.
16. Maintain a respect for the interviewee’s valuable time.
17. After an interview is completed, check your notes and recordings for quality and completeness.
18. Once you transcribe the interview, give the interviewee the opportunity to make any corrections to what was said.

In Table 8.3, you can see four types of interviews (Patton, 1987, 1990): the closed quantitative interview, the standardized open-ended interview, the interview guide approach, and the informal conversational interview. These four types can be grouped into quantitative interviews (which include the closed quantitative interview) and qualitative interviews (which include the standardized open-ended interview, the interview guide approach to interviewing, and the informal conversational interview).

Technology and Interviews

Interviews are often conducted over the telephone using a Computer Assisted Telephone Interview (CATI) system, which is programmable software into which researchers input the interview protocol along with its skip sequences. The telephone interviewer simply reads the script and enters the answers provided by respondents. The system only allows valid entries (e.g., a 6 would not be allowed on a 1-to-5 response scale) and produces, as the output, a data file that can be input easily into standard statistical software (such as SPSS, Excel, and R) for data analysis. Some CATI systems also provide basic statistical output.

Interviews can also be conducted by the researcher over the Internet. Software such as GoToMeeting and Zoom are very helpful, and the interviewer and interviewee can see each other and interact and develop rapport. The interviewer can share his or her computer screen with pictures, questions, and scales when needed. For a list of alternatives to GoToMeeting and Zoom, go to <https://www.g2crowd.com/products/gotomeeting/competitors/alternatives> or simply conduct a Google search on your own to find the best alternatives. Although interviewing conducted over the Internet is just becoming

TABLE 8.3
Patton's Classification of Types of Interviews

Type of Interview	Characteristics of an Interview Protocol	Strengths	Weaknesses
Informal conversational interview	The researcher knows the overall research purpose, but there is no formal interview protocol. Questions emerge from the immediate context and are asked in the natural course of things; there is no predetermination of question topics or wording.	Increases the salience and relevance of questions; interviews are built on and emerge from observations; the interview can be matched to individuals and circumstances.	Different information is collected from different people with different questions. Data are less systematic and comprehensive if certain questions do not arise "naturally." Data organization and analysis can be quite difficult.
Interview guide approach	Topics and issues to be covered are specified on the interview protocol in advance, in outline form; interviewer decides sequence and wording of questions during the course of the interview.	The outline increases the comprehensiveness of the data and makes data collection somewhat systematic for each respondent. Logical gaps in data can be anticipated and closed. Interviews remain fairly conversational and situational.	Important and salient topics may be inadvertently omitted. Interviewer flexibility in sequencing and wording questions can result in substantially different responses from different perspectives, thus reducing the comparability of responses.
Standardized open-ended interview	The exact wording and sequence of questions are determined in advance and included on the interview protocol. All interviewees are asked the same basic questions in the same order. Questions are worded in a completely open-ended format. The interview protocol will look like the qualitative (open-ended) questionnaire shown in Exhibit 9.1.	Respondents answer the same questions, thus increasing comparability of responses; data are complete for each person on the topics addressed in the interview. Reduces interviewer effects and bias when several interviewers are used. Permits evaluation users to see and review the instrumentation used in the evaluation. Facilitates organization and analysis of the data.	Offers less flexibility in relating the interview to particular individuals and circumstances; standardized wording of questions may constrain and limit naturalness and relevance of questions and answers.
Closed quantitative interview	Questions and response categories are determined in advance and included on the interview protocol. The interview protocol will look much like a quantitative or mixed questionnaire (Exhibit 9.4) and it provides a script for the interviewer to read and mark responses. Responses are fixed; respondent chooses from among these fixed responses.	Data analysis is simple; responses can be directly compared and easily aggregated; many questions can be asked in a short time.	Respondents must fit their experiences and feelings into the researcher's categories; may be perceived as impersonal, irrelevant, and mechanistic. Can distort what respondents really mean or experience by so completely limiting their response choices.

Source: Adapted from M. Q. Patton, *How to Use Qualitative Methods in Evaluation*, pp. 116–117, © 1987 by SAGE. Used by permission of SAGE.

popular in educational research, the Internet is an exciting form of data collection because (a) anyone with Internet access (anywhere in the world) can be interviewed, (b) you can see each other and develop rapport, and (c) you can record the interview sessions. Technology is making the world “smaller” because we can now communicate with people who were previously out of reach! Please see Figure 8.2 for more comparisons of the different modes of conducting interviews.

Quantitative Interviews

When carrying out quantitative interviews, you must carefully read the words as they are provided in the interview protocol. The **interview protocol** is the data-collection instrument that includes the items, the response categories, the instructions, and so forth. The interview protocol in a quantitative interview is basically a script written by the researcher and read by the interviewer to the interviewees. The interviewer also records the interviewee’s responses on the interview protocol. The interview protocol is usually written on paper for in-person interviews and shown on a computer screen for telephone interviews.

The goal of the quantitative interview is to standardize what is presented to the interviewees. **Standardization** has been achieved when what is said to all interviewees is the same or as similar as possible. The key idea here is that quantitative researchers want to expose each participant to the same stimulus so that the results will be comparable. Not surprisingly, quantitative interviews result in mostly quantitative data that are later analyzed using quantitative statistical procedures. The reason we say “mostly” is that quantitative interview protocols often include a few open-ended items. If an open-ended question is asked in a quantitative interview, however, it is asked in exactly the same way for each participant in the study.

Exhibit 8.1 provides several questions taken from the 2018 Phi Delta Kappa (PDK) Poll of the Public’s Attitudes Toward the Public Schools. The seven questions are formatted in a way that they could be asked by an interviewer via a telephone or an in-person interview. Specifically, the instructions to the interviewer are shown in all capital letters in brackets. In an interview, the questions would be read to the interviewee, who would respond with his or her answers. The first question is open ended and the rest of the questions are closed ended. Questions 4 and 5 are contingency questions; that is, they are only asked to participants if they meet certain conditions. For example, question 4 is only asked to participants who have a child in school.

Exhibit 8.1 Questions 1–7 From the PDK Poll of the Public’s Attitudes Toward the Public Schools, 2018

1. What do you think are the biggest problems facing the public schools in your community? [OPEN-END, ALLOW UP TO 3 RESPONSES]
2. Students are often given the grades of A, B, C, D, and Fail to denote the quality of their work. Suppose the public schools themselves, in your community, were graded in the same way. What grade would you give the public schools here – A, B, C, D, or fail?
3. How about the public schools in the nation as a whole? What grade would you give the public schools nationally – A, B, C, D, or fail?
4. [IF HAS CHILD IN SCHOOL] Using the A, B, C, D, fail scale again, what grade would you give the school your (oldest) child attends?

Interview protocol

A data-collection instrument used in an interview

Standardization

Presenting the same stimulus to all participants

5. [IF GRADE IS NOT “A” FOR PUBLIC SCHOOLS IN ONE’S COMMUNITY] Thinking again about the public schools in your own community, what would they have to do to earn an “A” grade from you? [OPEN-END, ALLOW UP TO 3 RESPONSES]
6. Which approach do you think is preferable in order to improve public education in America? – (reforming the existing public school system) OR (finding an alternative to the existing public school system). Do you feel strongly or not strongly that (reforming the existing public school system/finding an alternative to the existing public school system) is preferable?
7. Which approach do you think is preferable in order to improve public education in your own community? – (reforming the existing public school system) OR (finding an alternative to the existing public school system). Do you feel strongly or not strongly that (reforming the existing public school system/finding an alternative to the existing public school system) is preferable?

Source: © Phi Delta Kappa International.

The interview protocol used in the quantitative interview looks very similar to a questionnaire. In fact, researchers sometimes call their interview protocol a questionnaire (e.g., Converse & Presser, 1986; Frankfort-Nachmias & Nachmias, 2014). Although the data-collection instruments are similar in interviews and questionnaires, there is a key difference in how they are used. When conducting an interview, an *interviewer* reads the questions or statements exactly as written on the interview protocol, and he or she records the interviewee’s answers in the spaces that are provided. When using a questionnaire, the *research participant* reads and records his or her own answers in the spaces provided on the questionnaire.

The 15 principles of questionnaire construction discussed in the next chapter also apply to the construction of interview protocols. You might want to examine the list of principles shown in Table 9.2 to convince yourself that those principles apply to interview protocols as well. When writing an interview protocol, the key point to remember is that the interviewer will read what you write and the research participant will hear what the interviewer reads. You will therefore need to make sure that your interview protocol operates properly for that purpose. You must also make sure that your interviewers are well trained in interviewing techniques and the proper use of an interview protocol.

Qualitative Interviews

Qualitative interviews consist of open-ended questions and provide qualitative data. Qualitative interviews are also called *depth interviews* because they can be used to obtain in-depth information about a participant’s thoughts, beliefs, knowledge, reasoning, motivations, and feelings about a topic. Qualitative interviewing allows a researcher to enter into the inner world of another person and to gain an understanding of that person’s perspective (Patton, 1987). The interviewer must establish trust and rapport, making it easy for the interviewee to provide information about his or her inner world.

The interviewer should listen carefully and be the repository of detailed information. The interviewer should also be armed with probes or prompts to use when greater clarity or depth is needed from the person being interviewed. For example, the interviewer should freely use the probes shown in Table 8.1. The interviewer can also ask follow-up questions that may naturally emerge during the qualitative interview. A qualitative interview will typically last anywhere from 30 minutes to more than 1 hour.

Not surprisingly, qualitative interviews are very popular with qualitative researchers. It is not uncommon, however, for quantitative researchers also to conduct some qualitative interviews as part

Qualitative interview
An interview providing qualitative data

See *Journal Article 8.1 on the Student Study Site.*

of their overall research study. The three types of qualitative interviews are shown in Table 8.3: the informal conversational interview, the interview guide approach, and the standardized open-ended interview. The key characteristics of these three types of qualitative interviews are also given in Table 8.3. The type of interview protocol constructed will depend on the type of interview, as you will see in the column titled “Characteristics of an Interview Protocol” in Table 8.3.

Informal conversational interview

A spontaneous, loosely structured interview

Interview guide approach

Specific topics and/or open-ended questions are asked in any order

The **informal conversational interview** is the most spontaneous and loosely structured of the three types of qualitative interviews. The interviewer discusses the topics of interest and follows all leads that emerge during the discussion. Because the informal conversational interview does not use an interview protocol, it is a good idea to tape-record the interview so that no important information will be lost. Many times the interview will occur at an unexpected or unscheduled time, however, and recording it will not be possible. Therefore, you should always take some field notes during the informal conversational interview and/or immediately after conducting the interview.

In the next approach to qualitative interviewing, the **interview guide approach**, the interviewer enters the interview session with a plan to explore specific topics and to ask specific open-ended questions of the interviewee. These topics and questions are provided on an interview protocol written by the researcher before the interview session. The interviewer, however, does not have to follow these topics and questions during the interview in any particular order. The interviewer can also change the wording of any questions listed in the interview protocol. In short, the interview session is still a relatively unstructured interaction between the interviewer and the interviewee. At the same time, because of the interview protocol, the interviewer will cover the same general topics and questions with all of the interviewees. The interviewer must try to keep the interview on track, bringing the respondent back when he or she goes off on a topic that is not relevant to the research purpose.

Cross and Stewart (1995) used the interview guide approach in their study of what it is like to be a gifted student attending a rural high school. They were interested in the experiences of gifted students attending rural high schools; gifted students attending urban schools had been examined in previous research. Here is Cross and Stewart’s discussion of the qualitative interviewing process that they used in their research study followed by the open-ended questions that they used to elicit information about the students’ experiences:

To obtain highly elaborated descriptions, the researchers asked participants to situate their experiences in specific settings. The process attempted to get subjects to regress to the actual experience so that pure descriptions would emerge. The interviews consisted of a beginning question, which asked subjects:

- When you think of your experience of being a student in your high school, what stands out in your mind?

Follow-up questions included:

- Can you think of a particular situation and describe it to me?

After the subject described the situation, the researcher would follow up with prompts like:

- Tell me more about that; or
- What were you aware of at that time?

When subjects exhausted their depictions, the researcher asked:

- Can you think of another time when that happened?

At this point, the aforementioned process would repeat. The researcher attended to the ideas conveyed by the subjects and tried not to lead the interviews in any direction. The interviews ranged in length from 40 to 90 minutes. All interviews were recorded on cassette tape and later transcribed. (p. 275)

In the third approach to qualitative interviewing, the **standardized open-ended interview**, the interviewer enters the interview session with a standardized interview protocol similar to the interview protocol used in quantitative interviewing. The key difference is that the interview protocol in the quantitative interview includes primarily closed-ended items, but the interview protocol in the standardized open-ended interview includes primarily open-ended items. The standardized open-ended interview, in which the interviewer does not vary from the interview protocol, is more structured than the interview guide approach to qualitative interviewing, in which the interviewer can vary from the protocol. In the standardized open-ended interview, the questions are all written out, and the interviewer reads the questions exactly as written and in the same order to all interviewees.

Standardized open-ended interview

A set of open-ended questions are asked in a specific order and exactly as worded

8.4 *What is the difference between a quantitative and a qualitative interview?*

REVIEW QUESTION

FOCUS GROUPS

A **focus group** is a type of group process in which a moderator or facilitator (working for the researcher) leads a discussion with a small group of individuals (e.g., students, teachers, teenagers) to examine, in detail, how the group members think and feel about a topic. It is called a “focus” group because the moderator keeps the individuals in the group focused on the topic being discussed. The moderator generates group discussion through the use of open-ended questions, and he or she acts as a facilitator of group process. Focus groups are used to collect qualitative data that are in the words of the group participants. The origin of focus groups is usually attributed to sociologist Robert K. Merton. He and his Columbia University students published the earliest works on focus groups (Merton & Kendall, 1946). Focus groups are best used as a qualitative method of data collection and we assume this in the remaining text. However, keep in mind that it is possible to also construct quantitative and mixed versions focus groups (see Johnson & Turner, 2003).

Focus group

A moderator leads a discussion with a small group of people

See Journal Article 8.2 on the Student Study Site.

Focus groups can be used for multiple purposes. Here are seven of the many uses of focus groups identified by Stewart, Shamdasani, and Rook (2009):

1. Obtaining general background information about a topic of interest;
2. Generating research hypotheses that can be submitted to further research and testing using more quantitative approaches; . . .
3. Stimulating new ideas and creative concepts;
4. Diagnosing the potential for problems with a new program, service, or product;
5. Generating impressions of products, programs, services, institutions, or other objects of interest;
6. Learning how respondents talk about the phenomenon of interest (which may, in turn, facilitate the design of questionnaires, survey instruments, or other research tools that might be employed in more quantitative research); and
7. Interpreting previously obtained quantitative results. (p. 591)

A focus group is composed of 6 to 12 participants who are purposively selected because they can provide the kind of information of interest to the researcher. A focus group is usually

Group moderator

The person leading the focus group discussion

homogeneous (composed of similar kinds of people) because the use of a homogeneous group promotes discussion. Homogeneous groups are less likely than heterogeneous groups to form cliques and coalitions. Using two to four focus groups as part of a single research study is quite common because it is unwise to rely too heavily on the information provided by a single focus group. Although each focus group is usually homogeneous, the set of focus groups used by the researcher may include some heterogeneity, depending on the purpose of the research.

The **group moderator** or group facilitator (the person leading the focus group discussion) must have good interpersonal skills, and he or she must know how to facilitate group discussion. He or she needs to get everyone involved in discussing the researcher's questions and not allow one or two people to dominate the discussion. If conflicts or power struggles occur, the moderator must skillfully bring the group back to the task. The moderator must know when to probe or ask for more information and know when the discussion about a particular topic has been exhausted. It is not uncommon for the moderator to have an assistant who observes the group process, provides information to the moderator when needed, and takes notes during the session. Some useful moderator roles (or metaphors) are the seeker of wisdom, the enlightened novice, the expert consultant, the challenger, the referee, the writer, the team member, the therapist, and the serial interviewer (Krueger & Casey, 2015).

The focus group moderator needs to cover all the topics and open-ended questions included in the focus group protocol. The protocol looks very similar to a relatively unstructured interview guide. It typically consists of a sheet of paper with approximately 10 open-ended questions on it. The more general questions are often placed early and the more specific questions placed later in the interview protocol. The moderator may have anywhere from 1 to 3 hours to complete the group session. The moderator does not have to take many notes during the session because focus groups are almost always recorded (using audio- and/or videotape) so that the data can be analyzed later.

Focus groups are especially useful as a complement to other methods of data collection. They are very useful for providing in-depth information in a relatively short period of time. In addition, the results are usually easy to understand. Researchers must, however, be very careful in making generalizations from focus groups because the sample size typically is too small and the participants are usually not randomly selected from any known population. If you need more information about focus groups, examine *The Focus Group Kit* (Morgan & Krueger, 1998; also see Morgan, 2019).

Technology and Focus Groups

When appropriate, focus groups can now be conducted via the Internet if you have the required software. The respondents and the moderator see and hear each other (through webcams and microphones) in real time, directly over the Internet. Software used by marketing corporations can be expensive (e.g., QualMeeting, Channel M2, and Cisco TelePresence), but software already mentioned for online meetings is less expensive and in some cases it is free (e.g., GoToMeeting, Zoom, and the many competitors). Some key advantages of the Internet mode of focus group administration are that (a) members can be widely dispersed across a large geographic region, (b) rapport can be developed, and (c) participants can respond from the convenience of their computer screens in their homes. In addition, most meeting software also allows "instant messaging," allowing members to interact privately during the meeting. In sum, in-person focus groups are still the research standard, but Internet focus groups have much to offer as an alternative.

REVIEW QUESTION

8.5 Why would a researcher want to conduct a focus group?

OBSERVATION

The next method of data collection involves something that you do most of your waking hours: observing things. Researchers are also observers of things in the world. In research, **observation** is defined as the watching of behavioral patterns of people in certain situations to obtain information about the phenomenon of interest. The observer should attempt to be unobtrusive so as not to affect what is being observed. Observation is an important way of collecting information about people because people do not always do what they say they do. It is a maxim in the social and behavioral sciences that attitudes and behavior are not always congruent.

A classic study done by a social scientist named Richard LaPiere (1934) demonstrated many years ago that attitudes and behaviors are not always congruent. LaPiere traveled more than 10,000 miles in the United States over a 2-year period (1930–1931) with a Chinese couple. LaPiere usually had the Chinese male secure the lodging and restaurant accommodations so that he could observe behavior toward the Chinese. LaPiere reported that he and his friends were denied service only once. LaPiere later sent a questionnaire to the same establishments asking whether a Chinese person would be accepted as a guest. Fully 92% reported that they would *not* accept Chinese customers. This reported attitude was clearly at odds with the observed behavior.

Because of the potential incongruence between attitudes and behavior, it is helpful for researchers to collect observational data in addition to self-report data (e.g., tests, questionnaires, interviews, and focus groups). An advantage of observation over self-report methods is the researcher's ability to record actual behavior rather than obtain reports of preferences or intended behavior. Observation is not without weaknesses, however, some of which are that it generally takes more time than self-report approaches, it usually costs more money than self-report approaches, determining exactly why people behave as they do (i.e., determining their inner states) may not be possible through the use of observations, and people may act differently when they know they are being observed.

Observational data are collected in two different types of environments. **Laboratory observation** is carried out in settings that are set up by the researcher inside the confines of a research lab. An example would be observing the behavior of children through a one-way window in the researcher's laboratory. A one-way window is a mirror on one side and a window through which the researcher can observe on the other side. **Naturalistic observation** is carried out in the real world. To make a naturalistic observation, you must go to wherever the behavior occurs naturally. For example, LaPiere (1934) made naturalistic observations because he observed the behavior of hotel and restaurant proprietors in their usual settings. Observing the behavior of children in their classrooms is another example of naturalistic observation. We now contrast how quantitative and qualitative researchers collect observational data.

Quantitative Observation

Quantitative (or structured) **observation** involves the standardization of all observational procedures in order to obtain reliable research data. It often involves the standardization of each of the following: who is observed (what kinds of people are to be studied, such as teachers or students), what is observed (what variables are to be observed by the researcher, such as time on task or out-of-seat behavior), when the observations are to take place (during the morning hour, during break time), where the observations are to be carried out (in the laboratory, in the classroom, in the lunchroom, in the library, on the playground), and how the observations are to be done (this involves the extensive training of observers so that they use the same procedures and so that high interrater reliability can be obtained). Quantitative observation usually results in quantitative data, such as counts or frequencies and percentages.

Different events may be of interest in quantitative observation. First, the researcher should observe actual behavior, especially when instances of the concepts and variables of interest occur. Second, the researcher may observe nonverbal behavior (body movements, facial expressions, posture, eye contact, etc.). Third, the researcher may observe spatial behavior (the distance between

Observation

Watching the behavioral patterns of people

Laboratory observation

Observation done in the lab or other setting set up by the researcher

Naturalistic observation

Observation done in real-world settings

Quantitative observation

Standardized and structured observation

different people and the distance between people and objects). Fourth, the researcher may observe extralinguistic behavior (characteristics of speech such as rate, tone, and volume). Fifth, the researcher may observe linguistic behavior (what people say and what they write).

Quantitative observation sometimes uses observational sampling techniques. One technique is called **time-interval sampling**, which involves observing participants during time intervals specified in advance of the actual data collection (e.g., observing student behavior for the first 10 minutes of every hour). Another technique is called **event sampling**, which involves making observations during and directly after a specific event has occurred (e.g., observing the behavior of students in a classroom after the teacher sends a student to the principal's office). For more information on quantitative observation sampling, see Bakeman and Quera (2011) and Suen and Ary (2014).

Researchers conducting quantitative observation usually use checklists or other types of data-collection instruments, such as a laptop computer to record data or a videotape recorder to produce a record for later coding. The content of the data-collection instrument will depend on the research problem and objectives of interest to the researcher. Data-collection instruments in quantitative observation are usually more specific and detailed than those used in qualitative observation. Usually, data-collection instruments are closed ended in quantitative observation and open ended in qualitative observation because quantitative observation tends to be used for confirmatory purposes (i.e., to test hypotheses) and qualitative observation tends to be used for exploratory purposes (i.e., to generate new information).

Qualitative Observation

Qualitative observation involves observing all potentially relevant phenomena and taking extensive field notes without specifying in advance exactly what is to be observed. In other words, qualitative observation is usually done for exploratory purposes. It is also usually done in natural settings. In fact, the terms *qualitative observation* and *naturalistic observation* are frequently treated as synonyms in the research literature. Not surprisingly, qualitative observation is usually carried out by qualitative researchers.

Whenever you conduct qualitative observations, you must remember exactly what you have observed. In fact, the researcher is said to be the data-collection instrument because it is the researcher who must decide what is important and what data are to be recorded. If you are wondering what to observe when you conduct a qualitative observation, you can consider the "Guidelines for Directing Qualitative Observation" in Exhibit 8.2. Most importantly, you need to look for anything and everything to observe whatever may be relevant to your research questions.

Researchers record what they believe is important in their **field notes** (notes written down by the observer during and after making observations). It's a good idea to correct and edit any notes you write down during an observation as soon as possible after taking them because that is when your memory is best. If you wait too long, you might forget important details and not be able to make sense of your handwritten, scribbled field notes. In addition to taking field notes during your observations, consider audiotaping and videotaping important scenes.

The form of interaction or type of role taken by the researcher during the conduct of a qualitative observation (called "fieldwork") varies along the following continuum (Gold, 1958):



Time-interval sampling

Observing during specific time intervals

Event sampling

Observing during and directly after a specific event has occurred

Qualitative observation

Observing all potentially relevant phenomena

Field notes

Notes taken by an observer

Exhibit 8.2 Guidelines for Directing Qualitative Observation

1. *Who* is in the group or scene? How many people are there, and what are their kinds, identities, and relevant characteristics? How is membership in the group or scene acquired?
2. *What* is happening here? What are the people in the group or scene doing and saying to one another?
 - a. What behaviors are repetitive, and which occur irregularly? In what events, activities, or routines are participants engaged? What resources are used in these activities, and how are they allocated? How are activities organized, labeled, explained, and justified? What differing social contexts can be identified?
 - b. How do the people in the group behave toward one another? What is the nature of this participation and interaction? How are the people connected or related to one another? What statuses and roles are evident in this interaction? Who makes what decisions for whom? How do the people organize themselves for interactions?
 - c. What is the content of participants' conversations? What subjects are common, and which are rare? What stories, anecdotes, and homilies do they exchange? What verbal and nonverbal languages do they use for communication? What beliefs do the content of their conversations demonstrate? What formats do the conversations follow? What processes do they reflect? Who talks and who listens?
3. *Where* is the group or scene located? What physical settings and environments form their contexts? What natural resources are evident, and what technologies are created or used? How does the group allocate and use space and physical objects? What is consumed, and what is produced? What sights, sounds, smells, tastes, and textures are found in the contexts that the group uses?
4. *When* does the group meet and interact? How often are these meetings, and how lengthy are they? How does the group conceptualize, use, and distribute time? How do participants view the past, present, and future?
5. *How* are the identified elements connected or interrelated, either from the participants' point of view or from the researcher's perspective? How is stability maintained? How does change originate, and how is it managed? How are the identified elements organized? What rules, norms, or mores govern this social organization? How is power conceptualized and distributed? How is this group related to other groups, organizations, or institutions?
6. *Why* does the group operate as it does? What meanings do participants attribute to what they do? What is the group's history? What goals are articulated in the group? What symbols, traditions, values, and world views can be found in the group?

Source: From M. D. LeCompte and J. Preissle, *Ethnography and Qualitative Design in Educational Research*, p. 294, © 1993 by Academic Press. Reprinted by permission of Elsevier and the authors.

Although one role may be primary, the researcher may play all four roles at different times and in different situations during the conduct of a single qualitative research study. This is especially true when the researcher is in the field for an extended period of time.

The **complete participant** takes on the role of an insider, essentially becoming a member of the group being studied and spending a great deal of time with the group. For example,

Complete participant

Researcher who becomes a member of the group being studied and does not tell members they are being studied

you might spend a year teaching at a “model school” that you want to learn about. During the year, you would take extensive field notes, documenting what you observe and what you experience. Because the complete participant does not inform the group members that he or she is in a research study, many researchers question the use of this approach on ethical grounds. It is a cardinal rule in research ethics that research participants should know that they are involved in a research study, that they have the right *not* to participate, and that they are free to withdraw at any time during a research study if they do choose not to participate (see Chapter 6 on research ethics). You should therefore be very careful about doing “undercover” research except in legally open and accessible places such as a mall, a playground, or a sporting event.

Participant-as-observer

Researcher who spends extended time with the group as an insider and tells members they are being studied

The **participant-as-observer** attempts to take on the role of an insider (a participant), similar to the complete participant. The participant-as-observer also spends a good deal of time in the field participating and observing. The participant-as-observer, however, explains to the people in the group being studied that he or she is a researcher and not a bona fide group member. The person in the previous example who spends a year teaching in a model school would be a participant-as-observer if the researcher informed the people in the school that he or she was conducting research and then participated in the school functions. An advantage of this approach is that, for ethical reasons, the researcher can request permission to collect and record data as needed. In addition, the researcher can obtain feedback about his or her observations and tentative conclusions from the people in the research study. A weakness is that the participants might not behave naturally because they are aware that they are being observed. Fortunately, this problem usually disappears as the people begin to trust the researcher and adjust to his or her presence.

Observer-as-participant

Researcher who spends a limited amount of time observing group members and tells members they are being studied

The **observer-as-participant** takes on the role of observer much more than the role of participant. The participants are fully aware that they are part of a research study. The observer-as-participant does not spend much time in the field. Rather, the observer-as-participant has more limited and briefer interactions with the participants. For example, the researcher might negotiate entry to one faculty meeting, one PTA meeting, and one or two classes as part of a research study. Compared to the complete participant and participant-as-observer roles, a disadvantage of the observer-as-participant role is that obtaining an insider’s view is more difficult. On the other hand, maintaining objectivity and neutrality is easier.

Complete observer

Researcher who observes as an outsider and does not tell people they are being observed

The **complete observer** fully takes on the role of outside observer. He or she does not inform the people in the group being studied that they are being observed, and they usually will not know that they are being observed. For example, the complete observer might view people through a one-way window or might sit in the back of the room at an open meeting. The advantage of this approach is that there is minimal **reactivity** (changes in the behavior of people because they know they are being observed). On the other hand, you can take the role of complete observer only in open settings because of ethical concerns.

Reactivity

Changes that occur in people because they know they are being observed

Perhaps the most useful styles of observation are the participant-as-observer and the observer-as-participant. These roles are generally preferred because they allow voluntary consent by research participants. In addition, they allow the researcher to take on a mix of the insider’s role and the outsider’s role. The complete participant always runs the risk of losing his or her objectivity, and the complete observer always runs the risk of not understanding the insider’s perspective. Not surprisingly, the participant-as-observer and observer-as-participant styles of observation are the most commonly used by researchers.

If you are going to enter the field and carry out qualitative observation, you should carry with you the general research question, a desire to learn, and an open mind. Good social skills are a must. Trust and rapport with the group being studied are essential if valid data are going to be obtained. Keep in mind, however, Erving Goffman’s (a famous sociologist)

See Journal Article 8.3 on the Student Study Site.

warning (1959) that much social behavior observed is **frontstage behavior** (what people want or allow us to see) rather than **backstage behavior** (what people say and do with their closest friends, when “acting” is at a minimum). After getting into the field, the researcher must learn the ropes, maintain relations with the people being studied, and, at the end of the study, leave and keep in touch. We provide a list of practical tips for conducting fieldwork in Table 8.4.

Frontstage behavior
What people want or allow us to see

Backstage behavior
What people say and do only with their closest friends

TABLE 8.4
Tips for Conducting Fieldwork and Qualitative Observation

1. Make sure all observers are well trained, are good note takers, and know how to fit into diverse situations.
2. Do background homework on the people and cultural settings to be observed.
3. Be sensitive to gender, age, and cultural differences between you and the people being observed.
4. Establish rapport and trust, starting with gatekeepers and informants.
5. Don't promise anything to anyone in the setting that you cannot or should not deliver.
6. Be reflexive (i.e., monitor yourself).
7. Be unobtrusive (i.e., try to fit in and don't stand out).
8. Remain alert at all times and pay attention to anything that may be important.
9. Find an effective way to record what is being observed (i.e., by taking field notes or using audiovisual recorders).
10. Try to corroborate anything important that you see, hear, or learn about.
11. Conduct opportunistic interviews while you are in the field when possible.
12. Be empathetic, but also remain neutral to the content of what people say to you.
13. Conduct observations in multiple and disparate settings.
14. Include descriptive details in your field notes. Get direct quotes when possible. Include your own insights and interpretations when they arise, but keep them separate from the description and verbatims (i.e., quotes).
15. Observe and record characteristics of the setting and context, interpersonal interactions, significant behaviors, verbal and nonverbal communication, formal and informal interactions, what does not happen, power and status hierarchy in the group, and anything else that seems important to you at the time.
16. Spend sufficient time in the field to collect useful data and to allow corroboration of your findings.
17. When you leave the field, immediately write up your field notes so that you don't forget what you have seen, heard, and experienced.

8.6 *What are the main differences between quantitative and qualitative observations?*

8.7 *What are the four main roles that a researcher can take during qualitative observation?*

8.8 *What is the difference between frontstage behavior and backstage behavior?*

REVIEW QUESTIONS

See Journal Article 8.4 on the Student Study Site.

Visual data collection

Process of collecting data using visual sources, such as photographs, drawings, graphics, paintings, film, and video

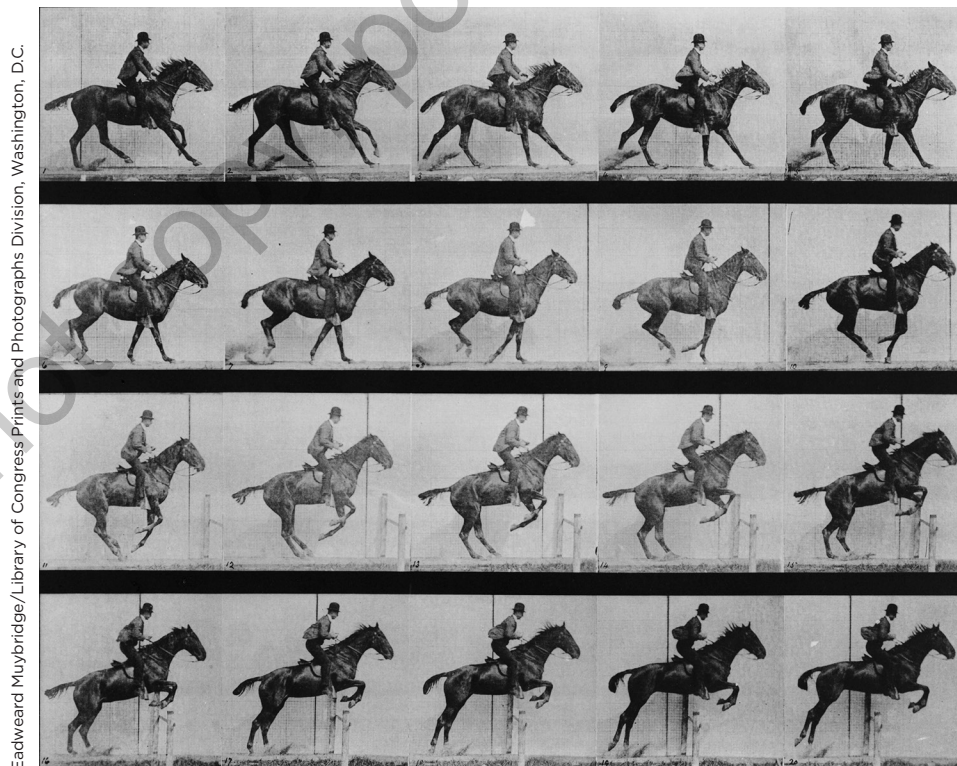
Visual Data

Because of the importance of photography in collecting observational (usually qualitative) data, we elaborate here on what is often called **visual data collection**. One of the richest methods of data collection is the image. The old adage “A picture is worth one thousand words” holds true in many research situations. One explanation is that the parts of the brain that process visual information are evolutionarily older than those that process verbal or numerical information. We see visual data concretely, whereas verbal and numerical data are more abstract. Visual data can be primarily qualitative, such as photographs, cartoons, drawings, videos, or carvings. Likewise, visual displays can reveal quantitative data by using graphs, charts, or pictographs in ways that numbers alone cannot communicate (see Photo 8.1).

There are so many methods of visual data collection and visual restructuring that it is surprising that more studies do not incorporate visual perspectives. Many studies that do incorporate visual data use photography as a tool. Some researchers act as participant observers and record photographs as part of the group experience. Others take photographs as an “outside” observer viewing social rituals or documenting particular artifacts that might represent cultural symbolisms (Ledin & Machin, 2018; Rose, 2016).

Some classic research studies using photography were conducted by Margaret Mead and her associates (Bateson & Mead, 1942; Mead, Bateson, & Macgregor, 1951) in studying child development using ethnography. In his classic book *The Hidden Dimension*, Edward Hall (1966) studied aspects of using space or “proxemics.” Photographic data also are used in quantitative research. For example, beginning with the work of Eadweard Muybridge, researchers have used photography for many years to study motion. Beginning in 1872, Muybridge photographed

PHOTO 8.1



Eadweard Muybridge/Library of Congress Prints and Photographs Division, Washington, D.C.

horses galloping for 12 years to win a bet that at some point during a gallop a horse has all its hooves off the ground! His classic compilation of photos showing his evidence is demonstrated in the accompanying pictures (see also <http://www.eadweardmuybridge.co.uk>).

Photographs sometimes are used as part of the interviewing process. **Photo interviewing** or photo elicitation (Dempsey & Tucker, 1994; Harper, 2002) uses visuals to obtain additional information during interviews. The visual data (photographs, video) can be used to support alternate interpretations of the phenomenon being investigated. In some studies, the participants are given cameras and collect the initial photographic data themselves. Research techniques such as these can expand the initial range of visual data enormously.

Photo interviewing

The process of eliciting data from a person using photographic or video imagery when conducting interviews

CONSTRUCTED, SECONDARY, AND EXISTING DATA

The last major method of data collection involves the collection of secondary or existing data for use in a new research study and/or data/objects that are literally constructed by the research participants during a research study. **Constructed data** are things *produced by your research participants during the research study* such as drawings, paintings, diaries, recordings, videos, and newly produced personal documents. Constructed data are used in quantitative, qualitative, and mixed research. **Secondary and existing data** are data that were collected, recorded, or left behind at an earlier time, usually by a different person and often for an entirely different purpose than the current research purpose at hand. In other words, the researcher uses what is already there. The researcher must, however, find these data or artifacts to use them in his or her research study. Secondary and existing data may be used with other data for corroboration, or they may be the primary data to be used in your research study. Several types of secondary and existing data that researchers commonly find are personal documents, official documents, physical data, and archived research data.

Constructed data

Objects or things that are constructed by research participants during a research study

Secondary and existing data

Existing data originally collected or left behind at an earlier time by a different person for a different purpose

Documents are one major type of existing data that is commonly used in qualitative research. **Personal documents** include anything that is written, photographed, or otherwise recorded for private purposes. Some examples of personal documents are letters, diaries, correspondence, family videos, and pictures. **Official documents** are written, photographed, or recorded by some type of public or private organization. Some examples are newspapers, educational journals and magazines, curriculum guides, annual reports, minutes of school board meetings, student records, student work, books, yearbooks, published articles, speeches, personnel files, and videos such as news programs and advertisements. Documents are frequently used by qualitative researchers and by historical researchers.

Personal documents

Anything written, photographed, or recorded for private purposes

Official documents

Anything written, photographed, or recorded by an organization

Physical data include any physical traces left by people as they take part in various activities. Physical data are popular in quantitative, qualitative, and mixed research. Some examples of physical data that have been used by social scientists are wear on floor tiles in museums, wear on library books, soil from shoes and clothing, radio dial settings, fingerprints, forensic DNA data, suits of armor, and contents of people's trash (Webb, Campbell, Schwartz, & Sechrest, 2000). Physical data can also include instances of material culture (e.g., clothes, buildings, books, billboards, art).

Physical data

Any material thing created or left by humans that might provide information about a phenomenon of interest to a researcher

Archived research data were originally used for research purposes and then stored for possible later use. Archived research data may be in print form but are usually stored in a computer-usable form (CD-ROM). Some examples of archived research data are the census data and social science research data stored and kept by researchers or research-related organizations such as the US Census Bureau (<https://www.census.gov>), the Institute for Social Research at the University of Michigan (<https://isr.umich.edu>), the National Opinion Research Center (NORC) at the University of Chicago (<http://www.norc.org>), and Gallup (<https://www.gallup.com>). Archived research data are usually quantitative. Traditionally, quantitative data have been archived; however, we expect that qualitative research data will increasingly be archived for later access and reanalysis.

Archived research data

Data originally used for research purposes and then stored

The largest repository of archived social science data (mostly quantitative) is kept by the Inter-university Consortium for Political and Social Research (ICPSR; <https://www.icpsr.umich.edu>).

Based in Ann Arbor, Michigan, the ICPSR includes more than 500 colleges and universities in the United States and across the world. The ICPSR currently houses more than 20,000 computer-readable data files, and faculty at member institutions (such as your local university) can obtain the data sets at very modest costs. Typically, the data were part of a research study by an academic researcher. Many studies were grant funded. After a researcher has finished with the data, he or she provides a copy to the ICPSR, which makes it available to member institutions or anyone else who has a legitimate reason to use it. If you want to see some of the many data files that are available, visit the ICPSR website or go to your library and browse through the *ICPSR Guide to Resources and Services*, a book that includes descriptions of hundreds of research data files.

REVIEW QUESTION

8.9 What are some examples of constructed, secondary, and existing data?

ACTION RESEARCH REFLECTION

Insight: Action researchers, at different times, creatively use all six of the major methods of data collection. They also use both qualitative and quantitative forms of the methods of data collection, and they often use a mixed version (e.g., a mixed questionnaire, an interview with both structured and unstructured components). That is, they often use *intramethod* mixing (mixing within a single method). An action researcher will rarely rely on a single method of data collection. The world is complex, and the multiple methods of data collection help us to see different parts of that complexity or see the same parts in different ways. Therefore, action researchers also often use *intermethod* mixing (mixing by using multiple methods).

1. How can you observe *your own* work practices (remember: self-development is an important part of action research)?
2. As an action researcher (e.g., attempting to make something work better in your school or workplace), what kinds of data would you like to collect about something that interests you? Be very specific.
3. Select three methods of data collection. What might each of these help you to see and understand or learn about your targeted research participants?

SUMMARY

A method of data collection is the procedure that a researcher physically uses to obtain research data from research participants. The method of data collection that is used in a research study is discussed in the method section of a research report. There are six major methods of data collection. Researchers can have their participants fill out an instrument or perform a behavior designed to measure their ability or degree of a skill (*tests*); researchers

can have research participants fill out self-report instruments (*questionnaires*); researchers can talk to participants in person or over the telephone (*interviews*); researchers can discuss issues with multiple research participants at the same time in a small-group setting (*focus groups*); researchers can examine how research participants act in natural and structured environments (*observations*); and researchers can use data that participants

construct during a study and data that came from an earlier time for a different purpose than the current research problem at hand (*constructed, secondary, and existing data*). One can use quantitative, qualitative, and mixed forms of the different major methods of data collection, although focus groups are usually used to collect qualitative data and tests are usually used to collect quantitative data. The mixed form of one method of data collection method is called *intramethod* mixing (e.g., a mixed questionnaire), and the mixing or use of two or more methods of data collection is called *intermethod*

mixing. The researcher must pay particular attention to the construction of the data-collection instrument that is used to collect research data to make sure that it works well. Multiple modes of administration of data collection methods were provided for tests (in-person vs. online administration), questionnaires (mail, in-person, Internet), interviews (in-person, telephone, Internet), and focus groups (in person vs. online) and were presented and compared in Figure 8.2. Finally, the fundamental principle of mixed research provides a logic for strengthening the evidence produced by a research study.

KEY TERMS

archived research data (p. 203)	interviewee (p. 189)	physical data (p. 203)
backstage behavior (p. 201)	interviewer (p. 189)	probe (p. 189)
complete observer (p. 200)	interview guide approach (p. 194)	qualitative interview (p. 193)
complete participant (p. 199)	interview protocol (p. 192)	qualitative observation (p. 198)
constructed data (p. 203)	intramethod mixing (p. 181)	quantitative observation (p. 197)
event sampling (p. 198)	laboratory observation (p. 197)	questionnaire (p. 183)
field notes (p. 198)	method of data collection (p. 181)	reactivity (p. 200)
focus group (p. 195)	naturalistic observation (p. 197)	research method (p. 181)
frontstage behavior (p. 201)	observation (p. 197)	secondary and existing data (p. 203)
fundamental principle of mixed research (p. 181)	observer-as-participant (p. 200)	standardization (p. 192)
group moderator (p. 196)	official documents (p. 203)	standardized open-ended interview (p. 195)
informal conversational interview (p. 194)	participant-as-observer (p. 200)	survey research (p. 182)
in-person interview (p. 189)	personal documents (p. 203)	telephone interview (p. 189)
intermethod mixing (p. 181)	photo interviewing (p. 203)	time-interval sampling (p. 198)
interview (p. 189)		visual data collection (p. 202)

DISCUSSION QUESTIONS

1. We talked about six major methods of data collection in this chapter. Can you think of any method of data collection not mentioned in the chapter? What is it? Does it fit into one of the six major methods, or does it deserve a new category?
2. Which of the six methods of data collection do you think is most commonly used by educational researchers? Why?
3. Which of the six methods of data collection would you feel most comfortable using? Why?
4. What is the point of the fundamental principle of mixed research? Think of an example of its use to share with your classmates.
5. Should a researcher use a single item to measure an abstract concept, such as self-esteem, intelligence, or teaching self-efficacy? If not, how should the researcher measure such concepts?

RESEARCH EXERCISES

1. Construct a short interview protocol on a topic of interest to you. Go to the local shopping mall and interview five people who are demographically different. After interviewing the people, write up what you found out about the topic. Also write up your methodological observations about whether trust and rapport affected the interview process and how you could improve your interview procedure.
2. Go to a public place and observe interactions between couples (or a different topic that you are interested in). Use your observations to identify two research questions that you might later study in more depth.

RELEVANT INTERNET SITES

Methods of data collection

http://www.nsf.gov/pubs/2002/nsf02057/nsf02057_1.pdf

<http://www.cdc.gov/healthyyouth/evaluation/pdf/brief16.pdf>

http://www.rand.org/content/dam/rand/pubs/technical_reports/2009/RAND_TR718.pdf

<http://www.slideshare.net/priyansakthi/methods-of-data-collection-16037781>

STUDENT STUDY SITE

Visit the Student Study Site at edge.sagepub.com/rbjohnson7e for these additional learning tools:

Video Links

Self-Quizzes

eFlashcards

Lecture Notes

Full-Text SAGE Journal Articles

Interactive Concept Maps

Web Resources

RECOMMENDED READING

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