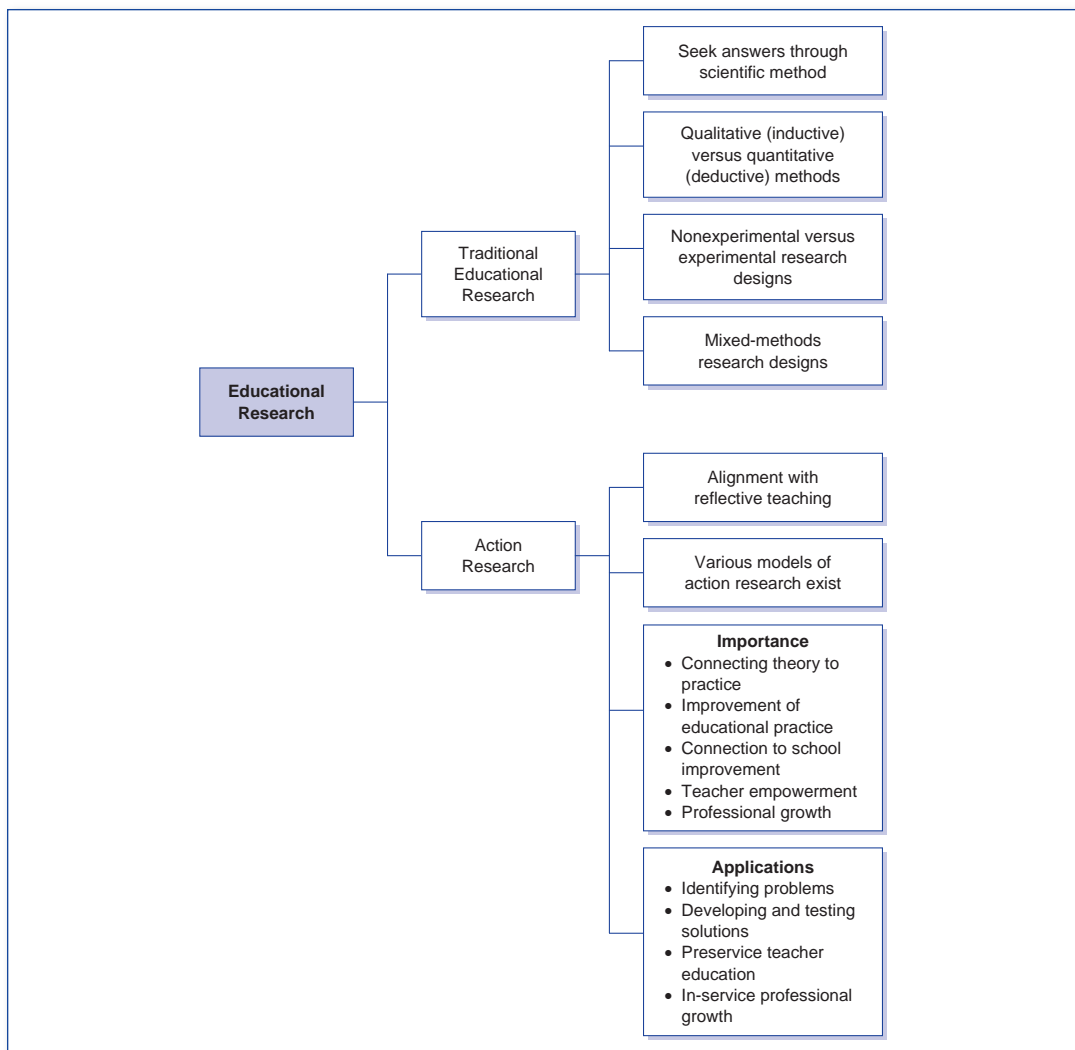


# Introduction to Action Research

## Chapter 1 Organizer



Research: Think about it for a few moments. What types of images come to mind? For many people, the term *research* tends to evoke images of scientists in white laboratory coats coaxing mice through a maze, observing their every move, action, and reaction. They closely monitor stopwatches, recording the amount of time that passes as the mice reach each stage of the maze. Further images called to mind might include chemists (yes, also wearing white lab coats!) with beakers, flasks, and Bunsen burners conducting experiments that involve mixing chemicals in order to make new solutions or to further study the properties of those solutions. Another visualization could involve medical researchers who work with animals or directly with human “subjects” to investigate possible cures for devastating diseases. Still others may envision research as something done by college or university professors as a regular aspect of their work. For quite some time, research has been conducted primarily by professionals whose principal education included training in the conduct of research studies. Admittedly, much research continues to be conducted by professionals, such as those described in the four examples above. However, more and more research is being conducted by *practitioners*—people whose primary education and training is *not* in research methodology. The specific procedures for conducting this type of research are somewhat different from those that serve as the foundation for more formal types of research, but the guiding principles are the same. It is this type of practitioner-based research—known as *action research*—upon which we will focus our attention in this book.

## What Is Action Research?

---

Over the last decade, action research has begun to capture the attention of teachers, administrators, and policymakers around the country (Mills, 2011). Educators at a variety of levels have embraced it as something that makes conducting research a more “manageable” task and that brings about results that are more informative and have immediate and direct application. But just what is action research? What does it look like? What does it purport to accomplish?

**Action research** is defined as any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn (Mills, 2011). More important, action research is characterized as research that is done by teachers for themselves. It is truly a systematic inquiry into one’s own practice (Johnson, 2008). Action research allows teachers to study their own classrooms—for example, their own instructional methods, their own students, and their own assessments—in order to better understand them and to be able to improve their quality or effectiveness. It focuses specifically on the unique characteristics of the population with whom a practice is employed or with whom some action must be taken. This, in turn, results in increased utility and effectiveness for the practitioner (Parsons & Brown, 2002). The basic process of conducting action research consists of four steps:

1. Identifying an area of focus
2. Collecting data
3. Analyzing and interpreting the data
4. Developing a plan of action (Mills, 2011)

You will learn much more about the process of action research later in this chapter and in Chapter 2.

## Introduction to Educational Research

As classroom teachers—who are the ultimate, or at least the most likely, consumers of educational research—it is essential to have a basic understanding of several key terms and essential concepts related to the notion of research. Research is simply one of many means by which human beings seek answers to questions. Questions arise constantly throughout a day, whether they be personal or professional in nature. As an example of a personal question in need of an answer, imagine a coworker who asks if you would like to go to lunch this afternoon. You will need to give that person a yes or no answer, but you must factor in some information first—for example, do you already have plans for lunch? Can you afford to give up the time to go to lunch today? Do you have enough money for lunch?

Answers to questions of a professional nature often require much more information; however, human nature prompts us to try to find answers to those questions as quickly as possible. Consider the following scenario: You have a student, Arthur, whom you informally classify as an “unmotivated reader.” You approach a colleague and ask about ideas for intervention strategies for motivating Arthur. She provides several strategies that she says have worked for other students, but you are not sure if they will work for Arthur. In addition, you know that there are undoubtedly many more strategies out there, but you need an answer now—the school year is off and running, and you do not want to lose any more valuable time by not encouraging Arthur to read more. But where do you go to find the answers you are looking for?

Mertler and Charles (2011) suggest that we usually consult sources for answers that are most convenient to us and with which we are most comfortable; however, these sources have the potential to be fraught with problems. These sources of information include tradition, authority, and common sense. **Tradition** refers to ways in which we have behaved in the past. Interventions that have worked in the past may in fact still work today, but there is no guarantee. In addition, there may now be newer interventions that will work better than our old standby. **Authority** refers to the use of the opinions of experts, whom we assume will know what will work best. However, simply finding someone who has a strong opinion about a given intervention or instructional strategy does not necessarily support the use of that strategy. In fact, it is typically safe to assume that as soon as you find an expert who supports any given technique, you will quickly find another who is willing to denounce it as being inferior. Finally, **common sense** refers to the use of human reasoning as a basis

for answering questions. While human reasoning has gotten our global culture far throughout history, it is most reliant on dependable information. If information that we collect in order to help us make common-sense decisions is of substandard quality or accuracy, our common-sense decisions will reflect those various deficiencies.

The main problem with these familiar sources of information is that they have a tendency to provide unreliable information. This is largely due to the fact that answers based on tradition, authority, and common sense use information that is biased to some degree. This bias occurs primarily because the information was collected in an unsystematic and subjective manner. In order for the answers we seek to be accurate and of high quality, we must obtain information that is both valid and reliable. This is best accomplished by using the scientific method. The **scientific method** is a specific strategy used to answer questions and resolve problems. You may recall the scientific method from a junior or senior high school science course when you may have been required to complete some sort of science fair project. What makes the scientific method such a useful strategy is that it is a very systematic, step-by-step set of procedures. In 1938, American philosopher John Dewey described the scientific method as a procedure for thinking more objectively (Mertler & Charles, 2011). He presented the procedure as a series of the following steps:

1. Clarify the main question inherent in the problem.
2. State a hypothesis (a possible answer to the question).
3. Collect, analyze, and interpret information related to the question, such that it will permit you to answer the question.
4. Form conclusions derived from your analyses.
5. Use the conclusions to verify or reject the hypothesis.

It would be misleading to assume that all researchers—and therefore all research studies—follow these steps exactly. For example, it may not be necessary to formally state a hypothesis in some studies. Although not all research studies conduct the procedure exactly as described above, they do have one important thing in common. Collecting, analyzing, and interpreting information (Step 3 above) is always done in research. It is the result of this step that provides the necessary impetus that allows us to answer our initial questions.

How, then, is the scientific method related to research in the broad field of education? There is a great deal of similarity between the two. Simply put, **educational research** involves the application of the scientific method to educational topics, phenomena, or questions in search of answers. Educational research is typically carried out in the following manner:

1. Specify the topic about which a concern exists.
2. Clarify the specific problem on which the research will focus.

3. Formulate research questions and/or hypotheses concerning the main problem.
  4. Carry out procedures by which data (a more appropriate term for “information”) are collected, analyzed, and interpreted.
  5. State the findings determined as a result of the data analysis.
  6. Draw conclusions related to the original research questions and/or hypotheses.
- (Mertler & Charles, 2011)

Note the similarities between Dewey’s list of steps in the scientific method and those used to conduct educational research. The major components are common to both lists. In either case, it is important to remember that in practice these steps do not always occur as neatly as presented here, nor do they always follow the sequence listed.

Johnson (2008) also reminds us that, as consumers of research as well as potential researchers, we must be aware of the differences between science and pseudoscience. Science—that is, the use of the scientific method for inquiry—uses perceived reality (typically in the form of collected data) to determine beliefs. In other words, data are collected and analyzed in order to determine what is believed:



An example of scientific inquiry is the Trends in International Mathematics and Science Study (or TIMSS). TIMSS resulted from the American education community’s need for reliable and timely data on the mathematics and science achievement of our students compared to that of students in other countries. Since 1995, TIMSS has provided trend data on students’ mathematics and science achievement from an international perspective. TIMSS uses standardized achievement tests, administered and scored in identical fashion, as the means of collecting student data. The tests are similar in content, form, and length in order to allow for comparisons. What makes this study “science” is the standardization and objectivity incorporated into the research design.

In contrast, pseudoscience uses beliefs to determine perceived reality. One begins with a strong belief and then looks for data to support that belief (Johnson, 2008):



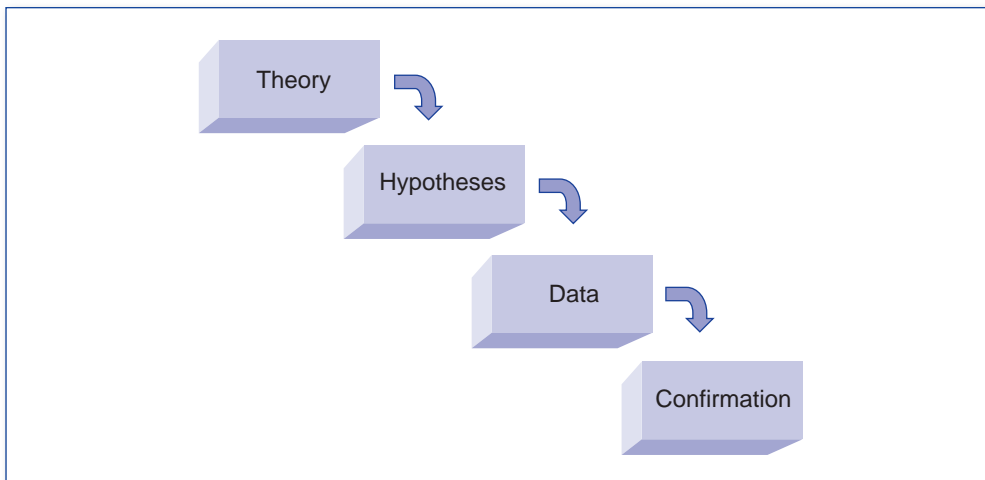
Pseudoscience is often used as a marketing tool by companies to sell products or by groups or individuals in an attempt to demonstrate that their ideas, methods, or products are the best or most effective. Clearly, this approach is not systematic, nor is it objective; it does not utilize the scientific method. Therefore, it is not science, and it is not research.

## Overview of Educational Research

Traditional research in education is typically conducted by researchers who are somewhat removed from the environment they are studying. This is not to say that they are not committed to the research study and truly interested in the ultimate results but rather to say that they are studying people, settings, or programs with which they are seldom personally involved (Schmuck, 1997). They may in fact be removed from the actual research site, in many instances. Furthermore, traditional researchers often seek explanations for existing phenomena and try to do so in an objective manner. The primary goal of traditional educational research is “to explain or help understand educational issues, questions, and processes” (Gay & Airasian, 2000, p. 24). In traditional research, different research methods—the specific procedures used to collect and analyze data—provide different views of a given reality. These various research methods tend to be put into two broad categories—quantitative approaches and qualitative approaches—based on different assumptions about how to best understand what is true or what constitutes reality (McMillan, 2004). Generally speaking, quantitative research methodologies require the collection and analysis of numerical data (e.g., test scores, opinion ratings, attitude scales); qualitative research methodologies necessitate the collection and analysis of narrative data (e.g., observation notes, interview transcripts, journal entries).

Quantitative research methodologies utilize a deductive approach to reasoning when attempting to find answers to research questions. **Deductive reasoning** works from the more general to the more specific, in a “top-down” manner (Trochim, 2002a). As depicted in Figure 1.1, the quantitative researcher might begin by thinking up a theory about a given topic of interest.

**Figure 1.1** Process of Deductive Reasoning as Applied to Research



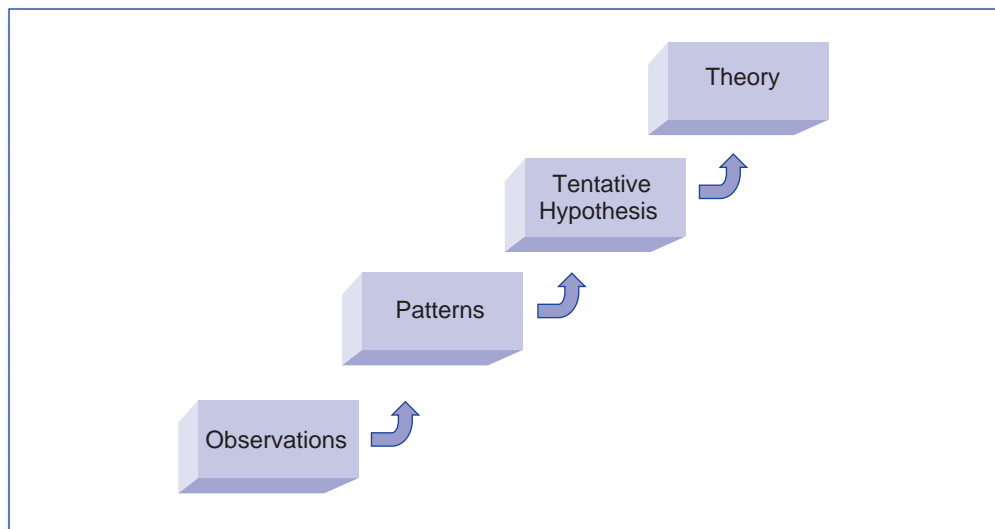
Source: Adapted from Trochim, 2002a.

That topic would then be narrowed down to more specific hypotheses that could be tested. This process of narrowing down goes even further when data are collected in order to address the hypotheses. Finally, the data are analyzed, and conclusions about the hypotheses are drawn—this allows for a confirmation (or not) of the original theory.

On the other hand, qualitative research methods typically use an inductive approach to reasoning. **Inductive reasoning** works in the exact opposite direction when compared to deductive reasoning. Using a “bottom-up” approach (see Figure 1.2), inductive reasoning begins with specific observations and concludes with broader generalizations and theories (Trochim, 2002a). One begins with specific observations (data), notes any patterns in those data, formulates one or more tentative hypotheses, and finally develops general conclusions and theories. It is important to note that, in some cases, the purpose of qualitative research is not to analyze data in order to form hypotheses or theories. Rather, in these cases, the purpose may simply be to provide a “thick description” of what is going on in the particular setting being studied. You will read more about deductive and inductive reasoning, as they relate to data analysis, in Chapter 6.

It is important to note that both quantitative and qualitative approaches to conducting educational research are guided by several sets of philosophical assumptions. These philosophical assumptions are composed primarily of several basic underlying beliefs about the world itself and how best to discover or uncover its true reality. The underlying beliefs held

**Figure 1.2** Process of Inductive Reasoning as Applied to Research



*Source:* Adapted from Trochim, 2002a.

by quantitative researchers differ substantially from those held by qualitative researchers. It is my conviction that an understanding of these beliefs is not requisite to understanding or being able to successfully conduct an action research study. This is largely due to the fact that action research, as we will view it throughout this text, typifies a grassroots effort to find answers to important questions or to foster change. It is entirely practical—and not necessarily philosophical—in its application. Mills (2011) refers to this as “practical action research” (p. 7), which he contrasts with the more philosophically based critical action research. The focus of this particular textbook is on the former; in-depth discussions of more philosophically based forms of action research are beyond the scope of this book. If the reader is interested in learning more about these various underlying philosophical assumptions and their connection to action research, several excellent resources include Johnson (2008), McMillan (2004), and Mills (2011).

Recall that the goal of quantitative research is to describe or otherwise understand educational phenomena. To accomplish this, researchers collect data by measuring **variables** (factors that may affect the outcome of a study or characteristics that are central to the topic about which the researcher wishes to draw conclusions) and then analyze those data in order to test **hypotheses** (predicted outcomes of the study) or to answer **research questions**. For example, a quantitative research study might involve collecting data on elementary school discipline referrals and absenteeism (numerical variables) in order to answer the question: Are there differences in the rates of disciplinary problems and absenteeism in schools with a K–8 grade span versus those with other grade span configurations (e.g., K–5, K–6)?

The type of **research design** employed by the researcher refers to the plan that will be used to carry out the study. Research designs may be either nonexperimental or experimental. In **nonexperimental research**, the researcher has no direct control over any variable in the study, either because it has already occurred or because it is not possible for it to be influenced. In other words, in nonexperimental research, variables cannot be controlled or manipulated by the researcher. The previous illustration of a study of school discipline and absenteeism problems is an example of a nonexperimental study, as the type of grade configuration, the number of discipline referrals, and the number of absences cannot be controlled or influenced by the researcher. The fact that variables cannot be controlled in nonexperimental studies is an important distinction between nonexperimental research and experimental research, especially when it comes to drawing conclusions at the end of a study. This usually means that conclusions to nonexperimental studies can describe only variables or relationships between variables. Some examples of nonexperimental research designs include *descriptive*, *comparative*, *correlational*, and *causal-comparative* research (McMillan, 2004). *Descriptive* studies simply report information about the frequency or amount of something (e.g., What percentage of the time do teachers use performance-based assessments in their classrooms?). *Comparative* studies characteristically build on descriptive studies by comparing two or more groups to that which is measured (e.g., Is there a significant difference between elementary and secondary teachers’ use of performance-based assessments?).



*Correlational* studies measure the degree to which a relationship exists between two or more variables (e.g., What is the relationship between years of teaching experience and use of performance-based assessments?). Finally, *causal-comparative* studies (also sometimes referred to as *ex post facto* studies) compare groups—where group membership is determined by something that occurred in the past—on subsequent data on another variable in such a way that it makes possible drawing potential causal relationships between the two variables (e.g., Do teachers who completed a stand-alone preservice course in classroom assessment use performance-based assessment more than teachers who did not complete such a course?). Notice that based on the sample research questions provided it is quite possible to use any of the various types of nonexperimental research designs to study a given topic—in this case, classroom teachers’ use of performance-based assessments.

In **experimental research**, the researcher has control over one or more of the variables included in the study that may somehow influence (or cause) the participants’ behavior. The variables over which the researcher has control are known as the **independent variables**; these are the variables that are manipulated by the researcher, meaning that the researcher determines which subjects will receive which condition. For example, if the effectiveness of a new math program was being investigated, those students exposed to the new program would constitute the **experimental** or **treatment group**; their performance would be compared to a **control group** that receives the standard math instruction. The ultimate variable of interest (i.e., the “behavior” variable mentioned above, perhaps “math achievement” in our example) is referred to as the **dependent variable** (since its value depends on the value, or group membership, of the independent variable).

There are a wide variety of experimental research designs, the discussion of which is beyond the scope of this book. However, an illustration of experimental research is likely in order. Suppose a history teacher wanted to determine whether students performed better when taught American history using the more traditional forward (i.e., past to present) approach versus a backward (i.e., present to past) approach. She randomly assigns half of her classes to be taught using the forward approach and the other half to be taught using the backward approach. The independent variable for her study is the type of instruction. There are two levels to this variable that “define” the two groups—the experimental group receives the innovative backward approach to instruction; the control group receives the more traditional forward approach. Finally, the academic performance (dependent variable) of all students is measured using the same instrument (e.g., a final exam) for both groups. The aspect that makes this study experimental in nature is that the teacher herself determines which group will receive which version of the treatment (i.e., instruction); in other words, she is manipulating or controlling the independent variable.

Data collected as part of quantitative research studies are numerical and therefore naturally analyzed statistically. Analyses may include descriptive statistics, inferential statistics, or both. **Descriptive statistics** allow researchers to summarize, organize, and simplify data. Specific techniques include such statistics as the mean, median, mode, range, standard

deviation, correlations, and standardized scores. **Inferential statistics** are more complex and permit researchers to test the statistical significance of the difference between two or more groups or to test the degree of correlation between two variables. **Statistical significance** refers to a decision made from the results of statistical procedures that enable researchers to conclude that the findings of a given study (e.g., the size of the difference between two groups or the strength of the relationship between two variables) are large enough in the sample studied in order to represent a meaningful difference or relationship in the **population** from which the sample was drawn.

Whereas quantitative research studies focus on a relatively small number of variables, qualitative research studies utilize a much broader, more holistic approach to data collection. Qualitative research designs use systematic observation in order to gain knowledge, reach understanding, and answer research questions. There is no attempt to control or manipulate any variable in a qualitative study; researchers simply take the world as it exists and as they find it (Johnson, 2008). Qualitative research tends to emphasize the importance of multiple measures and observations (Trochim, 2002b). Therefore, guiding research questions tend to be more broad and open-ended. This allows the researcher to collect a wide variety of data for the purpose of getting a more holistic picture of the phenomenon under investigation. This also permits the researcher to engage in triangulation. **Triangulation** is a process of relating multiple sources of data in order to establish their trustworthiness or verification of the consistency of the facts while trying to account for their inherent biases (Bogdan & Biklen, 2007; Glesne, 2006). It is important to note that “triangulation” does not necessarily mean that the researcher is using three (as in “tri-”) sources of data; it simply means that there is more than one source of data—perhaps, a more appropriate term would be “*polyangulation*” (since the prefix “*poly-*” is defined as “more than one or many”). Ultimately, this enables the researcher to try to get a better handle on what is happening in reality and to have greater confidence in research findings (Glesne, 2006). For example, in a qualitative study, one might collect data through firsthand observations, videotaped observations, and interviews. Triangulating these sources of data would involve examination in order to determine, for example, if the behaviors exhibited and comments made by participants are consistent regardless of the type of data representing them. In other words, did a specific person act the same way he said he acted, or did he verbally portray his behavior differently from his actual behavior?

Similar to quantitative research, there are a variety of qualitative research designs. These include phenomenology, ethnography, grounded theory, and case studies (McMillan, 2004). **Phenomenological studies** engage the researcher in a long process of individual interviews in an attempt to fully understand a phenomenon (e.g., What characteristics of teachers are needed in order for them to be viewed as compassionate by their students?). **Ethnographic research** attempts to describe social interactions between people in group settings (e.g., What meaning does the teachers’ lounge have for the staff at Main Street Elementary School?). **Grounded theory** research studies attempt to discover a theory that

relates to a particular environment (e.g., What types of personal and school characteristics serve to motivate teachers?). Finally, **case studies** are in-depth studies of individual programs, activities, people, or groups (e.g., What is the nature of the school culture at Washington Middle School?).

Data collected during a qualitative research study may be quite diverse. Recall that qualitative data are typically narrative and consist primarily of observations, interviews, and existing documents and reports (McMillan, 2004). Resulting qualitative data are analyzed by means of a process known as **logico-inductive analysis**, a thought process that uses logic to make sense of patterns and trends in the data (Mertler & Charles, 2011).

Although quantitative and qualitative approaches to conducting research are quite different on a variety of levels, they need not be considered mutually exclusive. It is not uncommon to see research studies that employ both types of research data. These types of studies are often referred to as **mixed-methods research designs**. The combination of both types of data tends to provide a better understanding of a research problem than one type of data in isolation. In other words, these types of studies capitalize on the relative strengths of both quantitative and qualitative data. Creswell (2005) considers action research studies to be most similar to mixed-methods designs, since they often utilize both quantitative and qualitative data. The only real difference between the two is the underlying purpose for the research. The main goal of mixed-methods studies is more traditional (i.e., to better understand and explain a research problem); the main goal of action research is to address local-level problems with the anticipation of finding immediate solutions.

## Overview of Action Research

For decades, there has been pressure from both public and governmental sources for improvement in our schools. The public, fueled by the mass media, has criticized schools for low levels of achievement in math, science, reading, writing, and history (Schmuck, 1997). Business leaders fault schools for not preparing students for the workforce. Although teachers are on the receiving end of the brunt of this criticism, it is my firm belief that teachers in the United States have been doing—and continue to do—an outstanding job in the classroom. However, that being said, I also believe that true school improvement must begin from within the proverbial “four walls of the classroom.” Teachers must be able and willing to critically examine their own practice as well as how students (both collectively and individually) learn best.

Often, school improvement leaders look toward the enormous body of educational research literature as a means of guiding their improvement efforts. However, many practitioners do not find that either formal or applied academic research is very helpful (Anderson, 2002). This is largely due to the fact that traditional educational researchers have a tendency to impose abstract research findings on schools and teachers with little or no attention paid to local variation (i.e., not all schools are the same) and required adaptations

(i.e., the extent to which research findings generalize across entire populations; Metz & Page, 2002). I believe that, due to this continued imposition of more traditional research findings, there is a real need for the increased practice of teacher-initiated, classroom-based action research.

Schmuck (1997) defines action research as an attempt to “study a real school situation with a view to improve the quality of actions and results within it” (p. 28). Its purpose is also to improve one’s own professional judgment and to give insight into better, more effective means of achieving desirable educational outcomes. McMillan (2004) describes action research as being focused on solving a specific classroom or school problem, improving practice, or helping make a decision at a single local site. Action research offers a process by which current practice can be changed toward better practice. The overarching goal of action research is to improve practice immediately within one or a few classrooms or schools (McMillan, 2004).

Due to the fact that action research is largely about examining one’s own practice (McLean, 1995), reflection is an integral part of the action research process. **Reflection** can be defined as the act of critically exploring what you are doing, why you decided to do it, and what its effects have been. In order for teachers to be effective, they must become active participants in their classrooms as well as active observers of the learning process; they must analyze and interpret classroom information—that has been collected in a systematic manner—and then use that information as a basis for future planning and decision making (Parsons & Brown, 2002). **Reflective teaching** is a process of developing lessons or assessing student learning with thoughtful consideration of educational theory, existing research, and practical experience, along with the analysis of the lesson’s effect on student learning (Parsons & Brown, 2002). This process of systematic collection of information followed by active reflection—all with the anticipation of improving the teaching process—is at the core of action research.

Accordingly, action research is also largely about developing the professional disposition of teachers and the teaching profession (Mills, 2011). Through action research, teachers are encouraged to become continuous, lifelong learners in their classrooms and with respect to their practice. This notion is central to the very nature of education—action research encourages teachers to examine the dynamics of their classrooms, critically think about the actions and interactions of students, confirm and/or challenge existing ideas or practices, and take risks in the process (Mills, 2011). A goal of every classroom teacher should be to improve her or his professional practice, as well as student outcomes. Action research is an effective means by which this can be accomplished.

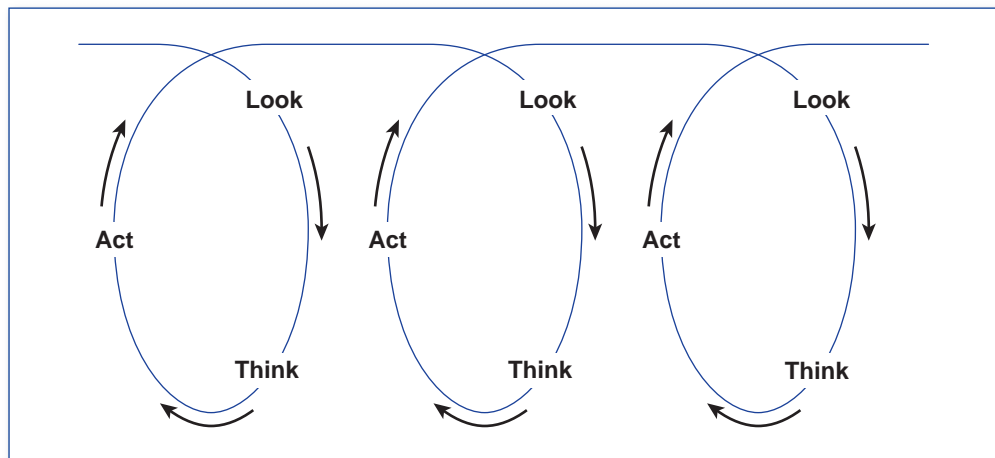
## Models of Action Research

Numerous authors and researchers have proposed models for the action research process. Because this process is somewhat dynamic, various models look a bit different from one another but possess numerous common elements. Action research models begin with a

central problem or topic. They involve some observation or monitoring of current practice, followed by the collection and synthesis of information and data. Finally, some sort of action is taken, which then serves as the basis for the next stage of action research (Mills, 2011). In addition, some models are simple in their design, while others appear relatively complex. This range of complexity—from simpler to more complex—can be seen in the following examples:

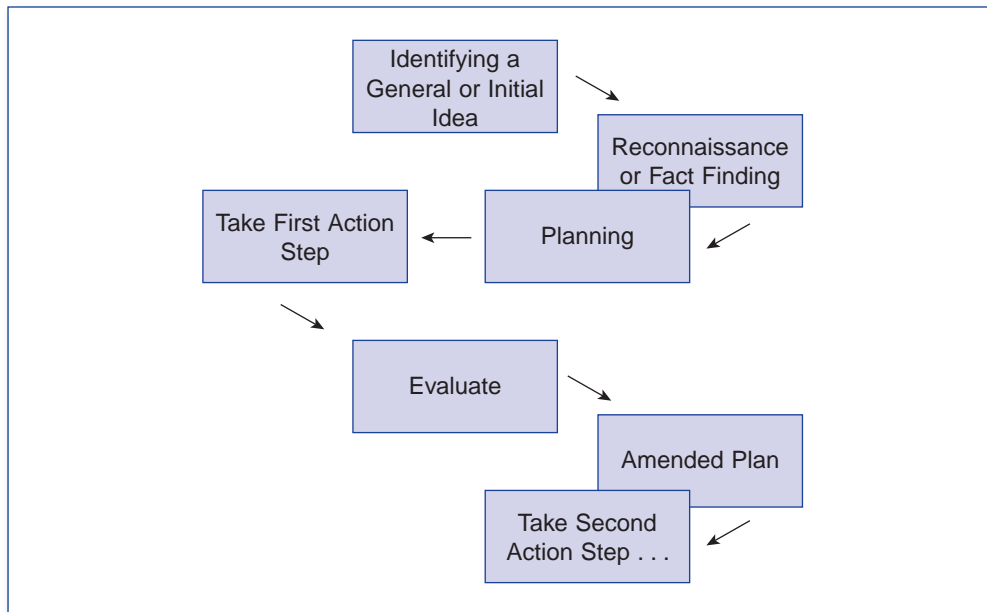
- Stringer (2007), in his action research interacting spiral, describes action research as a “simple, yet powerful framework” consisting of a “look, think, and act” routine (p. 8). During each stage, participants observe, reflect, and then take some sort of action. This action leads them into the next stage (see Figure 1.3).

**Figure 1.3** Stringer’s Action Research Interacting Spiral



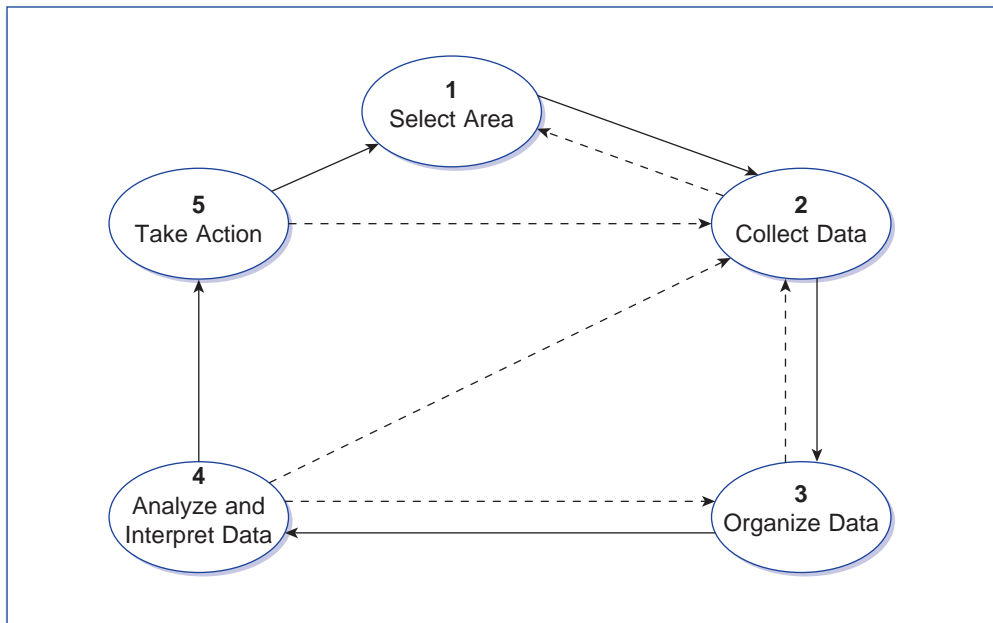
*Source:* Adapted from *Action Research* (p. 9), by Ernest T. Stringer, 2007, Thousand Oaks, CA: Sage. Copyright 2007 by Sage. Reprinted with permission of the publisher. All rights reserved.

- Kurt Lewin (Smith, 2007)—who, by the way, is credited with coining the term “action research”—also depicts an action research spiral, which includes fact finding, planning, taking action, evaluating, and amending the plan, before moving into a second action step (see Figure 1.4).
- Calhoun’s (1994) action research cycle, while not appearing as a “spiral,” still represents a process that is built around a cyclical notion. As she describes, the solid lines indicate the primary direction of the action research cycle through the phases, in numerical order. The dotted lines indicate backward and forward movement within the cycle as refinement or clarification of information is warranted (see Figure 1.5).

**Figure 1.4** Lewin's Action Research Spiral

*Source:* Adapted from *Encyclopedia of Informal Education* ([www.infed.org](http://www.infed.org)). Copyright 2007. Reprinted with permission of the publisher. All rights reserved.

- Bachman's (2001) action research spiral continues this notion of the cyclical nature of action research (see Figure 1.6). His downward spiral suggests that participants gather information, plan actions, observe and evaluate those actions, and then reflect and plan for a new cycle of the spiral, based on the insights that were gained in the previous cycle.
- Riel's (2007) progressive problem solving through action research model takes the participant through four steps in each cycle: planning, taking action, collecting evidence, and reflecting (see Figure 1.7).
- Piggot-Irvine's (2006) action research model continues to depict this spiraling nature of the action research process. In her upward spiral, she shows these similar steps—planning, acting, and reflecting—through three subsequent action research cycles (see Figure 1.8).
- Hendricks's (2009) action research model is shown in Figure 1.9. In her model, which she has placed in a school-based context, she focuses on acting, evaluating, and reflecting.

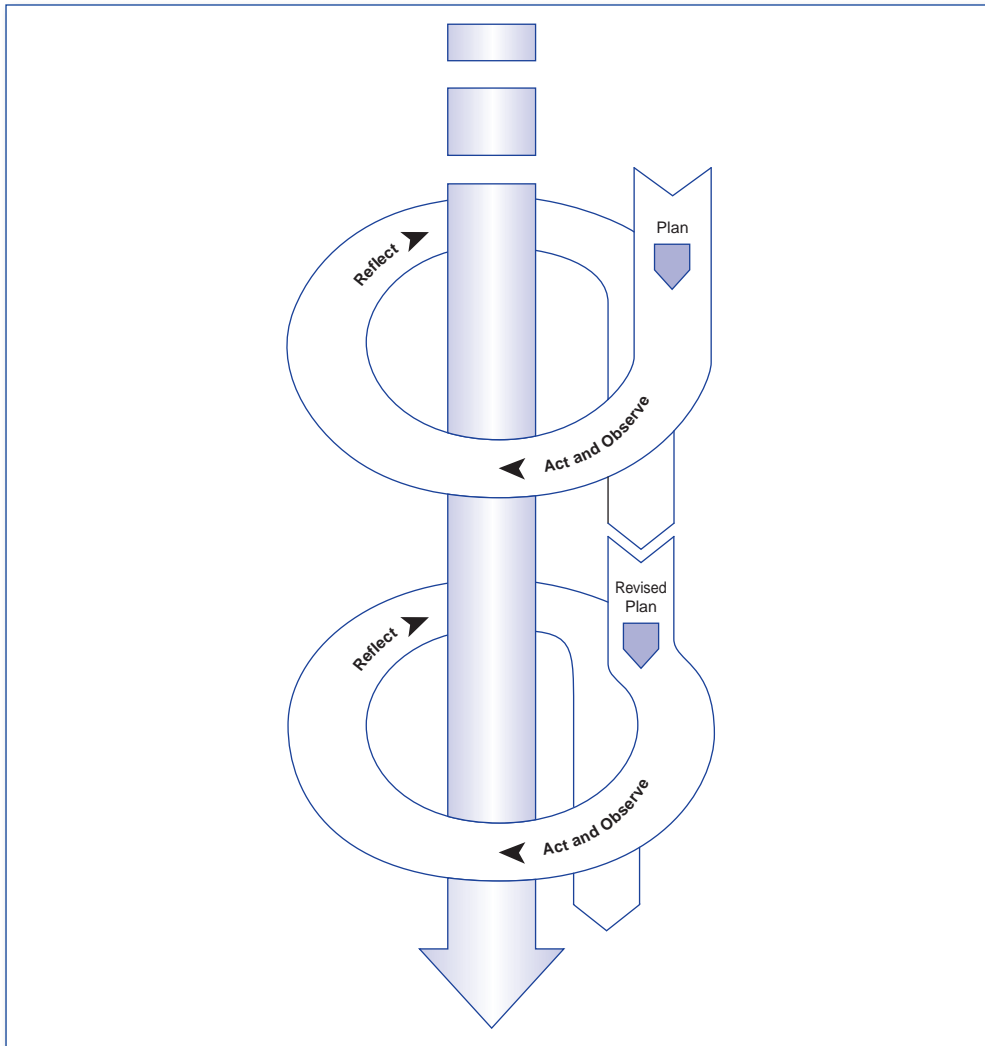
**Figure 1.5** Calhoun's Action Research Cycle

*Source:* Adapted from *How to Use Action Research in the Self-Renewing School* (p. 2), by Emily F. Calhoun, 1994, Alexandria, VA: Association for Supervision and Curriculum Development. Copyright 1994 by ASCD. Reprinted with permission of the publisher. All rights reserved.

Which model should you follow? Personally, I do not think it really matters, as I see them essentially as variations on the same theme (as evidenced by their shared elements). Generally speaking, my version of the action research process is composed of a four-stage procedure (Mertler & Charles, 2011), which will be expanded in more detail in the next chapter. For the time being, these four stages are as follows:

1. The planning stage
2. The acting stage
3. The developing stage
4. The reflecting stage

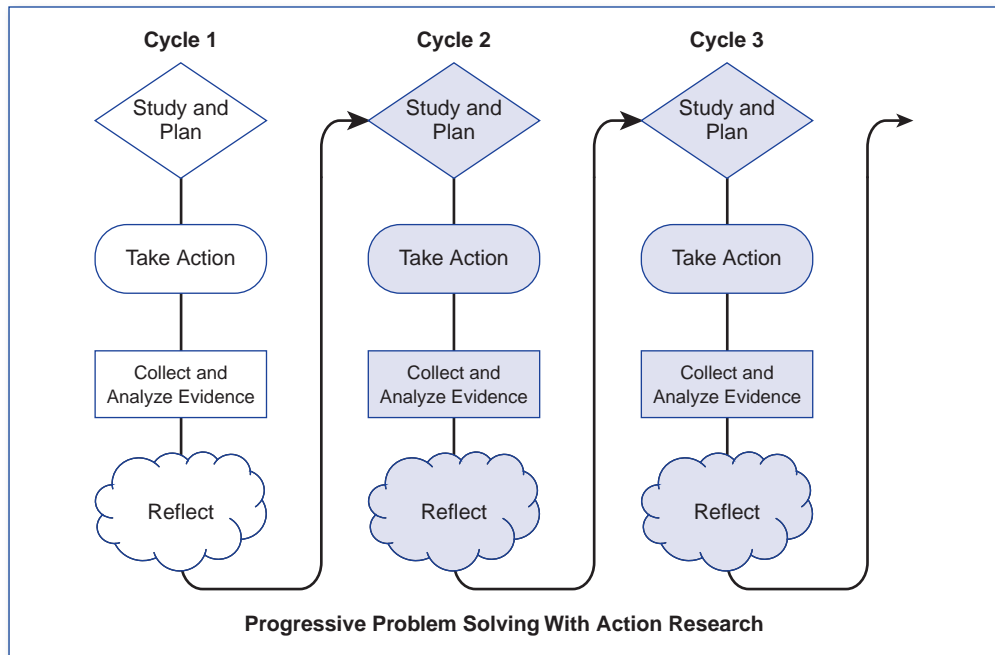
Within this framework—and as you saw earlier in the various models presented—action research is a recursive, cyclical process that typically does not proceed in a linear fashion (Johnson, 2008). Teacher-researchers engaged in action research often find themselves repeating some of the steps several times or perhaps doing them in a different order.

**Figure 1.6** Bachman’s Action Research Spiral

*Source:* Adapted from “Review of the Agricultural Knowledge System in Fiji: Opportunities and Limitations of Participatory Methods and Platforms to Promote Innovation Development” (unpublished dissertation), by Lorenz Bachman, 2001, Berlin, Germany: Humboldt University to Berlin. Copyright 2001. Retrieved January 17, 2008, from <http://edoc.hu-berlin.de/dissertationen/bachmann-lorenz-b-r-2000-12-21/HTML/bachmann-ch3.html>. Reprinted with permission of the author.

Depending on the nature of a given action research project, there may never be a clear end to the study—teachers may continue to go through subsequent cycles of planning, acting and observing, developing a new plan, and reflecting, which seemingly spiral from 1 year



**Figure 1.7** Riel's Action Research Model

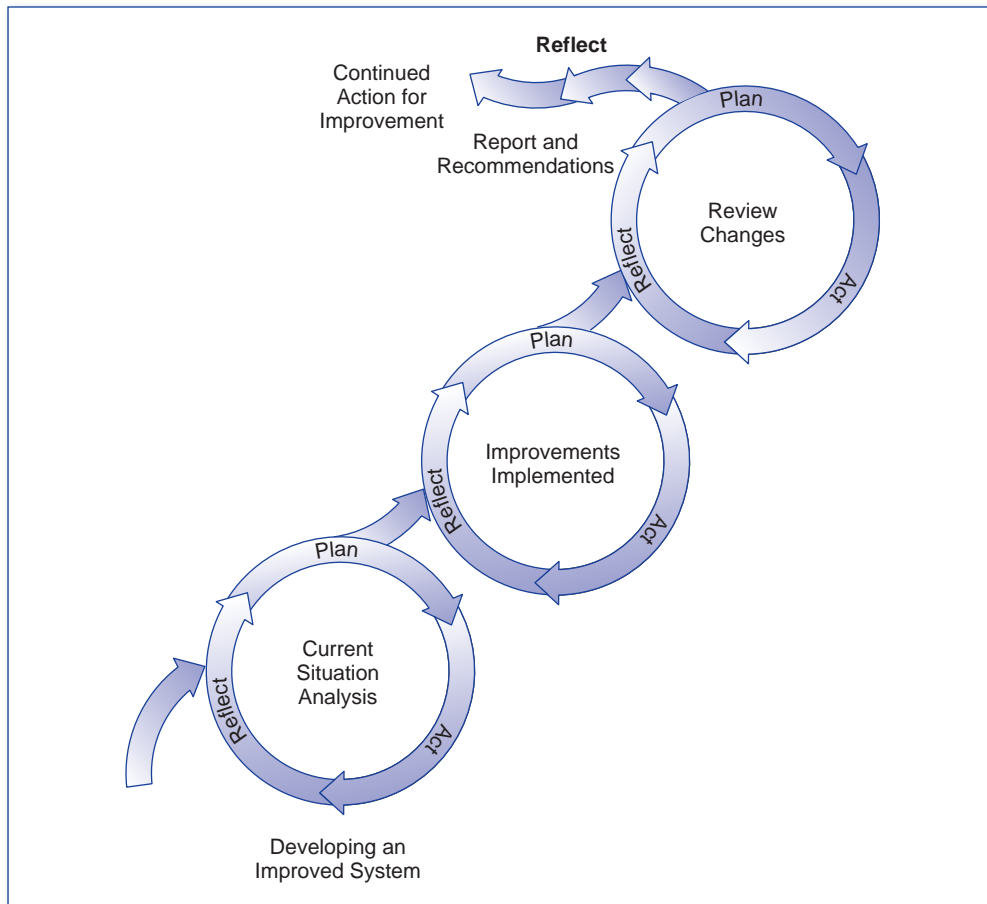
*Source:* Adapted from *Understanding Action Research*, by Margaret Riel. Retrieved January 17, 2008, from <http://cadres.pepperdine.edu/ccar/define.html>. Copyright 2007 by the Center for Collaborative Action Research, Pepperdine University. Reprinted with permission of the author.

into the next (Mertler & Charles, 2011). You will learn more about the specific steps in conducting action research in Chapter 2.

## Characteristics of Action Research: What It Is and What It Is Not

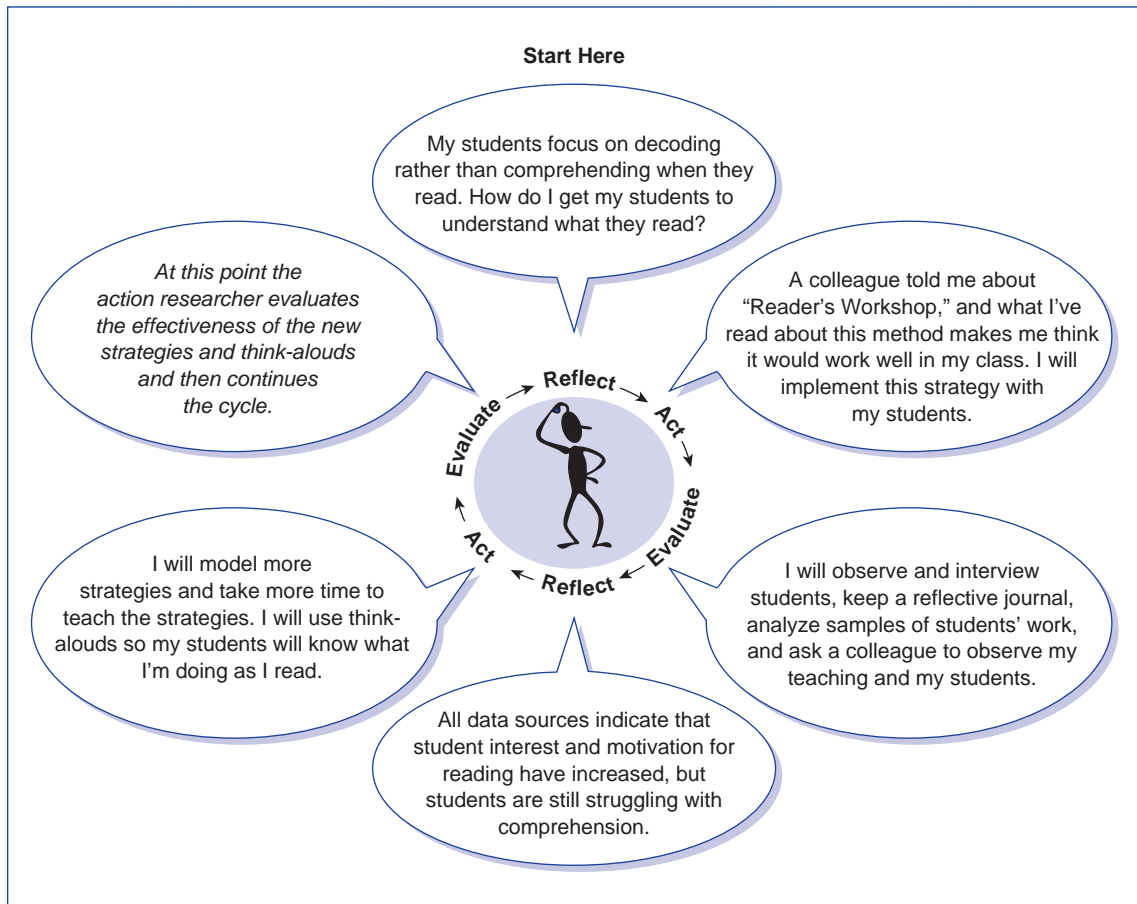
Although action research can be a fairly straightforward process, it is sometimes misunderstood by educational practitioners (Mertler & Charles, 2011). There are many aspects of this methodology that characterize its uniqueness as an approach to conducting educational research. It is imperative for educators to have a sound, foundational understanding of just what action research is and is not. The following list, compiled from several sources (Johnson, 2008; Mertler & Charles, 2011; Mills, 2011; Schmuck, 1997), is an attempt to describe what action research is:

- Action research is a process that improves education, in general, by incorporating change.

**Figure 1.8** Piggot-Irvine’s Action Research Model

*Source:* Adapted from “Sustaining Excellence in Experienced Principals? Critique of a Professional Learning Community Approach,” by Eileen Piggot-Irvine, 2006, *International Electronic Journal for Leadership in Learning*, 10(16). Retrieved January 17, 2008, from <http://www.ucalgary.ca/iejll/vol10/irvine>. Copyright 2006 by the University of Calgary Press. Reprinted with permission of the publisher.

- Action research is a process involving educators working together to improve their own practices.
- Action research is persuasive and authoritative, since it is done by teachers for teachers.
- Action research is collaborative; that is, it is composed of educators talking and working with other educators in empowering relationships.

**Figure 1.9** Hendricks's Action Research Process

*Source:* Adapted from *Improving Schools Through Action Research: A Comprehensive Guide for Educators* (p. 9), by Cher Hendricks, 2009, Boston: Allyn & Bacon.

- Action research is participative, since educators are integral members—not disinterested outsiders—of the research process.
- Action research is practical and relevant to classroom teachers, since it allows them direct access to research findings.
- Action research is developing critical reflection about one's teaching.
- Action research is a planned, systematic approach to understanding the learning process.

- Action research is a process that requires us to “test” our ideas about education.
- Action research is open-minded.
- Action research is a critical analysis of educational places of work.
- Action research is a cyclical process of planning, acting, developing, and reflecting.
- Action research is a justification of one’s teaching practices.

Of equal importance is that educators understand what action research is not (Johnson, 2008; Mertler & Charles, 2011; Mills, 2011; Schmuck, 1997):

- Action research is not the usual thing that teachers do when thinking about teaching; it is more systematic and more collaborative.
- Action research is not simply problem solving; it involves the specification of a problem, the development of something new (in most cases), and critical reflection on its effectiveness.
- Action research is not done “to” or “by” other people; it is research done by particular educators, on their own work, with students and colleagues.
- Action research is not the simple implementation of predetermined answers to educational questions; it explores, discovers, and works to find creative solutions to educational problems.
- Action research is not conclusive; the results of action research are neither right nor wrong but rather tentative solutions that are based on observations and other data collection and that require monitoring and evaluation in order to identify strengths and limitations.
- Action research is not a fad; good teaching has always involved the systematic examination of the instructional process and its effects on student learning. Teachers are always looking for ways to improve instructional practice, and although teachers seldom have referred to this process of observation, revision, and reflection as research, that is exactly what it is.

## The Importance of Action Research

---

At this point, you may find yourself asking a basic—albeit legitimate—question: Why should I become involved in an action research project, especially with all the demands and responsibilities placed on me as an educator today? Mertler and Charles (2011) have provided at least some partial answers to this question:



**Video Clip 1.1**  
View a clip of  
Dr. Mertler  
discussing the  
importance of  
action research.

[First,] action research deals with your problems, not someone else's. Second, action research is very timely; it can start now—or whenever you are ready—and provides immediate results. Third, action research provides educators with opportunities to better understand, and therefore improve, their educational practices. Fourth, as a process, action research can also promote the building of stronger relationships among colleagues with whom we work. Finally, and possibly most importantly, action research provides educators with alternative ways of viewing and approaching educational questions and problems and with new ways of examining our own educational practices. (Mertler & Charles, 2011, p. 339–340)

Unfortunately, the answers to the initial question may have prompted another query in your mind: If the benefits are so substantial, why doesn't everyone do action research? Again, Mertler and Charles (2011) suggest answers to this question:

First, although its popularity has increased over the past decade, action research is still relatively unknown when compared to more traditional forms of conducting research. Second, although it may not seem the case, action research is more difficult to conduct than traditional approaches to research. Educators themselves are responsible for implementing the resultant changes, but also for conducting the research. Third, action research does not conform with many of the requirements of conventional research with which you may be familiar— it is therefore less structured and more difficult to conduct. Finally, because of the lack of fit between standard research requirements and the process of conducting action research, you may find it more difficult to write up your results. (Mertler & Charles, 2011, p. 340)

These sets of responses to our hypothetical (or perhaps very realistic) questions provide compelling reasons for both conducting and not conducting action research projects. The following is a discussion of four broad but vitally important ways in which action research can be used successfully in educational settings: to effectively connect theory to practice, to improve educational practice, to empower teachers, and as a means for promoting professional growth.

## Connecting Theory to Practice

Research is often used to develop theories that eventually help determine best practices in education (Johnson, 2008). These best practices are then used to help teachers develop effective learning experiences for their students. Johnson (2008) describes how this unidirectional flow of information, in the specific form of research findings, from researchers to practitioners, often breaks down. Frequently, a gap exists between what is learned by researchers, who conduct and report their research on educational topics, and practicing classroom teachers. This apparent gap may be described this way: Research occurs in the ivory towers, whereas practice takes place in the trenches (Parsons & Brown, 2002). What goes on in public school classrooms often does not reflect research findings related to instructional practices and student learning (Johnson, 2008).

Johnson (2008) further offers two possible explanations for this noticeable breakdown. First, he cites the fact that research (i.e., that conducted by university and college professors and other researchers) is characteristically written and therefore published in such a way that does not consider a teacher’s typical day-to-day schedule. Research articles often are overly descriptive, contain an overabundance of jargonistic terms, and use research methods that do not “fit” with the daily needs of and resources available to teachers. Many teachers who have taken my educational research methods course over the years have shared with me the fact that they believe most, if not all, education research is impractical and irrelevant to their needs. Second, Johnson suggests that this one-way flow of information from researcher to teacher creates an environment in which the researcher expects the practicing teacher to be a passive receiver of this information. Often, these research findings do not appreciate or even take into account teachers’ points of view, the complexities of the teaching-learning process, or the practical challenges teachers must address in their classrooms on a daily basis.



#### Video Clips 1.2 & 1.3

View clips of educator-researchers discussing the importance of action research.

Action research provides one possible solution to bridging this gap by creating a two-way flow of information. Research findings offered from researchers can still be used to inform best practices and to better understand what is happening in classrooms. Simultaneously, data collected and analyzed by practicing teachers in their own classrooms can be used to inform theories and research related to best practices (Johnson, 2008). Parsons and Brown (2002) effectively explain this two-way flow of information by stating that “teaching decisions are not only shaped by theory and research, but in turn help give shape and new directions to educational theory and research” (p. 7).

## Improvement of Educational Practice

As was discussed previously, a main focus of action research is the improvement of classroom practice. When teachers are reflective and critical of their own practice, they use the information they collect and phenomena they observe as a means of facilitating informed, practical decision making (Parsons & Brown, 2002). The clear strength of action research is that it is reflective and collaborative and that it can ultimately lead to improvements in educational practice (Parsons & Brown, 2002).

This sometimes requires a bit of a shift in the way we think about and approach our own classroom practice. Many teachers believe that they have mastered their profession and that they will be successful if they simply keep doing what they have been doing. Ironically, however, the truly successful teachers (i.e., those whom we call experts or “master teachers”) are those who constantly and systematically reflect on their actions and the consequences of those actions. This constant reflection results in the acquisition of new knowledge as it pertains to the teaching and learning process. It is important to remember that, as teachers, we work all day long with other human beings; each one is exceptional in her or his own special way. Each human being has different needs, desires, motivations, interests,

learning styles, strengths, and weaknesses. Each student or group of students constantly provides us with unique challenges and opportunities, many of which require unique approaches (Parsons & Brown, 2002). Systematic reflection in the form of action research can provide the stimulus for changing and improving practice in order to make it appropriate for these unique individuals with whom we work.

## Connection to School Improvement

The discussion in the previous section focused on the use of action research as a reflective means of improving individual classroom practice. Action research can also be organized and facilitated in such a way as to promote more systemic types of improvements. One way to accomplish this is to approach action research as a collaborative venture. One of the benefits of sharing the responsibilities of such a process is that it brings together different perspectives, ideas, experiences, and resources (Mertler, 2009). Collaboratively designed and implemented action research—a concept known as **collaborative action research** (or CAR), as opposed to “individual action research” (Clauet, Lick, & Murphy, 2008, p. 2)—is an ideal mechanism for engaging teachers, administrators, and support personnel in systemic, self-initiated school improvement. This concept can even spread so far as to include *every* educator in a school; this concept is known as “schoolwide action research” (Clauet, Lick, & Murphy, 2008, p. 2). As a means of improving schools and empowering educators (as you will read in the next section), I firmly believe that this process will lead to better instruction, better learning, and more productive students coming out of our classrooms.

## Teacher Empowerment—Teacher as Decision Maker

Another important aspect of action research is that it advances the notion of teacher empowerment. When teachers collect their own data in order to assist in making decisions about their own students and classrooms—a concept known as “teacher as decision maker”—they become empowered. Teacher empowerment allows teachers to bring into their classrooms their own unique expertise, talents, and creativity so that they can implement instructional programs to best meet the needs of their students (Johnson, 2008). Teachers are allowed—even encouraged—to take risks and make changes to their instructional practice whenever and wherever they believe it to be appropriate. This approach to school leadership and improvement is in complete opposition to the standard top-down, administrator-driven leadership. This is not meant to imply that the skills and abilities of building- and district-level administrators are not needed; the leadership skills of these individuals are quite necessary. They simply take on different roles (e.g., the roles of facilitator, supporter, and mentor). The locus of control is in essence returned to the classroom level, thereby enhancing the effectiveness of schools and promoting school improvement (Johnson, 2008).

## Professional Growth

Johnson (2008) characterizes traditional teacher in-services as a gathering of teachers, usually after a long day of teaching or on a jam-packed workshop day, who sit and listen to an expert describe a new methodology, a new approach, or new instructional material that they typically do not believe relates directly to their classroom situations or teaching styles. Teachers are not provided with enough time, content, or activities in order to effectively increase their knowledge or positively affect their practice. Action research has been shown to serve as a means of improving teachers' problem-solving skills and their attitudes toward professional development and school change, as well as of increasing their confidence and professional self-esteem (Parsons & Brown, 2002). Furthermore, action research affirms the professionalism of teaching by giving teachers a real voice in their own professional development, as opposed to being told by someone else that a specific goal or topic is what is needed by every teacher in the building or district (Schmuck, 1997).

## Applications of Action Research

---

There are several ways in which the basic principles of action research can be applied. Four of the most essential—the identification of educational problems, the development and testing of possible solutions, preservice teacher education, and in-service teacher professional growth—are outlined here.

### Identifying Problems

Action research can be used effectively as a means of identifying problems in school settings. In fact, as you will see in the next chapter, the identification of a particular problem is the first major step in the process of conducting an action research study. If a goal of action research is to promote improvement and change, obviously the specific target of that improvement or change must first be identified (Johnson, 2008). The basic process of problem identification occurs when a situation is observed and there is recognition that something within that situation could probably be done better (Johnson, 2008). Identifying, defining, and limiting the problem involves its specification, followed by actively pursuing further understanding of the situation and then uncovering its possible causal factors. You are, in essence, trying to answer the question: Why are things as they are (Johnson, 2008)? Examples might include the following:

- Why are my students not retaining what they have been taught?
- Why do Adam, Betty, and Carlos seem to lack the motivation to read?
- What are the specific reasons behind Devin's behavior problems?
- How can I use my instructional time more effectively?



## Developing and Testing Solutions

Action research can also be used to find solutions to problems you have identified and ultimately test their effectiveness. Once you have specified a problem (i.e., posed a question in need of an answer, as we did above), problem-solving strategies can be used to arrive at possible solutions (Johnson, 2008). For example, creative problem solving (Johnson, 2008) is a process that follows the identification of a problem with the generation of as many potential solutions as possible; the selection of one solution that seems best; the refinement and implementation of the solution; and finally the evaluation and revision of the solution, focusing on its limitations, for future use.

Action research—recall its systematic nature—allows teachers to be more flexible in their thinking, more receptive to new ideas, and more organized in their approach to problem solving (Johnson, 2008). All of these facets enable teachers to become better able to solve problems.

Once possible solutions have been developed, they must be tested or tried out in order to determine their effectiveness (Johnson, 2008). Every new idea must be tested in order to see if, or how well, it works. Often, during the initial implementation of a solution, procedures must be revised and adjusted. This requires some level of continuous monitoring. Action research allows for the integration of both formative and summative evaluation, a sort of “data-driven decision making.” **Formative evaluation** occurs during the implementation phase; **summative evaluation** occurs following the completion of the implementation phase. Both types of evaluative decisions are essential in determining the extent to which a solution has worked.

## Preservice Teacher Education

As we all know, teaching is an extremely complex professional undertaking. If we can say that, as experienced classroom teachers, imagine what those who are making the transition from student to beginning teacher must feel. The preservice teacher’s knowledge base and understanding of the complexities of the “typical” classroom environment is quite limited. Without this knowledge base and understanding, the everyday decision-making process takes substantially more time for the preservice teacher when compared to the in-service teacher (Johnson, 2008). Action research can add to this limited knowledge base by helping preservice teachers see things in the classroom that they would not normally notice (Johnson, 2008). This can help speed up the process of assimilating to a new classroom environment, thus allowing them to make better and quicker decisions.

As in-service teachers, most of you will not have the occasion to change the nature of preservice teacher education. However, I offer this small piece of advice: If you are ever afforded the opportunity to take a preservice teacher under your tutelage, consider providing that person with a unique preprofessional development opportunity—his or her own mini action research project, done collaboratively with you. Preservice teacher action research projects can focus on observations of students, observations of other classroom teachers

(including you), or observations of their own practice. In all likelihood, they will be required to do some of this anyway but probably not using a systematic, action research approach. Action research can serve as a vehicle through which preservice teachers, in-service teachers, and university faculty can work together. Schools and teachers within those schools provide real-world experiences for university students and faculty; university students and faculty provide schools and teachers with access to current best practices. Through action research, preservice teachers, in-service teachers, and university faculty can work together toward a common goal—the improvement of student learning. One cautionary note, however: Be sure to consider small-scale topics or problems—perhaps through the integration of performance-based assessments—so as not to overwhelm the preservice teacher, whose mind may already be spinning (Johnson, 2008).

### In-Service Professional Growth

As has been previously discussed, action research is an effective means for teachers to develop and grow professionally. In fact, Johnson (2008) believes action research to be perhaps “the most efficient and effective way to address the professional development of teachers” (p. 44). Action research affords teachers opportunities to connect theory with practice, to become more reflective in their practice, and to become empowered risk takers. All of these opportunities enable the in-service classroom teacher to grow professionally and ultimately to realize growth in student learning.

### “Rigor” in Action Research

---

Research, of any kind, is a scientific endeavor. Quality research must meet standards of sound practice. The basis for establishing the quality of traditional (i.e., experimental) research lies in concepts of validity and reliability. Action research, because of its participatory nature, relies on a different set of criteria (Stringer, 2007). Historically, however, one of the “weaknesses” of action research has been its perceived lower level of quality. People falsely believe that, since action research is conducted by teachers, and not academicians or researchers, it must be of lesser quality. Stringer (2007) tells of his experience of submitting a proposal, which was ultimately rejected for presentation, to present an action research paper at a national educational research conference. Accompanying the rejection notification was the feedback from one reviewer, who referred to the topic of the paper as “nonsense” (p. 191).

This idea that action research is of lesser quality is, of course, not true. However, it is critical for the action researcher to ensure that the research is sound. The extent to which it reaches a standard of quality is directly related to the usefulness of the research findings for its intended audience. This level of quality in action research can be referred to as its “rigor.”

In general, **rigor** refers to the quality, validity, accuracy, and credibility of action research and its findings. Rigor is typically associated with the terms validity and reliability in quantitative studies, referring to the accuracy of instruments, data, and research findings, and with accuracy, credibility, and dependability in qualitative studies (Melrose, 2001). (These terms will be discussed further in Chapter 5.) Many action researchers use the term rigor in a much broader sense, making reference instead to the entire research process, not just to its aspects of data collection, data analysis, and findings (Melrose, 2001). Rigor in action research is typically based on procedures of checking to ensure that the results are not biased or that they reflect only the particular perspective of the researcher (Stringer, 2007).

As mentioned, the determination of rigor is often contingent on the intended audience for the sharing of action research results. Classroom-based action research can be disseminated to a wide variety of audiences (e.g., teachers, administrators, counselors, parents, school boards, professional organizations), and the usefulness of the results of action research often depends on their particular perceptions about rigor, since it can have different connotations depending on the particular audience (Melrose, 2001). For example, if the research is intended for limited dissemination (e.g., sharing with members of the action research group or building staff), the necessary level of rigor is much different than if the dissemination is intended for scholarly academic output (e.g., formally presenting the results at a national research conference or publishing the study in a journal). It is necessary for the broader dissemination to be concerned more with generalizability, meaning that the results of the study will extend beyond its scope to other settings and people.

However, action research intended for more local-level dissemination—and, as an aside, I believe that the majority of classroom-based action research falls into this category—has an altogether different focus. It is important to remember that participants in action research studies make mistakes and learn from them (Melrose, 2001); this is inherent in the action research process. The research questions and design are often emergent, changeable, and therefore unpredictable. Therefore, there may be no generalizable conclusions at all, as the findings are context specific and unique to the particular participants and their setting and situation. What matters is typically the improvement of practice, as evidenced by the resulting, visible change, not the study's rigor (as defined by its ability to be generalized).

There are numerous ways in which to provide rigor within the scope of teacher-led action research studies. The following list has been adapted from Melrose (2001), Mills (2011), and Stringer (2007):

- *Repetition of the cycle*—Action research is, by its very nature, cyclical. Most action researchers firmly believe that once through an action research cycle is simply not enough. In order to develop adequate rigor, it is critical to proceed through a number of cycles, where the earlier cycles are used to help inform how to conduct the later cycles (Melrose, 2001). In theory, with each subsequent cycle, more is learned, and greater credibility is added to the findings.

- *Prolonged engagement and persistent observation*—In order to gather enough information to help participants fully understand the outcomes of an action research process, they must be provided “extended opportunities to explore and express their experience” (Stringer, 2007, p. 58) as it relates to the problem being investigated. However, simply spending more time in the setting is not enough. For example, observations and interviews must be deliberately and carefully conducted (Mills, 2011; Stringer, 2007). These should not be indiscriminate research activities.

- *Experience with the process*—In many cases rigor and credibility will depend on the experience of the action researcher(s). If a teacher has (or other school personnel have) conducted previous studies, or even previous cycles within the same study, this individual can perform confidently and will have greater credibility with respective audiences (Melrose, 2001). However, if the teacher-researcher is a novice, the entire process may benefit from the use of an experienced facilitator.

- *Polyangulation of data*—Rigor can be enhanced during the action research process when multiple sources of data and other information are included (Mills, 2011; Stringer, 2007). This permits the action researcher to cross-check the accuracy of data (Mills, 2011) and to clarify meanings or misconceptions held by participants (Stringer, 2007). Accuracy of data and credibility of the study findings go hand-in-hand.

- *Member checking*—Participants should be provided with opportunities to review the raw data, analyses, and final reports resulting from the action research process (Mills, 2011; Stringer, 2007). The rigor of the research is enhanced with this activity by allowing participants to verify that various aspects of the research process adequately and accurately represent their beliefs, perspectives, and experiences. It also gives them the opportunity to further explain and/or extend the information that they have already provided.

- *Participant debriefing*—Similar to member checking, debriefing is another opportunity for participants to provide insight. However, in this case, the focus is on their emotions and feelings, instead of the factual information they have offered (Mills, 2011; Stringer, 2007). They may address emotions that might have clouded their interpretations of events or inhibited their memories.

Needless to say, rigor in action research is very important, albeit for reasons that are different from those of more traditional forms of educational research.

## Related Websites: What Is Action Research?

---

This annotated list of related websites represents merely a partial offering of information on the Internet that can help you understand more about conducting action research.

- Action Research Resources <http://www.scu.edu.au/schools/gcm/ar/arhome.html>

Bob Dick, of Southern Cross University in Lismore, New South Wales, Australia, maintains this extensive site. The main page includes links to action research journals, discussion lists, papers, theses, dissertations, and much more. Included on the page titled “Action Research Theses and Dissertations” (<http://www.scu.edu.au/schools/gcm/ar/art/arhome.html>) are links to full-text action research theses and dissertations, as well as a wonderful paper offering an overview of the action research process, titled “You Want to Do an Action Research Thesis?” (<http://www.scu.edu.au/schools/gcm/ar/art/arthesis.html>). Everyone should definitely take a look at this paper!

- Classroom Action Research <http://oldweb.madison.k12.wi.us/sod/car/carhomepage.html>

This site is maintained by the Madison Metropolitan School District in Madison, Wisconsin. It is an extensive action research resource site for teachers. (I will be referencing this site numerous times in the Related websites sections of later chapters.) The first link is titled, “What is Action Research?” (<http://oldweb.madison.k12.wi.us/sod/car/carisandisnot.html>) and provides a nice summary of what classroom-based action research is and is not.

- Action Research Introduction <http://www.accessexcellence.org/LC/TL/AR/>

Sharon Parsons, of San Jose State University, provides a brief overview and introduction to action research. Included in her discussion are suggestions for getting started on an action research project, concentrating on the following steps: deciding on a focus for the project, developing a research plan, analyzing the data, and reporting on what has been learned. Several examples of classroom-based action research projects are also provided.

- Action Research by Teachers for Teachers <http://rubble.heppell.net/TforT/default.html>

This interesting website showcases action research projects undertaken by teachers that focus on the integration of technology in the classroom. Teachers can learn about projects, ideas, and solutions offered by other teachers. There is even a link providing information about how you can contribute to the collection.

- Dissecting My Classroom: A Teacher Experiments With Action Research <http://www.alliance.brown.edu/pubs/voices/3qrt1999/actref.shtml>

If you find yourself wondering if you can really do action research in your classroom, read this brief reflection piece offered by Julie Nora, an ESL (English as a Second Language) teacher in Providence, Rhode Island. She explains how her attitude toward educational research changed after attending an action research conference. She continues by explaining how she decided to integrate action research into her daily

teaching, how it eventually caused her to change her teaching, and how it ultimately resulted in substantial improvements in student achievement.

- Comparing Formal Research and Action Research [http://mypage.iusb.edu/~gmetteta/Research\\_about\\_Teaching\\_and.htm#Comparison](http://mypage.iusb.edu/~gmetteta/Research_about_Teaching_and.htm#Comparison)

Gwynn Mettetal, of Indiana University South Bend, offers a brief comparison of traditional and action research methodologies. This web page may help solidify many of the things discussed in this first chapter.

- Action Research Links <http://www.emtech.net/actionresearch.htm>

This final site is a compilation of links to websites related to action research. There are over 160 links contained on this site.

## SUMMARY

- ★ Educational research involves the application of the scientific method to educational problems.
  - Answers to questions typically come from common sources, such as tradition, authority, and common sense.
  - The scientific method is a more systematic, objective procedure for finding answers to questions.
  - Traditional research is often conducted by individuals who are somewhat removed from the environment they are studying.
- ★ Two broad types of research methods are quantitative and qualitative.
  - Quantitative research methodologies require the collection of numerical data and utilize a deductive approach to reasoning; they include both nonexperimental (e.g., descriptive, correlational, causal-comparative research) and experimental designs.
  - Qualitative research methodologies require the collection of narrative data and utilize an inductive approach to reasoning; they include phenomenology, ethnography, grounded theory, and case studies.
  - Mixed-methods research designs combine both quantitative and qualitative types of data.
- ★ Action research is any systematic inquiry conducted by educators for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn.
  - Action research is done *by* teachers *for* teachers, working with students and colleagues.

- Teacher reflection is an integral part of action research.
- The basic process of action research consists of the following four stages: planning, acting, developing, and reflecting.
- Most action research studies are cyclical and iterative.
- Action research can be used effectively to bridge the gap between theory and practice, to improve educational practice, to empower teachers, to provide professional growth opportunities for teachers, to identify educational problems, to develop and test solutions, and to expand the knowledge base of preservice teachers.

QUESTIONS AND ACTIVITIES

1. List or describe at least five things (e.g., problems, things you would like to improve) within your classroom or school that interest you and that you might want to pursue further. Do you think any of the things on your list might be appropriate for an action research study?
2. Describe a situation where someone other than you made a decision that affected your classroom practice. If it had been up to you, would you have made the same decision? If not, what would your decision have been, and why do you suppose there was a difference?
3. Think about your own views of research and what you have learned in this chapter. In a chart (see the example below), develop a list of advantages and limitations for both traditional research and action research.
4. Do you think that traditional research can benefit you and your students? If so, how can it benefit you? If not, why do you believe that it cannot?
5. Do you think that action research can benefit you and your students? If so, how? If not, why not?

	Advantages	Limitations
Traditional Research		
Action Research		

## STUDENT STUDY SITE

Visit the Student Study Site at [www.sagepub.com/mertler3study](http://www.sagepub.com/mertler3study) for these additional learning tools:

- Video clips
- Web resources
- Self quizzes
- E-flashcards
- PowerPoint slides
- Sample action research reports
- Full-text SAGE journal articles
- Chapter summaries