Chapter 3

PLANNING FOR ACTION RESEARCH

Planning for Action Research

Identifying a topic

Preliminary considerations

Limiting a topic

Focus on who, what, when, where, & how

Examination of journal articles, books and other sources related to an action research project

Purpose is to inform and guide decisions necessary in planning research

Primary sources:
- Journal articles
- Monographs
- Papers presented at conferences

Secondary sources:
- Reviews of research
- Summaries or analyses

Reviewing related literature

Personal interest
- Importance
- Time
- Difficulty
- Monetary costs
- Research ethics

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The first crucial steps in any research study are to clearly identify the topic under investigation and to examine the existing research, and any other related information, associated with the topic. In this chapter, we will explore various aspects of identifying a topic for research, including the whys and hows of gathering preliminary information and ways to narrow the focus of a topic. In addition, we will look at activities related to reviewing related literature. These activities include identifying appropriate sources to consult for related literature, finding ways to search those sources, and writing a literature review. The steps of topic selection and reviewing related literature comprise two of the three initial steps when planning for action research.

IDENTIFYING A TOPIC FOR RESEARCH

Identifying the topic to be investigated in an action research study is obviously the first step in the process of conducting the actual study. It is, however, also one of the most important steps in the process. Nothing shapes the remainder of a research study as much as the research topic or problem and the research questions that follow (Hubbard & Power, 2003). If the research topic is too broad or too vague, the researcher may become overwhelmed with too many possible variations in the data collection, too much data, and too little time. If the
topic is too narrow, it may not be possible to collect appropriate data in order to be able to answer the question at hand. The matter of limiting the focus of a research topic will be discussed in more detail later in this chapter.

The research topic should address a realistic classroom problem, such as an academic problem or an issue of classroom management (Rousseau & Tam, 1996). Johnson (2005) provides an overview of three main topic areas within which many action research studies fall. These three possibilities are as follows:

1. **A teaching method.** Teachers often consider trying a new teaching method or technique; action research allows for the systematic investigation of the effectiveness of new teaching methods.

2. **Identifying a problem.** Frequently teachers will notice when there is a problem or when things are not going as well as they should, whether the problem occurs in an individual classroom or schoolwide; an organized and logical examination can help educators better understand the problem and its possible causes and can help them explore various solutions.

3. **Examining an area of interest.** Teachers are professionals and, as such, their curiosity about particular topics in education is often aroused; action research can be used quite effectively to study such topics in an exploratory fashion.

Mertler & Charles (2005) have expanded this list by providing several categories of topics that could conceivably be considered for action research studies. They list the following categories, with only a few sample topics included here:

- **Classroom environment**—topics in this category include the various aspects of the physical and psychosocial environments in classrooms and school buildings and their impact on student learning.

- **Instructional materials**—topics might include the appropriateness of textbooks and other printed materials with respect to gender and ethnicity, the extent to which teachers find the materials useful and to which they support the curriculum, or the perceptions that students have of those materials.

- **Classroom management**—possible research topics might include the level of satisfaction that both teachers and students have with the methods of managing student behavior, the degree to which the methods of managing behavior allow students to learn without unnecessary distraction, or how limiting those methods are with respect to the ability of teachers to teach as they would like.

- **Instructional methods**—the effect of a given teaching method on student learning, the impact that different teacher personality styles can have on student learning or motivation to learn, or methods of providing effective feedback to students on their academic performance.

- **The relation of human growth patterns to education**—possible topics might include ways to incorporate individual students’ interests and learning preferences, teaching strategies that support self-regulated learning, or those that support individual rates of learning.

- **Grading and evaluation**—teachers often have questions about the effects that grades and other forms of evaluative decisions have on student motivation, stress, achievement, and
attitudes or on effective methods of incorporating authentic assessment and other nontraditional means of assessing students.

- **Conferencing**—possible topics might involve (a) the ways in which parents and teachers value individual conferences or (b) strategies for improving the effectiveness of parent-teacher conferences.

This list of categories represents merely a sampling of possible topic areas for action research investigations. There is a multitude of additional research topics that do not necessarily fall into these categories—curriculum, special education, counseling, psychological services, athletics, the arts, exceptionality services, student organizations, or gifted education. Bear in mind that in the broad field of education, you will not find a shortage of possible research topics for your action research projects.

**Preliminary Considerations**

Once you have decided on a general topic area that you are interested in examining further, it is a good idea to evaluate it against several important and practical considerations (Mertler & Charles, 2005). Schwalbach (2003) believes that considerations such as these help to establish the parameters of your research project. First, you should have a **personal interest** in your potential topic. The level of personal interest should probably stem from the fact that the topic is associated with positive experiences or is associated with some unpleasant concern. In either case, the topic continues to suggest itself to you. If this is the case, the particular topic is likely one you should consider. In addition, you will be spending some amount of time investigating this topic—it might be as brief as a couple of months or it might last an entire school year. It is important to identify a topic with which you will enjoy working. Imagine spending an entire year engaged in an in-depth study of a topic that you really do not like.

Second, the topic you identify should be **important**; the results of your action research study should make some sort of difference—or should at least have the potential to make some sort of difference—in some aspect of education. If you believe that investigation of the topic will not result in such a difference, it should probably not be pursued. You may wish to discuss the potential benefit of your study with colleagues and administrators.

Third, it is important at this point in the process to reflect (notice that we are already beginning to engage in the reflective process) and anticipate the **amount of time** that the study will require. You must compare the time requirements of the study to that which you have available. The last thing you want to happen is that your action research project begins to take time away from your regular teaching duties. All things being equal, it may be better to select a topic for investigation such that the study can be completed in a relatively short period of time.

Fourth, it is also critical to reflect on the anticipated **difficulty** of investigating the proposed topic. For a variety of reasons—many of them methodological in nature, as you will see in the next chapter—interesting topics are often difficult or simply impossible to research. To reiterate, the research topic must be practical. It is also important to design a research study within your personal research skill level. It is not wise to propose to undertake a study that will involve research skills beyond your individual capabilities. If you had absolutely no experience in conducting interviews, you probably would not want to select a topic that required that only interviews be conducted and their transcriptions analyzed.
Fifth, consideration should also be given to the potential monetary costs associated with investigating the topic. If you select and develop a topic that will require you to spend money on supplies, materials, travel, and so on, you will likely want to find a different topic or, at a minimum, alter your ideas for the original topic. There are many good topics that will not involve monetary costs.

Finally, action researchers need to be cognizant of research ethics. Generally speaking, it is unethical and sometimes illegal to conduct research that exposes participants (i.e., students, teachers, etc.) to harm of any kind, including physical, emotional, and psychological harm. Any of these are considered mistreatment of human beings and is unacceptable in the field of educational research.

Limiting a Topic

Once a topic has been selected and evaluated against the considerations above, it usually must be refined or limited before it can be effectively researched. This is due to the fact that most topics are either too broad, too vague, or too complex (Mertler & Charles, 2005). The process of evaluating your topic against the preliminary considerations as presented above will establish your research parameters and will typically help to focus the size of your topic. Focusing the size of your topic usually requires that the topic be narrowed in scope. If you do not have a specific and clear focus to your action research study, the project can wander aimlessly and you may waste valuable time (Schwalbach, 2003). In addition, the topic may need to be clarified, that is, reworded so that it is clear and unambiguous. Schwalbach (2003) suggests that when trying to narrow the topic, you should be mindful to choose a focus that will ultimately help your students learn. Provided in Table 3.1 are several examples of broad research topics and their revised, more focused counterparts.

Table 3.1 Examples of broad and narrow topics for action research

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<tr>
<th>Broad Topic</th>
<th>Narrowed Version of Topic</th>
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<tr>
<td>What teachers’ lives are like outside of school</td>
<td>Leisure activities of elementary teachers and the amount of time spent on them</td>
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<tr>
<td>Factors that affect learning among culturally diverse students</td>
<td>Hispanic students’ perceptions of factors that make academic success more difficult</td>
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<tr>
<td>Use of computers in the classroom</td>
<td>Effectiveness of a word processing program in helping students revise drafts of written stories</td>
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<tr>
<td>Importance of reading practice in developing reading skills</td>
<td>Effect of reading practice with fifth grade “buddies” on the developing reading skills of first grade students</td>
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<tr>
<td>Virtual dissection versus real dissection of lab specimens</td>
<td>Tenth grade biology students’ perceptions of virtual and real animal dissections</td>
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In addition to the preliminary considerations necessary in the early stages of an action research project, Mills (2003) suggests three forms of gathering information for purposes of gaining insight into and focusing a given research topic: self-reflection, descriptive activities, and explanatory activities. Self-reflection is the process of examining your own beliefs about your proposed topic idea. It is comprised of explorations of the theories that impact or guide your practice, of the educational values you hold, and about how your work as a classroom teacher fits into the larger context of education in general and into society. Self-examination of these entities can provide a specific context within which your action research will occur.

Next, he suggests that teacher-researchers try to describe as fully as possible the situation or problem to be improved by focusing on the who, what, when, where, and how. By providing specific answers to these questions, you continue to focus the direction of your investigation. For example, you might provide specific answers to the following list of generic questions:

- What evidence do you have that this is a problem?
- Does the problem exist only for students with certain characteristics?
- How is the situation currently addressed?
- Where in a specific sequence of activities (e.g., the curriculum) does it occur?

Finally, Mills (2003) suggests that after fully describing the situation or problem, try to explain it. Now you are attempting to address the why part of the situation. An essential phase in action research is trying to identify the critical factors that have some sort of impact on the general topic area. Engaging in these explanatory activities essentially results in the development of a hypothesis stating your expected outcomes in your study. Those outcomes could consist of the nature of the differences between the performance of two groups of students or the relationships between two or three variables.

Once the topic is adequately narrowed and clarified, the process of specifically focusing it is continued by stating specific research questions and/or hypotheses directly related to the topic. Research questions and hypotheses will be discussed in more detail in the next chapter.

**REVIEWING THE RELATED LITERATURE**

The next major step in the action research process that serves many purposes is reviewing the related literature. A literature review is “an examination of journal articles, ERIC documents, books, and other sources related to your action research project” (Johnson, 2005, p. 55). By reviewing related literature, you can identify a topic, narrow its focus, and gather information for developing a research design, as well as the overall project (Rousseau & Tam, 1996). You may also find examples of classroom applications, research questions, hypotheses, methods of data collection, and data analysis techniques (Johnson, 2005). A review of literature can reveal a study that could be systematically replicated in your classroom or provide you with potential solutions to the research problem you have identified.

The literature review can also help establish a connection between your action research project and what others have said, done, and discovered before you (Johnson, 2005). There is no reason to reinvent the wheel when it may not be necessary. A literature review allows you to use the insights and discoveries of others whose research came before yours in order to make your research more efficient and effective. In a manner of speaking, conducting a
A review of related literature can actually save you time in the development of your action research project (Mills, 2003). Instead of becoming bewildered in the research process because you are not sure of what to ask and how to pursue finding an answer, reflecting on your problem or situation through someone else’s perspective can prove very informative. Finally, conducting a literature review can enable you to become more of an expert in the area you are proposing to study, not to mention a more knowledgeable professional educator. Not only does a literature review guide you in many phases of your action research project, but it also will likely enhance your ability to teach (Johnson, 2005). Figure 3.1 depicts the ways in which a review of related literature can inform various aspects of an action research study.

**Figure 3.1** Integration of the literature review into the action research process, depicting steps at which it provides information (adapted from Schwalbach, 2003).
Before you actually begin searching for literature related to your topic, you should be aware of several things. First, there is an extremely wide range in the quality of books, articles, and conference papers that you will come across. Just because something has been published does not necessarily mean that it is of high quality. When you find an article, for example, it is important to consider whether it is simply someone's opinion or whether it has been well researched (Schwalbach, 2003). Well-researched articles and other types of manuscripts are based on the collection of original data; these types of studies are referred to as empirical research. Empirical studies are not inherently better, but they are based on data other than solely the author's individual opinions and perceptions.

A second key aspect of the research you locate is its objectivity. You will undoubtedly enter into your action research with some sort of expectation as to what you will discover at its end. Often, teacher researchers will examine the related literature only for works that support what they anticipate finding. If you are to do a thorough job of gathering all—or, at least, a representative cross-section—of the literature related to your topic, you should look for books, articles, and other published literature that both support and contradict your views (Schwalbach, 2003). For example, if you are proposing to study the effectiveness of whole language instruction, you should also examine the literature related to the effectiveness of phonics instruction. Because things change in the field of education, there is often a historical context embedded within any body of literature. It is important to examine the entire body of literature in order to better understand how and why those things changed.

Third, be aware of the timeliness of the literature you find. Although it is important to examine the body of literature in its entirety, it is most applicable to your study to focus your review on the thinking and empirical research that is most current in that particular discipline (Schwalbach, 2003). If you did not consider the historical context and the fact that things change, and if you only examined literature from 20 years ago, you would very likely be missing out on newer, innovative, and more timely research findings. Although it will vary from topic to topic, my recommendation is to initially look at literature produced or published within the last 5 years. Of course, there will be situations where you may need to look to older publications or other sources of related information. For example, if your topic is one that received much attention a decade or two ago, then experienced a lack of research attention but has now resurfaced as an area of interest in the field, it would likely be wise to examine those older sources of information.

Finally, there are two questions I am probably asked most by my students related to literature reviews: (1) How many references do I need? and (2) How much review of related literature is enough? My typical response is something to the effect of “Well, I don’t really know the body of literature that you’re reviewing, so I have no way of knowing.” Although they generally do not care for that response, it is usually accurate. Having said that, it is important to recognize that it is often very easy to get bogged down in reviewing literature related to your topic, especially if you are examining a topic that already has a large research base. My recommendation is that you know you have done a reasonably good job of reviewing literature on a given topic when you begin to see the same articles and the same authors being cited in those articles. When you begin to recognize the big names in the field, you can be more confident that you most likely have not missed any substantial information (Schwalbach, 2003). The bottom line is that you must be comfortable with the level of review you have done. Johnson (2005) offers the following general rule of thumb with some specific numbers of sources. Masters’ theses typically call for 25 or more sources, whereas doctoral
dissertations require 50 or more. Action research projects designed to be published in journals, presented at conferences, or shared with peers might use anywhere from 2 to 15 sources. Schwalbach (2003) suggests some important questions whose answers may help you better make this determination: Do you understand the current trends in the field? Do you understand the historical context of your topic? Have you uncovered research that examines both—or all—sides of the issue? Do you believe that you have enough information in order to design a good action research project? If you answer yes to these questions, then you can probably stop reviewing literature related to your topic.

**Sources for Related Literature**

Sources for related literature can be broken down into two types: primary sources and secondary sources. **Primary sources** are firsthand accounts of original research. Common primary sources include journal articles, monographs, and papers presented at professional research conferences (Mertler & Charles, 2005). In contrast, **secondary sources** of information are not firsthand accounts; they do not consist of original research. Rather, they are summaries, compilations, analyses, or interpretations of primary information (i.e., original research) made by other individuals. They include publications such as encyclopedias of research, handbooks of research, reviews of research, scholarly books (such as a textbook), and perhaps magazine and newspaper articles. As a general rule, it is best to examine secondary sources first, in order to gain some perspective on the body of literature you will be examining in terms of trends and general conclusions (Mertler & Charles, 2005). However, your literature review should focus predominantly on primary sources of information.

Secondary sources are typically found in the reference section or other specific sections of the library and can be located by searching the library’s main catalog (Mertler & Charles, 2005). In the past, these catalogs consisted of small index cards located in numerous drawers (hence the name “card catalogs”). However, most libraries now have all of their holdings cataloged electronically and provide computers for you to be able to conduct an efficient search for these various secondary sources. Reference books such as the *Encyclopedia of Educational Research*, the *Review of Educational Research*, the *National Society for the Study of Education (NSEE) Yearbooks*, and various handbooks of research can usually be found in the library’s main reference section. Newspaper stories can be located and reviewed through the library’s computer system via *Newspaper Abstracts*. The original newspaper articles can then be read in their entirety on microfiche or microfilm. Similarly, magazine articles can be located and reviewed through the use of *Periodical Abstracts*.

Primary sources are most often found by searching specialized indexes or databases (Mertler & Charles, 2005). Most of what you will identify by searching these databases are original research articles, either published in academic journals or presented at professional research conferences. There are literally hundreds of different academic journals published in the field of education. The purpose of academic journals is to inform the field of education or a more specific discipline within the educational field (Johnson, 2005). Most journal articles are written by researchers or other academicians (usually college and university professors). Manuscripts are submitted to the editor of the journal, then sent out for peer review, which means that they are reviewed usually by three to six experts in the field in order to check for quality, accuracy, validity, and overall contribution to the field. Each reviewer provides evaluative comments and makes a recommendation for publication. If the article is accepted for
publication, there are typically a couple of rounds of revisions that must be made prior to its appearance in the journal. Some journals have acceptance rates of 50%, whereas others may have acceptance rates as low as 5%.

Although there are numerous electronic databases in operation, the ERIC database is arguably the most popular among education researchers. ERIC, or the Educational Resources Information Center, was established in 1966 by the U.S. Department of Education. It is the largest database for locating research in education. However, it is important to be cautious of what you may find. ERIC has historically been a clearinghouse, meaning that the manuscripts submitted are not peer reviewed in the same manner as they are for academic journals; therefore, the quality varies quite a bit (Schwalbach, 2003). On the other hand, ERIC has recently undergone a substantial revamping. The new ERIC digital library opened to the public on September 1, 2004. There are now two advisory panels that provide research, technical, and content expertise (Institute of Education Sciences, n.d.a). One of these panels, the advisory panel of content experts, provides recommendations for selecting journals and nonjournal materials for inclusion in the ERIC database (Institute of Education Sciences, n.d.b). Members of the panel of content experts provide expertise in the following areas:

- Adult, Career, and Vocational Education
- Assessment and Evaluation
- Community Colleges
- Counseling and Student Services
- Disabilities and Gifted Education
- Education Management
- Elementary and Early Childhood Education
- Higher Education
- Information and Technology
- Languages and Linguistics
- Reading, English, and Communication
- Rural Education and Small Schools
- Science, Mathematics, and Environmental Education
- Social Studies/Social Science Education
- Teaching and Teacher Education
- Urban Education

The new ERIC online system provides the educational community with the capability to search the ERIC bibliographic database of more than 1.1 million citations going back to 1966. More than 107,000 full-text nonjournal documents (issued 1993-2004), previously available through fee-based services only, are now available free of charge (Institute of Education Sciences, n.d.a). The ERIC database can be searched from its main page, affiliated with the U.S. Department of Education (http://www.eric.ed.gov/). The process of searching the ERIC database will be discussed in the next section.

Many, but not all, other databases require the public to pay some sort of subscription or user fee. Searching ERIC is a free service; all you need is access to the Internet. However, it is important that you not limit yourself only to one database or only to full-text articles that are available online. Granted, this is an easier way to gain access to related literature; however, you limit your review of the entire body of literature if you use only certain databases.
or succumb to the lure of not having to leave your computer in order to print copies of articles. All it takes is a little time, and some loose change, to go to your college or university library and make photocopies of articles you locate.

Finally, the Internet can be a valuable source for related information, as well as for exploring ideas for research topics. There is a wide variety of search engines available on the Web. Search engines organize Web sites by keywords. When you search for a specific keyword or words, the results yield a list of related Web sites and usually an attempt to rank them in terms of relevance to the topic (Mertler & Charles, 2005). Many professional associations also maintain Web sites and include links to related Web pages. These sites are often very useful in identifying or narrowing a topic, as well as for locating related literature and other information. The premier professional association in education is the American Educational Research Association (AERA). AERA is divided into 12 divisions, based on broad disciplines. In addition, there are numerous special interest groups (SIGs). The AERA Web page can be found at http://www.aera.net. More information related to search engines and professional associations is provided in the Related Web Sites section later in this chapter.

Searching the ERIC Database Online

ERIC is comprised of two indexes, both of which are searchable online. The Current Index to Journals in Education (CIJE) cites and presents abstracts of journal articles published in education and closely related fields. Resources in Education (RIE), on the other hand, cites and abstracts documents that have not appeared in education journals. These include documents such as papers read at conferences, technical reports, reports of evaluations of federally funded programs, and any other original research that has not been published elsewhere (Mertler & Charles, 2005). The main page for this site is shown in Figure 3.2. Under the section titled Search the Database, users should click on Advanced Search in order to arrive at the ERIC search page, shown in Figure 3.3.

Notice that, initially, one can search for up to three terms in ERIC. Furthermore, notice that the search can be conducted based on one of several criteria (located in the drop-down menus, or selection buttons), including searching by Keyword, Title, and Author. Most searches are conducted by Keyword, at least during the initial stages. Let us consider a concrete example: Suppose we wanted to located published research on the topic of teachers’ classroom assessment practices. We might search under the terms “educational assessment” and “classroom techniques” (see Figure 3.3). Notice that located beneath the criterion Search by button is another set of selection buttons containing Boolean operators. Boolean operators are keywords that enable the retrieval of terms in specific combinations. The most common operators are “and” and “or”—if “and” is used, only those documents that contain both keywords as descriptors will be retrieved (i.e., a narrower search); if “or” is used, every document with either of these two keywords as descriptors will be retrieved (i.e., a broader search). We will use “and” for our example—therefore, we are searching for documents that contain both “educational assessment” and “classroom techniques.” We then click on Submit to begin our search of the database. The results of our search are shown in Figure 3.4.

First, you will notice that ERIC retrieved 4,668 documents containing these two descriptive keywords, entirely too many to search through. By clicking on Narrow My Results, you can reduce the number of citations returned by adding more descriptors or by focusing the years of publication. For purposes of this search, I narrowed the focus to those documents
published between 2000 and 2003—thus reducing the number of citations returned to 573 documents. The documents are initially screened by the user for relevance by examining the titles. If you are interested in exploring a given document more closely, this can be accomplished by simply clicking on the title of the document. This will take you to a new page that provides the entire citation information for that document. For example, if you scan down the list, you will notice that a document written by myself appears on the list. By clicking on the title (in this case, *Teacher-Centered Fallacies of Classroom Assessment Validity and Reliability*), you are provided with the document’s citation (see Figure 3.5).

The ERIC Number (ERIC #, as shown in Figure 3.5) serves as the document’s identification within ERIC but also informs you as to whether the document was published in an academic journal (EJ) or exists in one of several unpublished forms (ED). Documents listed as EJ will include the citation information for the journal in which the document appears. This is important information, since you will need it in order to locate the article in the appropriate library shelves.

Documents listed as ED may have originally been written as papers to be presented at academic conferences, position papers, technical reports, research reports, and so on. The
Accession Number is again of vital importance here, since all ED documents appear on microfiche and are cataloged by the six-digit ED number. This number is the only means of locating the correct microfiche in your library’s microfiche stacks.

Also of great importance to the researcher is the abstract. This is a brief summary of the contents of the document, including the results and conclusions of the study, if appropriate. Only by reading the document abstract can you really be sure if you want to obtain the full document for complete review. It is always best to study the abstract prior to investing the time required to locate the complete article. Finally, all keywords under which this particular document is catalogued within ERIC are provided in the section labeled “Descriptors.”

Because of the flexibility of the searchable ERIC database, it does take some practice and experience in order to be able to work with it effectively. The idea of combining keywords in a single search—or even combining keywords with authors’ names, and so on—can be a little intimidating to the beginning researcher. However, novice researchers should not hesitate to experiment with searches of ERIC. Online access to the ERIC database is certainly a valuable research tool of which all researchers—at any level of experience—should take advantage.
Writing a Literature Review

Writing a review of related literature is, in my opinion, one of the more difficult aspects of writing up any type of research. What makes it so difficult is that every study is different and every body of literature is different. Therefore, there is no easy, prescriptive, step-by-step process for writing such a review. One of the best ways to learn how to write a literature review is to examine how others have accomplished the task. With that in mind, I will offer several suggestions that will hopefully help you to organize your review and get it down on paper.

It is initially important to keep in mind the purpose to be served by a written review of related literature. Its purpose is to convey to all individuals interested in the particular topic of the action research project the historical context of the topic, the trends experienced by the topic, how theory has informed practice, and vice versa. For each study that you review, encapsulate it into a brief summary that reflects any aspect of the study that has relevance to your topic (Mills, 2003). This may include the variables studied, the methodology employed, the participants studied, and the conclusions obtained. However, the literature review should emphasize the findings of previous research (Pyrczak & Bruce, 2003)—that is what will influence your study most.
Once you have done this, develop an outline for the review, beginning with an introduction that communicates the organization—often using subheadings—of your review (Pyrczak & Bruce, 2003). Again, your organization and subheadings should focus on the aspects of the body of literature that are relevant to your topic and study. As you begin to use this organizational outline to write the actual review, it is important to keep in mind that it should not be written in the form of an annotated list (i.e., one study summarized in a paragraph, followed by another summarized in the next paragraph, etc.) but rather as a cohesive essay that flows smoothly for the reader (Pyrczak & Bruce, 2003). This creates a better view of the trends that your topic has seen over time. All literature related to a given subtopic is cited during the discussion of that topic.

A concluding paragraph is extremely useful because it provides a starting point for your study, based on what previous research has found (Mills, 2003). It also provides support for your study by placing it into a relevant context and demonstrating how your study will potentially contribute to that particular body of literature. Finally, it provides a brief overview of the existing research for the benefit of those individuals who have not had the opportunity to review it as thoroughly as you have. More in-depth information related to the act of writing up action research is presented in Chapter 9.
WRITING UP ACTION RESEARCH:  
TOPICS AND LITERATURE REVIEWS

In the Writing Up Action Research sections, which begin in this chapter and continue throughout the remainder of the book, excerpts from actual published—or otherwise disseminated—action research studies are presented. These passages demonstrate how to write up the specific section of a research report addressed in the particular chapter. This section in the current chapter includes excerpts from two published articles, illustrating the introduction of the research topic and review of related literature.

Prominent organizations such as the National Council of Teachers of Mathematics (NCTM) and the National Research Council (NRC) have identified aspects of mathematics classroom instruction that must be changed to improve mathematics instruction and increase student achievement (NCTM, 1989, 1991, 2000; NRC, 1989). One is the need to make stronger connections between mathematics and students' lives outside of the mathematics classroom. Another is a shift from lecture and transmission model, where students are expected to memorize procedure and facts, to a participation model, where students are to actively participate in constructing their own knowledge. According to McNair (2000), both of these reform efforts are supposed to change students' role in the classroom from that of a knowledge consumer to a knowledge producer.

Proponents of mathematics reform have argued that traditional mathematics instruction, the predominant form of instruction in our nation's schools, has been unsuccessful in promoting conceptual understanding and application of mathematics to real-life contexts. Battista (1999, p. 426) asserts that, "For most students, school mathematics is an endless sequence of memorizing and forgetting facts and procedures that make little sense to them." A major thrust of the current reform movement is to get students actively involved in their study of mathematics and to encourage them to see the big picture (Ross, 1996). Data suggests that most classroom instruction is geared toward the development of rote procedural skills. Existing teaching methods do not develop the high levels of conceptual understanding or the reasoning, problem solving, and communication skills that students will need to be competitive (Silver & Stein, 1996).

From the eighth-grade teacher's perspective, the transmission method of mathematics is a simpler way of teaching, predetermined and more clearly defined. In contrast, a participation-based method is more complex, demanding that he motivate students to participate in developing math concepts; this, he cautions, is not a straightforward matter. He believes successfully motivating all students to participate may depend on the connections made between mathematics and students' experiences outside the classroom, but these connections are highly individualized, mediated by social and cultural elements of the students' environment (Lakoff & Nunez, 1997; Lave, 1988). A "daunting task" faces him in trying to reach every student, especially since there is a wide range of abilities in his classroom. He is concerned that using a reform mathematics curriculum may detract from the quality of his teaching, thus affecting student report card grades; he is troubled that parents and administrators view report card grades as a yardstick to measure the effectiveness of the curriculum and seeks a more objective criterion for making an important curriculum decision in his school district.

There is resistance towards mathematic reform from teachers, parents, administration, and school boards. What are their concerns? One, according to Ross (1996), is that the laudable focus on understanding seems to have led to some decline in mathematical skills.
Since it is easier to measure and spot deficiencies in skills, than in understanding, this decline can easily be overemphasized. However, this problem is serious, especially since our future scientists, engineers, and mathematicians must obtain both substantial understanding and fluency in their skills. This study attempts to shed light on the question of how traditional and reform mathematics curricula affect eighth-grade mathematics students’ overall mathematics achievement, problem-solving ability, and skill proficiency.


The purpose of this research was to assess the effectiveness of cloze procedure as an instructional tool in a middle school classroom. The question that the research revolved around was, “Does the use of cloze procedure increase student learning as measured by performance on multiple-choice tests?” For several years I have used a form of cloze procedure as an instructional technique in my seventh grade classroom. Although cloze procedure was originally developed as a way to measure the readability of written material, it has come to be used for a wide range of teaching purposes (Jongsma, 1980). I do not believe a textbook should form the core of classroom curriculum or dictate instructional methods. Yet, textbooks remain an important resource that can contribute to high levels of student learning. Improving the ability to read subject content has been shown to be an effective way of improving student comprehension (Jongsma, 1980).

Cloze procedure, which arose primarily in the field of reading, grew out of the cognitive school of psychology. Cognitive psychology, like earlier Piagetian theory, views learning as an active process that combines the acquisition of new information with prior knowledge and structures. Human behavior is not controlled by stimuli only, but also by how people interpret and react when in contact with the environment. A primary ambition of cloze procedure is to encourage the learner to link new information with previously learned material and to initiate questions to be asked. Besides helping the learner to link new information with prior knowledge, cloze sheets also actively involve the learner in thinking about what they are reading. In general, cloze sheets provide opportunities for recall and contribute to better conceptual organization of information (Santa, 1988).

For the purpose of this study, standard cloze procedure will be defined as the random deletion of every nth word in a body of text. A modified method is to purposely delete specific words of text that include key concepts and words. Typically, I construct five or six cloze sheets for a chapter of written material (the number of cloze sheets varies depending upon the length or difficulty of the chapter), selecting lines of text that I think best summarize and highlight key concepts and terms. These teacher-made “cloze sheets” are completed by students as they read assigned portions of their textbooks. The cloze sheets are then checked, graded, and returned to the students. I have found the quickest and most efficient way for me to grade the sheets is on a “did it” and “did not do it” basis.

I have found two major advantages to using cloze sheets in my classroom. First, the use of cloze sheets increases the likelihood that students will complete reading assignments, and second, completed cloze sheets can be used by the students as a study guide. A majority of my students verbally describe cloze sheets as helpful. Such anecdotal evidence from my students indicates that the use of cloze sheets aids in their learning. However, at the time of the study I was unsure whether the perceived gains justified the amount of time required for teacher preparation and student usage.
One of the developments for the use of cloze procedure has been for aiding student comprehension by creating teacher-made worksheets that summarize key portions of text. These worksheets delete relevant words that the student supplies as he/she reads (Santa, 1988). Several studies (Hayes, 1988; Gauthier, 1990; Andrews, 1991) have found cloze procedure effective in helping students make connections with concepts contained in content material. Fuchs (1988) found cloze procedure to be effective with special education students, while McKenna (1990) found cloze procedure to be marginally effective with upper level elementary students.

Andrews (1991) completed a study in a high school science classroom with emphasis on the use of cloze procedure for creating a reading study guide. This study ascertained that only 28 percent of her students reported completing reading assignments prior to the introduction of cloze sheets. She found that “to complete the individualized reading study guide, students were unable to skim text material, but instead had to read the assignment thoroughly” (p. 11). Also reported was a posttest increase of 16 points in mean test scores. However, others (Kintsch & Yarbrough, 1982; van Dijk & Kintsch, 1983) have found the procedure to have little effect on students in grasping the text as a coherent whole.


Note: Two Action Research Portraits begin in this chapter. These illustrations of action research projects will describe—in continuing fashion through Chapter 8 of the book—two action research studies from beginning to end, highlighting the related aspect that is addressed in that particular chapter.

**ACTION RESEARCH PORTRAIT 1**

Enhancing Academic Performance Through Improved Classroom Assessment

Over the past few years, several members of the faculty at Jones Middle School have become increasingly aware of a problem related to their students’ academic performance. The teachers who make up Team North—Susan (language arts), Larry (mathematics), Cathy (science), and John (social studies)—have noticed that although their group of students earn good grades in their coursework, they do not seem to perform well on the statewide proficiency tests given each fall and spring. The teachers believe that their classroom assessments appropriately address the content they are teaching, but ironically, the proficiency tests are also designed to measure the same content, since both are based on the state’s curriculum guides and standards in each of the four content areas.

In one of their regular team faculty meetings during the spring, they decided to take a methodical look at this problem. Susan began by sharing that she really wanted to find
a way to enable their students to perform better on the proficiency test, especially in the spring, since it is near the end of the school year. However, the others quickly replied that they did not want to simply teach to the proficiency test. Susan responded that she was really talking about trying to find some way to improve their performance, some way for them to actually learn better so that they can demonstrate that mastery on the spring proficiency test. All four teachers agreed but were unsure as to how they should go about accomplishing this.

Cathy shared that she had recently read an article in a teaching journal that talked about how enhancing the quality of teacher-made classroom assessments and the quality of assessment feedback provided to students can actually result in improved student performance on standardized achievement tests. A couple of the teachers expressed skepticism about this relationship, stating that the two types of assessment are very different. Susan explained that if assessments—whether they be standardized or teacher-made—are done well, they not only provide information about how students are performing, but they also help to reinforce student learning for the students themselves.

Cathy then reminded the group of a flyer that had just been posted in the teachers’ lounge. The flyer advertised a two-week workshop being conducted at the university this summer. Its basic purpose is to help teachers improve their classroom assessments. Since all four teachers were thinking about taking a course or two this summer, they decided to take the assessment workshop together. Larry also shared that he was currently taking a research methods course and that they just learned about action research. The group discussed the feasibility of the four of them designing—an action research project for next year in order to investigate if improving their classroom assessments would also improve students’ performance on standardized tests.

Larry explained that there were some things that they would need to do this summer. In addition to the workshop, they would need to gather some information related to their research topic. They all agreed that they needed to formalize their topic before moving on. They decided to state the topic as improving student achievement by improving teachers’ assessments. They decided to make a plan for finding research that had already been done on their topic. The four teachers then resolved to spend the first part of the summer looking for research and any other information related to their topic. They planned to meet again just prior to the beginning of the workshop in July.

At the meeting in early July, the teachers met to share what they had found. Although there was not a great deal of research related specifically to their topic, what they did find was very informative. They found several opinion pieces from experts in the field of classroom assessment who supported the original article that Cathy had shared earlier in the spring. In addition, they found numerous empirical research studies related to teachers’ classroom assessment practices. The majority of these studies concluded that teachers need and desire more training in the area of assessment and that only then will students be able to better achieve their full potential. The teachers agreed that this provided the motivation that they needed to attend the workshop and pursue the investigation beginning in the fall.
Improving Reading Comprehension in a Title I Program

Kathleen is a Title I reading specialist in a small, suburban elementary school. She has always striven to improve her reading instruction but has had trouble targeting a specific area for the upcoming year. She talked with several of her fellow teachers, who reminded her that students in their building have always seemed to have trouble with reading comprehension. Kathleen agreed, noting that in the 5 years she has served as a reading specialist, she has noticed that her intermediate-level (i.e., Grades 4, 5, and 6) students struggle most with reading comprehension. She has several sources of evidence for this fact. First, she can tell from the daily observations of her students. Kathleen generally has students read short sections of chapter books aloud and then engages them in several related activities, including having them respond to either written or oral comprehension questions or having them complete a book project. The students seldom answer more than one half of the questions correctly. In addition, the book projects require that extended time be spent on rereading. Second, Kathleen administers diagnostic reading tests on several occasions throughout the school year. Her students consistently experience their lowest performance on the reading comprehension section. Finally, these diagnostic test results have also been supported by the results of the standardized test administered each spring. Although the reading comprehension section is not lengthy, her students continue to perform low.

Kathleen would like to try something new this year with her students in order to improve their reading comprehension skills. Currently, she relies on both oral and written comprehension questions—asked of students on an individual basis—following a reading assignment, as well as small group discussions and book projects that focus on comprehension skills. One day, during her planning time, she conducted a brief search of ERIC in the computer lab. She found several articles that provided her with several ideas for ways to improve her students’ comprehension skills. Several of the techniques showed promise, although she read several articles that also criticized the potential effectiveness of those techniques.

A couple of the articles that Kathleen read showed that matching classroom, teacher-made assessments to a format similar to that which appears on a standardized test results in increased student performance on that test. She decided to continue to teach reading comprehension as she typically has in the past but provide students with additional, different types of assessments. She planned to have students read brief passages taken from reading-level appropriate books, then provide them with written multiple-choice and extended-response types of items addressing their level of comprehension. She would still teach and assess reading comprehension, but students would additionally become more familiar with the format of items they would see on the standardized reading comprehension test.
RELATED WEB SITES: SOURCES FOR RESEARCH TOPICS AND RELATED INFORMATION

Several Web sites and groups of Web sites are described below. All provide good suggestions or sources for ideas for research topics, as well as for related research and other information. This list is certainly not intended to be exhaustive.

- Internet Search Engines
  You read a bit about Internet search engines earlier in this chapter. Search engines provide an excellent resource for preliminary investigations into a potential research topic. Some of these available search engines, listed with their respective URLs, include
  Ask Jeeves (http://www.ask.com/)
  Excite (http://www.excite.com/)
  Go.com (http://www.go.com/)
  Northern Light (http://www.northernlight.com/)
  WebCrawler (http://www.webcrawler.com/)
  Yahoo! (http://www.yahoo.com/)

- Professional Associations
  You also read about using professional associations to generate ideas for research topics. A sampling of other prominent professional associations are listed below:
  American Psychological Association (http://www.apa.org/)
  Association for Educational Communications and Technology (http://www.aect.org/)
  Association for Supervision and Curriculum Development (http://www.ascd.org/)
  Council for Exceptional Children (http://www.cec.sped.org/)
  International Reading Association (http://wwwира.org/)
  International Society for Technology in Education (http://www.iste.org/)
  National Association for the Education of Young Children (http://www.naeyc.org/)
  National Council for Teachers of English (http://www.ncte.org/)
  National Council for the Social Studies (http://www.ncss.org/)
  National Council of Teachers of Mathematics (http://nctm.org/)
  National Education Association (http://www.nea.org/)
  National Science Teachers Association (http://nsta.org/)
  Phi Delta Kappa (http://www.pdkintl.org/)
  Teachers of English to Speakers of Other Languages (http://www.tesol.org/)

  In addition, the U.S. Department of Education (ED) maintains a list of professional organizations and links to their Web sites. The list currently includes over 25 professional organizations and can be found at http://www.ed.gov/about/contacts/gen/othersites/associations.html.
SUMMARY

- Identifying a topic for action research is one of the most important steps in the process.
- Action research topics should address realistic classroom problems or issues.
- Research topics should also be weighed against several practical considerations, including your personal interest in the topic, its potential importance, the amount of time it will require, the anticipated difficulty, potential costs, and any ethical issues.
- Research topics should be appropriately focused in order to facilitate the completion of a given study.
- Narrowing a topic can be accomplished by addressing practical considerations and also through self-reflective, descriptive, and explanatory activities.
- A literature review is described as a systematic examination of research and other information related to your research topic.
- Literature reviews help to establish a connection between your given project and what has been done before.
- Literature reviews can provide guidance in helping to identify and narrow a topic, formulate research questions and hypotheses, select appropriate data collection methods, and identify appropriate techniques for data analysis.
- When reviewing related literature, it is important to consider its quality, objectivity, and timeliness.
- Primary sources of related literature are firsthand accounts of original, empirical research; secondary sources are summaries or interpretations of primary sources made by individuals other than the original researchers.
- When trying to locate related literature, it is best to begin with secondary sources and then move to primary sources. Furthermore, it is best to focus your review on primary sources.
- Numerous databases for locating primary sources of information exist; the largest and most widely used database for education research is ERIC.
- If it becomes necessary to write a formal review of related literature, bear in mind its purpose: to convey to all individuals interested in the topic the historical context of the topic, the trends experienced by the topic, how theory has informed practice, and vice versa.
A written literature review should begin with an introductory paragraph that communicates the organization of the review.

A literature review should not consist of an annotated list of summaries of research, but rather it should flow smoothly for the reader as a cohesive essay.

A concluding paragraph should make a connection between the body of literature on your topic and the study you are proposing to conduct.

QUESTIONS AND ACTIVITIES

1. Think of a preliminary topic you are interested in investigating. Complete the table below by addressing the considerations discussed in the chapter.

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Your Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your topic?</td>
<td></td>
</tr>
<tr>
<td>What do you want to learn about this topic?</td>
<td></td>
</tr>
<tr>
<td>What are you planning to do in order to address the topic?</td>
<td></td>
</tr>
<tr>
<td>To whom will the outcome of your study be important?</td>
<td></td>
</tr>
<tr>
<td>How much time do you anticipate the study requiring?</td>
<td></td>
</tr>
<tr>
<td>How difficult do you anticipate it will be to conduct the study?</td>
<td></td>
</tr>
<tr>
<td>Will there be any monetary costs?</td>
<td></td>
</tr>
<tr>
<td>Do you foresee any ethical problems?</td>
<td></td>
</tr>
</tbody>
</table>

2. Make a list of ethical considerations with which you might want to be concerned in an action research study.

3. What do you believe might be the most difficult aspect of conducting a review of literature related to a potential action research topic?

4. Searching databases and the Internet for related literature can sometimes seem a daunting task. Begin small by identifying a preliminary topic of interest and find one of each kind of the following: a published journal article, a paper presented at a professional conference, and an Internet Web site.

5. Assume that you will write a literature review for only the three items you located in Number 4 above. Draft an outline of your review based on the contents of those three sources.