Preface

NEW TO THE FIFTH EDITION

You will find several key changes in this edition as a result of reader feedback and the careful review of the last edition by anonymous external reviewers.

- Increased coverage can be found on the quantitative topics of single-subject research and meta-analysis. This coverage especially identifies the processes involved in using these procedures as well as the latest issues and challenges being discussed about them in texts and in journal articles.
- Increased emphasis is mentioned about the more advanced statistical procedures being discussed in the literature. These include structural equation modeling, hierarchical linear modeling, and the use factor analysis, path analysis, and discriminant function analysis. Also in the quantitative approaches, the distinctions among types of variables are expanded as well as the use of causal comparative research approaches versus experiments in the discussion about experimental designs.
- Validity is an important issue in qualitative research. This edition expands the discussion about the types of validity strategies and the processes that educational researchers might use.
- The chapter on mixed methods analysis has been updated to reflect current thinking about mixed methods, especially about the types of basic and advanced designs available.
- The sample articles used in the fourth edition of the text have remained the same. They provide good illustrations of quantitative and qualitative approaches as well as the many research designs covered in this book. As with past editions, these articles are annotated with marginal notes to help readers locate key passages of research and important characteristics of research.
- The references used in this edition have been extensively updated from past editions of this book. Key writers in research methods have issued new editions of books, and readers need to be introduced to these new editions. In addition, new books on research methods are continually being published, and readers need to be informed of the latest writings. At the end of each chapter are suggestions for additional resources to consider for more information about certain topics. References to software and their Web sites have been updated when needed.
- The evaluation criteria for each type of research design have been updated to include indicators of higher quality and lower quality for specific criteria. This evaluation should provide a better understanding for both reading studies as well as conducting your own study.

THE PHILOSOPHY OF THE TEXT

The philosophy that guided the development of this text is twofold. First, research involves a process of interrelated activities rather than the application of isolated, unrelated concepts and ideas. Educators practice research following a general sequence of procedures—from the initial identification of a research problem to the final report of research. This means that understanding the sequence or flow of activities is central to inquiry. Thus, the text begins with specific chapters devoted to each step in the process of research and the inclusion of concepts and ideas within this process.

Second, the educational researcher today needs a large toolbox of approaches to study the complex educational issues in our society. No longer can we, as educators, use only experiments or surveys to address our research problems. Educators in this new century—whether conducting research or reading research to self-inform—need to know about quantitative, qualitative, and combined approaches to inquiry and to have an in-depth understanding of the multiple research designs and procedures used in our studies today. In each step in the process of research, this text will introduce you to quantitative, qualitative, and combined approaches. Throughout the text, you will learn about the differences and similarities of qualitative and quantitative research. In the last section of the text, you will be introduced to eight distinct quantitative and qualitative research designs or procedures that make up the repertoire of the educational researcher in the quantitative, qualitative, and combined applications of research.

KEY FEATURES

This text offers a truly balanced, inclusive, and integrated overview of the field as it currently stands. As you will see from the table of contents, the book's coverage is unique in its balanced presentation of quantitative and qualitative research. Moreover, it consistently examines foundational issues of research—for example, determining how to approach a project and understanding what constitutes data and how to analyze them—from quantitative, qualitative, and mixed perspectives. This approach helps students understand fundamental differences *and* similarities among these approaches. This text has three main purposes:

- It provides balanced coverage of quantitative and qualitative research.
- It helps students learn how to begin to conduct research.
- It helps students learn how to read and evaluate research studies.

Let's look at each of these in detail to see how each can help you achieve your course objectives.

Balances Coverage of Quantitative and Qualitative Research

This text provides balanced coverage of all types of research designs. This provides readers with a complete picture of educational research as it is currently practiced. The text begins with an overview in Part 1 of the general nature of educational research and the specific quantitative and qualitative approaches to educational research. Next, in Part 2, Chapters 2 through 9, the book examines in depth the steps in the research process:

1. Identifying a research problem
2. Reviewing the literature

3. Specifying a purpose and research questions or hypotheses
4. Collecting either quantitative or qualitative data
5. Analyzing and interpreting either quantitative or qualitative data
6. Reporting and evaluating the research

Looking at the process simultaneously from both quantitative and qualitative perspectives helps students understand what choices a researcher has available and what meaning exists for a particular choice.

After this discussion, in Part 3, students will learn the procedures for conducting specific types of quantitative, qualitative, and mixed methods studies. Chapters 10 through 17 provide balanced coverage and examples of each of these types of educational research designs: experimental, correlational, survey, grounded theory, ethnographic, narrative, mixed methods, and action research.

Helps Students Learn How to Begin to Conduct Research

Both the research process and the design chapters offer the researcher step-by-step guidance in the basic aspects of planning, conducting, and evaluating research. A number of features guide readers through the steps and procedures of research. For example, a fictional beginning researcher, Maria, who is also a high school teacher and new graduate student, is followed throughout Parts 2 and 3 to illustrate one researcher's efforts and to provide students with a realistic perspective of the process of research and the selection of specific research designs. Other features include, but are not limited to, the following:

- Tips on planning and conducting research in "Useful Information for Producers of Research"
- Checklists that summarize key points such as evaluation criteria used to assess the quality of a quantitative or qualitative study
- In-text examples of actual and hypothetical studies that illustrate the correct and incorrect ways of reporting research
- Follow-up activities in "Understanding Concepts and Evaluating Research Studies" to help students apply the concepts they've just learned
- A "Think-Aloud" feature that describes practices the author has found useful

Helps Students Learn How to Read and Evaluate Research Studies

Direct guidance on reading research is offered throughout the text. To further help students become more skilled at interpreting and evaluating research, the text offers a number of features. Most important among these are the many articles included in the text and the "Useful Information for Consumers of Research" feature:

- The text provides annotated research articles in each of the design chapters in Part 3. Two other articles—one qualitative, one quantitative—appear at the end of Chapter 1. All of these complete articles (there are numerous other, shorter article excerpts in the book) include highlighted marginal annotations that help students understand the structure of articles and the key issues with which a reader should be concerned when evaluating the quality and the applicable scope of each particular piece of research.
- The "Useful Information for Consumers of Research" feature appears at the end of every chapter and offers concrete guidance in interpreting and evaluating research.

NEW INTERACTIVE LEARNING FEATURES

Practice Using What You Have Learned These interactive activities appear in Chapters 2–9 and provide opportunities for readers to make key decisions regarding research design and statistical analysis. (See Chapter 3, page 108 for an example).

Understanding Concepts and Evaluating Research Studies These interactive activities appear in Chapters 1–9 and allow readers to apply the basic research concepts they've just learned by identifying key elements of published studies or considering how the concepts influence planning a new study. (See Chapter 3, page 108 for an example).

Reading Research Interactive Reading Research exercises in Chapters 1 and 10–17 provide readers with scaffolding to read and evaluate published research articles of the types discussed in the target chapter. (See Chapter 12, page 412, for an example.)

Check Your Understanding of Chapter Content Interactive Self-Assessment Chapter Quizzes with feedback enable students to check how well they understand chapter content. (See Chapter 3, pages 91 and 104 for examples.)

SUPPLEMENTARY MATERIALS

The following resources are available for instructors to download at **pearsonhighered.com/educators**:

Online Test Bank The Test Bank contains various types of items—multiple choice, matching, short essay, and fill in the blank—for each chapter. Questions ask students to identify and describe research processes and design characteristics they have learned about and to classify and evaluate quantitative and qualitative studies and research situations.

TestGen TestGen is a powerful test generator available exclusively from Pearson Education publishers. You install TestGen on your personal computer (Windows or Macintosh) and create your own tests for classroom testing and for other specialized delivery options, such as over a local area network or on the web. A test bank, which is also called a Test Item File (TIF), typically contains a large set of test items, organized by chapter and ready for your use in creating a test, based on the associated textbook material. Assessments—including equations, graphs, and scientific notation—may be created in either paper-and-pencil or online form.

The tests can be downloaded in the following formats:

TestGen Testbank file—PC
TestGen Testbank file—MAC
TestGen Testbank—Blackboard 9 TIF
TestGen Testbank—Blackboard CE/Vista (WebCT) TIF
Angel Test Bank (zip)
D2L TestBank (zip)
Moodle Test Bank
Sakai Test Bank (zip)

PowerPoint® Slides These slides include key concept summarizations and other graphic aids to help students understand, organize, and remember core concepts and ideas.

ACKNOWLEDGMENTS

This book is a culmination of 35 years of experience in conducting both quantitative and qualitative research in education and the social sciences. It could not have been written without the capable assistance of numerous individuals such as graduate students, research assistants, and colleagues at the University of Nebraska–Lincoln. Dr. Dana Miller assisted in a timely and thorough review of many chapters. Dr. Vicki Plano Clark provided editorial assistance and a key conceptual eye for missing details as well as useful leads for sample illustrative articles. Amanda Garrett has provided invaluable assistance in locating up-to-date materials and in conceptualizing ideas. Dr. Ron Shope developed the initial PowerPoint presentation. Others have been helpful as well. Dong Dong Zhang provided inspiration for many applied ideas and support at critical phases of the project. Other graduate students offered useful ideas, including Michael Toland, Kathy Shapely, and many other students in my graduate program area (quantitative and qualitative methods of education), as did students in my classes on the foundations of educational research. Dr. Bill Mickelson served as a statistics consultant and quantitative analysis reviewer on earlier editions.

I am also indebted to Kevin Davis at Pearson for initiating this book and providing the vision to launch it as the "next-generation" research methods text in education. Gail Gottfried, my development editor at Pearson for this edition, provided patience, support, and useful insights throughout the project.

Numerous reviewers helped to shape this book: Sheri Berkeley, George Mason University; Anne Dahlman, Minnesota State University–Mankato; Kathleen Gee, California State University, Sacramento; Tracey Stuckey-Mickell, The Ohio State University; and Maria D. Vasquez, Florida Atlantic University.

PART 1

An Introduction to Educational Research

Consider research your personal journey. It will be challenging but also exciting. Pack along for your journey a tool kit. In Chapter 1, you will be introduced to the basic supplies. In your pack, place a solid understanding of "research." Also include a map—the six steps in the process of conducting research. Realize that on this journey, you need to respect people and the places you visit. Enjoy the process using your natural skills, such as your ability to solve puzzles, use library resources, and write. After learning the process of research, decide on which of two major paths—quantitative or qualitative research—you will follow. Each is viable, and, in the end, you may choose to incorporate both, but as you begin a study, consider one of the paths for your research journey.

Let us begin.

CHAPTER 1

The Process of Conducting Research Using Quantitative and Qualitative Approaches

What is research? Research is a process in which you engage in a small set of logical steps. In this chapter, I define research, discuss why it is important, advance six steps for conducting research, and identify how you can conduct research ethically by employing skills that you already have. You can approach research in two ways—through a quantitative study or a qualitative study—depending on the type of problem you need to research. Your choice of one of these approaches will shape the procedures you use in each of the six steps of research. In this chapter, I explore the many ways these two approaches are similar and different.

By the end of this chapter, you should be able to:

- Define and describe the importance of educational research.
- Describe the six steps in the process of research.
- Identify the characteristics of quantitative and qualitative research in the six steps.
- Identify the type of research designs associated with quantitative and qualitative research.
- Discuss important ethical issues in conducting research.
- Recognize skills needed to design and conduct research.

To begin, consider Maria, a teacher with 10 years of experience who teaches English at a midsize metropolitan high school. Lately, a number of incidents in the school district have involved students possessing weapons:

- A teacher found a 10th grader hiding a knife in his locker.
- A 12th-grade student threatened another student, telling him "he wouldn't see the light of day" unless he stopped harassing her.
- At a nearby high school, a student pointed a handgun at another student outside the school.

These incidents alarm district officials, school administrators, and teachers. The principal forms a committee made up of administrators and teachers to develop guidelines about how the school should respond to these situations. In response to a call for teachers to serve on this committee, Maria volunteers immediately.

Maria sees the school committee assignment and her graduate program's research study requirement as mutual opportunities to research school violence and weapon possession and to have a positive impact on her school. Where does she begin?

Maria's situation of balancing the dual roles of professional and graduate student may be familiar to you. Let's assess her present research situation:

- Maria recognizes the need to closely examine an important issue—school violence and weapons at school—although she is new to research. However, she is not a stranger to looking up topics in libraries or to searching the Internet when she has a question about something. She has occasionally looked at a few research journals, such as the *High School Journal*, the *Journal of Educational Research*, and *Theory Into Practice*, in her school library, and she has overheard other teachers talking about research studies on the subject of school violence. Although she has no research background, she expects that research will yield important findings for her school committee and also help her fulfill the requirement to conduct a small-scale research study for her graduate degree.
- To complete the required research for her graduate program, Maria must overcome her fears about planning and conducting a study. To do this, she needs to think about research not as a large, formidable task but rather as a series of small, manageable steps. Knowing these smaller steps is key to the success of planning and completing her research.

Your situation may be similar to Maria's. At this stage, your concerns may start with the question "What is research?"

A DEFINITION OF RESEARCH AND ITS IMPORTANCE

Research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue. At a general level, research consists of three steps:

1. Pose a question
2. Collect data to answer the question
3. Present an answer to the question

This should be a familiar process. You engage in solving problems every day, and you start with a question, collect some information, and then form an answer. Although there are a few more steps in research than these three, this is the overall framework for research. When you examine a published study or conduct your own study, you will find these three parts as the core elements.

Not all educators have an understanding and appreciation of research. For some, research may seem like something that is important only for faculty members in colleges and universities. Although it is true that college and university faculty members value and conduct research, personnel in other educational settings, such as school psychologists, principals, school board members, adult educators, college administrators, and graduate students, also read and use research. Research is important for three reasons.

Research Adds to Our Knowledge

Educators strive for continual improvement. This requires addressing problems or issues and searching for potential solutions. **Adding to knowledge** means that educators undertake research to contribute to existing information about issues. We are all aware of pressing educational issues being debated today, such as the integration of AIDS education into the school curriculum.

Research plays a vital role in addressing these issues. Through research, we develop results that help answer questions, and as we accumulate these results, we gain a deeper understanding of the problems. In this way, researchers are much like bricklayers who build a wall brick by brick, continually adding to the wall and, in the process, creating a stronger structure.

How can research specifically add to the knowledge base and existing literature? A research report might provide a study that has not been conducted and thereby fill a void in existing knowledge. It can also provide additional results to confirm or disconfirm results of prior studies. It can help add to the literature about practices that work or advance better practices that educators might try in their educational setting. It can provide information about people and places that have not been previously studied.

Suppose that you decide to research how elementary schoolchildren learn social skills. If you study how children develop social skills and past research has not examined this topic, your research study addresses a gap in knowledge. If your study explores how African American children use social skills on their way home from school, your study might replicate past studies but would test results with new participants at a different research site. If your study examines how children use social skills when at play, not on the school grounds but on the way home from school, the study would contribute to knowledge by expanding our understanding of the topic. If your study examines female children on the way home from school, your study would add female voices seldom heard in the research. If your study has implications for how to teach social skills to students, it has practical value.

Research Improves Practice

Research is also important because it *suggests improvements* for practice. Armed with research results, teachers and other educators become more effective professionals. This effectiveness translates into better learning for kids. For instance, through research, personnel involved in teacher education programs in schools of education know much more about training teachers today than they did 20 years ago. Zeichner (1999) summarized the impact of research on teacher training during this period (see Table 1.1). Teacher trainers today know about the academic capabilities of students, the characteristics of good teacher training programs, the recurring practices in teacher training programs, the need to challenge student beliefs and worldviews, and the tensions teacher educators face in their institutions. However, before these research results can impact teacher training or any other aspect of education, individuals in educational settings need to be aware of results from investigations, to know how to read research studies, to locate useful conclusions from them, and to apply the findings to their own unique situations. Educators using research may be teachers in preschool through grade 12, superintendents in school district offices, school psychologists working with children with behavioral problems, or adult educators who teach English as a second language. Research may help these individuals improve their practices on the job.

Research offers practicing educators *new ideas* to consider as they go about their jobs. From reading research studies, educators can learn about new practices that have been

TABLE 1.1

Zeichner's (1999) Summary of Major Research Results in Teacher Education

Research Conducted	What Researchers Have Learned
Surveys about students in teacher education programs	• From academic, social class, racial, ethnic, and gender characteristics of both teacher educators and their students, the research has challenged the misconception that students who go into teaching are academically inferior to those who go into other fields. • Despite changing U.S. demographics, teacher education programs admit mostly students who are white, monolingual English speakers.
Specific case studies of individual teacher education programs	• Successful teacher education programs have a coherent vision of good teaching and close links to local schools. • Researchers need to spend time living in teacher education programs to understand them.
Conceptual and historical research on teacher education programs	• Teacher education programs differ in their approaches, such as the importance of disciplinary knowledge versus students learning versus critiquing societal inequalities in schooling practices. • Programs throughout the 20th century have emphasized recurring practices such as performance-based teacher education.
Studies of learning to teach in different settings	• It is difficult to change the tacit beliefs, understandings, and worldviews that students bring to teacher education programs. • The impact of a program on students can be increased through cohort groups, portfolio development, case studies, and narratives in which they examine their beliefs.
Nature and impact of teacher education activities and self-studies	• Despite the sometimes unfavorable structural conditions of teacher educators' work, their voices are being heard. • Teachers, in these self-studies, describe the tensions and contradictions involved in being a teacher educator.

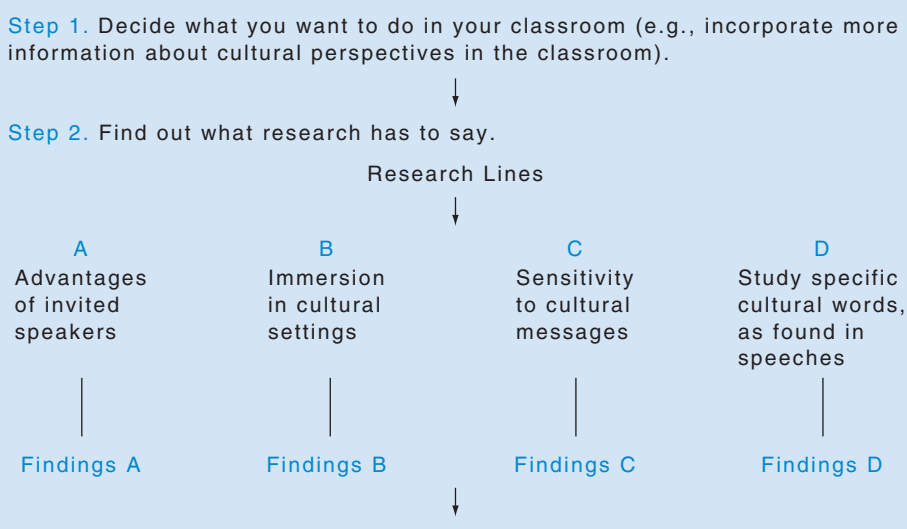
tried in other settings or situations. For example, the adult educator working with immigrants may find that small-group interaction that focuses on using cultural objects from the various homelands may increase the rate at which immigrants learn the English language.

Research also helps practitioners *evaluate approaches* that they hope will work with individuals in educational settings. This process involves sifting through research to determine which results will be most useful. This process is demonstrated in Figure 1.1, which focuses on three steps that a classroom teacher might use (Connelly, Dukacz, & Quinlan, 1980). As shown in Figure 1.1, a teacher first decides what needs to be implemented in the classroom, then examines alternative lines of research, and finally decides which line of research might help accomplish what needs to be done.

For example, a reading teacher decides to incorporate more information about cultural perspectives into the classroom. Research suggests that this may be done with classroom interactions by inviting speakers to the room (line A) or by having the children consider and think (cognitively) about different cultural perspectives by talking with individuals at a local cultural center (line B). It may also be accomplished by having the children inquire into cultural messages embedded within advertisements (line C) or identify the cultural subject matter of speeches of famous Americans (line D). A line of research is then chosen that helps the teacher accomplish classroom goals. This teacher might be Maria, our teacher conducting research on weapon possession in schools and its potential for violence. Maria hopes to present options for dealing with this issue to her committee and needs to identify useful research lines and consider approaches taken by other schools.

FIGURE 1.1

Lines of Research and Your Decision Making



Source: "Lines of research and your decision-making" from *Curriculum Planning for the Classroom*, edited by F. Michael Connelly, Albert S. Dukacz, and Frank Quinlan. © Ontario Institute for Studies in Education, 1980. Reprinted with permission of the publisher.

At a broader level, research helps the practicing educator *build connections* with other educators who are trying out similar ideas in different locations. Special education teachers, for example, may establish connections at research conferences where individuals report on topics of mutual interest, such as using small-group strategies for discipline management in classrooms.

Research Informs Policy Debates

In addition to helping educators become better practitioners, research also provides information to policymakers when they research and debate educational topics. Policymakers may range from federal government employees and state workers to local school board members and administrators, and they discuss and take positions on educational issues important to constituencies. For these individuals, research offers results that can help them weigh various perspectives. When policymakers read research on issues, they are informed about current debates and stances taken by other public officials. To be useful, research needs to have clear results, be summarized in a concise fashion, and include data-based evidence. For example, research useful to policymakers might summarize the alternatives on the following:

- Welfare and its effect on children's schooling among lower-income families
- School choice and the arguments proposed by opponents and proponents

Several Problems with Research Today

Despite the importance of research, we need to realistically evaluate its contributions. Sometimes the results show contradictory or vague findings. An education aide to the Education and Labor Committee of the U.S. House of Representatives for 27 years expressed

this confusion: "I read through every single evaluation . . . looking for a hard sentence—a declarative sentence—something that I could put into the legislation, and there were very few" (Viadero, 1999, p. 36). Not only are policymakers looking for a clear "declarative sentence," but many readers of educational research search for some evidence that makes a direct statement about an educational issue. On balance, however, research accumulates slowly, and what may seem contradictory comes together to make sense in time. Based on the information known, for example, it took more than 4 years to identify the most rudimentary factors about how chairpersons help faculty become better researchers (Creswell, Wheeler, Seagren, Egly, & Beyer, 1990).

Another problem with research is the issue of questionable data. The author of a particular research report may not have gathered information from people who are able to understand and address the problem. The number of participants may also be dismally low, which can cause problems in drawing appropriate statistical conclusions. The survey used in a study may contain questions that are ambiguous and vague. At a technical level, the researcher may have chosen an inappropriate statistic for analyzing the data. Just because research is published in a well-known journal does not automatically make it "good" research.

To these issues, we could add unclear statements about the intent of the study, the lack of full disclosure of data collection procedures, or inarticulate statements of the research problem that drives the inquiry. Research has limits, and you need to know how to decipher research studies because researchers may not write them as clearly and accurately as you would like. We cannot erase all "poor" research reported in the educational field. We can, however, as responsible inquirers, seek to reconcile different findings and employ sound procedures to collect and analyze data and to provide clear direction for our own research.

THE SIX STEPS IN THE PROCESS OF RESEARCH

When researchers conduct a study, they proceed through a distinct set of steps. Years ago, these steps were identified as the "scientific method" of inquiry (Kerlinger, 1972; Leedy & Ormrod, 2010). Using a "scientific method," researchers do the following:

- Identify a problem that defines the goal of research
- Make a prediction that, if confirmed, resolves the problem
- Gather data relevant to this prediction
- Analyze and interpret the data to see if it supports the prediction and resolves the question that initiated the research

Applied today, these steps provide the foundation for educational research. Although not all studies include predictions, you engage in these steps whenever you undertake a research study. As shown in Figure 1.2, the **process of research** consists of six steps:

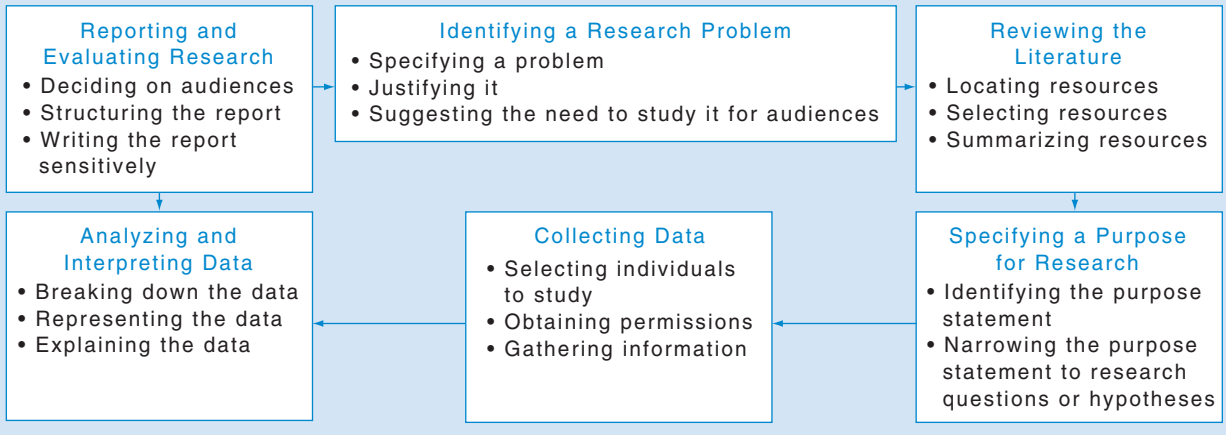
1. Identifying a research problem
2. Reviewing the literature
3. Specifying a purpose for research
4. Collecting data
5. Analyzing and interpreting the data
6. Reporting and evaluating research

Identifying a Research Problem

You begin a research study by identifying a topic to study—typically an issue or problem in education that needs to be resolved. **Identifying a research problem** consists of specifying an issue to study, developing a justification for studying it, and suggesting

FIGURE 1.2

The Research Process Cycle



the importance of the study for select audiences that will read the report. By specifying a "problem," you limit the subject matter and focus attention on a specific aspect of study. Consider the following "problems," each of which merits research:

- Teens are not learning how to connect to others in their communities.
- Teenage smoking will lead to many premature deaths.

These needs, issues, or controversies arise out of an educational need expressed by teachers, schools, policymakers, or researchers, and we refer to them as *research problems*. You will state them in introductory sections of a research report and provide a rationale for their importance. In a formal sense, these problems are part of a larger written section called the "statement of the problem," and this section includes the topic, the problem, a justification for the problem, and the importance of studying it for specific audiences, such as teachers, administrators, or researchers.

Let's examine Maria's research to see how she will specify her study's research problem.

> Maria plans to study school violence and weapon possession in schools. She starts with a problem: escalating weapon possession among students in high schools. She needs to justify the problem by providing evidence about the importance of this problem and documenting how her study will provide new insight into the problem.

In her research, Marie will need to identify and justify the research problem that she is studying.

Reviewing the Literature

It is important to know who has studied the research problem you plan to examine. You may fear that you will initiate and conduct a study that merely replicates prior research. However, faculty and advisers often fear that you will plan a study that does not build on existing knowledge and does not add to the accumulation of findings on a topic. Because of these concerns, reviewing the literature is an important step in the research process.

Reviewing the literature means locating summaries, books, journals, and indexed publications on a topic; selectively choosing which literature to include in your review; and then summarizing the literature in a written report.

The skills required for reviewing the literature develop over time and with practice. You can learn how to locate journal articles and books in an academic library, access computerized databases, choose and evaluate the quality of research on your topic, and summarize it in a review. Library resources can be overwhelming, so having a strategy for searching the literature and writing the review is important. Let's examine Maria's approach to reviewing the literature.

> To inform her committee about the latest literature on school violence and to plan her own research, Maria needs to conduct a literature review. This process will involve becoming familiar with the university library holdings, spending time reviewing resources and making decisions about what literature to use, and writing a formal summary of the literature on school violence. She consults the library catalog at her university and plans to search the computerized databases.

In order to review the literature, Maria will need to become familiar with the literature and visit her university library.

Specifying a Purpose for Research

If your research problem covers a broad topic of concern, you need to focus it so that you can study it. A focused restatement of the problem is the *purpose statement*. This statement conveys the overall objective or intent of your research. As such, it is the most important statement in your research study. It introduces the entire study, signals the procedures you will use to collect data, and indicates the types of results you hope to find.

The **purpose for research** consists of identifying the major intent or objective for a study and narrowing it into specific research questions or hypotheses. The purpose statement contains the major focus of the study, the participants in the study, and the location or site of the inquiry. This purpose statement is then narrowed to research questions or predictions that you plan to answer in your research study. Let's check again with Maria to see how she will write a purpose statement and research questions.

> Maria now needs to write down the purpose of her study and formulate the questions she will ask of the individuals selected for her study. In draft after draft, she sketches this purpose statement, recognizing that it will provide major direction for her study and help keep her focused on the primary aim of her study. From this broad purpose, Maria now needs to narrow her study to specific questions or statements that she would like her participants to answer.

Maria will need to write a good purpose statement and the research questions for her study.

Collecting Data

Evidence helps provide answers to your research questions and hypotheses. To get these answers, you engage in the step of collecting or gathering data. **Collecting data** means identifying and selecting individuals for a study, obtaining their permission to study them, and gathering information by asking people questions or observing their behaviors. Of paramount concern in this process is the need to obtain accurate data from individuals and places. This step will produce a collection of numbers (test scores or frequency of behaviors) or words (responses, opinions, or quotes). Once you identify these individuals and places, you write *method* or *procedure sections* into your research studies. These

sections offer detailed, technical discussions about the mechanics and administration of data collection. Many decisions, however, go into creating a good data collection procedure. Let's see how Maria will address data collection.

> At this point in the research process, Maria needs to think about where she will conduct her study of school violence and weapon possession, who will participate in the study, how she will obtain permission to study them, what data she will collect, and how she will gather the data. She needs to decide whether she will have students fill out forms or talk to them directly to gather data to answer her research questions. Whichever course she chooses, she will need permission from the high school students and, because the students are minors, from their parents.

Maria will engage in the steps of data collection to gather the data she needs to address her research questions.

Analyzing and Interpreting the Data

During or immediately after data collection, you need to make sense of the information supplied by individuals in the study. Analysis consists of "taking the data apart" to determine individual responses and then "putting it together" to summarize it. **Analyzing and interpreting the data** involves drawing conclusions about it; representing it in tables, figures, and pictures to summarize it; and explaining the conclusions in words to provide answers to your research questions. You report analysis and interpretation in sections of a research report usually titled "Results," "Findings," or "Discussion." How will Maria analyze and interpret the data in her research?

> If Maria collects information on a written questionnaire from students across the school district, she will need to enter the questionnaire responses into a computer program, choose a statistical procedure, conduct the analyses, report the results in tables, and draw conclusions about (or interpret) whether the data confirm or disconfirm her expected trends or predictions. If she conducts face-to-face interviews, she will collect audiotapes of students talking about weapon possession at school and transcribe these tapes to obtain a written record. With her transcriptions, she will engage in making sense of student comments by selecting specific sentences and paragraphs and by identifying themes of information. From these themes, she will interpret the meaning of student comments in light of her own personal stance and the suggestions found in past studies.

For help in the data analysis and interpretation phase of her study, Maria will need to analyze her data and make an interpretation to answer her research questions.

Reporting and Evaluating Research

After conducting your research, you will develop a written report and distribute it to select audiences (such as fellow teachers, administrators, parents, or students) that can use your information. **Reporting research** involves deciding on audiences, structuring the report in a format acceptable to these audiences, and then writing the report in a manner that is sensitive to all readers. The audiences for research will vary and will include academic researchers who contribute and read journal articles, faculty advisers and committees that review master's theses and dissertations, and personnel in educational agencies and school districts that look for reports of research on timely topics. Your structure for the research report will vary for each audience, from a formal format for theses and dissertations to a more informal document for in-house

school reports. In all types of reports, however, researchers need to be respectful and avoid language that discriminates on the basis of gender, sexual orientation, race, or ethnic group.

The audience for your report will have its own standards for judging the quality and utility of the research. **Evaluating research** involves assessing the quality of a study using standards advanced by individuals in education. Unfortunately, there are no ironclad standards for evaluating educational research in the academic research community, in school districts, or in local, state, or federal agencies. Still, we need some means of determining the quality of studies, especially published research or reports presented to practitioner audiences. Let's look at how Maria thinks about organizing her research report.

> Maria thinks about how she will organize her final report to her school committee and to her university graduate committee. Her graduate committee likely has a structure in mind for her graduate research study, and she needs to consult her faculty adviser about the format that students typically use. She should have a general idea about what the major sections of the study will be, but the contents of the specific paragraphs and ideas will take shape as her data analysis and interpretation progress.
>
> Her school report will likely be different from her research report. The school report will be informative and concise, will offer recommendations, and will include minimal discussions about methods and procedures. Whatever the audience and structure for her report, it must be respectful of the audience and be devoid of discriminatory language.

Maria will need to organize and report her research in ways suitable for different audiences.

✓ Check your understanding in the Pearson etext.

THE CHARACTERISTICS OF QUANTITATIVE AND QUALITATIVE RESEARCH IN EACH OF THE SIX STEPS

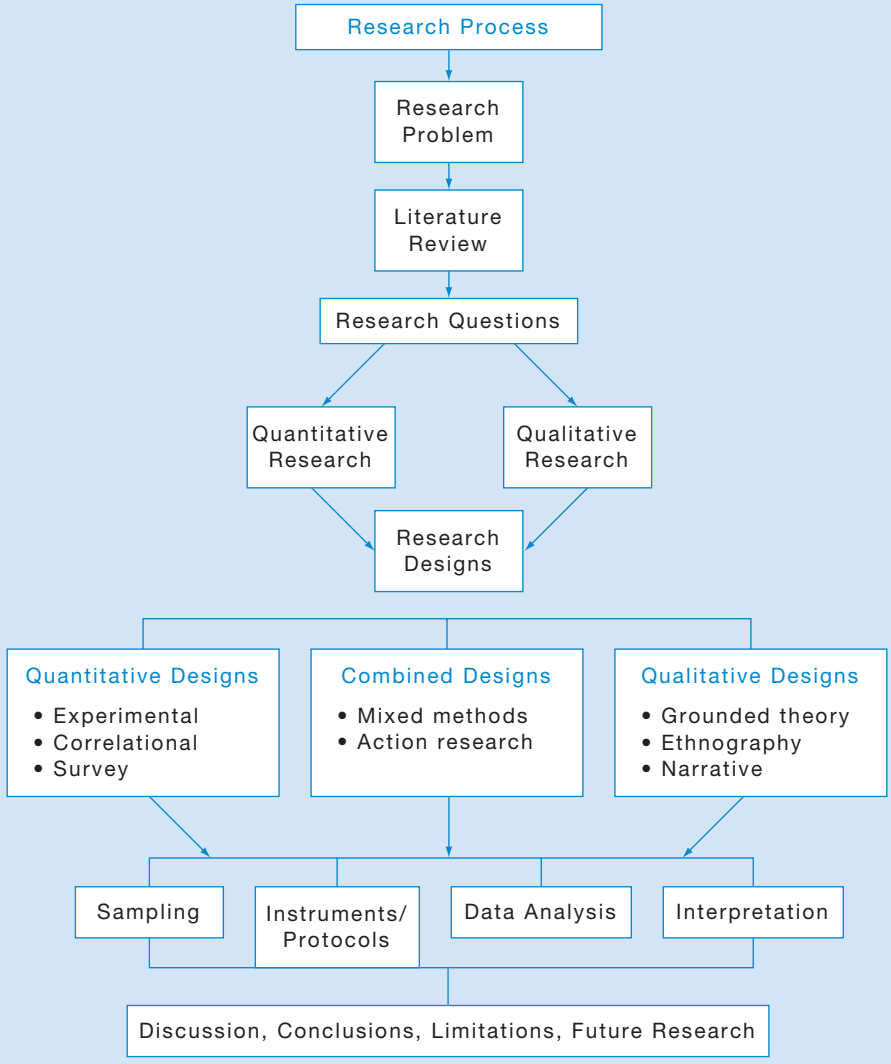
Conducting educational research is more than engaging in the major steps in the process of research. It also includes designing and writing the research in one of the two major tracks: quantitative research or qualitative research. The way that this unfolds is illustrated in the flow of the research process, as shown in Figure 1.3.

Based on the nature of the research problem and the questions that will be asked to address the problem (and accompanying review of the literature that establishes the importance of the problem), the researcher chooses either the quantitative or the qualitative research track. The problem, the questions, and the literature reviews help steer the researcher toward either the quantitative or the qualitative track. These, in turn, inform the specific research design to be used and the procedures involved in them, such as sampling, data collection instruments or protocols, the procedures, the data analysis, and the final interpretation of results.

What are the characteristics of quantitative and qualitative research tracks at each step in this research process? As each characteristic is discussed, it is helpful to first examine two sample journal articles at the end of this chapter because these articles will be cited with illustrations for each characteristic. Marginal notes have been inserted into the articles to identify the specific passage containing the quantitative and qualitative characteristics.

FIGURE 1.3

Flow of the Research Process through Quantitative and Qualitative Research



The first article is quantitative research, whereas the second is qualitative research. These two articles were chosen because they are good representatives of both tracks of research and illustrate within them good procedures of research. They will become a frame of reference for each step in the process of research for the quantitative and qualitative tracks. The two articles are the following:

- *Quantitative:* Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary-level schooling. *Journal of Educational Research, 98*(3), 164–175.
- *Qualitative:* Shelden, D. L., Angell, M. E., Stoner, J. B., & Roseland, B. D. (2010). School principals' influence on trust: Perspectives of mothers of children with disabilities. *Journal of Educational Research, 103,* 159–170.

Quantitative Research Characteristics

In **quantitative research**, the major characteristics are the following:

- Describing a research problem through a description of trends or a need for an explanation of the relationship among variables
- Providing a major role for the literature through suggesting the research questions to be asked and justifying the research problem and creating a need for the direction (purpose statement and research questions or hypotheses) of the study
- Creating purpose statements, research questions, and hypotheses that are specific, narrow, measurable, and observable
- Collecting numeric data from a large number of people using instruments with preset questions and responses
- Analyzing trends, comparing groups, or relating variables using statistical analysis and interpreting results by comparing them with prior predictions and past research
- Writing the research report using standard, fixed structures and evaluation criteria and taking an objective, unbiased approach

In *quantitative research*, the investigator *identifies a research problem* based on trends in the field or on the need to explain why something occurs. Describing a trend means that the research problem can be answered best by a study in which the researcher seeks to establish the overall tendency of responses from individuals and to note how this tendency varies among people. For example, you might seek to learn how voters describe their attitudes toward a bond issue. Results from this study can provide information on how a large population views an issue and the diversity of these views.

However, some quantitative research problems require that you explain how one variable affects another. *Variables* are an attribute (e.g., attitude toward the school bond issue) or characteristic of individuals (e.g., gender) that researchers study. By explaining a relation among variables, you are interested in determining whether one or more variables might influence another variable. For example, quantitative researchers may seek to know why certain voters voted against the school bond issue. The variables—gender and attitude toward the quality of the schools—may influence individuals' vote on the bond issue.

For example, examine the sample quantitative article—the parent involvement study—at the end of this chapter. The authors in the parent involvement study (Deslandes & Bertrand, 2005) are less interested in describing the level of parent involvement in secondary-level schooling and more interested in examining the relationship between four factors—parents' role construction, self-efficacy, perceptions of teacher invitations, and perceptions of adolescent invitations—as predictors of parent involvement at home and at school. To examine this relation, they collect survey data from 770 parents of children in grades 7, 8, and 9 (American system equivalents to Canadian schools). Thus, the problem being addressed is that we know little about what factors relate to parental involvement in secondary-level schooling. Assessing whether certain factors predict an outcome is best suited to quantitative research.

In *reviewing the literature* in quantitative research, you will typically see a substantial literature review at the beginning of the study. Thus, the literature plays a major role in two ways: justifying the need for the research problem and suggesting potential purposes and research questions for the study. Justifying the research problem means that you use the literature to document the importance of the issue examined in the study. To accomplish this, you search the literature, locate studies that identify the problem as important to examine, and then cite this literature in the opening sections of a research report.

The literature also creates a need for the study, as expressed specifically in the purpose statement and the research questions or hypotheses. You identify in the literature

key variables, relations, and trends and use these to provide direction for your research questions and hypotheses. A literature review on college students, for example, may show that we know little about the problem of binge drinking. Existing literature, however, may identify the importance of peer groups and styles of interacting among student peer groups. Thus, important research questions might address how peers and their interaction styles influence binge drinking on college campuses. In this way, the literature in a quantitative study both documents the need to study the problem and provides direction for the research questions.

In the quantitative parent involvement study (Deslandes & Bertrand, 2005), the authors cite extensive literature at the beginning of the article. In these paragraphs, the authors rely on the model of the parent involvement process, and they discuss the literature surrounding each of the four major factors that are expected to influence parental involvement. They begin by reviewing the literature about demographic or personal factors, such as family size and educational level, and then proceed to review the literature about the major factors in the study that they predict will influence parental involvement—parents' role construction, parents' self-efficacy, parents' perceptions of teacher invitations, and parents' perceptions of student invitations. In this way, the introduction establishes the research that has been reported in the literature on each of the four factors in the study and foreshadows the research questions that will be addressed in the study.

In *quantitative research questions*, you ask specific, narrow questions to obtain measurable and observable data on variables. The major statements and questions of direction in a study—the purpose statement, the research questions, and the hypotheses—are specific and narrow because you identify only a few variables to study. From a study of these variables, you obtain measures or assessments on an instrument or record scores on a scale from observations. For example, in a study of adolescent career choices, the variable—the role of the school counselor—narrows the study to a specific variable from among many variables that might be studied (e.g., role of parents or personal investment by student). To examine the impact of the school counselor on adolescent career choices, data must be obtained from the students.

In the quantitative parent involvement study (Deslandes & Bertrand, 2005), the authors narrow and select a few factors that they predict will explain parental involvement. They state their purpose of the study and the major research questions. They say that they will examine four factors that influence parental involvement at home and at school and then identify the four factors that they predict will influence this involvement. Thus, their research questions are specific to four factors, and later in the method section, they explain how they will measure these factors.

In *quantitative data collection*, you use an instrument to measure the variables in the study. An *instrument* is a tool for measuring, observing, or documenting quantitative data. It contains specific questions and response possibilities that you establish or develop in advance of the study. Examples of instruments are survey questionnaires, standardized tests, and checklists that you might use to observe a student's or teacher's behaviors. You administer this instrument to participants and collect data in the form of numbers. For instance, you might collect responses based on students checking boxes on a form or from checklists that you complete as you watch a student perform a task in the classroom. The intent of this process is to apply the results (called *generalizing the results*) from a small number of people to a large number. The larger the number of individuals studied, the stronger the case for applying the results to a large number of people. For example, on a survey sent to 500 parents in a school district, the researcher seeks information about parents' attitudes toward the educational needs of pregnant teenagers in the schools. The researcher selects an instrument, "Attitudes Toward Education of Pregnant Teenagers," found through a search of library resources. The 500 parents who receive this instrument

represent a cross section of people from all socioeconomic levels in the school district. After collecting and analyzing these data, the investigator will draw conclusions about all parents in this school district based on the representative sample studied.

Data collection is also an integral part of the quantitative parent involvement study (Deslandes & Bertrand, 2005). The authors study a large number of parents (i.e., 770) of children in grades 7, 8, and 9. They survey parents using an adaptation of the instrument, the "Sharing the Dream! Parent Questionnaire," as well as items on a questionnaire designed by other researchers to assess parents' perceptions of student invitations. The survey items are translated into French to fit the Quebec context, and they gather quantifiable data (scores) on the survey. They discuss the scales used to collect the data and how they are scored (i.e., from 1 = *disagree very strongly* to 6 = *agree very strongly*).

In *quantitative data analysis*, you analyze the data using mathematical procedures, called *statistics*. These analyses consist of breaking down the data into parts to answer the research questions. Statistical procedures such as comparing groups or relating scores for individuals provide information to address the research questions or hypotheses. You then interpret the results of this analysis in light of initial predictions or prior studies. This interpretation is an explanation as to why the results turned out the way they did, and often you will explain how the results either support or refute the expected predictions in the study.

For example, in the parent involvement study (Deslandes & Bertrand, 2005), the authors collect responses from the parents of secondary-level students who provide scores on the survey instrument. The survey has questions relating to each of the eight factors (or constructs) and the outcome measures, as shown in Table 2. To examine the relation of factors to parental involvement, the researchers do not use all the items on the survey because some were not good measures of the factors. They use a statistical program (i.e., factor analysis) to help them identify the most important questions for each of the four scales composed of items (or factors) in the study. With this reduced set of questions for each of the four factors in the study, they then conduct descriptive analysis (i.e., means and standard deviations, as shown in Table 3) and use the statistical program of regression statistical analysis to predict whether the control or personal items or four predictors best explain the variation in scores for parent involvement. From Tables 4 and 5, we see what variables best explain the variation for each grade level (7, 8, and 9) and for the two outcome measures of parent involvement at home and parent involvement at school. In short, the authors use statistical analysis consisting of three phases: factor analysis, descriptive analysis, and regression analysis. The ultimate goal was to relate variables to see what predictors (demographics or the four factors) best explain parental involvement. Then, in the implication section of the article, the authors discuss the main results of the study and compare their results with those found in other studies in the literature.

In *reporting and evaluating* quantitative research, the overall format for a study follows a predictable pattern: introduction, review of the literature, methods, results, and discussion. This form creates a standardized structure for quantitative studies. In addition, it also leads to specific criteria that you might use to judge the quality of a quantitative research report. For example, you examine a quantitative study to see if it has an extensive literature review; tests good research questions and hypotheses; uses rigorous, impartial data collection procedures; applies appropriate statistical procedures; and forms interpretations that naturally follow from the data.

In quantitative research, you also use procedures to ensure that your own personal biases and values do not influence the results. You use instruments that have proven value and that have reliable and valid scores from past uses. You design studies to control for all variables that might introduce bias into a study. Finally, you report research without referring to yourself or your personal reaction.

In the quantitative parent involvement study (Deslandes & Bertrand, 2005), the authors subdivide the research into standard sections typically found in quantitative studies. The study begins with an introduction that includes the literature review, purpose statement, and research questions; the methods; the results; the discussion; and, finally, the implications and limitations. The entire study conveys an impersonal, objective tone, and they do not bring either their biases or their personal opinions into the study. They use proven instruments to measure variables and employ multiple statistical procedures to build objectivity into the study.

Qualitative Research Characteristics

In **qualitative research**, we see different major characteristics at each stage of the research process:

- Exploring a problem and developing a detailed understanding of a central phenomenon
- Having the literature review play a minor role but justify the problem
- Stating the purpose and research questions in an open-ended way to capture the participants' experiences
- Collecting data based on words (e.g., from interviews) or from images (e.g., photographs) from a small number of individuals so that the participants' views are obtained
- Analyzing the data for description and themes using text analysis and interpreting the larger meaning of the findings
- Writing the report using flexible, emerging structures and evaluative criteria and including the researchers' subjective **reflexivity** and bias

Qualitative research is best suited to address a *research problem* in which you do not know the variables and need to explore. The literature might yield little information about the phenomenon of study, and you need to learn more from participants through exploration. For example, the literature may not adequately address the use of sign language in distance education courses. A qualitative research study is needed to explore this phenomenon from the perspective of distance education students. Unquestionably, using sign language in such courses is complex and may not have been examined in the prior literature. A *central phenomenon* is the key concept, idea, or process studied in qualitative research. Thus, the research problem of the difficulty in teaching children who are deaf requires both an exploration (because we need to better know how to teach these children) and an understanding (because of its complexity) of the process of teaching and learning.

The authors in the sample article on mothers' trust in school principals (Shelden et al., 2010) build a case for the importance of trust in the opening passages of the article. They suggest that it is an important issue and that it has a positive effect on student outcomes. They then narrow the discussion to trust of school leaders and then to parents of children with disabilities and finally to the relationships between home and school partnerships for students with disabilities. They point out the problem of possible discrepant viewpoints between parents and schools—a potential problem that needs to be addressed. They then discuss the need for exploring further the critical role of principals in establishing trust in the relationships between families of children with disabilities and education professionals. In sum, they open the article by discussing the important central phenomenon of trust and exploring the potential discrepant viewpoints between mothers of individuals with disabilities and principals. They say that they view trust as the "central phenomenon requiring exploration and understanding" (p. 161).

In qualitative research, the *literature review* plays a less substantial role at the beginning of the study than in quantitative research. In qualitative research, although you may review the literature to justify the need to study the research problem, the literature does not provide major direction for the research questions. The reason for this is that qualitative research relies more on the views of participants in the study and less on the direction identified in the literature by the researcher. Thus, to use the literature to foreshadow or specify the direction for the study is inconsistent with the qualitative approach of learning from participants. For example, one qualitative researcher who studied bullying in the schools cited several studies at the beginning of the research to provide evidence for the problem but did not use the literature to specify the research questions. Instead, this researcher attempted to answer in the research the most general, open question possible—"What is bullying?"—and to learn how students constructed their view of this experience.

In the illustrative sample qualitative study by Shelden et al. (2010), the authors begin the article by citing numerous studies from the literature. This literature review is not to identify specific questions that need to be answered; instead, the literature review establishes the meaning and importance of the central phenomenon of trust—why it is important and the relationships needed in schools that involve parents and educational teams, including principals. In this article, there is no separate literature review section, and the literature is used to justify the importance of studying the potential problem of the relationships between parents (i.e., mothers) and the schools (i.e., principals).

In qualitative research, the *purpose statement* and the *research questions* are stated so that you can best learn from participants. You research a single phenomenon of interest and state this phenomenon in a purpose statement. A qualitative study that examines the "professionalism" of teachers, for example, asks high school teachers, "What does it mean to be a professional?" This question focuses on understanding a single idea—being a professional—and the responses to it will yield qualitative data, such as quotations.

In the qualitative study of mothers' trust in school principals (Shelden et al., 2010), the authors say that the study emerged from a broader study of the perspectives of mothers of children with disabilities on trust in education personnel. The authors raise this question: "What are the perspectives of mothers of children with disabilities on trust in school principals?" (p. 161). This is a general and broad question that seeks to understand (or "gain insight into," p. 161) the perspectives of the mothers.

In qualitative research, you *collect data* to learn from the participants in the study and develop forms, called *protocols*, for recording data as the study proceeds. These forms pose general questions so that the participants can provide answers to the questions. Often questions on these forms will change and emerge during data collection. Examples of these forms include an *interview protocol*, which consists of four or five questions, or an *observational protocol*, in which the researcher records notes about the behavior of participants. Moreover, you gather text (word) or image (picture) data. Transcribed audio recordings form a database composed of words. Observing participants in their work or family setting, you take notes that will become a qualitative database. When researchers ask young children to write their thoughts in a diary, these diary entries, too, become a text database. With each form of data, you will gather as much information as possible to collect detailed accounts for a final research report.

In our sample qualitative study by Shelden et al. (2010), the authors recruited a sample of mothers of school-age children with disabilities and conducted interviews with 16 of these parents. In the journal article, the authors provide the eight open-ended questions that they asked. These interviews enabled them to probe for further information, elaboration, and clarification of responses while maintaining a "feeling of openness" to the participants' responses.

In qualitative research, typically you gather a text database, so the *data analysis* of text consists of dividing it into groups of sentences, called *text segments*, and determining the meaning of each group of sentences. Rather than using statistics, you analyze words or pictures to describe the central phenomenon under study. The result may be a description of individual people or places. In some qualitative studies, the entire report is mostly a long description of several individuals. The result may also include themes or broad categories that represent your findings. In qualitative studies in which you both describe individuals and identify themes, a rich, complex picture emerges. From this complex picture, you make an interpretation of the meaning of the data by reflecting on how the findings relate to existing research, by stating a personal reflection about the significance of the lessons learned during the study, or by drawing out larger, more abstract meanings.

In the study of mothers' perspectives of trust in school principals (Shelden et al., 2010), we can see these data analysis steps. The authors analyzed text data based on audiotaped and transcribed verbatim passages as mentioned in the section on interviews. In their section on data analysis, they talk about the "line-by-line coding" of their data in which they used the words of the participants to form categories. They provide in Table 1 a detailed descriptive portrait of participants in their study, noting the ethnicity, type of disability, grade level, and other personal information. In the results section, we find the various themes that they identified, such as principal attributes and principal actions. In the conclusion section, they review all of these findings, thereby creating a complex picture of the relationship between mothers and school leaders. Although their personal reflections are minimal in this study, the authors discuss their challenges in recruiting participants to the study and how they sought to protect the identity of the participants.

In *reporting* qualitative research, you employ a wide range of formats to report your studies. Although the overall general form follows the standard steps in the process of research, the sequence of these "parts" of research tends to vary from one qualitative report to another. A study may begin with a long, personal narrative told in story form or with a more objective, scientific report that resembles quantitative research. With such variability, it is not surprising that the standards for evaluating qualitative research also are flexible. Good qualitative reports, however, need to be realistic and persuasive to convince the reader that the study is an accurate and credible account. Qualitative reports typically contain extensive data collection to convey the complexity of the phenomenon or process. The data analysis reflects description and themes as well as the interrelation of themes. In addition, you discuss your role or position in a research study, called *being reflexive*. This means that you reflect on your own biases, values, and assumptions and actively write them into the research. This may also involve discussing personal experiences and identifying how you collaborated with participants during phases of the project. You may also discuss how your experiences and cultural backgrounds (e.g., Asian American perspectives) affect the interpretations and conclusions drawn in the study.

In the sample study of mothers' trust in school principals (Shelden et al., 2010), the authors used more of a scientific structure than a literary structure for writing their article. This may have been done because of the requirements of the journal to address certain aspects (e.g., methods, results, and discussion). However, the article did depart from the traditional structure by not having a separate literature review section; instead, the literature review was incorporated into the introduction to establish the importance of the central phenomenon—trust—and to develop a need for the study. The authors did employ the personal pronoun "we" in referring to themselves in the study, a subjective orientation typically associated with qualitative, literary writing. As mentioned earlier, references to themselves and especially how their backgrounds shaped their interpretation were absent.

Similarities and Differences between Quantitative and Qualitative Research

At this point, you may be asking how quantitative research and qualitative research are similar and different. In terms of similarity, both forms of research follow the six steps in the process of research. There are minor differences as well in the introduction to a study—the research problem section—in that both sections need to establish the importance of the problem. In quantitative research, the research problem section is used to direct the types of questions or hypotheses asked in the study, whereas in qualitative research, the research problem discussion is typically used to establish the importance of the central idea. These differences are apparent in the comparison of the introduction to the quantitative parent involvement study (Deslandes & Bertrand, 2005) and the qualitative mothers' trust in school principals study (Shelden et al., 2010).

Another similarity exists in the data collection procedures. Both quantitative and qualitative data collection may employ similar approaches, such as interviews or observations. However, quantitative approaches use more closed-ended approaches in which the researcher identifies set response categories (e.g., strongly agree, strongly disagree, and so forth), whereas qualitative approaches use more open-ended approaches in which the inquirer asks general questions of participants and the participants shape the response possibilities (e.g., in an interview with a teacher, a qualitative researcher might ask, "What does professional development mean to you?").

There are distinct differences that go beyond the forms of gathering data. In data analysis, the procedures are quite different. In quantitative research, the investigator relies on statistical analysis (mathematical analysis) of the data, which is typically in numeric form. In qualitative research, statistics are not used to analyze the data; instead, the inquirer analyzes words (e.g., transcriptions from interviews) or images (e.g., photographs). Rather than relying on statistical procedures, the qualitative researcher analyzes the words to group them into larger meanings of understanding, such as codes, categories, or themes. The reporting formats are also typically different, with the quantitative structure following the typical introduction, literature review, methods, results, and conclusion sections. In qualitative research, some of these sections may be missing, as in the literature review in the Shelden et al. (2010) study, and the format may be more of a literary opening with a personal vignette or passage, an unfolding story, the use of extensive quotes from participants, and personal reflections from the researcher.

It should also be mentioned that rather than viewing quantitative and qualitative as two end points in a dichotomy, they should be viewed as different points on a continuum. Studies may contain some elements of the characteristics of quantitative research and some elements of qualitative research. However, studies do *tend* to lean toward one approach or the other, and knowing the characteristics associated with each type of research enables a researcher to assess whether a particular study favors either quantitative or qualitative research.

How do you choose whether to use a quantitative or a qualitative approach? Three factors are important. First, match your approach to your research problem. Remember that the problems best suited for quantitative research are those in which trends or explanations need to be made. For qualitative research, the problems need to be explored to obtain a deep understanding. Second, your approach needs to fit the audience(s) for the research report. Educators write for several audiences, such as policymakers, faculty and graduate committees, editors and review boards, evaluators of grant proposals, and individuals in schools or educational settings. It is important that the audience(s) be familiar with the approach used in a study. Third, relate your approach to your personal experience and training. A quantitative researcher typically has taken some courses or

training in measurement, statistics, and quantitative data collection, such as experiments, correlational designs, or survey techniques. Qualitative researchers need experience in field studies in which they practice gathering information in a setting and learning the skills of observing or interviewing individuals. Course work or experience in analyzing text data is helpful, as is experience in research designs, including grounded theory, ethnography, or narrative research. Some individuals have experience and training in approaches to research that combine both quantitative and qualitative methods, such as mixed methods research or action research.

Research Designs Associated with Quantitative and Qualitative Research

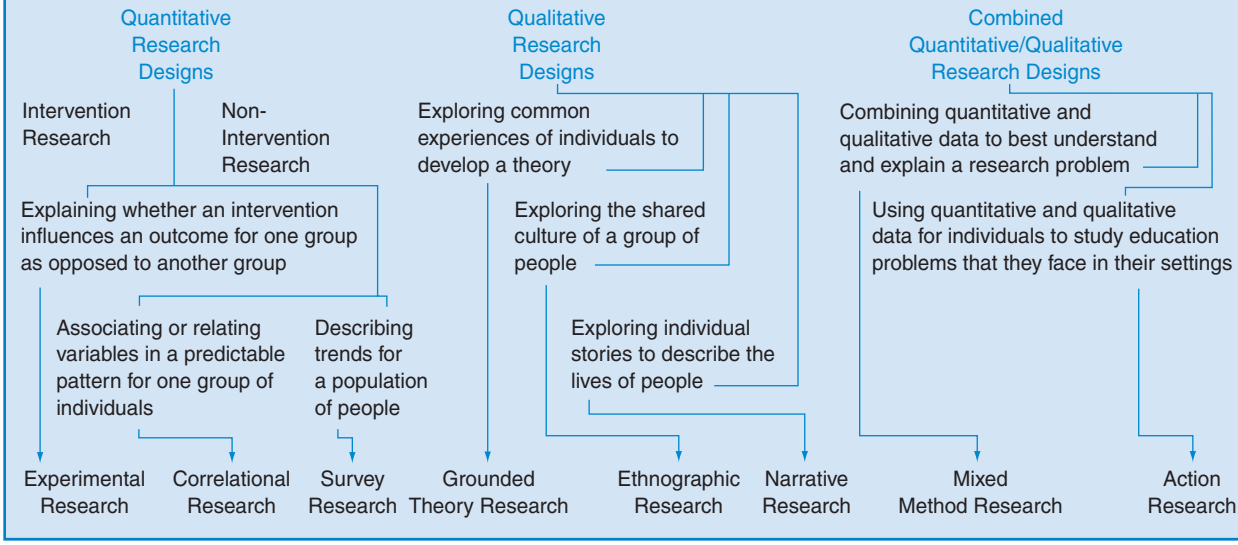
It is not enough to know the steps in the process of research and that quantitative and qualitative procedures differ at each step. This text will also go into detailed procedures involved in quantitative, qualitative, and combined research. **Research designs** are the specific procedures involved in the research process: data collection, data analysis, and report writing. Figure 1.4 illustrates how the steps in the research process relate to quantitative and qualitative research and advances eight different research designs, used by educational researchers, discussed in this book.

Experimental Designs

Some quantitative researchers seek to test whether an educational practice or idea makes a difference for individuals. Experimental research procedures are ideally suited for this study. *Experimental designs* (also called intervention studies or group comparison studies) are procedures in quantitative research in which the investigator determines whether an activity or materials make a difference in results for participants. You assess this impact by giving one group one set of activities (called an *intervention*) and withholding the set from another group.

FIGURE 1.4

Types of Quantitative and Qualitative Research Designs and Their Primary Uses



Correlational Designs

In some studies, you may be unable to provide an intervention or to assign individuals to groups. Moreover, you focus more on examining the association or relation of one or more variables than in testing the impact of activities or materials. *Correlational designs* are procedures in quantitative research in which investigators measure the degree of association (or relation) between two or more variables using the statistical procedure of correlational analysis. This degree of association, expressed as a number, indicates whether the two variables are related or whether one can predict another. To accomplish this, you study a single group of individuals rather than two or more groups, as in an experiment.

Survey Designs

In another form of quantitative research, you may not want to test an activity or materials or may not be interested in the association among variables. Instead, you seek to describe trends in a large population of individuals. In this case, a survey is a good procedure to use. *Survey designs* are procedures in quantitative research in which you administer a survey or questionnaire to a small group of people (called the *sample*) to identify trends in attitudes, opinions, behaviors, or characteristics of a large group of people (called the *population*).

Grounded Theory Designs

Instead of studying a single group, you might examine a number of individuals all of whom have experienced an action, interaction, or process. *Grounded theory designs* are systematic, qualitative procedures that researchers use to generate a general explanation (grounded in the views of participants, called a *grounded theory*) that explains a process, action, or interaction among people. The procedures for developing this theory include primarily collecting interview data, developing and relating categories (or themes) of information, and composing a figure or visual model that portrays the general explanation. In this way, the explanation is "grounded" in the data from participants. From this explanation, you construct predictive statements about the experiences of individuals.

Ethnographic Designs

You may be interested in studying one group of individuals, in examining them in the setting where they live and work, and in developing a portrait of how they interact. An ethnographic study is well suited for this purpose. *Ethnographic designs* are qualitative procedures for describing, analyzing, and interpreting a cultural group's shared patterns of behavior, beliefs, and language that develop over time. In ethnography, the researcher provides a detailed picture of the culture-sharing group, drawing on various sources of information. The ethnographer also describes the group within its setting, explores themes or issues that develop over time as the group interacts, and details a portrait of the group.

Narrative Research Designs

You may not be interested in describing and interpreting group behavior or ideas or in developing an explanation grounded in the experiences of many individuals. Instead, you wish to tell the stories of one or two individuals. *Narrative research designs* are qualitative procedures in which researchers describe the lives of individuals, collect and tell stories about these individuals' lives, and write narratives about their experiences. In education, these stories often relate to school classroom experiences or activities in schools.

Mixed Methods Designs

You decide to collect both quantitative data (i.e., quantifiable data) and qualitative data (i.e., text or images). The core argument for a mixed methods design is that the combination

of both forms of data provides a better understanding of a research problem than either quantitative or qualitative data alone. *Mixed methods designs* are procedures for collecting, analyzing, and mixing both quantitative and qualitative data in a single study or in a multiphase series of studies. In this process, you need to decide on the intent of your study (why "mixing" is important), the emphasis you will give to each form of data (priority), which form of data you will collect first (concurrent or sequential), how you will "mix" the data (integrate, connect, or embed), and whether you will use theory to guide the study (e.g., advocacy or social science theory).

Action Research Designs

Like mixed methods research, action research designs often utilize both quantitative and qualitative data, but they focus more on procedures useful in addressing practical problems in schools and the classrooms. *Action research designs* are systematic procedures used by teachers (or other individuals in an educational setting) to gather quantitative and qualitative data to address improvements in their educational setting, their teaching, and the learning of their students. In some action research designs, you seek to address and solve local, practical problems, such as a classroom-discipline issue for a teacher. In other studies, your objective might be to empower, transform, and emancipate individuals in educational settings.

IMPORTANT ETHICAL ISSUES IN CONDUCTING RESEARCH

Respect for audiences and the use of nondiscriminatory language are **ethical issues** that Maria must observe. Like Maria, all educational researchers need to be aware of and anticipate ethical issues in their research. Such a need stems from the research horrors of treatment of individuals in Nazi Germany and the inappropriate Tuskegee syphilis studies (Mark & Gamble, 2009). From these and other violations of treatment of participants developed federal guidelines for conducting research as announced in the 1978 National Commission for the Protection of Human Subjects on Biomedical and Behavioral Research and its *Belmont Report* (Department of Health, Education, and Welfare, 1978). The three basic principles of this *Report* involve the beneficence of treatment of participants (maximizing good outcomes and minimizing risk), respect for participants (protecting autonomy and ensuring well-informed, voluntary participation), and justice (a fair distribution of risk and benefits).

Institutional Review Boards

Campus offices developed to monitor adherence to these three principles, and offices of institutional review boards emerged. Federal funds could be withheld from campuses if research conducted on those campuses did not protect the treatment of participants. Accordingly, on campuses that receive federal funds, educational researchers need to learn about the procedures involved in applying for approval from their institutional review board offices and follow guidelines in developing applications for approval and in designing consent forms for participants to complete that guarantee their protection.

Professional Associations

Ethical standards are also available from professional associations. Examples of professional associations that offer helpful guidelines include the American Educational Research

Association (2011), the American Psychological Association (2010a), the American Anthropological Association (2012), and the Joint Committee on Standards for Educational Evaluation (Yarbrough, Shulha, Hopson, & Caruthers, 2011).

According to these guidelines, individuals who participate in a study have certain rights. Before participating in research, individuals need to know the purpose and aims of the study, how the results will be used, and the likely social consequences the study will have on their lives. They also have the right to refuse to participate in a study and to withdraw at any time. When they participate and provide information, their anonymity is protected and guaranteed by the researcher. Individuals are not to be offered excessive financial inducements to participate in a project. Participants also have the right to gain something from a study. Researchers need to actively look for ways to "give back" (or reciprocate) to participants in a study because the participants have freely provided their time. For example, in one study involving individuals with HIV, the author shared book royalties with the participants in the study. In another study, a researcher volunteered to help supervise lunchroom activities in exchange for information from students in the school.

Ethical Practices throughout the Research Process

In all steps of the research process, you need to engage in ethical practices. Practicing ethics is a complex matter that involves much more than merely following a set of static guidelines such as those from professional associations or conforming to guidelines from campus institutional review boards. Ethics has become a more pervasive idea stretching from the origins of a research study to its final completion and distribution. Ethics should be a primary consideration rather than an afterthought and should be at the forefront of the researcher's agenda (Hesse-Bieber & Leavy, 2006). Of all the steps in the research process, it does tend to relate more closely to the data collection and reporting and distribution of reports than to any of the other phases of research. Some of these issues are mentioned here.

Some Ethical Issues in Data Collection

It is important to respect the site in which the research takes place. This respect should be shown by gaining permission before entering a site, by disturbing the site as little as possible during a study, and by viewing oneself as a "guest" at the place of study. Lincoln Public Schools (n.d.) in Lincoln, Nebraska, provides illustrative guidelines to follow for conducting research with minimal disruption to a school district. Their guidelines list several reasons why a project may not be approved. Disapproved projects are those that take away considerable amounts of instructional time; require large amounts of teacher, administrator, or office time (the district may ask to be reimbursed for the costs of compiling information, staff time, or materials); interfere with district data collection or the work of current research projects; are planned for the first or last month of the school year; or are received too late in the year to be adequately reviewed.

Another strategy for respecting the research site with minimal disruption is to gain access through gatekeepers (or officials). Researchers may need to consult with different gatekeepers at multiple levels in an organization. For example, in a study in one high school classroom, the researcher sought permission from several individuals, including the school board responsible for ensuring that the rights of human participants were protected, the research official in the school district, the principal of the school, the teacher in a government class, and the actual students who participated in the study and their parents.

Other ethical issues arise in data collection and are associated with specific types of research designs. You need to not purposefully deprive some participants of helpful

treatments, only publish positive results, or fail to disclose the purpose of the study to participants. It is helpful to involve stakeholders in assessing risk to participants and to not pressure participants into signing consent forms (S. Levy, personal communication, May 3, 2010), to not engage in practices that create power imbalances, and to respect norms of indigenous cultures (Lincoln, 2009).

Some Ethical Issues in Data Reporting

You need to show respect to audiences who read and use information from studies. Data should be reported honestly, without changing or altering the findings to satisfy certain predictions or interest groups. It may, however, be appropriate for the primary investigator to provide those at the research site with a preliminary copy of any publications. In addition, studies completed by others should not be plagiarized, and credit should be given for material quoted from other studies. This credit involves citing the authors and the date of the publication and listing the publication in the reference section of the study. In addition, research should be free of jargon and be understandable to those being studied. As ethical educators, we need to make every effort to communicate the practical significance of our research to the community of researchers and practitioners so that inquiry will be encouraged and used. Educational researchers have an ethical mandate to produce research that is of high quality and to report their results that convey the basic assumptions they are making. This also means that research should not sit unpublished and that researchers should openly share their findings (Brown & Hedges, 2009). Results should be published and disseminated even though they may present findings contrary to accepted standards (S. Levy, personal communication, May 3, 2010).

SKILLS NEEDED TO DESIGN AND CONDUCT RESEARCH

As a new researcher, you may wonder whether you have the ability to read, evaluate, and actually conduct research. Knowing the process of research, you may say, does not guarantee an adequate research study. Certainly, Maria, who is new to research, has these concerns.

Let me set your mind at ease. You have already learned valuable research skills through your life experiences. These skills include solving puzzles, employing a long attention span, using a library, and, of course, writing out your thoughts.

Solving Puzzles

Researchers look at problems as puzzles to solve. The steps in the research process are viewed as a series of puzzle pieces that the inquirer assembles. You already have skills in solving puzzles. You fit together the debits and credits to balance your checkbook. As a parent (or prospective parent), you engage in multiple roles during the day that require juggling of different tasks. These are puzzles that we work out by breaking them down into manageable parts (“What will be the demands on my time today?”), setting obtainable objectives (“I will have a busy day at work, so I will focus on my job today”), and possibly writing them down (“I need to make a list of what I must accomplish today”). As you examine research studies or engage in the process of inquiry, assembling these parts of the puzzle—such as first working on a research problem and then specifying a purpose for a study—will require that all of the pieces fit together, as with the many puzzles that we solve in daily living.

Lengthening Your Attention Span

Although we generally make time to complete the tasks we love, our attention span certainly varies from task to task. The process of research involves six steps that may span a period of 6 months or more. For example, reading through a journal article and identifying each of these steps requires patience as well as knowledge about what to look for. All of us bring attention spans of varying lengths to the process of research, but if we consider the tasks we love and the amount of time we devote to them, we can see that we have already developed an attention span long enough to spend considerable time at research.

Learning to Use Library Resources

The step in the research process that requires you to review the literature means spending time in an academic library. For most of us, going to the library probably began in grade school with trips to the school library. Engaging in research requires spending time with library resources, a process that is facilitated by home computers and Internet connections to library catalogs. However, the process of research requires that you use skills in locating studies, summarizing them, and writing a review of the literature. These skills are developed during research, if you do not already have them. They develop from our comfort level with a library and with experiences that began early in our schooling and continue today.

Writing, Editing, and More Writing

Researchers cannot escape the ever-present aspect of writing as a key facet of research. As writers, we work through numerous drafts, receive reactions from others, and develop new drafts. Research involves writing the study for an audience. Do you enjoy writing and communicating your thoughts? Do you like to write in a journal or a diary? Do you get satisfaction from completing projects? You have probably written several essays in college already or worked on a research report with other students or a faculty member. In short, you have experience in writing. As you know, writing is more than recording ideas on paper or in a computer file. It is also organizing ideas, preparing interview questions, jotting down notes during an observation, and writing for permission to use someone else's questions or articles. Writing exists in all phases of the creative process of planning and in conducting research.

✓ Check your understanding in the Pearson etext.

KEY IDEAS IN THE CHAPTER

The Definition and Importance of Educational Research

Research involves asking a question, collecting data, and analyzing data to determine the answer to the question. It helps educators understand problems or issues through the accumulation of knowledge. It can assist educators in improving practice, and it focuses attention on important policy issues being discussed and debated by decision makers. In addition, engaging in research provides valuable conceptual writing and presenting skills for students.

The Six Steps in the Process of Research

Six steps are followed when conducting a research study. The study begins with identifying a research problem or issue of study. It then consists of reviewing the literature, advancing direction through research questions and statements, and collecting, analyzing, and interpreting the data. This process culminates in a research report presented, evaluated, and potentially used by the educational community.

The Characteristics of Quantitative and Qualitative Research

In quantitative research, the major characteristics are describing a research problem through a description of trends or a need for an explanation of the relationship among variables; providing a major role for the literature through suggesting the research questions to be asked and justifying the research problem and creating a need for the direction (purpose statement and research questions or hypotheses) of the study; creating purpose statements, research questions, and hypotheses that are specific, narrow, measurable, and observable; collecting numeric data from a large number of people using instruments with preset questions and responses; analyzing trends, comparing groups, or relating variables using statistical analysis and interpreting results by comparing them with prior predictions and past research; and writing the research report using standard, fixed structures and evaluation criteria and taking an objective, unbiased approach.

In qualitative research, we see different major characteristics at each stage of the research process: exploring a problem and developing a detailed understanding of a central phenomenon; having the literature review play a minor role but justify the problem; stating the purpose and research questions in a general and broad way so as to include the participants' experiences; collecting data based on words or images from a small number of individuals so that the participants' views are obtained; analyzing the data for description and themes using text analysis and interpreting the larger meaning of the findings; writing the report using flexible, emerging structures and evaluative criteria; and including the researchers' subjective reflexivity and bias.

Although quantitative and qualitative characteristics need to be seen as points on a continuum rather than opposites, the choice of research between the two is based on matching the approach to a research problem, fitting the approach to your audience, and relating the approach to your experiences.

The Types of Research Designs Associated with Quantitative and Qualitative Research

Researchers tend to employ specific procedures for data collection, analysis, and report writing in the quantitative and qualitative approaches. This text emphasizes eight research designs: experimental, correlational, survey, grounded theory, ethnographic, narrative, mixed methods, and action research designs.

The Important Ethical Issues

A need for attention to ethical issues arose out of the inhumane treatment of participants in past years. As a result, the federal government issued legislation and reports governing good ethical practices. These guidelines have been supplemented by professional organizational reports. As a result, educational researchers need to anticipate ethical issues throughout the research process, but they are especially important during data collection and in writing and disseminating reports.

The Skills Needed to Design and Conduct Research

Research often mirrors the practices found in everyday life, such as solving puzzles, focusing attention on topics, and practicing good writing and editing. It also involves learning how to use the academic library and to locate useful literature for a study.

Useful Information for Producers of Research

- As you plan and conduct a study, keep in mind that research needs to be valuable to educators. Include comments in your study that convey the value to specific educational audiences.
- Use the general framework of the six steps for thinking about your plans and the conduct of research. These six steps make research manageable, help ensure that you conduct thorough inquiries, and provide a useful strategy for the design and writing of the research.
- As you plan and conduct a study, discuss specifically the characteristics of the quantitative and qualitative approach you are using.
- Recognize that research is neither all quantitative nor all qualitative but tends toward one or the other (on a continuum).
- Be ethical in conducting research. Respect the rights of participants, research sites, and individuals who will be readers of your study.
- Consider the skills that you need to develop to be a researcher. You may already have developed the skills of reading and writing, using library resources, solving puzzles, and focusing in on a topic of interest.

Useful Information for Consumers of Research

- As you examine a study, recognize that authors emphasize different reasons for undertaking their study. Look for suggestions by the author for practical applications of a study.
- Recognize that researchers proceed through a process of research and then construct sections of a study that reflect different steps in this process. For the research problem, examine the "introduction" to a study; for the literature review, explore the "literature review" section. For the data collection discussion, visit the "method" or "procedure" section, and for the data analysis and interpretation, see the "results" or "findings" as well as the "discussion" sections.
- Expect that a quantitative study and a qualitative study will not look the same because they differ in many of the steps of the research process. At the same time, they adhere to the same general steps of the overall research process.
- Look for statements in the study where the researcher discusses ethical issues that arose in the study and how they were addressed.

Understanding Concepts and Evaluating Research Studies

You can test your knowledge of the content of this chapter by answering the following questions that relate to the parent involvement study and the mothers' trust in school principals study. **In the Pearson etext, click here to answer the questions and receive instant feedback.**

1. What preconceptions do you bring to the study of research? List three advantages and three disadvantages of conducting research.
2. Assume that you are Maria in the introductory scenario in this chapter. List three steps that you might take to begin your research study.
3. How would the parent involvement study (Deslandes & Bertrand, 2005) be different if you presented it as a *qualitative* study? How would the mothers' trust in school principals study (Shelden et al., 2010) be different if you presented it as a *quantitative* study?

Reading Research: A Quantitative Study

In the Pearson etext, click here to answer questions about the study. When you submit your answers, you'll receive expert feedback.

Quantitative Characteristics in Marginal Annotations

Motivation of Parent Involvement in Secondary-Level Schooling

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Abstract

Inspired by K. V. Hoover-Dempsey and H. M. Sandler's (1995, 1997) model of the parent involvement process, the authors examined 4 psychological constructs of parent involvement: (a) relative strength of parents' role construction, (b) parents' self-efficacy for helping adolescents succeed in school, (c) parents' perceptions of teacher invitations to become involved, and (d) parents' perceptions of students' invitations to become involved. The authors obtained survey responses from 770 parents of adolescents in 5 Quebec secondary schools—354 parents of 7th graders, 231 parents of 8th graders, and 185 parents of 9th graders. Results emphasize that it is important that researchers distinguish parent involvement at home and at school when examining the predictive power of the 4 psychological constructs. Findings also provide evidence of grade-level differences in the predictive models of parent involvement at home and at school. Parents' perceptions of students' invitations was the most powerful predictor of parent involvement at home models across the 3 grade levels. Parents' role construction made important contributions to the prediction of their involvement at Grades 7 and 9; parents' perceptions of teacher invitations were associated with parent involvement at school across the 3 grade levels. Whether at home or at school, parents became involved if they perceived that teachers and students expected or desired their involvement.

Key words: parent involvement, parent motivation, secondary schools

(01) In past decades, a wealth of studies showed that parent involvement is essential in children's educational process and outcomes (Henderson & Mapp, 2002). Parent involvement refers to parents' roles in educating their children at home and in school (Christenson & Sheridan, 2001). Involvement can take different forms, including discussions about school, help with homework, or volunteering at school. Parent involvement appears to have lasting benefits even through high school. When parents are involved, secondary students tend to earn higher grades (Deslandes, Royer, Turcotte, & Bertrand, 1997; Dornbusch & Ritter, 1988; Lee, 1994; Steinberg, Lamborn, Dornbusch, & Darling, 1992), show higher aspirations (Trusty, 1996), and have fewer disciplinary problems (Deslandes & Royer, 1997; Eccles, Early, Frasier, Belansky, & McCarthy, 1997).

(02) Even though the benefits associated with parent involvement at the secondary level seem to be well understood, educators still know little about what factors lead parents to decide to become involved in their adolescents' schooling. In the present study, we explored how the psychological constructs, as defined in Hoover-Dempsey and Sandler's model (1995, 1997), influence the parent involvement process at the secondary level, and more precisely, at the first three grade levels in Quebec secondary schools. We addressed the following research question: What are the relative contributions of parents' (a) role construction, (b) self-efficacy, (c) perception of teacher invitations, and (d) perception of adolescent invitations to predict parent involvement at home and at school in

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Grades 7, 8, and 9? (Because the invitation for parents to become involved is presented by teachers and students, we considered, as did Walker, Hoover-Dempsey, Reed, and Jones [2000], teacher invitations and student invitations as two different constructs, thus leading to four psychological constructs related to parent involvement.) Previous research on the evolution of adolescents' autonomy and parent involvement in secondary schools led us to expect some differences across grade levels in the predictive models of parent involvement at home and at school (Deslandes, 2003).

Influences on Parent Involvement

Jordan, Orozco, and Averett (2001) identified factors that influence levels and aspects of parent involvement. Family (e.g., education level, family structure, family size, parent gender, work outside the home) and child characteristics (e.g., age, gender, grade level, academic performance) are of particular relevance in this study. Research has shown that undereducated parents and single parents are less involved in certain types of involvement activities. For instance, Deslandes, Potvin, and Leclerc (1999) found that adolescents from traditional families and well-educated parents report more affective support (parent encouragement and praise, help with homework, frequent discussions about school, and attendance at school performances or sports events) than do adolescents from nontraditional families and less educated parents. Astone and McLanahan (1991) also indicated that adolescents who live with single parents or stepparents report that their homework is monitored less than the homework of adolescents from traditional families. Deslandes and Cloutier (2000) reported that mothers are more involved with homework than are fathers. Dauber and Epstein (1989) argued that well-educated parents and those who do not work outside the home (Eccles & Harold, 1996) are more likely to be involved at school. Eccles and Harold concluded that parents with fewer children provide more help with homework than do parents with more children. (03)

The literature plays a major role

Child characteristics also may influence parent involvement. For example, Deslandes and Potvin (1999) observed that mothers of adolescent boys communicated with teachers more often than did mothers of adolescent girls. Parents tend to become more involved when their children experience their first learning or behavior difficulties. According to Eccles and Harold (1996), parents of high-achieving children tend to participate more in school activities than do parents of low-achieving children. Epstein (2001) showed that parent involvement decreases dramatically as children move into secondary school. When Deslandes (2003) compared parent involvement in Grades 8, 9, and 10, he found a steady decline in parent involvement, but a steady increase in adolescent autonomy. (04)

Parents' Role Construction

Parents need to understand their roles because that understanding identifies the activities that they believe are necessary and part of their responsibilities as parents. In other words, parents are more likely to become involved if they view their participation as a requirement of parenting. Hoover-Dempsey, Jones, and Reed (1999) hypothesized three components of role construction, depending on whether parents focused responsibility for children's education on themselves as parents, on the school, or on parent–school partnerships. (05)

Parents' Self-Efficacy for Helping Children Succeed in School

Parent self-efficacy is rooted in Bandura's (1997) self-efficacy theory and suggests that parents are more likely to be involved if they believe that they have the skills and knowledge to help their children. In other words, parents become involved if they believe that their actions will improve learning and academic performance (Hoover-Dempsey, Bassler, & Brissie, 1992; Stevenson, Chen, & Uttal, 1990). Prior research has indicated that parents believe that they will have more influence over their children's schooling when their children are in the elementary grades than they will when their children are in the upper grades (Freedman-Doan, Arbreton, Harold, & Eccles, 1993). In general, the stronger their self-efficacy, the more persistence parents exhibit in their involvement (Hoover-Dempsey et al., 2001). (06)

Parents' Perceptions of Teacher Invitations

Research also has shown that teachers' demands and opportunities for involvement, coupled with an inviting school climate, are related significantly to level of parent involvement (Comer & Haynes, 1991; Dauber & Epstein, 1993; Eccles & Harrold, 1996; Epstein, 1986). Parents tend to be more involved if they perceive that teachers and students both want and expect their involvement (Hoover-Dempsey et al., 2001). (07)

Parents' Perceptions of Student Invitations

(08) Parents will become involved if they perceive that their young children or adolescents want them to do so. Students' invitations are either implicit or explicit and emerge as a function of their age, their press for independence, and their performance level (Hoover-Dempsey et al., 2001; Walker et al., 2000). For instance, when young children or adolescents ask for help with homework, they are expressing explicit invitations. On the other hand, if they express the desire to work alone, parents might respond by reducing their involvement. If children bring a poor report card home, they might be conveying implicit invitations. Seeking parental help does not necessarily mean that young children or adolescents are having academic difficulties. For example, Zimmerman and Martinez-Pons (1986) found that high-achieving students wanted more parental assistance than did low-achieving students.

(09) Reflecting on three of the four psychological constructs to involvement cited in the preceding paragraphs (i.e., parents' role construction, self-efficacy, and perceptions of teacher invitations), Reed, Jones, Walker, and Hoover-Dempsey (2000) found that parents' role construction, self-efficacy for helping the child succeed in school, and perceptions of teacher invitations represent motivators of parents' involvement in their children's education at the elementary level. Role construction was the first predictor of parent involvement; perception of teachers' invitations was the second predictor. Parent self-efficacy seemed less influential. The authors suggested that role construction may be a mediator of efficacy's influence on involvement (Reed et al.).

The literature justifies the research problem and provides direction for the study

(10) In a study that compared 5th, 8th, and 11th graders' self-reported invitations to parent involvement in homework, Walker and Hoover-Dempsey (2001) revealed decreased levels of parent homework involvement across adolescence. Across the three age groups, students' invitations for parents' homework involvement was steady, but the authors found that parents of younger students tend to help without being asked.

(11) Investigations are needed to better understand what motivates parents to become involved in their young children's education and, more particularly, in their adolescents' educational process. Researchers need to examine differences in parents' motivation to become involved across secondary-grade levels. To our knowledge, no study has yet examined the individual and combined contributions of Hoover-Dempsey and Sandler's (1995, 1997) four psychological constructs to predict parent involvement decisions across secondary-grade levels.

(12) We targeted adolescents in the first 3 years of secondary school in Quebec (equivalent to Grades 7, 8, and 9 in the American school system). Prior work (Deslandes, 2003) showed that parent involvement is significantly lower, and adolescent autonomy level is significantly higher, in the fourth year of secondary school in Quebec (Grade 10 in the American school system) than in the second and third years of secondary school.

(13) To examine how the four psychological constructs influence parent-involvement decisions across the three secondary grade levels, we posed the following research question: What are the relative contributions of parents' role construction, self-efficacy, perceptions of teacher invitations, and perceptions of adolescent invitations to predict parent involvement at home and at school in Grades 7, 8, and 9?

Purpose statements, research questions, and hypotheses are specific and narrow

Method

Participants

(14) Participants were 770 parents of secondary-level students attending five public schools located in urban and rural areas in the Mauricie and Centre du Quebec and Monteregie regions. The regions are representative of the general Quebec population. Forty-six percent (354) of the participants were parents of Secondary I students (equivalent to Grade 7 students in the American school system), 30% (231) were parents of Secondary II students (equivalent to Grade 8 students in the American system), and 24% (185) were parents of Secondary III students (equivalent to Grade 9 students in the American system). Nearly 51% of the students were girls and 49% were boys. Forty-seven percent of the students were first born in their family, 37% second born, 13% third born, and 3% fourth and fifth born, respectively.

(15) The demographics of the sample were as follows: Approximately 84% of the respondents were mothers, and 13% were fathers. The other respondents were either stepmothers or stepfathers, or others. Seventy percent of the participants were employed outside of the home. Seventy percent

lived in a traditional family, and 30% lived in a nontraditional one, which corresponds exactly to what is being reported in the Quebec population in general (Quebec Statistics Institute, 2001). The majority of the families (37%) had two children, 25% had one child, 21% had three children, and the remainder of the sample (17%) had four or more children. About 3% of the respondents had less than a high school education, 65% had a high school diploma or a secondary-level trade formation, and 32% had a college or university education. Seventy-two percent of the participants had a job outside the home environment. Table 1 presents the characteristics of the whole sample and of the three subsamples.

Measures

Among the eight constructs that we used, parents' role construction, self-efficacy, perception of teacher invitations, and reports of parent practices of involvement were adapted from the Sharing the Dream! Parent Questionnaire (Jones, Gould, Brown, Young, & The Peabody Family School Partnership Lab of Vanderbilt University, 2000). They are grounded in Hoover-Dempsey and -Sandler's (1995, 1997) model of the parent-involvement process. The parents' perceptions of student invitations and their reports of involvement activities include items from questionnaires designed by Epstein and her colleagues (Epstein, Connors, & Salinas, 1993; Epstein, Connors-Tadros, Horsey, & Simon, 1996). The items have been translated in French, adapted in the Quebec context, and used in previous studies on the basis of adolescents' perceptions (Deslandes, 2000; Deslandes & Cloutier, 2002; Deslandes et al., 1997; Deslandes & Potvin, 1999). (16)

Purpose statements, research questions, or hypotheses seek measurable, observable data on variables

We used classical item analysis and factor analysis to evaluate the psychometric properties of the eight constructs (see the list of constructs presented as the predictors and the outcomes with the control variables in Table 2). The final decision of keeping or rejecting some of the items was based mostly on the eigenvalues greater than 1 criterion and on the screen test. For all the analyses, we used only those items loaded at least .30 on the factor to interpret the factors. We computed Cronbach's alpha reliability coefficient for each scale. We obtained all scores by calculating the mean score of the items of the same constructs, which are described in the following paragraphs. (17)

Parents' role construction. This construct measured the extent to which parents believed that it is their responsibility to help the school educate their adolescent (Hoover-Dempsey & Sandler, 1995, 1997). We based the construct on Hoover-Dempsey's work that suggests three types of parent role (18)

TABLE 1
Demographic Characteristics of the Sample and Subsamples (in Percentages)

Characteristic	*N*	Grade 7	Grade 8	Grade 9
Adolescent gender	Female (51) Male (49)	Female (44) Male (56)	Female (52) Male (48)	Female (60) Male (40)
Rank in family	1 (47) 2 (37) 3 (13) Others (3)	1 (46) 2 (36) 3 (13) Others (5)	1 (46) 2 (39) 3 (13) Others (2)	1 (49) 2 (36) 3 (12) Others (3)
Participant gender	Mothers (84) Fathers (13) Others (3)	Mothers (84) Fathers (12) Others (4)	Mothers (83) Fathers (15) Others (2)	Mothers (87) Fathers (13) Others (0)
Participant education level				
Primary level	3	2	2	3
High school or equivalent	65	63	68	65
College or university	32	35	30	32
Participant outside work	Yes (73) No (27)	Yes (76) No (24)	Yes (69) No (31)	Yes (69) No (31)
Family structure				
Traditional	70	68	71	74
Nontraditional	30	32	29	26
Family size				
One child	25	31	26	27
Two children	37	33	37	43
Three children	21	23	23	17
Four or more children	17	13	15	13

TABLE 2
Control Variables, Predictors, and Outcome Measures

Control Variable	Predictor	Outcome
Participant gender	Parents' role constructions	Parent involvement at home
Participant outside work	Parents' self-efficacy for helping adolescents succeed in school	Parent involvement at school
Participant education level	Relative parent influence	
Family size	Impact of parent efforts	
Family structure	Parents' perceptions of teacher Invitations	
Adolescent gender	Parents' perceptions of adolescent Invitations	
Rank in family	Invitations in academic domain	
Results in French	Invitations in social domain	

Data collection involves studying a large number of individuals, gathering numeric data, and using instruments identified prior to the study

construction: parent focused (six items), school focused (five items), and partnership focused (six items; Hoover-Dempsey et al., 1999; Reed et al., 2000). Principal axis factor analysis revealed a single-factor solution that corresponded to a combination of the three types of role construction with a predominance of items related to the partnership-focused role construction. We used a construct that comprised 10 items (α = .72) that measure behaviors that are parent focused, school focused, and mainly partnership focused in accordance with the adolescents' education. The parents had to respond to items, for example, "It's important that I let someone at school know about things that concern my teenager," and "I make it my business to stay on top of things at school") by using a 6-point, Likert-type scale that ranged from (1) *disagree very strongly* to (6) *agree very strongly*. One possible explanation for obtaining only one scale instead of three could be a cultural one. Another explanation could be associated with the fact that Hoover-Dempsey and her colleagues developed the constructs on the basis of pilot work with a small sample of 50 parents of elementary school children, reported in Reed et al. (2000).

(19) *Parents' self-efficacy for helping adolescents succeed in school.* We assessed this construct with Hoover-Dempsey and colleagues' scale after adaptations for parents of high school students (Jones et al., 2000). Factor analysis revealed a two-factor solution that accounted for 49% of the total variance in parents' self-efficacy for helping adolescents succeed in school. The first factor, relative parent influence, contained four items (α = .68) and measured the extent to which parents believed that they could help their adolescent succeed in school compared with other sources of influence (e.g., "Other adolescents have more influence on my adolescent's motivation to do well in school than I do"). The second factor, impact of parent efforts, estimated the level of influence that parents' perceptions had on their adolescents' education. We assessed perceptions with five items (α = .63; e.g., "I feel successful about my efforts to help my adolescent learn"). Participants used a 6-point, Likert-type scale that ranged from 1 (*disagree very strongly*) to 6 (*agree very strongly*).

(20) *Parents' perceptions of teacher invitations.* This construct provided an assessment of parents' perceptions of teacher invitations to become involved in their adolescents' schooling at home. We based the measure on an eight-item scale created by Hoover-Dempsey and her colleagues (Jones et al., 2000; Reed et al., 2000). In the present study, principal axis factoring analysis yielded a one-factor solution that was composed of four items (α = .70; e.g., "One or more of my teenager's teachers has spoken with me about homework"). We asked parents to rate the frequency of teachers' invitations on a 6-point, Likert-type scale that ranged from 1 (*never*) to 6 (*once or more per week*).

(21) *Parents' perceptions of student invitations.* This construct is a modification of a similar construct for adolescents (Deslandes & Cloutier, 2002) that we derived from Epstein et al., (1993) and Epstein et al. (1996). Principal axis factor analysis revealed the presence of two factors that explained 50% of the total variance in parents' perceptions of student invitations. The first factor, invitations in the academic domain, included five items (α = .79; e.g., "My adolescent has asked me to . . . listen to him/her read something he/she wrote"). The second factor, invitations in the social domain, consisted of four items (α = .71; e.g., "My adolescent has asked me to . . . talk with me about current events"). All items were answered on a 6-point, Likert-type scale that ranged from 1 (*disagree very strongly*) to 6 (*agree very strongly*).

Parent reports of involvement activities. This measure was a modified version of the questionnaires elaborated by Epstein and colleagues (1993; 1996) and used in prior studies on the basis of adolescents' perceptions (e.g., Deslandes, 2000; Deslandes & Cloutier, 2002; Deslandes et al., 1997) and those designed by Hoover-Dempsey and her colleagues (e.g., Jones et al., 2000). Principal axis factoring analysis followed by varimax rotation revealed a two-factor solution that accounted for 35% of the total variance. The first factor, parent involvement at home, was composed of 16 items and assessed how often parents get involved in educational activities at home with their adolescents (α = .87; sample items: ". . . encourage my adolescent about school," ". . . help my adolescent study before a test"). The second factor, parent involvement in school, included eight items and measured how often parents were at school and how often they interacted with their adolescents at school and with the teachers (α = .67; sample items: ". . . go to school to attend an extracurricular event," ". . . have a conference with one or more of my adolescent's teachers"). Parents were asked to answer on a 6-point, Likert-type scale that ranged from 1 (*never*) to 6 (*once or more per week*). (22)

Demographics. We collected information on family and student individual characteristics from the parents. Participants reported on their gender (mother, father, or other), education level (primary, secondary, college or university levels), family structure (traditional, nontraditional), family size (number of children living at home), and outside work (yes/no). They also provided information on their adolescents' gender (female, male), rank in the family, grade level (7, 8, or 9), and grades in French, their mother tongue, as reported in the last report card (see Table 2). (23)

Procedures

We collected all the data from survey respondents by means of questionnaires in late spring 2001. Following the school principals' acceptance to participate in the study, we mailed nearly 2,560 parent questionnaires to the schools. Forty-five classroom teachers from five schools volunteered to send the questionnaires to 1,500 parents via the students. The package included a letter that explained the purpose of the study and requested voluntary participation. The participation rate was approximately 51% (770 parents accepted from the 1,500 questionnaires that were sent home). The classroom council received a token payment of thanks ($1) for each returned questionnaire, and the classroom teachers received a token payment of thanks ($10) for their collaboration and support. (The token payments were considered as costs associated with the collaboration and were paid through the research grant.) (24)

Results

Predicting Parent Involvement

The primary question in the study focused on the relative strength of parents' role construction, self-efficacy, and perceived teacher and student invitation measures for predicting parent involvement at home and at school. We performed separate stepwise regression analyses to examine the best predictive models at Grades 7, 8, and 9 in Quebec secondary schools. We computed Mallow's C(P) statistic[1] for each final model and grade level. Descriptive statistics of the measures are illustrated in Table 3. (25)

Parent Involvement at Home for Seventh-Grade Students

First, eight family and individual adolescent characteristics,[2] used as control variables, were introduced as a block and forced into the regression equation. Together, the control variables explained 4% of the variance in parent involvement at home. After the introduction of the control variables, the analyses yielded a final five-variable model that explained an additional 42% (total R^2 = 46%; total R^2 adj. = 42.5%) of the variance in parent involvement at home, F (13,232) = 15.47, $p < .001$ (see Table 4). The variable corresponding to parents' perception of student invitations in the academic domain was the best predictor of parent involvement in schooling at home, ΔR^2 = .28; β = .31, $p < .001$. The variable was followed by parents' role construction, ΔR^2 = .07; β = .18, $p < .001$, parents' perceptions of student invitations in the social domain, ΔR^2 = .04; β = .25, $p < .001$, and parents' self-efficacy, that is, perceived impact of efforts, ΔR^2 = .02; β = .15, $p < .01$, and perceived relative influence ΔR^2 = .01; β = .12, $p < .05$. (26)

Data analysis consists of describing trends, comparing groups, or relating variables and using statistical analysis.

TABLE 3
Means and Standard Deviations for all Predictors and Outcome Measures

Variable	Grade 7 (n = 246)		Grade 8 (n = 156)		Grade 9 (n = 112)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Parents' role constructions	4.52	.56	4.40	.59	4.30	.67
Parents' self-efficacy for helping adolescents succeed in school						
Relative parent influence	4.14	.87	4.13	.94	4.14	.90
Impact of parent efforts	4.41	.66	4.32	.71	4.19	.73
Parents' perceptions of teacher invitations	1.55	.61	1.40	.52	1.31	.48
Parents' perceptions of adolescent invitations						
Invitations in academic domain	3.96	1.06	3.82	1.04	3.39	1.04
Invitations in social domain	3.80	1.06	3.61	1.0	3.65	1.0
Parent involvement at home	4.67	.73	4.45	.83	4.13	.87
Parent involvement at school	2.28	.70	2.12	.71	2.00	.66

Parent Involvement at Home for Eighth-Grade Students

(27) We observed a somewhat different pattern of relations in analyses conducted at the eighth-grade level; control variables explained 10% of the variance. Regression analysis revealed a three-variable model that accounted for an additional 38% of the total variance (total R^2 = 48%; total R^2 adj. = 43%) in the level of parent involvement at home, $F(11,144) = 11.69$, $p < .001$. Parents' perceptions of students' invitations in the social domain was the most powerful predictor; it accounted for an additional 28% of the variance ($\beta = .35$, $p < .001$). Parents' perceptions of student invitation in the academic domain was the second strongest predictor, $\Delta R^2 = .07$; $\beta = .26$, $p < .01$, followed by parents' self-efficacy, that is, impact of efforts ($\Delta R^2 = .03$; $\beta = .19$, $p < .01$).

TABLE 4
Final Regression Models for Each Grade Level Predicting Parent Involvement at Home

Variable	ΔR^2	β
Grade 7		
Control variables	.04	
Parents' perceptions of adolescent invitations in the academic domain	.28	.31***
Parents' role constructions	.07	.18***
Parents' perceptions of adolescent invitations in the social domain	.04	.25***
Parents' self-efficacy		
Impact of parent efforts	.02	.15**
Impact of parent influence	.01	.12*
Grade 8		
Control variables	.10	
Parents' perceptions of adolescent invitations in social domain	.28	.35***
Parents' perceptions of adolescent invitations in academic domain	.07	.26**
Parents' self-efficacy		
Impact of parent efforts	.03	.19**
Grade 9		
Control variables	.11	
Parents' perceptions of student invitations in academic domain	.26	.44***
Parents' perceptions of student invitations in social domain	.03	.20*

Note. $\Delta R^2 = R^2$ change. Grade 7: Mallow's C(P) = 14.385; P = 14 (independent variables, including constant); Grade 8: Mallow's C(P) = 10.335; P = 12 (independent variables, including constant); Grade 9: Mallow's C(P) = 9.769; P = 11 (independent variables, including constant). $p < .05$. **$p < .01$. ***$p < .001$.

Parent Involvement at Home for Ninth-Grade Students

The control variables accounted for 11% of the variance in the first step. A two-variable model explained an additional 30% of the variance (total R^2 = 41%; total R^2 adj. = 34%) in the level of parent involvement at home, F (10,101) = 6.81, $p < .001$. Parents' perceptions of student invitations in the academic domain emerged as the first predictor in the final model, accounting for 26% of the variance ($\beta = .44$, $p < .001$); parents' perception of student invitation in the social domain was the second predictor, explaining 3% of the variance ($\beta = .20$, $p < .05$). (28)

Parent Involvement at School for Seventh-Grade Students

As shown in Table 5, control variables explained 9% of the variance in parent involvement at school. A three-variable model explained an additional 17% of the variance (total R^2 = 26%; total R^2 adj. = 23%) for level of parent involvement at school, F (11,234) = 7.51, $p < .001$. Parents' role construction explained the greatest part of the variance, $\Delta R^2 = .13$, $\beta = .31$, $p < .001$. Parents' perceptions of teacher invitations ($\beta = .14$, $p < .05$) and parents' perceptions of student invitations in the social domain explained an additional 2% of the variance ($\beta = .15$, $p < .01$). (29)

Parent Involvement at School for Eighth-Grade Students

For eighth-grade students, introducing the demographic variables resulted in a small contribution to the model ($\Delta R^2 = .05$). Parents' perceptions of teacher invitations ($\Delta R^2 = .12$; $\beta = .31$, $p < .001$), and parents' perceptions of student invitations in the social domain, $\Delta s R^2 = .08$; $\beta = .29$, $p < .001$, added significance to the final model (total R^2 = 25%; total R^2 adj. = 19%), F (10,145) = 4.61, $p < .001$. (30)

Parent Involvement at School for Ninth-Grade Students

For ninth-grade students, the control variables first introduced explained 9% of the variance in parent involvement at school. Subsequently, parents' role construction appeared as the stronger predictor of parent involvement at school ($\beta = .36$, $p < .001$), accounting for 22% of the variance. The second predictor was parents' perceptions of teacher invitations, explaining an additional 8% of the variance, which resulted in a final model (total R^2 = 39%; total R^2 adj. = 33%), F (10,101) = 6.48, $p < .001$. (31)

Discussion

We investigated the contribution of Hoover-Dempsey and Sandler's (1995, 1997) four psychological constructs—parents' role construction, self-efficacy, perceived student invitations, and perceived teacher invitations—to predict parent involvement at home and at school. We addressed whether predictive models might differ across the first three grade levels in Quebec secondary schools. The following paragraphs summarize the overall results. (32)

Of great importance were our findings that extended beyond family and adolescent characteristics—two different models that predicted secondary-level parent involvement at home and parent involvement at school. In similar research conducted with 1,227 parents of elementary students, Deslandes and Bertrand (2003) also reported two different parent involvement models—a home-based model and a school-based model. (33)

Parent Involvement at Home

With respect to seventh-grade students, after we controlled for family and individual characteristics, our findings showed that parents decided to become involved at home mostly because of their adolescents' specific academic invitations, such as asking (a) for ideas for a story or a project, (b) that a parent listen to the student read an original writing, (c) that a parent observe something learned or done well, or (d) for help to study or practice for a test. When personally invited by the adolescents, parents tended to perceive their involvement as expected and desired. Also predictive at a much lesser degree were parent beliefs that their responsibility was, for example, to closely watch their adolescents' progress and to keep abreast of activities at school (parents' role construction). (34)

TABLE 5
Final Regression Models for Each Grade Level Predicting Parent Involvement at School

Variable	ΔR^2	β
Grade 7		
Control variables	.09	
Parents' role constructions	.13	.31***
Parents' perceptions of teacher invitations	.02	.14*
Parents' perceptions of student invitations in the social domain	.02	.15**
Grade 8		
Control variables	.05	
Parents' perceptions of teacher invitations	.12	.31***
Parents' perceptions of student invitations in social domain	.08	.29***
Grade 9		
Control variables	.09	
Parents' role constructions	.22	.36***
Parents' perceptions of teacher invitations	.08	.31***

Note. $\Delta R^2 = R^2$ change. Grade 7: Mallow's C(P) = 12.199; P = 12 (independent variables, including constant); Grade 8: Mallow's C(P) = 12.845; P = 11 (independent variables, including constant); Grade 9: Mallow's C(P) = 8.138; P = 11 (independent variables, including constant). $p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Similarly, adolescents' personal invitations in the social domain, like talking with a parent about a TV show or current events or interviewing a parent for information or opinions, contributed to parent involvement at home. Contributing to a much lesser extent were significant parents' beliefs that their involvement could make a difference in their adolescents' school performance and that their help was better than any other sources of influence (parents' self-efficacy). Parents subsequently responded with high levels of involvement at home manifested by their help with homework when asked, discussions about school, future plans, course options, and so forth. Findings at the seventh-grade level supported a five-variable, predictive model of parent involvement at home that explained a significant portion of the variance (42.5%).

(35) Concerning eighth-grade students, the full model comprised three variables that included, as the major predictors, (a) parents' perceptions of student invitations in the social domain (i.e., ask for opinion or information, discuss current events, exchange information on trends during parents' youth), (b) parents' perception of student invitations in the academic domain, and (c) parents' self-efficacy. One especially striking result in our prediction of parent involvement at home was the importance of adolescents' personal invitations in the social domain, such as talking with a parent about a TV show or current event or interviewing a parent for information or opinions. Those findings suggest that positive parent–adolescent interactions might contribute to adolescents' personal invitations to parents to become involved, which is related to subsequent parent involvement at home.

(36) According to Belsky (1981) and Sameroff's (1975) transactional model, our results highlight the importance of reciprocal influences in the parent–adolescent relationship regarding schooling. Obviously, the quality of parent–adolescent relationships is key to a better understanding of parent involvement at home for secondary-level students. The quality of those relationships seems to be of paramount importance for eighth-grade students. The results are consistent with those of previous studies conducted in Quebec that provide evidence of the positive relation between authoritative parenting style characterized by high levels of warmth, supervision, and psychological autonomy (Steinberg, Elmen, & Mounts, 1989; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994), parent involvement in schooling (Epstein et al., 1993), perceived autonomy (Greenberger, Josselson, Knerr, & Knerr, 1975), and adolescent school grades (Deslandes et al., 1997; Deslandes, 2000; Deslandes & Potvin, 1999). Similarly, Deslandes and Cloutier (2002) found with a sample of 872 eighth-grade students in Quebec that specific invitations to involve parents requires that the adolescents are willing and open to work and exchange ideas with parents. The authors concluded that adolescents with a high level of autonomy, and more precisely, those who are highly work oriented and self-confident are more likely than adolescents without these traits to invite parent involvement.

Concerning ninth-grade students, analyses revealed a two-variable predictive model: (a) Parent perception of student invitations in the academic domain made the most significant contribution and (b) parent perception of student invitations in the social domain was a less powerful predictor. Whether parents believe that their involvement will have a positive impact on their adolescents' school performance is not significant at Grade 9. Rather, parents wait for their adolescents' invitations before they become involved at home. One possible explanation is that parents may consider that Grade 9 students have developed self-responsible behaviors toward school and schoolwork (see Xu & Corno, 2003). Consequently, parents rely on the adolescents to initiate the requests for parent involvement at home. That behavior somewhat reinforces the perspective that differences in adolescent autonomy modulate the degree of parent involvement at home (Deslandes, 2000). (37)

Parent Involvement at School

At the Grade 7 level, after the introduction of controlled variables, the addition of the four psychological constructs resulted in a three-variable model that predicted parent involvement at school. Across various family and individual characteristics, the more that parents of Grade 7 students believed their involvement was part of their parenting responsibilities (e.g., teacher conferences are helpful to parents; parents should call the school with concerns about their adolescents' progress), the more they perceived invitations from the teachers (e.g., one of the teachers spoke with them about homework; a school employee has asked the parents to have a conference about their adolescent), and the more they perceived invitations from their adolescents in the social domain (e.g., interview parents for information or opinions), the more they reported involvement at school (e.g., having a conference with one or more of their adolescents' teachers, attending an extracurricular event at school). Noteworthy is the more significant contribution of parents' role construction to the predictive model at the Grade 7 level. Parents reported that they would be more involved at school if they believed that it is their duty. (38)

Once we controlled for demographics, regression analyses yielded a two-variable predictive model at the Grade 8 level. Parents of Grade 8 students are involved at school if they perceive invitations from the teachers and from their adolescents in the social domain. The question of whether parents of Grade 8 students are involved at school seems to be primarily an issue of relations and parent–teacher and parent–adolescent relationships. We think of the development of trust in teachers (Adams & Christenson, 2000) and of positive parent–adolescent interactions as prerequisites to parents' decisions to become involved at school, and more important, at the Grade 8 level (see Christenson & Sheridan, 2001). (39)

For Grade 9, adding the four psychological constructs yielded a two-variable model that contributed significantly to the prediction of parent involvement at school. Parents' understanding that involvement at school is part of their responsibilities (parents' role construction) was by far the best predictor, followed by parents' perceptions of teacher invitations. (40)

To summarize, our findings clearly identify two categories of predictive models: (a) parent involvement at home and (b) parent involvement at school. Contrary to Hoover-Dempsey and Sandler's (1995) measures, parents' self-efficacy in its francophone version comprised two factors: (a) relative parent influence and (b) impact of parent efforts, whereas parents' role construction consisted of only one factor. Our findings confirmed the relevance of Hoover-Dempsey and Sandler's model mainly for the seventh graders' parent involvement at home model, in which perceived teacher invitations was the only missing construct (one of four). Parents' role construction contributed more significantly to seventh and ninth graders' parent involvement at school models. Parents' self-efficacy contributed significantly only in the seventh and eighth graders' parent involvement at home models, and its overall contribution was marginal. (41)

Of major interest in this study is the powerful contribution exerted by parents' perception of student invitations in the models of parent involvement at home at the three secondary-grade levels. As adolescents mature, parent involvement at home becomes more a question of parent–adolescent relationships, which is particularly important at the eighth-grade level. Parents of students in Grades 7, 8, and 9 appear to be involved more proactively (e.g., in response to invitations) than reactively (e.g., in reaction to prior school grades, adolescent gender). The links between perceived adolescents' invitations and parent involvement at home are robust across various individual and family characteristics. (42)

(43) Two notable patterns stand out in our results regarding parent involvement at school. The most outstanding pattern is the greater influence of parents' role construction. Parents must comprehend that parent involvement at school is part of their responsibilities before they decide to become involved. Also of interest in this study are the perceived invitations from the teachers to motivate parents to become involved at school.

Implications and Limitations

Researchers report in an objective and unbiased approach

(44) The main implication derived from this study relates to the two identified categories of parent involvement predictive models. First, if the objective of the school interventions is to enhance parent involvement at home, the findings suggest the need to work directly with adolescents. That effort could be undertaken by (a) sensitizing adolescents to the importance of their inviting parents to become involved at home and by (b) coaching them on how to involve a family member in homework, discussions, or other tasks (Balli, Demo, & Wedman, 1998). For example, adolescents could ask their families to offer feedback about the assignments. Evidently, if parent involvement at home is the objective of school interventions, the involvement should focus on increased adolescent acceptance of and openness to developmentally appropriate parent involvement in schooling activities. Our findings also suggest that parent education programs should enhance parents' skills and self-efficacy. Parents should be aware of the importance of sustained parent–adolescent communication about schooling, and career and work planning over time. Parents could regularly attend workshops or meetings (e.g., parenting classes) to increase their parenting skills and their knowledge of different types of parent involvement, including less intensive involvement.

(45) Second, if the objective is increased parent involvement at school, the implications are fairly straightforward: school interventions should first focus on individualized contacts that teachers initiate with parents. Our finding regarding perceived invitations involved specific requests from teachers, such as "One or more of my teenager's teachers has spoken with me about homework," ". . . has asked me to encourage my teenager to read," and so forth. Parents responded to teachers' specific invitations by attending an extracurricular event, by volunteering at school, and so forth. The findings call attention to the value of personal teacher–parent contacts for building trusting relationships that will be manifested subsequently by parent involvement activities at school and by other forms of parents' willingness to help. Those results suggest that preservice and inservice teachers could benefit from training programs that offer the opportunity to develop knowledge and skills needed to initiate first contacts with parents and foster parent involvement (Hiatt-Michael, 2001; Shartrand, Weiss, Kreider, & Lopez, 1997).

(46) There are limitations of this study that suggest directions for future investigations. First, the sample used in our investigation included only students in Grades 7, 8, and 9, and the subsamples were of various sizes. Future investigations need to expand across the secondary levels. We collected data only from parents of adolescents. Past research focused primarily on adolescents' perceptions; researchers should endeavor to use both adolescent and parent reports.

(47) Research findings indicate the need for further research on parent–adolescent and parent–teacher relationships to better understand parents' decision to become involved at home and at school. In addition, more research is needed on the relationship between parents' self-efficacy, role construction, and involvement. Some issues remain unclear. For instance, what is the explanation for the marginal contribution of parents' self-efficacy in the parent involvement at home model? As Hoover-Dempsey and colleagues (2000) suggested, is it possible that parents' self-efficacy is distal to parents' involvement decisions, whereas parents' role construction and perceived teacher and student invitations are more proximal? Researchers need to replicate this study in other settings by comparing different age categories to determine greater "generalizability" of the findings. Longitudinal research would help clarify the extent to which each of the studied psychological constructs changes over time and in different settings. To fully understand parents' motivation to become involved, educators need more qualitative studies that focus on the subject.

Conclusions

(48) The results of this study highlight the importance of researchers considering parent involvement at home and parent involvement at school separately as opposed to their examining

parent involvement in terms of global involvement. For example, parents' perception of student invitations in the academic domain made a significant contribution to the prediction of parent involvement at home but did not appear as a predictor of parent involvement at school. In addition, parents' perceived teacher invitations were associated with parent involvement at school, but not with parent involvement at home. Thus, the findings would have been missed had parent involvement been assessed in global terms. Obviously, the different models obtained in this study require more research that examines the influences on parent involvement at home and at school separately. In terms of practical implications, our research suggests that use of one of the psychological constructs should depend on whether parent involvement at home or parent involvement at school is the target. To enhance parent involvement at home, school administrators and teachers should work mainly with adolescents. To improve parent involvement at school, the results suggest the importance of sensitizing parents to their duties and responsibilities and of regarding the role of the school and the teachers when motivating parents to become involved.

The results of this study provide evidence of grade-level differences in the predictive models of parent involvement at home and at school. For instance, at Grade 7, the parent involvement at home predictive model included three constructs: (a) perceived student invitations, (b) parents' role construction, and (c) parents' self-efficacy. At Grade 9, only one construct made a significant contribution—perceived student invitations. Regarding parent involvement at school, the predictive power of parents' role construction at Grade 9 was nearly twice as important as that at Grade 7. Overall, the pattern of results differs to some extent by grade levels. Analogous to those results, one might focus on the specific influences of each grade level that seem to be used in parents' involvement decisions. Further longitudinal research is needed to test changes in the models across all secondary grade levels. (49)

Notes

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1 One can use Mallow's C(P) statistic to evaluate the amount of mean square error (bias and random error) in the model. We sought values of C(P) near or below p (number of independent variables in the model; Neter, Wasserman, & Kutner, 1990, p. 448). We obtained all statistics with SPSS 11.0 (e.g., the stepwise regression method and the SELECTION keyword [for the Mallow's statistic]).

2 Merging the 770 parents' file with the students' file totaled 514 cases.

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School Principals' Influence on Trust: Perspectives of Mothers of Children with Disabilities

Qualitative Characteristics in Marginal Annotations

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Abstract

The authors employed a qualitative research design to explore issues of trust in family–professional relationships. They specifically focused on the nature of trust between mothers of children with disabilities and school principals. Analysis of the mothers' responses to face-to-face interview questions yielded two primary categories related to their perspectives regarding principals: (a) personal and professional principal attributes and (b) principal actions within the education system, with students, and with students' families. Subcategories were developed that further delineated the relationships participants had with the principals of their children's educational programs. The authors address implications for school leadership and the establishment of trustworthy family–professional relationships, especially as they impact the lives of students and families in need of special education support.
Key words: parents of children with disabilities, school principals, trust

Parents are meant to be included as fundamental participants in educational organizations. Decades of research have supported the role of parent involvement in positive educational outcomes for students (Colarusso & O'Rourke, 2007; Freiberg, 2006). Recent legal mandates require school systems to engage parents in meaningful ways. The No Child Left Behind Act of 2001 (NCLB; 2002) calls for school systems to facilitate parent involvement (Keller, 2006) and the Individuals with Disabilities Education Improvement Act (IDEIA; 2004) mandates parental involvement in all aspects of assessment and service delivery for students who receive special education support (Fletcher, Coulter, Reschly, & Vaughn, 2004). In light of these legal mandates and underlying fundamental principles of family–school relationships, trust between parents and educational professionals has emerged as a critical factor (Bryk & Schneider, 2003; Dunst, Johanson, Rounds, Trivette, & Hamby, 1992). Trust may influence student achievement because of its role in establishing and maintaining collaborative relationships between home and school, and trust may shape parents' attitudes toward educational systems and influence their engagement in their children's educational programs (Dunst et al.; Tschannen-Moran, 2004). Bryk and Schneider found that was not only trust associated with greater gains in student achievement, but also with longer lasting gains in achievement. (01)

Consequently, not only is trust between parents and education professionals necessary for effective partnerships stipulated by legal mandates, but also, and more importantly, it appears to have a positive effect on student outcomes, and it is the students themselves who are the true beneficiaries of trusting relationships between parents and education professionals. However, if trust is valuable to parents, teachers, and students, it is incumbent on school principals to foster it, maintain it, and exemplify trusting relationships with all parents, including parents of children with disabilities. Indeed, trust is "increasingly recognized as a critical element of leadership" (Tschannen-Moran, 2003, p. 162) and the leadership of schools, the principals, must understand their vital role in establishing trust. (02)

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(03) Many definitions of trust exist in the literature. In their review of literature on trust, Hoy and Tschannen-Moran (1999) found 16 definitions of trust. They identified five facets of trust reflected in those definitions, including benevolence, reliability, competence, honesty, and openness. Based on those facets of trust, Hoy and Tschannen-Moran proposed that trust is "an individual's or group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable, competent, honest, and open" (p. 189). In this definition, they established vulnerability as a precursor to the need for trust. The need for trust rests on the recognition of the potential for betrayal or harm from another person. When that risk does not exist, we have no need to trust (Tschannen-Moran, 2004). The latter part of the definition identifies five facets, or dimensions, that influence the extent of trust. This definition served as a conceptual foundation for the present report of a study of the perspectives of mothers of children with disabilities on the role of school principals in facilitating or inhibiting the establishment and maintenance of trust between parents of children with disabilities and education professionals. Hoy and Tschannen-Moran's facets of trusts, particularly benevolence, openness, and competence, were reflected in the principal attributes and actions that emerged from the present study as facilitators of trust.

Trust and School Leaders

Literature justifies the problem

(04) On a systems level, trust is identified as a critical factor in school reform (Bryk & Schneider, 2003). School leaders can influence the nature of trust within educational systems (Kochanek, 2005; Tschannen-Moran, 2004). The significance of teachers' and parents' trust in school principals is strong and can influence trust among other constituents (Hoy & Tschannen-Moran, 1999). Among school leaders, principals in particular can influence the overall school climate and thereby influence trust (DiPaola & Walther-Thomas, 2003; Hoy, Smith, & Sweetland, 2002; Soodak & Erwin, 2000). Collegial leadership, or the openness of the leadership behavior of the principal, is a predictor of school climate, which in turn also influences overall trust (Hoy et al., 2002).

(05) As leaders who set the tone in schools, principals are responsible for building and maintaining trusting relationships (Whitener, Brodt, Korsgaard, & Werner, 1998). To demonstrate how principals might fulfill this responsibility, Tschannen-Moran (2004) offered a three-dimensional Trustworthy Leadership Matrix (p. 176). She emphasized the usefulness of considering not only five facets of trust (i.e., benevolence, honesty, openness, reliability, and competence) in relation to five constituencies of schools (i.e., administrators, teachers, students, parents, and the public), but also five functions of school leadership in understanding how school principals' behavior can significantly influence school climate and culture. These functions of leadership, as applied to trust, include (a) developing a vision of a trustworthy school, (b) serving as a role model for trustworthiness through language and action, (c) facilitating teacher competence through effective coaching, (d) improving school discipline among students and teachers through effective management, and (e) mediating conflict and repair in a constructive and honest manner. Administrator trustworthiness, then, is demonstrated by nurturing and balancing relationships among facets of trust, constituencies of schools, and the functions of leadership.

(06) Bryk and Schneider (2003) discussed the demonstration of respect as one critical facet of the trust definition for school principals. They claimed that respect is closely related to other facets of trust, particularly openness, benevolence, and reliability. Bryk and Schneider defined respect as part of the social discourse within school communities. When educators in a school system demonstrate respect in their social exchanges, they contribute to the development of trust. Principals serve as models of these social exchanges for other school personnel (Kochanek, 2005). Openness, as a part of the trust definition, refers to the perception of one party that another party is forthcoming with relevant information and one party's confidence that another party does not withhold relevant information (Butler & Cantrell, 1984; Mishra, 1996). This openness signals a kind of reciprocal trust (Tschannen-Moran & Hoy, 2000). Benevolence, as demonstrated by caring and support, also influences reciprocal trust (Tschannen-Moran & Hoy) and is valued by principals' constituents (Bryk & Schneider; Tschannen-Moran, 2004). Finally, reliability is demonstrated not only through predictability but also through commitment and dedication. These facets of trust are principal characteristics valued by parents. As Bryk and Schneider noted, "Almost every parent and teacher we spoke with at this school commented effusively about the principal's personal style, his openness to others, and his willingness to reach out to parents, teachers, and students" (p. 42).

Although the research cited above applies to all relationships of trust within a school, there is a growing body of research that has focused on these issues as related to parents of children with disabilities. Parents of children with disabilities may have increased interaction with educational administrators simply by the nature of special education delivery. Administrators and parents of children with disabilities are part of an Individualized Education Program (IEP) team. Parents and administrators are integral to team decisions and, through stipulations in the IDEIA, parents are to be considered equal and active team members. Beyond the legal requirements of parental involvement with children with disabilities, recent research has investigated parent perspectives regarding various aspects of interactions with education professionals (Angell, Bailey, & Stoner, 2008; Bailey, Parette, Stoner, Angell, & Carroll, 2006; Stoner & Angell, 2006; Stoner, Angell, House, & Bock, 2007; Stoner et al., 2005). This research has revealed that trust is a major factor in the complex relationship between parents of children with disabilities and education professionals (Lake & Billingsley, 2000; Stoner & Angell; Stoner et al., 2005). (07)

Parents of children with disabilities also have the right to implement due process proceedings if they disagree with the decisions of the IEP team (IDEIA, 2004). Due process safeguards "afford parents a basic right of protest when they disagree with the educational decisions and actions of the school district" (Fiedler, Simpson, & Clark, 2007, p. 207). These due process safeguards provide for increased opportunities between parents and educational administrators and hence provide additional opportunities for trust to be influenced. If due process is lengthy and involves hiring attorneys, it can be quite costly to the school district and parents. The IDEIA encourages but does not require mediation prior to the implementation of due process. Lake and Billingsley (2000) investigated perspectives of parents and education professionals involved in due process cases. Nearly 90% of their parent participants reported the initiation or escalation of conflict as a result of discrepant perceptions between parents and other team members' differing perceptions of children's needs. In their study, parents reported dissatisfaction with school teams who did not recognize children's individuality (i.e., did not recognize individual strengths and limitations separate from a disability label). In addition, parents felt as though schools operated from a deficit perspective, placing too much emphasis on what children cannot do as opposed to focusing on or recognizing the strengths of each child (Aigne, Colvin, & Baker, 1998; Lake & Billingsley). It should be noted that the discrepant perspectives between parents and education professionals developed over time as parents perceived negative interactions with school teams. (08)

In addition, when parents and educational teams operate from discrepant viewpoints with regard to assessment and service delivery, parents are more likely to distrust future exchanges when their expectations are not met (Stoner & Angell, 2006). Principals can influence the impact of these discrepant viewpoints through their influence on school climate. Tschannen-Moran (2004) described the relationship among principals, overall school trust and climate, and parents' trust: (09)

> Principals play an important role in creating the context for trust to develop between parents and the school and between teachers and parents. The school leader creates the framework and structure for these relationships and, by example, may set the tone for these interactions as well. (p. 136)

More specifically, principals' interactions with individual students and families can influence the overall child-centeredness of schools (DiPaola & Walther-Thomas, 2003; Kochanek, 2005; Soodak & Erwin, 2000). (10)

Establishing and maintaining trust does not ensure that school districts never face a due process hearing; however, a trusting relationship has the potential to minimize conflict and lead to resolution. Consequently, principals have a major responsibility to positively contribute to the establishment of trust with all parents, including parents of children with disabilities, who may be interacting with great frequency with education professionals, including teachers, related service personnel, and principals. (11)

Purpose of the Study

The role of the principal in establishing or influencing overall organizational trust in schools has emerged from extant research (e.g., Hoy et al., 2002; Hoy & Tschannen-Moran, 1999). More recent research has addressed characteristics and actions that can be taken by principals to improve organizational trust (e.g., Kochanek, 2005). The importance of trust in establishing effective home–school (12)

partnerships for students with disabilities is also strongly supported in recent research (Lake & Billingsley, 2000; Stoner & Angell, 2006; Stoner et al., 2005; Turnbull, Turnbull, Erwin, & Soodak, 2006). Given the critical role principals can assume in establishing trust, further research is needed on how they influence levels of trust in relationships between families of children with disabilities and education professionals.

Problem is exploratory

(13) The present study emerged from a broader study of the perspectives of mothers of children with disabilities on trust in education personnel (Angell, Stoner, & Shelden, 2009). Although we did not inquire specifically about the role of administrators, the strong influence of administrators, particularly school principals, was apparent during interviews with 16 mothers of children of varying disabilities, ages, and geographical settings. We then re-examined our data to address the following research question:

Purpose and question focuses on participants' experiences

(14) What are the perspectives of mothers of children with disabilities on trust in school principals?

Literature plays a minor role in shaping question

Method

Research Design

(15) We employed a qualitative research methodology to gain insight into the nature of trust of mothers of children with disabilities in school principals. We viewed trust as the central phenomenon requiring exploration and understanding (Creswell, 2002). Considering the nature of our target phenomenon (i.e., trust), we followed the advice of Strauss and Corbin (1998) who explained that "qualitative methods can be used to obtain the intricate details about phenomena such as feelings, thought processes, and emotions that are difficult to extract or learn about through more conventional methods" (p. 11).

(16) The method used for the present study was the collective case study as described by Stake (2000). Collective case study involves the study of more than one case in order to "investigate a phenomenon, population, or general condition" (p. 437). This approach assumes that investigating a number of cases leads to better comprehension and better theorizing (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005). Miles and Huberman (1994) contended that studying multiple cases gives the researcher reassurance that the events in only one case are not "wholly idio-syncratic" (p. 172). Further, studying multiple cases allowed us to see processes and outcomes across all cases and enabled a deeper understanding through more powerful descriptions and explanations.

Participants

(17) We used a purposive sampling technique that included snowballing methods to recruit a heterogeneous group of mothers of school-aged children with disabilities as participants in this study, basing the rationale for our maternal focus on research indicating that mothers have more contact with education professionals than do fathers (e.g., David, 1998; Nord, Brimhall, & West, 1997; Nord & West, 2001; Thomson, McLanahan, & Curtin, 1992). We purposefully included a range of mothers who had children with various disabilities across various grade levels in schools from several school districts that represented a range of settings (e.g., rural, suburban, urban). We expected this sampling methodology to afford us maximum opportunities for comparable analysis (Strauss & Corbin, 1998) of mothers from a variety of backgrounds and experiences with schools, as well as having children with a variety of disabilities and at various ages.

(18) Participants were recruited using three techniques: (a) district-level administrators' distribution of recruitment materials; (b) individual school personnel's distribution of recruitment materials; and (c) a participant referral snowballing technique, whereby participants distributed recruitment materials to other mothers who might express different perspectives or had had different experiences with education professionals. This sampling method facilitated our attaining as much variation as possible within our sample (Patton, 1980). In our initial recruitment phase, after obtaining university approval to conduct the research, we mailed explanatory and invitational letters to several school district administrators in a Midwestern state, asking them to distribute the letters to potential participants if they approved of our interviewing mothers with children in their schools. In the invitational letters, mothers were asked to return permission-to-contact forms if they were interested in participating in the study. Although it was designed to protect potential participants' identities until they agreed to meet with us for interviews, this method of recruitment proved to be minimally effective,

yielding only 2 participants. We tentatively attributed administrators' or mothers' reluctance to participate to the nature of the study (i.e., the investigation of trust) and consequently asked school principals and various school personnel (e.g., therapists and special education teachers) to assist us in recruiting participants.

The researcher is reflexive

During the second phase of recruitment, school personnel sent permission-to-contact forms to potential participants with whom they had regular contact. On receipt of this approval, we scheduled one-on-one, face-to-face interviews with the mothers, explained the study, and obtained informed consent. We tentatively attributed the success of this recruitment method to the nature of the relationships participants had with the education professionals who contacted them or to the personal contact. Personal contact from familiar individuals within their schools or districts may have influenced the mothers' willingness to participate.

(19)

Our second and third recruitment phases yielded an additional 14 participants. Our final participant pool consisted of 16 mothers of children with various disabilities. They ranged in age from 18 to 55 years. In all, 12 mothers were Caucasian, 1 was African American, and 3 were Hispanic. One of the Hispanic mothers had limited English proficiency, so a Spanish-speaking interpreter assisted during her interview. Most of the mothers were from urban and suburban areas and 2 were from rural areas. These mothers and their children represented eight school districts, varying grade levels, and a range of geographical areas (i.e., rural, suburban, and urban). See Table 1 for participant demographics.

(20)

Data are based on small numbers

Interviews

Data were collected via semistructured interviews, which Fontana and Frey (2000) described as "one of the most powerful ways in which we try to understand our fellow human beings" (p. 645). Face-to-face interviews occurred in the mothers' homes or at places the mothers designated (e.g., restaurants, coffee shops) and ranged in length from 60 to 90 min. The interview questions, which focused on trust, relationships with education professionals, and situations where trust was either enhanced or diminished, are provided in the Appendix. Each interview was audio-taped and transcribed verbatim to facilitate subsequent data analysis.

(21)

Text data are collected

Each interview was conducted by one of the first three authors. The 16 single-participant interviews consisted of broad, open-ended questions designed to investigate mothers' perspectives on

(22)

Descriptive analysis is presented

TABLE 1
Participant Demographics

Parent Name	Ethnicity	Child's Name	Disability/Diagnosis	Grade Level	Instructional Setting	School Location
Mary	Caucasian	Alex	ASD	Preschool	Self-contained	Rural
Olivia	Caucasian	Emily	Sensory integration dysfunction	Preschool	Inclusive	Suburban
Terri	Hispanic	Frankie	Developmental delay	Preschool	Inclusive	Urban
Vickie	Caucasian	Larry	Mental retardation	Elementary	Self-contained	Rural
Yvonne	Caucasian	George	ASD	Elementary	Inclusive	Suburban
Noreen	Caucasian	Roger	Other health impaired	Elementary	Inclusive with pull-out services	Urban
Nicole	Caucasian	Oscar	ADHD-PI	Elementary	Inclusive with pull-out services	Urban
Monica	Caucasian	Tommy	ADHD-PI	Elementary	Inclusive with pull-out services	Urban
Lisa	Caucasian	Hank	Learning disability	Elementary	Inclusive	Urban
DeDe	African American	Victor	Deaf	Middle	Inclusive	Urban
Teresa	Hispanic	Selena	Deaf	Middle	Self-contained	Urban
Dolorita	Hispanic	Josefina	Deaf	Middle	Self-contained	Urban
Ursula	Caucasian	Charlie	ADHD	Middle	Inclusive	Suburban
Valerie	Caucasian	Tad	Nonverbal learning disability	High	Inclusive	Suburban
Carole	Caucasian	Sam	Cerebral palsy	High	Inclusive	Suburban
Pat	Caucasian	Mike	Learning disability	High	Inclusive	Suburban

Note. Dolorita used an English–Spanish interpreter during her interview. ASD = autism spectrum disorder; ADHD-PI = attention-deficit hyperactivity disorder predominantly inattentive; ADHD = attention-deficit hyperactivity disorder.

their trust in education professionals. As we interviewed the mothers, we probed for further information, elaboration, or clarification of responses as we deemed appropriate. Semistructured interviews permitted us to address the issue of trust while maintaining a feeling of openness (Kvale, 1996).

Data Analysis

(23) The findings related to mothers' trust in school principals actually emerged as one of several categories or themes we identified as we analyzed our interview data. Besides reporting the findings related to overall trust in education professionals (Angell et al., 2009), we decided to report separately on other emergent themes, such as mothers' trust in school principals, issues related to communication, and teaming factors. Once we had analyzed all the interview data and identified the major themes, we then focused more closely on specific themes and developed concept maps that guided our reports. For example, when we reported on our overall findings (Angell et al.), we did not have the journal space to delve into and discuss our findings related to mothers' trust in school principals. We took all the data that were categorized as *administrator perspectives* from our larger study and conducted additional analysis by revisiting the data, recoding the data, and categorizing the themes. Therefore, we selected this set of data for its own in-depth analysis and discussion due to the perspectives of our participants that principals had a significant impact on their trust in education professionals.

Text data are analyzed

(24) We used cross-case analysis as described by Miles and Huberman (1994) to study each mother (i.e., case) as a whole entity, using line-by-line coding of each mother's interview responses, followed by a comparative analysis of all 16 cases. Each researcher independently line-by-line coded each interview and all codes were entered in NVivo7 software (Richards, 2002). Next, we met as a team on several occasions to discuss the codes, identify emergent themes, and reach concordance on the development of a concept map (shown in Figure 1) that represents the study's findings.

(25) We used a flexible standard of categories, meaning we adjusted our categories as additional data from each case was analyzed in depth (Coffey & Atkinson, 1992). As categories emerged, we used a constant comparative method (Charmaz, 2000) to compare cases and to refine, expand, or delete categories as needed. This type of coding procedure helped us stay in tune with the mothers' views as we continually studied our interview data (Charmaz). As we discussed any disagreements we had about emergent categories, we returned to the verbatim data to again ascertain the participants' viewpoints, and continued this process until we agreed on all categories. This process of cross checking coding of the major categories provided "thoroughness for interrogating the data" and allowed for discussion that enhanced insights of the coding (Barbour, 2001, p. 1116).

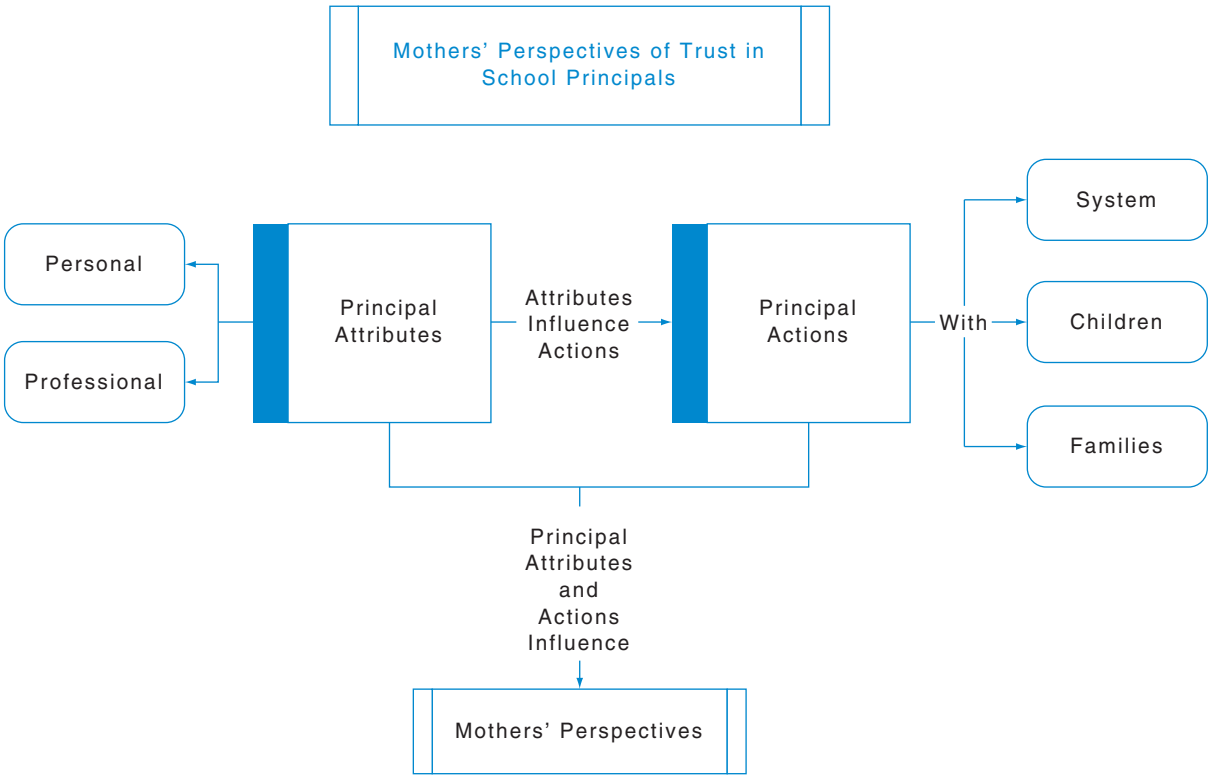
Confirmability

(26) We engaged in methods of respondent validation (Creswell, 2002) and member checking (Janesick, 2000) to confirm our findings. To secure respondent validation, we presented a summary of our findings to the interviewees by telephone or e-mail, asking them if they concurred with any or all of the emergent perspectives, that is, if they saw their personal perspectives represented in any or all of the reported findings. We also conducted member checks as a means of confirming the findings. Through member checking, we asked participants to comment on the accuracy of verbatim quotes and obtained their approval to use their direct personal quotes in written or verbal reports of the study. All 16 participants confirmed that the summary of findings adequately and accurately represented their perspectives on trust in school principals and all the mothers whose direct quotes appear in the report gave permission to cite them.

Limitations and Scope of the Study

(27) Although we used accepted qualitative research methods for this study, we recognize that the validity of the findings may be affected by certain limitations. The first limitation of this study was that we did not explicitly plan to gather data on mothers' trust in school principals. Rather, these data emerged from the data gathered for broader research questions about mothers' trust in education professionals. The use of a semistructured interview protocol allowed us to probe further when participants discussed their trust in principals. However, we did not explicitly ask all participants about their trust in school principals or their perspectives on how those principals might influence their trust in other education professionals.

FIGURE 1
Concept Map of Findings



The second limitation of this study was that we did not establish extended relationships with the participants. We interviewed each mother once. Multiple interviews would have been ideal. However, we feel that the initial data and our analysis of them provided a strong foundation for more in-depth examinations of trust between parents of children with disabilities and school principals. We also recognize that the generalizability of the findings might have been limited by the nature of our participants. Although these findings are based on the perceptions of only 16 mothers from one state, these participants reflected ethnic, racial, and economic diversity and were mothers of children of various ages and disabilities. The recruitment of participants through school personnel might have also limited the generalizability of the findings, in that school personnel might have identified mothers with whom they felt they had positive, established relationships. (28)

Results

Interviews centered on the issue of trust and the perspectives of the participants regarding their relationships with education professionals. Relationships with administrators, primarily school principals, emerged from all participants as one of the education professionals who had a strong effect on the trust of the mothers of children with disabilities. Two primary categories were identified as affecting the participants' perspectives of principals: (a) principal attributes (personal and professional) and (b) principal actions within the education system, with students, and with students' families. Additionally, within each of these primary categories, subcategories were developed that further delineated the relationships participants had with the principals at their children's schools. (29)

Principal Attributes

(30) Theme analysis is presented

Principal attributes can be viewed as those *individual* characteristics that participants identified as affecting their trust. Attributes were categorized as either personal or professional. Within each of those two categories, the attributes could positively or negatively affect the relationship participants had with principals.

(31) *Personal attributes.* All participants had interacted at one time or another with administrators, primarily principals. Interactions might have been brief but participant perspectives were developed over a long period of time. Participants might have had numerous relationships with their children's teachers but relationships with principals were consistent over a longer period of time. Principal personal attributes were part of principals' characters that participants perceived during their interactions. We categorized these personal attributes as approachability and authentic caring.

(32) Approachability was identified as a positive influence on the trust of the participants in principals. Principals who were perceived as approachable were those who not only took the time to listen but also conveyed an accepting attitude that resulted in parents comfortably approaching them with their concerns. For example, Norine stated,

> You know, I had talked to him earlier in the year about how I thought it would really be important that those end-of-the-year awards that the kids all get, that every kid could get an award. And I didn't want to speak just about my son but obviously that's where it's coming from. But he just dreads those awards. He would have no reason to think that he could attain an art award, a music award, a scholastic award, nothing. He has nothing to shoot for. . . . He [the principal] was, you know, very approachable about that and he has substituted some reading awards. So, now I just have to read with T. I feel like I have to do it now because I was the one that planned this.

(33) However, not all participants described their principals as approachable. For example, Nicole described her son's principal as "personable, but not to the point where I feel I could sit down and talk to her on a personal level at all." Even if a principal was accessible, approachability was identified as the key to a mother's connecting and developing trust in the principal.

(34) Similarly, another key to developing trust was the perception that the principal authentically cared for the children and their parents. Authentic caring can be viewed as actions and behaviors that participants identified as genuine, voluntary, child-focused, and benefiting children or the parents themselves. Ursula exemplified this concept when she described her son's principal: "He knew that my son had problems, so he would actually be checking out his assignment book as he left."

(35) Authentic caring did not have to necessarily result in actions; it was often a perception of warmth that parents described from their interactions with principals. Dolorita talked about the principal from her son's school who had retired in the previous year: "Yes, very good [referring to her relationship with the principal]. She was always welcoming the parents. Really warm."

(36) Principals who were trusted by participants were described as warm, respectful, and exhibiting caring for children that was perceived as authentic.

(37) *Professional attributes.* Attributes that were categorized as professional also affected the trust participants had in principals. These professional attributes included accessibility and knowledge of disabilities.

(38) Principal accessibility was highly valued by all participants. Teresa spoke of the accessibility of her son's principal: "She was very nice, she was so helpful with me any time that I need anything. She was there and if I needed to talk to her she was right there." Participants recognized how busy principals were and perhaps that recognition made them value the time principals offered even more, illustrated by Monica's comment: "Even if she was busy she would take the minutes off." Vickie highly valued the principal time given to her when she had concerns:

> I just called her and she sat on the phone with me for like a half an hour. And she had me come out and she gave me some books and, I mean, they are all, I think they are all wonderful.

(39) Mary related an incident concerning programs for her son with Autism Spectrum Disorder (ASD). She had expressed concern about her child's placement in a new program to the special education administrator.

> So I said I'd go ahead and try it out and I kinda wanted him to stay where he was. She's like "Well, you know, you want to go with it and you can try it out and then we can pull him out if you don't like it or feel comfortable with it." So I said, "Okay." And we went ahead and tried it and then I called her up saying that

> I wasn't comfortable with him going there and just for all the happenings that were going on and we'd like him to go back to the first school and she said, "Okay, we can make some calls."

This incident illustrates the value of accessibility when participants feel a strong need to speak with principals. Accessibility was a necessary prerequisite for the establishment of trust and was mentioned by all participants. Participants were also keenly aware of the knowledge principals had about their children's disabilities. Valerie spoke of the knowledge a new principal had of her son's disability and the subsequent effect on the entire school staff. (40)

> They also have a new principal, who I think is a little bit more aware of that [the disability]. I think the staff, whether they know it or not, takes cues from the principal as to whether the principal's going to follow up, whether this is something serious that we need to take note of. Is this really important, or is it something I can put a second priority on?

One incident in which the principal and staff had no knowledge of her daughter's disorder prompted Olivia to offer to provide an in-service session to the entire school staff. The principal readily agreed and this was appreciated by the parent. (41)

> So I did a lot of reading on the issue, prepared a presentation. It was a good hour long, and they even stayed after to ask questions. I was really surprised. You know, we're talking an in-service that is in the evening, when people can be freed up from the classroom. It was 6–7:30 in the evening, and they made it mandatory.

The lack of knowledge of the disability was not viewed as an inhibitor to trust unless it was accompanied by a lack of desire to learn. Terri withdrew her child from a parochial school when she perceived that the staff was unwilling to address her son's disability. This perception appeared to contrast directly with the principal's words indicating that her son should remain at the school. (42)

> Right, it is like I am, you know, I am very into the school. And the principal said "No we will leave him here." You know, and I said "No" because I am not going to force somebody on him. I am not going to do that to them just like I am not going to force that person onto my son.

One participant, Yvonne, spoke of the benefit of having the same principal during her son's vertical transition from preschool through elementary school. Yvonne was in an unusual situation in which her son's principal had moved from the preschool to the elementary school attended by her son. She spoke of the benefit of the principal's and the staff's continuous knowledge of her son's development and progress: (43)

> I think again it's just been continuity and it's been more than just the principal that's been continually in his case; each time we meet people they seem to be amazed, everyone that is sitting around the table seems to be amazed at the progress that he's made. Yeah so they take great pride in him as do I and I don't know if he does yet, but he should.

Unfortunately, participants also recalled instances when principals did not recognize their children's disabilities, did not know their children, and at times appeared to dismiss parents' concern for their children. Ursula stated, (44)

> The only thing I do want to add is I think the principals of each school should be more involved in IEP meetings. I know they're invited to it, but they never show up. So they might know this child is in special education but if they don't sit down and listen to everything, they really don't know the child.

Principals who were approachable, exhibited authentic caring, were accessible, and had knowledge of disabilities were identified as enhancing trust between participants and principals. Conversely, when these attributes were perceived as lacking, trust was negatively affected. Participants were aware that if principals valued their children and themselves, an example was set for the staff to follow. (45)

Principal Actions

Actions spoke loudly to the participants. They identified actions that were categorized into three subcategories: (a) actions within the system, (b) actions with children, and (c) actions with families. These actions, or, at times, lack of action, had a significant effect on the trust participating mothers had in principals. (46)

(47) Actions within the system involved actions that were focused on issues such as encouraging teachers' involvement with parents and attendance at IEP meetings. When participants experienced or observed these actions, they felt principals truly were concerned about the student body and about their students with disabilities as well. Monica illustrated this by comparing the new principal of her son's school with the previous one, illustrating the issue of teacher involvement with parent fundraising efforts.

> And Mrs. F [the previous principal] was pushing the teachers to join, and pushing the teachers to do things. When we [Parent-Teacher Organization] did a pizza fundraiser she made every teacher order lunch with the kids for the room. She just was so involved in supporting all that stuff. And she knew we would in turn, money would go back to her. Whatever money we raised would go back to the school. I don't think he [the new principal] sees that. So, she was very much into everything.

(48) Several participants indicated that principal attendance at IEP meetings was an action that facilitated trust. Attendance not only affected the participants but the staff that was directly involved with the child. Valerie spoke of the significance of her son's principal attending the IEP meeting: "And I just think, especially at the IEP meetings, even if they're only there for 5–10 minutes, especially at the middle school, at least what I saw, it made a quite a difference . . . quite a difference."

(49) While attendance at IEP meetings was appreciated, if it did not occur on a regular basis, principal attendance became an indicator of a problem. Carole recalled that the only IEP meeting her son's principal attended was one that was contentious. The principal attended only when the conflict had grown to a point where she was considering filing due process. Carole felt that once the principal fully recognized her son's disability, his perception of her and her son changed drastically.

> He actually saw my son then, and saw that these parents are not making this up. He [her son] has trouble speaking, too, so that people can't understand him, it's not just that he has trouble writing, everything is delayed to some degree. He can do everything but it just takes longer and he needs assistance. Before that the principal just thought I was a complaining parent.

(50) It should be noted that most of our participants indicated that principals did not attend IEP meetings. Participants also reported there was significantly less principal involvement in IEP meetings at the middle and secondary levels.

(51) Principal actions with students that affected parent trust were numerous. When the principals took a personal interest in their children, parents noticed. Ursula reported that one of her son's principals was very involved with all the students in the school, including those with disabilities.

> My son had a principal in fifth and sixth grade, Mr. L, he was on top of it. He was a very good principal. He would be checking the kids out. He was just very—he was not just a principal that stays in his office. He would get there and be involved with all the kids. He knew that my son had had problems so he would actually be checking out his assignment book as he left.

(52) Involvement with students, and especially involvement that included students with disabilities, was appreciated and recognized by our participants and had a positive effect on their establishment of trust in education professionals. Conversely, ignoring students or a perceived nonaction by principals was perceived negatively and had an inhibiting effect on the establishment of trust. Carole described this perception as, "A few times they've [principals] been involved. I don't feel like they ever took a stand on anything. They just kind of were there."

(53) Principals' actions with parents directly also had the potential of positively affecting trust. DeDe related a conversation with a vice principal:

> Because when last year my son was in it was his first year and he's mainstreamed. So she was . . . I was going to get his grades and she said, "How did he do?" And I said he did fine, but he was in fourth grade and doing fifth grade math and I was like well, he got a "C" in math, that was the only thing. She was like but you should be proud of him and I said I am proud of him. She kinda like, she was encouraging me to encourage him. She said "'cause you have to think he's in fourth grade, he's doing fifth grade math; he got a 'C' so that's wonderful." So I was like you know for a vice principal to come and talk to the parents is really good. So she talked to me and you know they are very encouraging and I think if I ever needed anything or needed to talk to one of them I could go up there and talk to them.

Actions with parents that were positively perceived were a focus on actively listening to parents and offering advice or assistance when needed, resulting in an enhancement of trust. However, not all principal actions with participants were positive. (54)

Pat related an incident of requesting an evaluation for her son, who was having significant difficulties in school. Pat had spoken with a special educator, who had advised her to ask for an assessment for her son: (55)

> She [the special educator] said "there is something not right here. And I can see this and you can deal with this. Go to the principal and tell him that he has to have him tested." And so I went and I told him and he [the principal] is like, "No, he is just a disruptive little boy."

Participants related other incidents that decreased trust, similar to the one stated above. These incidents were ones that did not respect or acknowledge parent perspectives. (56)

Participants identified principal attributes and actions that enhanced trust and spoke strongly of times when these same attributes and actions were absent and inhibited their trust in principals. Participants wanted to trust principals; they appreciated principals who were accessible and evidenced authentic caring for their children and they described principal actions within the educational system, with their children, and with their families that facilitated their trust. (57)

Discussion

Through an examination of the perspectives of mothers of children with disabilities, the present study findings revealed insights into the critical role school administrators, specifically principals, may assume in establishing and maintaining trust between schools and families. After a consideration of the limitations of this study, we discuss key findings from a school leadership framework. We then discuss implications for practice and future research. (58)

Researchers interpret the larger meaning of findings

Principals' Influence on Trust

As depicted in Figure 1, the mothers we interviewed identified principals' attributes and actions that can have positive and negative influences on trust. They spoke primarily of school principals rather than special education administrators when they discussed school leaders. The findings on influential attributes and actions that emerged from these interviews were consistent with previous research on trust, particularly on trust in and as facilitated by school leaders (Bryk & Schneider, 2003; Kochanek, 2005; Tschannen-Moran, 2004). However, these findings extend past research by illuminating how trustworthy leadership may connect to the educational experiences of students with disabilities and their families. (59)

Through her leadership matrix, Tschannen-Moran (2004) presented a framework for school leadership that promotes trust. The framework identified facets of trust, constituencies of schools, including parents, and functions of instructional leadership. The functions of leadership in the framework—visioning, modeling, coaching, managing, and mediating—can be demonstrated in a manner that inhibits or facilitates trust. We discuss our key findings in relationship to this framework for trustworthy school leadership. (60)

Facets of Trust

Five facets of trust are included in Tschannen-Moran's (2004) leadership matrix, including benevolence, honesty, openness, reliability, and competence. Past research has confirmed the centrality of these facets to building trusting relationships in schools (see Bryk & Schneider, 2003; Hoy & Tschannen-Moran, 1999; Tschannen-Moran & Hoy, 1998, 2000). The personal and professional attributes that emerged in the present study as influences on mothers' trust in school principals reflect aspects of the facets of trust, specifically benevolence, openness, and competence. (61)

Benevolence involves demonstrating caring, support, and respect. It may be the most critical facet of trust (Tschannen-Moran, 2004) and is valued by constituencies of school leaders (Bryk & Schneider, 2003; Tschannen-Moran). Mothers in this study identified the personal attribute of authentic caring, perceived as warmth and respect, as a critical influence on trust. Authentic caring also involves acceptance of a child (Noddings, 1992). For parents of children with disabilities, this may take on particular importance as they value school leaders who demonstrate acceptance despite (62)

the nature of a disability. Principals who have limited experience with children with disabilities may have difficulty demonstrating acceptance of all children (Alonzo, Bushy, Hasazi, Johnston, & Miller, 2006) and hence trust may be negatively affected.

(63) Approachability and accessibility both emerged from this study as personal attributes that affected trust. These attributes are components of openness, one of the facets of trust identified by Tschannen-Moran (2004). Openness is critical to trust, and involves vulnerability and open communication. Openness involves a willingness to communicate and share information (Tschannen-Moran). In identifying approachability as a positive influence on trust, the mothers in the present study described school leaders who listened to parent concerns and facilitated a climate where parents felt comfortable approaching them with concerns. When working with parents of children with disabilities, it may be important for principals to be engaged in conversations about parental concerns with parents themselves rather than delegating those concerns to special education personnel.

(64) Competence was another aspect of trust identified by Tschannen-Moran (2004) and the participants in our study. Our findings suggest that knowledge of a student's disability or, at the very least, the desire to learn about a particular disability, is an important aspect affecting the perceived competence of school leaders. Principals often lack specific training related to understanding various disabilities (DiPaola & Walther-Thomas, 2003), but their effective leadership for all constituencies in a school requires a basic understanding of disabilities and an understanding of special education processes (DiPaola & Walther-Thomas). Principals may need to seek additional training or information through professional organizations or through collaborating with special education administrators.

Functions of Leadership

(65) The trustworthy leadership matrix presented by Tschannen-Moran (2004) includes five functions of leadership—visioning, modeling, coaching, managing, and mediating—that can influence the culture of trust within their schools. Principal actions, which closely paralleled Tschannen-Moran's functions, were readily identified by the study participants as affecting their trust in school principals. The mothers in the present study described leadership actions related to these functions, particularly the functions of modeling, coaching, and mediating.

(66) Mothers participating in the present study discussed the importance of modeling when they described the impact of principals' actions on other education personnel. For instance, principal attendance at IEP meetings was valued not only because the principal demonstrated commitment by his or her presence, but also because that attendance was perceived as sending a message to faculty that the IEP process was important. Modeling the importance of these processes necessitates principals having an understanding of the special education system and assuming an active rather than delegating role in those processes.

(67) Closely related to modeling, coaching involves exerting the appropriate amount of pressure and support to facilitate desired changes in teacher behavior. In the present study, the importance of coaching was reflected in mothers' comments regarding principal actions within the system, including encouraging general education teacher attendance at IEP meetings and encouraging teacher involvement in parent-teacher organizations.

(68) In the present study, mothers identified conflicts that arose from various sources, such as disagreement with teachers or delays in receiving related services. Principal mediation of those conflicts affected the mothers' perceptions of the trustworthiness of their relationships with these principals. Mediation is a common need within the special education system and refers to actions leaders take to deal with conflicts and repair trust. In this context, mediation differs from the structured resolution process identified in IDEIA and is instead leadership actions taken outside of a formal process. Mediation is extremely valuable when conflicts initially emerge and it has the ability to reduce escalation of conflict, possibly preventing formal resolution or due process. Principal mediation was perceived as varied by mothers in this study, yet the overall perspective was that effective mediation increased parental trust. Specifically, an effective mediation strategy that emerged from our findings was the willingness of principals to address concerns directly rather than downplaying concerns or delegating them to other school personnel. As with other attributes and actions identified in the present study, principals may be at a disadvantage due to a lack of training related to children with disabilities and special education processes (DiPaola & Walther-Thomas, 2003). However, it should be emphasized that the lack of knowledge was not as large a barrier as lack of action.

Conclusion

Mothers of children with disabilities identified attributes and actions of school leaders that influenced trust. If school leaders, and particularly principals, are to establish and maintain trust with all of their constituencies, including children with disabilities, their teachers, and their families, they need to examine how trustworthy leadership relates to the special education system. These findings suggest that the facets of benevolence, openness, and competence may have high significance when considering how principals relate to families of children with disabilities. Likewise, these findings suggest that leadership functions of modeling, coaching, and mediating may require specialized competencies or considerations related to students with disabilities. School principals who desire more effective collaboration between school and families of children with disabilities may need to become more personally involved in the special education programs within their schools. Direct involvement in IEP meetings and other educational decision making, caring and acceptance of children with disabilities, a willingness to learn more about students with disabilities, and demonstrating leadership in educational decisions and climate related to students with disabilities may all be effective steps in enhancing trust with families of children with disabilities. These findings also suggest a need to examine the extent to which school principal personnel preparation programs are adequately preparing school principals to build trust and effective partnerships with parents of students with disabilities. (69)

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Appendix

Trust Study Interview Questions

[Advise interviewee that she can apply most of these questions to ANY education professionals in her child's life—administrators, teachers, assistants, related services personnel like SLPs, OTs, PTs . . .]

1. Tell me about your child.
2. How would you generally describe your relationship with (child's name)'s teacher? [teachers]
3. Describe the trust you have in the professionals who work with your child. [Do you trust the education professionals who work with your child? . . . Probe: Please describe this trust/lack of trust . . .]
4. Have there been situations or experiences that have increased your level of trust in the professionals who work with your child? [Tell me about this/these . . .]
5. Have there been situations that have decreased the trust you have in the professionals who work with your child? [Tell me about this/these . . .]
6. Do you tend to trust other people or distrust them? Does it take time for you to develop trust in someone?
7. How much contact have you had with your child's education professionals? Have you had contact on a regular basis, occasionally, seldom . . . ? Have your interactions been generally positive? Generally negative? Please describe some . . .
8. Do you think that your cultural background (your race, ethnicity, education, income level) in any way influences your level of trust in others or in education professionals? If so, how?