GLOBAL EDITION

Educational Psychology

Developing Learners

NINTH EDITION

Jeanne Ellis Ormrod • Eric M. Anderman • Lynley Anderman

Pearson

EDUCATIONAL PSYCHOLOGY

DEVELOPING LEARNERS

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NINTH EDITION

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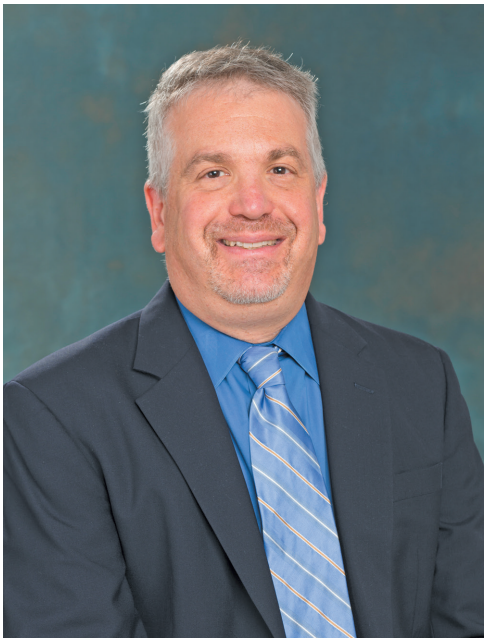
Dedication

To Olivia, Miles, and Jack
Jeanne

To our parents Gloria and Arthur, Myra and Noel,
and our children Jacob and Sarah
Eric and Lynley

About the Authors

JEANNE ELLIS ORMROD received her A.B. in psychology from Brown University and her M.S. and Ph.D. in educational psychology from The Pennsylvania State University. She earned licensure in school psychology through postdoctoral work at Temple University and the University of Colorado at Boulder and has worked as a middle school geography teacher and school psychologist. She was Professor of Educational Psychology at the University of Northern Colorado until 1998, when she moved east to return to her native New England. She has published and presented extensively on cognition and memory, cognitive development, instruction, and related topics but is probably best known for this book and four others: *Human Learning* (currently in its seventh edition); *Essentials of Educational Psychology* (currently in its fourth edition); *Child Development and Education* (co-authored with Teresa McDevitt, currently in its sixth edition); and *Practical Research* (co-authored with Paul Leedy, currently in its eleventh edition). She has also published a non-textbook for a broad audience: *Our Minds, Our Memories: Enhancing Thinking and Learning at All Ages*. She and her husband Richard live in New Hampshire, where (she is happy to report) she is within a 90-minute drive of her three young grandchildren.



ERIC M. ANDERMAN received his B.S. in Psychology and Spanish from Tufts University, his Ed.M. from Harvard University, and his Ph.D. in Educational Psychology from The University of Michigan. He earned licensure as a social studies and foreign language teacher, and taught at the middle school and high school levels before attending graduate school. He is currently Professor of Educational Psychology and Chair of the Department of Educational Studies at The Ohio State University. He has published extensively on academic motivation, with emphases on (a) school transitions, (b) school effects on motivation, (c) motivation and risky behavior during adolescence, and (d) academic cheating. He is the editor of *Theory Into Practice*, and former associate editor of the *Journal of Educational Psychology*. He has co-edited several books, including the third edition of the *Handbook of Educational Psychology* (with Lyn Corno); the *International Guide to Student Achievement* (with John Hattie); *Psychology of Academic Cheating* (with Tamera Murdock); and *Psychology of Classroom Learning* (with Lynley Anderman). He also co-authored the book *Classroom Motivation* (currently in its second edition) with Lynley Anderman.

LYNLEY H. ANDERMAN received her B.A. and M.A. (Hons.) in Education from the University of Auckland, New Zealand, and her Ph.D. in Educational Psychology from The University of Michigan. A graduate of North Shore Teachers College (Auckland, New Zealand) she taught for several years in primary and intermediate schools in Auckland. Currently, she is Professor of Educational Psychology at The Ohio State University. She has published and presented extensively on academic motivation, particularly in relation to the roles of instructional and social-relational characteristics of classrooms that support students' motivation and engagement, and on the role of Educational Psychology in Teacher Education. She is the former editor of the *Journal of Experimental Education* and former associate editor of *Theory into Practice*. She has co-edited *Psychology of Classroom Learning* and co-authored the book *Classroom Motivation* with Eric Anderman.

Preface

New to this Edition

In this ninth edition of *Educational Psychology: Developing Learners,* I'm pleased to welcome my fellow educational psychologists Eric and Lynley Anderman as coauthors. More specifically, Eric and Lynley have overhauled Chapter 11 and also brought their perspectives to Chapters 4, 5, 10, and 13.

Many features that have made previous editions of the book so popular with instructors and students remain in this edition, including a conversational writing style, Experiencing Firsthand features, organizational tables and diagrams, and an ongoing emphasis on classroom applications. Yet there are also significant changes. As always, all 15 chapters have been updated to reflect recent advances in research, theory, and classroom practices.

More specific additions and changes to this edition include the following:

- **Chapter 1**: New heading to give greater visibility to mixed-methods research; new discussion of *principles* (in addition to *theories*) in the section "From Research to Practice."
- **Chapter 2**: Expanded discussion of Bronfenbrenner's bioecological systems theory, with a new Figure 2.1 depicting the various layers of environmental influence proposed by Bronfenbrenner; updated discussion of physical development (in a Content Extension feature); Video Explanation showing various basic brain structures and their key roles; two Video Explanations illustrating certain concepts in Vygotsky's theory (e.g., *cognitive tools, zone of proximal development*).
- **Chapter 3**: Addition of a fourth important role of peers in children's development (i.e., to teach new skills, such as computer programming or skateboarding techniques); replacement of the term *peer pressure* with the broader term *peer contagion,* in line with current thinking about the nature of peer influences; expanded discussion of popularity and social isolation; broadened discussion of diversity in moral development to include six different dimensions that moral reasoning and behavior might encompass.
- **Chapter 4**: Expanded discussion of distinctions between ethnic and racial groups; expanded discussions of students who speak languages other than English at home and of cultural differences in conceptions of time; discussion of increasing expectations for students to use technology at home and the challenges that such expectations impose on children in low-income families; expanded discussion of possible strategies for assisting homeless students.
- **Chapter 5**: New Experiencing Firsthand exercise related to fluid versus crystallized intelligence; updated critical examination of different theoretical conceptions of intelligence and measurement of intelligence; discussion of noncognitive contributors to intelligence; expanded discussions of how certain widely advocated strategies have little or no research support and thus are questionable practices at best (see the sections "Do Students Have Distinct Learning Styles?" and "Does It Make Sense to Teach to Students' 'Right Brains' or 'Left Brains'?"); expanded discussion of advantages versus drawbacks of inclusion as a general approach to working with students who have special educational needs.
- **Chapter 6**: Two Video Explanations regarding the nature of human memory; addition of *executive function* as a key term (because this term has increasingly been appearing in practitioner-oriented literature); new discussion of the brain's need for some mental downtime during the school day; discussion of *reconsolidation* as a possible reason for forgetting or, more accurately, misremembering.
- **Chapter 7**: New discussion of self-reflection as a strategy for enhancing metacognitive awareness; new section "Metacognitive Strategies in the Digital Age"; expanded discussion of epistemic beliefs; expanded discussion of critical thinking.

- **Chapter 8**: Revision of the discussion of *situated learning* and *situation cognition* to encompass two somewhat different meanings that various theorists have ascribed to these terms; greater visibility given to Vygotsky's and Bronfenbrenner's theories as foundations for the contextual perspectives described in the chapter (with a new Video Explanation regarding Vygotsky's theory); new example of culturally relevant practice in teaching math; greater attention to how literacy and various content domains are interdependent, especially as reflected in a new Application Exercise.
- **Chapter 9**: Five Video Explanations that explain and illustrate certain behaviorist ideas and applications (e.g., negative reinforcement versus punishment, use of functional analysis to address chronic behavior problems); content of the previous edition's section "Strengths and Potential Limitations of Behaviorist Approaches" now integrated into the section "Strategies for Encouraging Productive Behaviors"; revision of section on classical conditioning to encompass the idea that the association between the unconditioned stimulus (UCS) and unconditioned response (UCR) might have been acquired at an earlier time (a footnote introduces the concept of *higher-order conditioning* for readers who might want to pursue this idea further); revision of discussion of *time-out* to be more in line with current practices; new bullet on using technology to reinforce desirable behaviors and achievements.
- **Chapter 10**: Expanded discussion of teacher efficacy; addition of *proximal goal* as a key term in this chapter, with discussion of the benefits of setting proximal goals, within the contexts of self-efficacy and self-regulation; new table comparing various self-related concepts.
- **Chapter 11**: Reorganization of sections, with distinctions among different perspectives on the roles of "needs" in motivation; discussion of self-determination theory as both a cognitively and needs-based theory of motivation; addition of the distinction between *mastery-approach goals* and *mastery-avoidance goals;* new section on *mindsets*; new concluding section on motivating students in any environment.
- **Chapter 12**: Revision of opening case study to incorporate uses of digital technology and the Internet; more extensive coverage of Common Core, with an effort to address some common misconceptions (and help alleviate widespread concerns) about these standards; addition of Next Generation Science Standards to the discussion of standards; new Figure 12.3 to illustrate how content-area standards can be integrated into a backward-design approach to instructional planning; new Application Exercises in which readers apply what they have learned about Common Core and backward design; new discussion of *My Science Tutor* (including two screenshots) as an example of an instructional website in which students interact with a virtual tutor via spoken language; expanded discussion of discovery and inquiry activities.
- **Chapter 13**: Expanded discussion of planning activities that keep students on task as a means of preventing misbehavior; updated use of terminology in discussions of schoolwide positive behavioral supports and interventions; inclusion of additional strategies for communicating with parents; expanded discussion of dealing with misbehaviors; modification of the previous edition's discussion of gang-related problems.
- **Chapter 14**: Two new Video Explanations regarding formative versus summative assessments and rubric design; new rubric in the text that better illustrates good rubric design (Figure 14.5); discussion of backward design as an essential tool in planning assessments (with Figure 12.3 being repeated as Figure 14.6); integration of discussions of digital technologies (which were previously in a separate section near the end of the chapter) into discussions of formative assessment and formal paper–pencil assessments; new discussion of how students might cheat via digital technologies.
- **Chapter 15**: Expansion of section on criterion-referenced scores, with a new discussion of problems associated with combining multiple criterion-referenced scores (e.g., obtained with a rubric) into a single overall score; expanded discussion of the pros and cons of value-added assessment as a means of evaluating teacher effectiveness.

General Rationale for the Book

As teachers, we play critical roles in the lives of children and adolescents. Some of us help them learn to read and write. Some of us help them understand their physical and social worlds through explorations of science, mathematics, geography, history, or literature. Some of us help

them express themselves through physical movement, the visual arts, or music. And some of us teach them specific skills they will need as adult professionals in, say, auto mechanics, cooking, or computer technology. But regardless of the subject matter we teach, we help those in the generations that follow us to become knowledgeable, self-confident, and productive citizens.

In my mind, teaching is the most rewarding profession we could possibly choose. Yet it's often a challenging profession as well. Students don't always come to us ready or eager to learn classroom subject matter. How can we help them develop the knowledge and skills they need to become productive adults? What strategies can we use to motivate them? What tasks and instructional materials are appropriate for students at different developmental levels? Over the years, researchers and practitioners have worked together to answer such questions. Collectively, we're in the fortunate position of being able to benefit from the many insights that such experts offer.

I've been teaching educational psychology since 1974, and I've loved every minute of it. How children and adolescents learn and think, how they change as they grow and develop, why they do the things they do, how they're often very different from one another—our understandings of all of these things have innumerable implications for classroom practice and, ultimately, for the lives of young people.

In this and the previous eight editions, I've written this textbook in much the same way that I've taught my college classes. Because I want the field of educational psychology to captivate you the way it has captivated me, I've tried to make the book interesting, meaningful, and thought-provoking as well as informative. I have a definite philosophy about how future teachers can best learn and apply educational psychology, and this philosophy has guided me as I've written every edition. In particular, I believe that human learners of all ages actively *construct* their own understandings of what they read in textbooks—an idea reflected in the puzzle-piece motif you'll see throughout the book.

Helping Our Readers Learn and Apply Educational Psychology

You can gain much more from your study of educational psychology when you:

- Focus on core concepts and principles of the discipline
- See these principles in action in your own learning and behavior
- Use the principles to understand the learning and behavior of children and adolescents
- Consistently apply the principles to classroom practice

You'll find numerous features throughout the book to help you do all of these things. We authors hope you'll learn a great deal from what educational psychology has to offer, not only about the students you may be teaching but also about yourself.

FOCUSING ON CORE CONCEPTS AND PRINCIPLES

Rather than superficially explore every aspect of educational psychology, this book zeroes in on fundamental concepts and principles that have broad applicability to classroom practice. Throughout the book, core concepts appear in boldfaced blue font. Core principles are clearly identified in sections labeled "Basic Principles" or "Basic Assumptions" and then often summarized in *Principles/Assumptions* tables. Each table includes educational implications and concrete examples. See the following pages for some examples: 42, 195, and 270.

SEEING CONCEPTS AND PRINCIPLES IN ACTION IN YOUR OWN LEARNING

A central goal of this book has always been to help our readers discover more about themselves as thinkers and learners. Thus we include *Experiencing Firsthand* exercises throughout the book—exercises that illustrate such diverse concepts as constructive processes, working memory, sense of self, social cognition, ethnic stereotyping, and confidentiality in assessment. All of these exercises are designed to do exactly what their name implies: help our readers observe principles of educational psychology *in themselves.* See the following pages for some examples: 132, 194, and 199.

UNDERSTANDING CHILDREN'S AND ADOLESCENTS' LEARNING AND BEHAVIOR

Throughout the book we continually urge our readers to look closely at and try to make sense of what children and adolescents do and say. Each chapter begins with a *Case Study* that situates chapter content in a real-life scenario; for instance, see page 191. We also make frequent use of *real artifacts* from children's journals and school assignments to illustrate concepts and principles in action. For examples, see pages 54, 203, and 356.

EXAMINING DEVELOPMENTAL TRENDS

Unique to this book is a focus on children's and adolescents' development in every chapter. For example, Chapters 2 through 4 and 6 through 15 all have one or more *Developmental Trends* tables that summarize age-typical characteristics at four grade levels (K–2, 3–5, 6–8, and 9–12), present concrete examples, and offer suggested classroom strategies for each level. You can find three of these tables on pages 210, 289, and 491.

APPLYING CORE IDEAS OF EDUCATIONAL PSYCHOLOGY TO CLASSROOM PRACTICE

Throughout this text, psychological concepts and principles are consistently applied to classroom practice. We also provide *Into the Classroom* and *Creating a Productive Classroom Environment* boxes that suggest and illustrate strategies related to particular areas of concern for teachers. You can find three such features on pages 131, 242, and 416.

This book is consistently praised for its emphasis on application. Throughout the book we identify suggested strategies—within the text, in tables, and in the margins—with apple icons; for instance, see pages 47 and 50.

HELPING YOU PREPARE FOR LICENSURE

All chapters end with *Practice for Your Licensure Exam* exercises. These exercises provide readers with opportunities to use the content they've learned in a particular chapter to answer multiple-choice and constructed-response questions similar to those that appear on many teacher licensure tests. Three of these exercises are on pages 113, 188, and 341.

Ancillary Materials

The following resources are available for instructors to download on www.pearsonglobaleditions.com/ormrod.

INSTRUCTOR'S RESOURCE MANUAL

An Instructor's Resource Manual includes suggestions for learning activities, additional Experiencing Firsthand exercises, supplementary lectures, case study analyses, discussion topics, group activities, and additional media resources.

POWERPOINT® SLIDES

The PowerPoint slides include key concept summarizations, diagrams, and other graphic aids to enhance learning. They are designed to help students understand, organize, and remember core concepts and theories.

TEST BANK

I (Jeanne Ormrod) have personally written many of the test questions in the Test Bank that accompanies the book; Test Bank coauthors have added new ones to reflect the updates to the eighth and ninth editions. Some items (lower-level questions) simply ask students to identify or explain concepts and principles they have learned. But many others (higher-level questions) ask students to apply those same concepts and principles to specific classroom situations—that is, to actual

student behaviors and teaching strategies. Ultimately it is these higher-level questions that assess students' ability to use principles of educational psychology in their own teaching practice.

TESTGEN

TestGen is a powerful test generator that you install on your computer and use in conjunction with the TestGen test bank file for your text. Assessments, including equations, graphs, and scientific notation, may be created for both print and online testing.

TestGen is 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.

The tests can be downloaded in the following formats:

TestGen Test bank file—MAC

TestGen Test bank file—PC

Angel TestGen Conversion

Test Bank for Blackboard Learning System

Desire to Learn TestGen Conversion

Moodle TestGen Conversion

Sakai TestGen Conversion

Test Bank for Blackboard CE/Vista

Acknowledgments

I've been fortunate to have had a great deal of help in writing the many editions of this book. First and foremost, the book wouldn't be what it is today without long-term partnerships with my editor and publisher, Kevin Davis. Kevin first came on board as developmental editor for the book in 1989 and, except for a 2-year hiatus while he served in other roles at Pearson, has continued to guide the book through its multiple iterations, first only in paper and now in the ever-changing digital world. Although Kevin hasn't penned the words, his influence permeates every page of text and every activity. His ideas, suggestions, and occasional gentle demands have consistently pushed and stretched me to new heights in my efforts to create the best possible pedagogical experience for readers.

My coauthors and I are also deeply indebted to developmental editor Gail Gottfried, who has kept all three of us on course, reminding us of our long-term targets and nudging us ever closer to those targets. Whereas authors can sometimes get lost in the nitpicky details of a monumental writing task such as this one, Gail has an amazing ability to direct our attention simultaneously to both the specific trees and the overall forest of which each one is a part. Especially with two new authors coming on board, Gail has gone way, way, *way* beyond the call of duty this time around. I hope that she is finally finding the time to sit back and relax with a big glass of wine as she celebrates the book's final arrival on the scene.

Three other critical players have been project managers Lauren Carlson, Pam Bennett, and Norine Strang, who have expertly organized and overseen the countless steps involved in transforming our word-processed manuscripts and rough sketches into the finished product you see before you. In this high-tech day and age, publishing a book is a very complicated process that I'm grateful they know how to complete. Many thanks, too, to Raye Lakey, who has created all of the Self-Check Quizzes and some of the new Application Exercises in MyEducationLab. In fact, she took charge of the overall media plan for Chapters 4, 5, 10, 11, and 13 and created all of the Application Exercises for those chapters.

In addition, numerous colleagues across the nation have strengthened the book itself by reviewing one or more of its previous versions. Reviewers for the first eight editions were Jane Abraham, Virginia Tech University; Joyce Alexander, Indiana University; Eric M. Anderman, then at University of Kentucky; Linda M. Anderson, Michigan State University; Margaret D. Anderson, SUNY–Cortland; Cindy Ballantyne, Northern Arizona University; J. C. Barton,

Tennessee Technical University; Timothy A. Bender, Southwest Missouri State University; Angela Bloomquist, California University of Pennsylvania; Phyllis Blumenfeld, University of Michigan; Gregory Braswell, Illinois State University; Kathy Brown, University of Central Oklahoma; Randy L. Brown, University of Central Oklahoma; Stephen L. Benton, Kansas State University; Karen L. Block, University of Pittsburgh; Kathryn J. Biacindo, California State University–Fresno; Barbara Bishop, Eastern New Mexico University; Robert Braswell, Winthrop College; Kay S. Bull, Oklahoma State University; Margaret W. Cohen, University of Missouri–St. Louis; Theodore Coladarci, University of Maine; Sharon Cordell, Roane State Community College; Roberta Corrigan, University of Wisconsin–Milwaukee; Richard D. Craig, Towson State University; José Cruz, Jr., The Ohio State University; David Yun Dai, SUNY–University at Albany; Peggy Dettmer, Kansas State University; Joan Dixon, Gonzaga University; Leland K. Doebler, University of Montevallo; Kellah Edens, University of South Carolina; Catherine Emilhovich, SUNY–Buffalo; Joanne B. Engel, Oregon State University; Kathy Farber, Bowling Green State University; William R. Fisk, Clemson University; Victoria Fleming, Miami University of Ohio; M. Arthur Garmon, Western Michigan University; Roberta J. Garza, Pan American University–Brownsville; Mary Gauvain, University of California–Riverside; Sister Nancy Gilchriest, St. Joseph's College; Nathan Gonyea, SUNY–Oneonta; Cheryl Greenberg, University of North Carolina–Greensboro; Richard Hamilton, University of Houston; Jennifer Mistretta Hampston, Youngstown State University; Ken Hay, Indiana University; Arthur Hernandez, University of Texas–San Antonio; Lynley Hicks, University of Missouri-Kansas City; Heather Higgins, University of North Carolina—Greensboro; Frederick C. Howe, Buffalo State College; Peggy Hsieh, University of Texas–San Antonio; Dinah Jackson, University of Northern Colorado; Janina M. Jolley, Clarion University of Pennsylvania; Caroline Kaczala, Cleveland State University; CarolAnne M. Kardash, University of Missouri–Columbia; Pamela Kidder-Ashley, Appalachian State University; Kenneth Kiewra, University of Nebraska–Lincoln; Nancy F. Knapp, University of Georgia; Mary Lou Koran, University of Florida; Randy Lennon, University of Northern Colorado; Howard Lloyd, University of Kentucky; Susan C. Losh, Florida State University; Pamela Manners, Troy State University; Hermine H. Marshall, San Francisco State University; Teresa McDevitt, University of Northern Colorado; Sharon McNeely, Northeastern Illinois University; Michael Meloth, University of Colorado–Boulder; Kelly S. Mix, Michigan State University; Bruce P. Mortenson, Louisiana State University; Janet Moursund, University of Oregon; P. Karen Murphy, The Pennsylvania State University; Gary A. Negin, California State University; Joe Olmi, The University of Southern Mississippi; Helena Osana, Concordia University; James Persinger, Emporia State University; Judy Pierce, Western Kentucky University; James R. Pullen, Central Missouri State University; Gary F. Render, University of Wyoming; Robert S. Ristow, Western Illinois University; Jeff Sandoz, University of Louisiana—Lafayette; Rolando Santos, California State University—Los Angeles; Gregg Schraw, University of Nebraska–Lincoln; Dale H. Schunk, University of North Carolina—Greensboro; Mark Seng, University of Texas; Glenn E. Snelbecker, Temple University; Johnna Shapiro, University of California–Davis; Kenneth Springer, Southern Methodist University; Harry L. Steger, Boise State University; Bruce Torff, Hofstra University; Ann Turnbull, University of Kansas; Julianne C. Turner, University of Notre Dame; Tina Van Prooyen, Heartland Community College; Enedina Vazquez, New Mexico State University; Courtney Vorell, Minnesota School of Business; Alice A. Walker, SUNY–Cortland; Mary Wellman, Rhode Island College; Jane A. Wolfle, Bowling Green State University; Ya-Shu Yang, University of Nebraska–Lincoln; and Karen Zabrucky, Georgia State University.

Coming on board for the ninth edition were these reviewers, who offered helpful suggestions now reflected in the book: E. Namisi Chilungu, Georgia State University; Darlene DeMarie, University of South Florida; Beverly K. McIntyre, University of North Carolina–Charlotte; Joseph Pizzillo, Rowan University; Thomas R. Scheira, SUNY–Buffalo; and Julia Yoo, Lamar University.

Some of our own students and teacher interns—especially Jenny Bressler, Kathryn Broadhead, Ryan Francoeur, Gerry Holly, Michele Minichiello, Shelly Lamb, Kim Sandman, Melissa Tillman, Nick Valente, and Brian Zottoli—have at one time or another agreed to let us use their interviews, essays, and experiences as examples. Teachers and administrators at schools both home and abroad (including two of my own children, now teachers themselves) have allowed us to share their strategies with our readers; we thank Liz Birnam, Berneen Bratt, Tom Carroll, Barbara Dee, Jackie Filion, Tina Ormrod Fox, Sarah Gagnon, Dinah Jackson, Sheila Johnson, Don Lafferty,

Gary MacDonald, Sharon McManus, Linda Mengers, Mark Nichols, Jeff Ormrod, Ann Reilly, and Gwen Ross. The Andermans are particularly grateful to two of their graduate students, Megan Sanders and Alyssa Emery, who assisted them with several administrative tasks in the preparation of their chapters.

Many young people, too, deserve thanks for letting us use their work. In particular, I want to acknowledge the contributions of the following present and former elementary and secondary school students: Andrew and Katie Belcher; Noah and Shea Davis; Zachary Derr; Amaryth, Andrew, and Anthony Gass; Ben and Darcy Geraud; Dana Gogolin; Colin Hedges; Erin Islo; Charlotte Jeppsen; Laura Linton; Michael McShane; Frederik Meissner; Alex, Jeff, and Tina Ormrod; Patrick Paddock; Isabelle Peters; Cooper Remignanti; Ian Rhoads; David and Laura Riordan; Corey and Trisha Ross; Ashton and Haley Russo; Alex and Connor Sheehan; Matt and Melinda Shump; Andrew Teplitz; Emma Thompson; Grace Tober; Grant Valentine; Caroline and Hannah Wilson; and Geoff Wuehrmann.

Last but certainly not least, the Andermans and I must thank our families, who have forgiven our countless hours spent either buried in our books and journals or else glued to our computers. Without their continuing understanding and support, this ninth edition would never have seen the light of day.

J. E. O.

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Brief Contents

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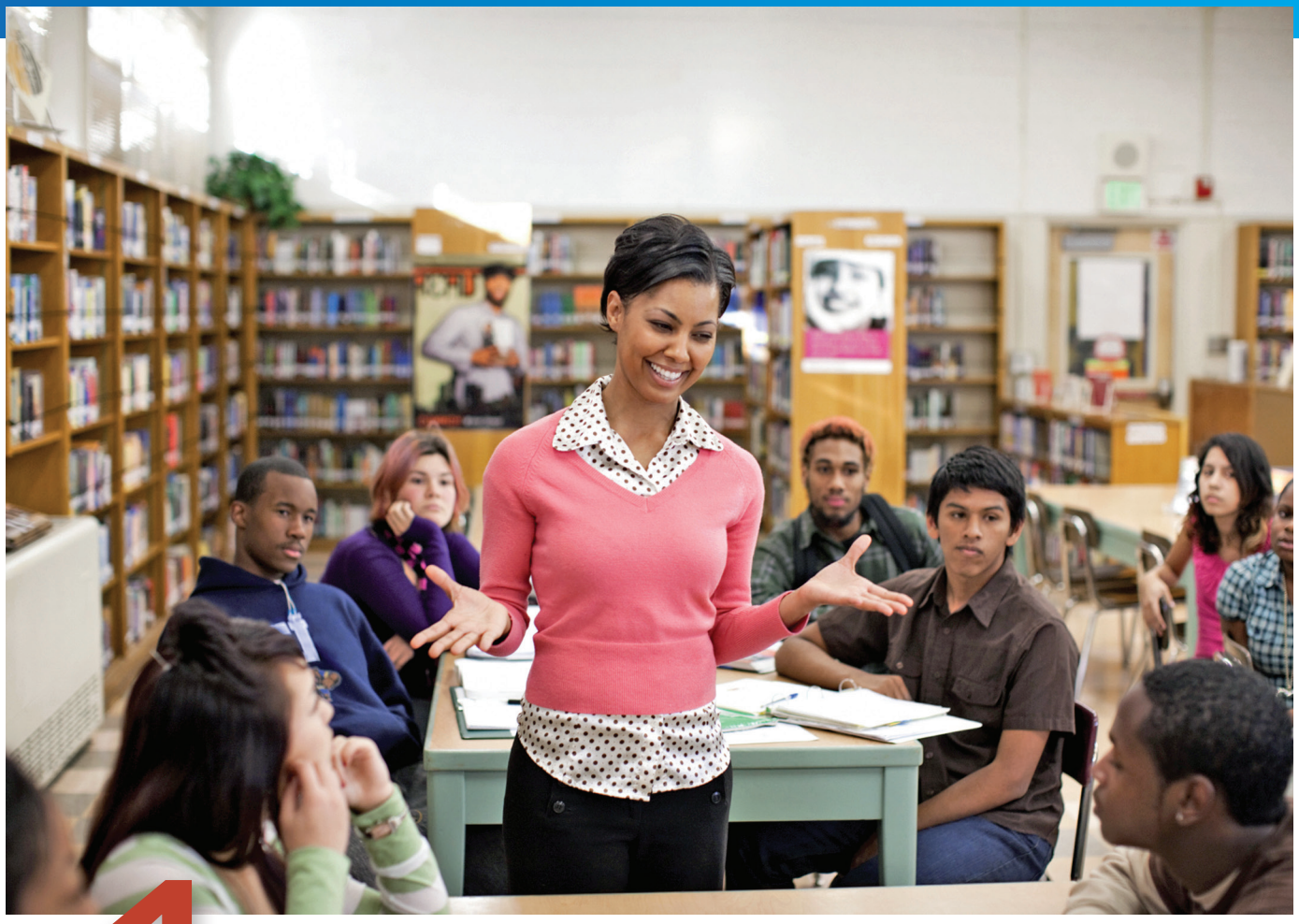

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1 Teaching and Educational Psychology

Learning Outcomes

1.1 Explain the importance of research in classroom decision making.

1.2 Draw appropriate conclusions from different types of research studies.

1.3 Describe several strategies for collecting information about your own students.

1.4 Plan long-term strategies for gaining expertise as a teacher.

1.5 Use effective strategies when you read and study.

CASE STUDY: THE "NO D" POLICY

Anne Smith is a ninth-grade English teacher with 10 years of teaching experience, and by all accounts she is an excellent teacher. Even so, in previous years many of her students haven't invested much time or energy in their writing assignments and seemingly haven't been bothered by the Cs and Ds they've eventually earned in her classes. In an effort to more fully engage this year's students in their schoolwork, Ms. Smith begins fall semester by initiating two new policies. First, to pass her course, students must earn at least a C; she won't give anyone a final grade of D. Second, students will have multiple opportunities to revise and resubmit assignments; she'll give whatever feedback students need—and, if necessary, one-on-one instruction—to help them improve their work. She solicits students' questions and concerns about the new policies, gains their agreement to "try something new," and engages them in a discussion of specific, concrete characteristics of A-quality, B-quality, and C-quality work. Then, as the semester progresses, she regularly administers brief surveys to get students' feedback about her innovations, asking such questions as "How is the 'no D' working for you?" "Do you think your grade is an accurate reflection of your learning?" and "Any suggestions?"

Students' responses on the surveys are overwhelmingly positive. Students mention noticeable improvements in the quality of their writing and increasingly report that they believe themselves to be in control of both their learning and their grades. Furthermore, they begin to see their teacher in a new light—"as one who will help them achieve their best work, not as one who just gives out grades . . . as a coach encouraging them along the long race of learning." Final course grades also confirm the value of the new policies: A much higher percentage of students earn grades of C or better than has been true in past years. (Action research project described in A. K. Smith, 2009.)

- Effective teachers don't simply transmit new information and skills to students; they also work hard to help students *master* the information and skills. In the case study just presented, what various strategies does Ms. Smith use to foster her students' writing development?

Teaching other people—especially teaching the generation that will follow you into the adult world—can be one of the most rewarding professions on the planet. It can also be a very challenging profession. Certainly effective teaching involves presenting a topic or skill in such a way that students can understand and master it. Yet it involves many other

CHAPTER OUTLINE

things as well. For instance, teachers must motivate students to *want* to learn the subject matter, must help students recognize what true mastery involves, and—in order to appropriately individualize instruction—must assess each student's progress in his or her learning and development. And, in general, effective teachers create an environment in which students believe that if they work hard and have reasonable support, they can achieve at high levels. In the opening case study, Anne Smith does all of these things.

Mastering the multifaceted nature of teaching takes time and practice, of course. But it also takes knowledge about human learning and motivation, developmental trends, individual and group differences, and effective classroom practices. Such topics are the domain of **educational psychology**. This book will help you understand children and adolescents—how they learn and develop, how they're likely to be similar to but also different from one another, what topics and activities are apt to engage them in the classroom, and so on. It will also give you a toolbox of strategies for planning and carrying out instruction, creating an environment that keeps students motivated and on task, and assessing students' progress and achievement.

Teaching as Evidence-Based Practice

You yourself have been a student for many years now, and in the process you've undoubtedly learned a great deal about how children change over time and about how teachers can foster their learning and development. But exactly how much *do* you know? To help you find out, we authors offer a short pretest, Ormrod's Own Psychological Survey (OOPS).

EXPERIENCING FIRSTHAND

ORMROD'S OWN PSYCHOLOGICAL SURVEY (OOPS)

Decide whether each of the following statements is *true* or *false.*

True False 1. Some children are predominantly left-brain thinkers, whereas others are predominantly right-brain thinkers.

True False 2. Children's personalities are largely the results of their home environments.

True False 3. Instruction is most effective when it is tailored to students' individual learning styles.

True False 4. The best way to learn and remember a new fact is to repeat it over and over.

True False 5. Students often misjudge how much they know about a topic.

True False 6. Anxiety sometimes helps students learn and perform more successfully in the classroom.

True False 7. Playing video games can enhance children's cognitive development and school achievement.

True False 8. The ways in which teachers assess students' learning influence what and how students actually learn.

Following are the correct answers to each item, along with an explanation regarding *why* it is true or false.

1. *Some children are predominantly left-brain thinkers, whereas others are predominantly right-brain thinkers*. FALSE. With the development of new medical technologies in recent years, researchers have learned a great deal about how the human brain works and which parts of it specialize in which aspects of human thinking. The two halves, or *hemispheres,* of the brain do seem to have somewhat different specialties, but they continually communicate and collaborate in tackling even the simplest of daily tasks. For all intents and purposes, there's no such thing as left-brain or right-brain thinking (Bressler, 2002; M. I. Posner & Rothbart, 2007).
2. *Children's personalities are largely the results of their home environments*. FALSE. Certainly children's home environments mold their behaviors to some extent, but so, too, can teachers and other people outside the family have some influence (e.g., Morelli & Rothbaum, 2007).

The brain's structure, functioning, and development are discussed in Chapter 2 and in Applying Brain Research features throughout the book.

Furthermore, inherited characteristics have a significant impact on children's personalities. From day 1 infants are noticeably different in the extent to which they're calm or fussy, shy or outgoing, fearful or adventurous, and attentive or easily distractible. Such differences in *temperament* appear to have their roots in biology and genetics, and they persist throughout the childhood years and into adulthood (Kagan & Snidman, 2007; Keogh, 2003; Rothbart, 2011).

Chapter 3 discusses temperament and personality development.

3. *Instruction is most effective when it is tailored to students' individual learning styles*. FALSE. Contrary to a popular belief, most measures of supposed "learning styles" merely reflect students' self-reported *preferences*, and tailoring instruction to such preferences doesn't noticeably enhance students' learning or academic achievement (Kirschner & van Merriënboer, 2013; Kozhevnikov, Evans, & Kosslyn, 2014; Krätzig & Arbuthnott, 2006; Mayer & Massa, 2003). It is far more important that teachers base their instructional practices on knowledge of the cognitive processes that underlie how virtually *all* students think and learn.

Chapter 5 describes individual differences in cognitive abilities and dispositions that can significantly impact students' learning and academic achievement. Chapter 6 describes general mental processes that underlie effective thinking, learning, and memory.

4. *The best way to learn and remember a new fact is to repeat it over and over*. FALSE. Although repeating information several times is better than doing nothing at all, repetition of specific facts is a relatively *in*effective way to learn. Students learn information more easily and remember it longer when they connect it with things they already know. One especially effective strategy is **elaboration**: using prior knowledge to expand or embellish on a new idea in some way, perhaps by drawing inferences from a historical fact, identifying new examples of a scientific concept, or thinking of situations in which a mathematical procedure might be helpful (J. R. Anderson, 2005; Graesser & Bower, 1990).

Chapter 6 discusses elaboration and its implications for instructional practice.

5. *Students often misjudge how much they know about a topic*. TRUE. Most adults and children are *not* the best judges of what they do and don't know. For example, many students think that if they've spent a long time studying a textbook chapter, they must know its contents very well. Yet if they've spent most of their time studying ineffectively—perhaps by "reading" while thinking about something else altogether or by mindlessly copying definitions—they may know far less than they think they do (N. J. Stone, 2000; Thiede, Griffin, Wiley, & Redford, 2009).

Chapter 7 describes this *illusion of knowing* in more detail.

6. *Anxiety sometimes helps students learn and perform more successfully in the classroom*. TRUE. Many people think that anxiety is always a bad thing. In fact, a *little bit* of anxiety can actually *improve* learning and performance, especially when students perceive a task to be something they can accomplish with reasonable effort. For instance, a small, manageable amount of anxiety can spur students to complete their work carefully and to study for tests (Cassady, 2010b; N. E. Perry, Turner, & Meyer, 2006; Shipman & Shipman, 1985).

Chapter 11 explores anxiety's effects in different situations.

7. *Playing video games can enhance children's cognitive development*. TRUE—or more accurately, SOMETIMES TRUE. A great deal of time spent playing video games *instead of* reading, doing homework, and engaging in other school-related activities can definitely interfere with children's long-term academic success. But some video games can be powerful tools for promoting important cognitive abilities, such as sustained attention and spatial reasoning (Gentile, 2011; Rothbart, 2011; Tobias & Fletcher, 2011). And increasingly, educational technologists have been designing highly motivating video games that simulate real-world problems and foster complex problem-solving skills (Barab, Gresalfi, & Ingram-Goble, 2010; Gee, 2010; Squire, 2011).

Chapter 3 describes potential adverse effects of violent video games on children's aggression. Chapter 12 explores potential benefits of appropriately designed video games.

8. *The ways in which teachers assess students' learning influence what and how students actually learn*. TRUE. We see this principle in action in the opening case study: When Anne Smith's "No D" and multiple-submission policies convey the message that students can't get by with marginal work, students are more likely to seek feedback about their work, benefit from their mistakes, and enhance their writing skills. *Good* assessments encourage cognitive processes essential for high-quality learning. For example, students are more likely to pull class material into an integrated, meaningful whole if they expect assessment activities to require such synthesis, and they're more likely to focus on applying what they learn to new situations if they think that assessments will involve application tasks (Carpenter, 2012; N. Frederiksen, 1984b; Lundeberg & Fox, 1991).

Chapter 14 and Chapter 15 explore numerous ways in which assessment practices affect students' learning.

How many of the OOPS items did you answer correctly? Did some of the false items seem convincing enough that you marked them true? Did one or more of the true items contradict certain beliefs you had? If either of these was the case, you're hardly alone. College students often agree with statements that seem to be obviously "true" but are, in fact, partially or completely incorrect (Gage, 1991; L. S. Goldstein & Lake, 2000; Woolfolk Hoy, Davis, & Pape, 2006).

It's easy to be persuaded by "common sense" and to assume that what seems logical must be true. Yet common sense and logic don't always give us the real scoop about how people actually learn and develop, nor do they always give us appropriate guidance about how best to help students succeed in classrooms. Instead, our knowledge about learning and instruction must come from a more objective source of information—that is, from systematic research.

As professionals, teachers are *decision makers* who must choose among many, many possible strategies for helping students learn and develop. Certainly teaching is an art to some degree: Good teachers are creative and innovative, and they add many imaginative touches to classroom lessons and activities. But that art must be based on a firm foundation of research findings both about how human beings learn and about how teachers can help them learn effectively; in other words, it must be based on the *science of learning* and the *science of instruction.* Ultimately, good teaching involves **evidence-based practices**—the use of instructional methods and other classroom strategies that research has consistently shown to bring about significant gains in students' development and academic achievement.

MyEdLab **Self-Check 1.1**

Understanding and Interpreting Research Findings

Many research studies involve **quantitative research**: They yield numbers that reflect percentages, frequencies, or averages related to certain characteristics or phenomena. For example, a quantitative study might provide information about students' scores on achievement tests, students' responses to rating-scale questionnaires, or school district records of students' attendance and dropout rates.

Other studies involve **qualitative research**: They yield nonnumerical data—perhaps in the form of verbal reports, written documents, pictures, videos, or maps—that capture many aspects of a complex situation. For example, a qualitative study might involve one-on-one interviews in which students describe their hopes for the future, a detailed case study of interpersonal relationships within a tight-knit clique of adolescent girls, or in-depth observations of several teachers who create distinctly different psychological atmospheres in their classrooms.

To a considerable degree, the research study described at the beginning of the chapter is a quantitative one: Anne Smith tabulates students' responses to various survey questions and computes the percentages of various final class grades. But when she collects the completed surveys, she also looks closely at students' specific comments and suggestions—qualitative information.

Not all research on learning and instruction is *good* research, of course. Furthermore, people sometimes draw inappropriate conclusions from even the best of research studies. It's important, therefore, that teachers understand what various kinds of research studies can and cannot tell us about learning and instruction.

QUANTITATIVE RESEARCH

Quantitative research studies vary widely in nature, but you might think of them as falling into four general categories: descriptive, correlational, experimental, and quasi-experimental. These categories yield different kinds of information and warrant different kinds of conclusions.

DESCRIPTIVE STUDIES

A **descriptive study** does exactly what its name implies: It *describes* a situation. Descriptive studies might give us information about the characteristics of students, teachers, or schools. They might also provide information about how often certain events or behaviors occur. In general, descriptive studies enable us to draw conclusions about the way things are—the current state of affairs.

CORRELATIONAL STUDIES

A **correlational study** explores possible associations among two or more variables. For instance, it might tell us how closely various human characteristics are associated with one another, or it might give us information about the consistency with which certain human behaviors occur in conjunction with certain environmental conditions. In general, correlational studies enable us to draw conclusions about **correlation**: the extent to which two characteristics or phenomena tend to be found together or to change together. Two variables are correlated when one tends to increase as the other increases (a *positive correlation*) or when one tends to *de*crease as the other increases (a *negative correlation*). Correlations are often described numerically with a statistic known as a *correlation coefficient*.

You can learn about correlation coefficients in Appendix A.

Sometimes correlational studies involve comparing two or more groups that differ with respect to a particular characteristic, such as age, gender, or background.[1] For example, a correlational study might compare the average achievement test scores of boys and girls, or it might investigate whether young children who have had considerable exposure to reading materials at home learn to read more quickly at school than children without such exposure.

Any correlation between two variables allows us to make *predictions* about one variable when we know the status of the other. For example, if we find that, on average, 15-year-olds are more capable of abstract thought than 10-year-olds—in other words, if age and abstract thinking ability are correlated—we can predict that high school students will benefit more from an abstract discussion of democratic government than fourth graders will. And if we find that children learn to read more easily if they've had many previous experiences with books at home, we might take proactive steps to enhance the early literacy skills of children without such experiences. Yet our predictions will be imprecise ones at best, with exceptions to the general rule. For example, even if, *on average,* 15-year-olds have considerable ability to think about abstract ideas, some 15-year-olds will often struggle with abstract subject matter.

A more significant limitation of correlational studies is that although they may demonstrate that a relationship exists, they never tell us for certain *why* it exists. They don't tell us what specific factors—previous experiences, personality, motivation, or perhaps other things we haven't thought of—are the cause of the association we see. In other words, *correlation does not necessarily indicate causation.*

EXPERIMENTAL AND QUASI-EXPERIMENTAL STUDIES

Descriptive and correlational studies describe things as they exist or have previously existed naturally in the environment. In contrast, an **experimental study**, or **experiment**, is a study in which the researcher intentionally changes, or *manipulates,* one or more aspects of the environment (often called *independent variables*) and then measures the effects of such changes on something else. In educational research the "something else" being affected (a *dependent variable*) is typically some aspect of student behavior—perhaps end-of-semester grades, persistence in trying to solve difficult math problems, or ability to interact appropriately with peers. In a good experiment, a researcher *separates and controls variables,* testing the possible effects of one independent variable while holding all other potentially influential variables constant.

Some experimental studies involve simultaneously giving a single group of individuals two or more distinct treatments and comparing the specific effects of each treatment. Other experimental studies involve two or more groups that are treated differently. The following three examples illustrate the multiple-group approach:

- A researcher uses two different instructional methods to teach reading comprehension skills to two different groups of students. (Instructional method is the independent variable.) The researcher then assesses students' reading ability (the dependent variable) and compares the average reading-ability scores of the two groups.
- A researcher gives three different groups of students varying amounts of practice with woodworking skills. (Amount of practice is the independent variable.) The researcher

[1]Such group-comparison studies are sometimes called *causal-comparative studies*. However, as B. Johnson (2001) has pointed out, this label may mislead us to believe that such studies reveal cause-and-effect relationships, when in fact they do not.

subsequently scores the quality of each student's woodworking project (the dependent variable) and compares the average scores of the three groups.

- A researcher gives one group of students an intensive instructional program designed to improve their study skills. The researcher gives another group either no instruction or, better still, instruction in subject matter unrelated to study skills. (Presence or absence of instruction in study skills is the independent variable.) The researcher later (a) assesses the quality of students' study skills and (b) obtains their grade point averages—thus, there are two dependent variables—to see whether the program had an effect.

Each of these examples includes one or more **treatment groups** that are recipients of a planned intervention. The third example also includes a **control group** that receives either no intervention or a *placebo* intervention that's unlikely to affect the dependent variable(s) in question. In many experimental studies, participants are assigned to groups *randomly*—for instance, by drawing names out of a hat. Such random assignment is apt to yield groups that are, on average, roughly equivalent on other variables (e.g., pre-existing ability levels, personality characteristics, motivation) that might affect the dependent variable(s).

Random assignment to groups isn't always possible or practical, however, especially in research studies conducted in actual schools and classrooms. For example, when studying the potential benefits of a new teaching technique or therapeutic intervention, a researcher may not be able to completely control which students receive the experimental treatment and which do not, *or* a particular treatment or intervention may have important benefits for *all* students. In such situations, researchers often conduct a **quasi-experimental study**, in which they take into account but don't completely control other influential factors. Following are two examples:

- A researcher implements a new after-school homework program at one high school and identifies a comparable high school without such a program to serve as a control group. The researcher obtains achievement test data for students at both schools both before and after the program's implementation. Ideally, to document the homework program's effectiveness, the average test scores for the two high schools should be the same *before* program begins but different *after* its implementation. (Such an approach is known as a *pretest–posttest study.*)
- Three researchers want to study the effects of safety instructions on children's behaviors on the playground. The researchers present the instructional intervention to first graders one week, second graders the following week, and kindergartners and third graders the week after that. The researchers monitor students' playground behavior before, during, and after the intervention to determine whether each grade-level group's risky playground behavior decreases immediately following the intervention. (Such an approach is known as a *multiple-baselines study;* study described here was conducted by Heck, Collins, & Peterson, 2001.)

When researchers conduct quasi-experimental studies, they don't control for all potentially influential variables and so can't completely rule out alternative explanations for the results they obtain. For instance, in the preceding after-school homework program example, possibly the school getting the new homework program—but *only* that school—has simultaneously begun to use more effective instructional methods, and those methods are the reason for any increase in achievement scores. And in the playground safety example, perhaps certain other things coincidentally happened in the four classrooms during their respective safety-instructions weeks, and those things were the true causes of children's behavior changes.

When carefully designed and conducted, experimental studies and, to a lesser degree, quasi-experimental studies enable us to draw conclusions about *causation*—about *why* behaviors occur. Yet for practical or ethical reasons, many important questions in education don't easily lend themselves to experimental manipulation and tight control of other potentially influential variables. For instance, although we might reasonably hypothesize that children can better master difficult math concepts if they receive individual tutoring, most public school systems can't afford such a luxury, and it would be unfair to provide tutoring for some students and deny it to a control group of other, equally needy students. And, of course, it would be highly unethical to study the effects of aggression by intentionally placing some children in a violent environment. Some important

educational questions, then, can be addressed only with descriptive or correlational studies, even though such studies can't help us pin down precise cause-and-effect relationships.

Columns 2, 3, and 4 of Table 1.1 contrast descriptive, correlational, experimental, and quasi-experimental studies and give examples of the kinds of questions each type of study might address.

QUALITATIVE RESEARCH

Rather than address questions related to quantity—questions regarding *how much, how many,* or *how often*—researchers sometimes want to look in depth at the nature of certain characteristics or behaviors. Imagine, for example, that a researcher wants to find out what kinds of study strategies high-achieving students tend to use. One approach would be simply to ask the students questions such as "What things do you do to help you remember what you read in your

COMPARE/CONTRAST

TABLE 1.1 • Contrasting Various Types of Research

	QUANTITATIVE RESEARCH STUDIES			
	DESCRIPTIVE STUDIES	**CORRELATIONAL STUDIES**	**EXPERIMENTAL AND QUASI-EXPERIMENTAL STUDIES**	**QUALITATIVE RESEARCH STUDIES (DESCRIPTIVE)**
General Nature and Purposes	• Capture the current state of affairs regarding a real-world issue or problem	• Identify associations among characteristics, behaviors, and/or environmental conditions • Enable predictions about one variable, given knowledge of the degree or quantity of another variable • Provide an alternative when experimental manipulations are unethical or impossible	• Manipulate one (independent) variable in order to observe its possible effect on another (dependent) variable • Eliminate other plausible explanations for observed outcomes (especially in carefully controlled experimental studies) • Enable conclusions about cause-and-effect relationships	• Portray the complex, multifaceted nature of human behavior, especially in real-world social settings
Limitations	• Don't enable either (a) predictions about one variable based on another variable or (b) conclusions about cause-and-effect relationships	• Enable only imprecise predictions, with many exceptions to the general relationships observed • Don't enable conclusions about cause-and-effect relationships	• May not completely eliminate alternative explanations for observed outcomes (especially true for quasi-experimental studies) • In some cases, involve artificial laboratory conditions that don't resemble real-life learning environments (true for many tightly controlled experimental studies)	• Don't enable either predictions or conclusions about cause-and-effect relationships
Examples of Questions That Might Be Addressed	• How pervasive are gender stereotypes in popular children's literature? • What kinds of aggressive behaviors occur in schools, and with what frequencies? • How well have students performed on a recent national achievement test?	• Are better readers also better spellers? • Are students more likely to be aggressive at school if they often see violence at home or in their neighborhoods? • To what extent are students' class grades correlated with their scores on achievement tests?	• Which of two reading programs produces greater gains in reading comprehension? • Which method is most effective in reducing aggressive behavior—reinforcing appropriate behavior, punishing aggressive behavior, or a combination of both? • Do different kinds of tests (e.g., multiple-choice vs. essay tests) encourage students to study in different ways?	• What things do high-achieving students say they do "in their heads" when they read and study their textbooks? • What distinct qualities characterize high schools in which members of various adolescent gangs interact congenially and respectfully? • In what ways do teachers' instructional practices change when their jobs and salaries depend on their students' scores on statewide or national achievement tests?

textbooks?" and "How do you prepare for tests in your classes?" Students' responses to such open-ended questions are apt to go in many different directions, sometimes focusing on various behaviors (e.g., taking notes, working on practice problems) and at other times focusing on various mental processes (e.g., trying to make sense of a passage, generating new examples of concepts). Although it might be possible to categorize students' responses and count those falling into each category (thereby obtaining some quantitative data), the researcher may also want to preserve the multifaceted qualities of students' responses by reporting word-for-word excerpts from the interviews.

Qualitative research is often used to explore the complex nature of human behavior in social settings—perhaps in particular social groups, classrooms, schools, or cultures. For example, in-depth qualitative studies have contributed in important ways to our knowledge of school characteristics that affect the academic and social success of students from diverse backgrounds (e.g., Hemmings, 2004; Ladson-Billings, 1995b; Ogbu, 2003).

Like descriptive quantitative studies, qualitative studies *describe* the current state of affairs; they're inappropriate for drawing hard-and-fast conclusions about correlation or cause–and–effect. The rightmost column of Table 1.1 presents examples of questions that might best be answered by qualitative research.

MIXED-METHODS RESEARCH

You shouldn't think of quantitative and qualitative research as an either–or situation. Like Anne Smith in the opening case study, many educational researchers can best address their research questions by combining elements of both quantitative and qualitative research in what is known as a **mixed-methods study**. For example, in a study described in the *American Educational Research Journal* in 1999, researchers Melissa Roderick and Eric Camburn tracked more than 27,000 students' academic progress as they made the transition from small elementary or middle schools to much larger high schools in the Chicago public school system. Many students showed a sharp decline in academic achievement in ninth grade, their first year of high school. More than 40% of first-semester ninth graders (males especially) failed at least one course, and students who achieved at low levels early in their high school careers were more likely to drop out before graduation.

Such troubling findings are examples of quantitative data, but the researchers also obtained qualitative information that can help us understand the numbers. For instance, they described a student named Anna, who had done well in her neighborhood K–8 school and seemingly had the basic skills she needed to successfully tackle a high school curriculum. Unfortunately, Anna was overwhelmed by the new demands that her ninth-grade classes placed on her, and her first-semester final grades included several Ds and an F. In an interview with one of the researchers, she gave the following explanation:

> In geography, "he said the reason why I got a lower grade is 'cause I missed one assignment and I had to do a report, and I forgot that one." In English, "I got a C . . . 'cause we were supposed to keep a journal, and I keep on forgetting it 'cause I don't have a locker. Well I do, but my locker partner she lets her cousins use it, and I lost my two books there. . . . I would forget to buy a notebook, and then I would have them on separate pieces of paper, and I would lose them." And, in biology, "the reason I failed was because I lost my folder . . . it had everything I needed, and I had to do it again, and, by the time I had to turn in the new folder, I did, but he said it was too late. . . ." (Roderick & Camburn, 1999, p. 305)

Additionally, the interview revealed Anna's perception of most school faculty members as being uncaring, inattentive to students' difficulties, and inflexible in evaluating students' achievement.

If Anna's behaviors, experiences, and perceptions are common ones—and apparently they are—they point to the need for greater faculty support as students make the transition from a close-knit elementary or K–8 school to a more impersonal high school environment. This support might be not only emotional but also *academic*—for instance, it should probably include instruction and guidance in organizational skills and effective study habits. We must be careful in drawing such inferences, however. Remember, qualitative data are essentially *descriptive* data: They tell