EDUCATIONAL
Psychology

ANITA WOOLFOLK

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THIRTEENTH EDITION

Educational Psychology

ANITA WOOLFOLK

The Ohio State University

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PEARSON

To my mother,

Marion Wieckert Pratt.

A remarkable educator,
An adventurous world traveler,
A courageous advocate for all in need,
And a wonderful guide in life—

Thank you.

About the Author

So you will know your author a bit better, here is some information.

Anita Woolfolk Hoy was born in Fort Worth, Texas, where her mother taught child development at TCU and her father was an early worker in the computer industry. She is a Texas Longhorn—all her degrees are from the University of Texas, Austin, the last one a PhD. After graduating, she was a psychologist working with children in elementary and secondary schools in 15 counties of central Texas. She began her career in higher education as a professor of educational psychology at Rutgers University, and then moved to The Ohio State University in 1994. Today she is Professor Emerita at Ohio State. Anita's research focuses on motivation and cognition, specifically, students' and teachers' sense of efficacy and teachers' beliefs about education. For many years she was the editor of *Theory Into Practice,* a journal that brings the best ideas from research to practicing educators. With students and colleagues, she has published over 80 books, book chapters, and research articles. Anita has served as Vice-President for Division K (Teaching & Teacher Education) of the American Educational Research Association and President of Division 15 (Educational Psychology) of the American Psychological Association. Just before completing this thirteenth edition of *Educational Psychology,* she collaborated with Nancy Perry, University of British Columbia, to write the second edition of *Child Development* (Pearson, 2015), a book for all those who work with and love children.

Preface

Many of you reading this book are enrolled in an educational psychology course as part of your professional preparation for teaching, counseling, speech therapy, nursing, or psychology. The material in this text should be of interest to everyone who is concerned about education and learning, from the nursery school volunteer to the instructor in a community program for adults with disabilities. No background in psychology or education is necessary to understand this material. It is as free of jargon and technical language as possible, and many people have worked to make this edition clear, relevant, and interesting.

Since the first edition of *Educational Psychology* appeared, there have been many exciting developments in the field. The thirteenth edition continues to emphasize the educational implications and applications of research on child development, cognitive science, learning, motivation, teaching, and assessment. Theory and practice are not separated in the text, but are considered together. The book is written to show how information and ideas drawn from research in educational psychology can be applied to solve the everyday problems of teaching. To help you explore the connections between research and practice, you will find in these pages a wealth of examples, lesson segments, case studies, guidelines, and even practical tips from experienced teachers. As you read this book, I believe you will see the immense value and usefulness of educational psychology. The field offers unique and crucial knowledge to any who dare to teach and to all who love to learn.

NEW CONTENT IN THE THIRTEENTH EDITION

Across the book, there is increased coverage of a number of important topics. Some of these include:

- New explorations of current research on teaching and models of **expert teaching**, introduced in Chapter 1 and continued throughout the book.
- Increased coverage of the **brain, neuroscience, and teaching** emphasized in Chapter 2 and also integrated into several other chapters.
- Increased coverage of **the impact of technology and virtual learning environments** on the lives of students and teachers today.
- Increased emphasis on **diversity in today's classrooms** (see especially Chapters 1 to 6). Portraits of students in educational settings make diversity real and human for readers.

Key content changes in each chapter include:

- Chapter 1: My goal is that this text will provide the knowledge and skills that will enable you to build a solid foundation for an authentic sense of teaching efficacy in every context and for every student, so there is new information about **three models of good teaching**: Charlotte Danielson's Framework for Teaching, TeachingWorks from the University of Michigan, and the Gates Foundation Measure of Effective Teaching. Also, the section on research now examines different kinds of **qualitative and quantitative research** and what you can learn from each kind (see Table 1.2).
- Chapter 2: New information on the **brain**, **synaptic plasticity**, **executive functioning**, and **implications for teaching**, including an approach based on Vygotsky called *Tools of the Mind*.
- Chapter 3: New sections on **cultural differences in play**, **physical activity and students with disabilities**, **eating disorders** and the Web sites that promote them, **self-concept**, and Jonathan Haidt's **model of moral psychology**.
- Chapter 4: New sections on **nine possible multiple intelligences**, **accommodations under Section 504**, **autism spectrum disorders**, **student drug use**, and ways to **identify students who are gifted and talented**.

- Chapter 5: New information on **learning to read**, **emergent literacy and language diversity**, **sheltered instruction**, and **student-led conferences**.
- Chapter 6: New coverage of **homeless and highly mobile students**, expanded coverage of **poverty and school achievement**, **opportunity gaps**, and **stereotype threat**.
- Chapter 7: Expanded coverage of **teaching implications** of behavioral learning.
- Chapter 8: Updated coverage of **working memory**, **developmental differences**, and **teaching implications** of cognitive learning theories.
- Chapter 9: Updated sections on **metacognition** and **learning strategies**, **creativity**, and **transfer**, and a new section on **Paul and Elder's model of critical thinking**.
- Chapter 10: New material on **inquiry learning** and **teaching in a digital world**, including **Betty's Brain**—an example of a virtual learning environment, the **use of games** in teaching, and the initiative to teach **computational thinking and coding**.
- Chapter 11: Updated coverage of **self-efficacy**, **self-regulated learning**, and new material on **emotional self-regulation**.
- Chapter 12: Updated treatment of **self-determination theory** and **goal theory**, expanded coverage of **helping students cope with anxiety**, and new material on **flow** and **motivation**.
- Chapter 13: New sections on understanding your **beliefs about classroom management**, **creating caring relationships**, **bullying**, **restorative justice, and** Marvin Marshall's views on **consequences and penalties**.
- Chapter 14: Recent **research on teaching**, as well as new sections on the **Common Core** and **Understanding by Design**.
- Chapter 15: New sections on **what teachers think** about high-stakes testing, **value-added assessment**, and **PARCC tests**.

A CRYSTAL CLEAR PICTURE OF THE FIELD AND WHERE IT IS HEADED

The thirteenth edition maintains the lucid writing style for which the book is renowned. The text provides accurate, up-to-date coverage of the foundational areas within educational psychology: learning, development, motivation, teaching, and assessment, combined with intelligent examinations of emerging trends in the field and society that affect student learning, such as student diversity, inclusion of students with special learning needs, education and neuroscience, educational policy, and technology.

FEATURES OF THE BOOK

Advances in Digital Technologies Reflected in the Book's Pedagogy

Resources available in the etext enable readers to observe development in context and to apply and assess their understanding of the concepts in the book. These resources include (a) embedded assessments with feedback and (b) content extensions and examples.

EMBEDDED ASSESSMENTS WITH FEEDBACK. In every chapter, readers will find three types of assessments: Self-check quizzes, application exercises, and a licensure practice exercise.

- Short self-check quizzes appear at the end of each major text section. The quizzes are designed to help readers assess their mastery of the learning outcome or outcomes covered in the sections they've just read. When readers of the etext click on a highlighted link in the Pearson etext, an interactive multiple-choice quiz is displayed. Readers may answer the questions and then submit their quizzes to be scored, after which they can see the questions they've answered correctly, the questions they've answered incorrectly, and written feedback that includes rationales for the correct and incorrect answers.

ENHANCEDetext *self-check*

- Application exercises, titled *Practice Using What You Have Learned,* are included after the summary in every chapter. Clicking on the "play" button in the Pearson etext opens the exercise, allowing readers to view a video and answer open-ended questions that encourage application of chapter content to teaching and learning in real classrooms. After readers submit their answers to these questions, they receive feedback in the form of model answers written by experts.

- Licensure practice exercises, titled *Connect and Extend to Licensure,* are modeled after the types of questions found on teacher licensure exams. At the end of each chapter, these exercises include multiple-choice questions on key concepts presented in the chapter and constructed-response questions based on a short written case. Clicking on the licensure exam link allows readers to enter their responses and receive expert feedback.

CONNECT AND EXTEND TO LICENSURE

MULTIPLE-CHOICE QUESTIONS

1. Mr. Winstel was worried about his former star student, Ramon. As the seventh-grade year progressed, Ramon was frequently being called into the principal's office for skateboard stunts that broke school rules and bordered on dangerous. Recently, Ramon's parents contacted Mr. Winstel to alert him to the fact that Ramon had been skipping school to hang out with some older boys in the neighborhood. Which of the following answers would typically best describe what is happening with Ramon?
   A. Ramon's culture demands that boys of his age begin to engage in behaviors that reflect fearlessness.
   B. Ramon's limbic system is maturing, but his prefrontal lobe has not yet caught up.
   C. Ramon is engaging in deviant behaviors as a cry for attention from his parents.
   D. Ramon is undergoing a period of synaptic pruning, which causes adolescents to engage in risk-taking behavior.

2. Miss McClintock discovered that five of the children in her class were developmentally advanced. All of the students' language skills were exploding! Although many of the students still had trouble sharing, a few appeared to understand that by sharing, everyone could be happy. Finally, there was even one child who could solve conservation problems. According to Piagetian theory, in what stage are the students in Miss McClintock's class?
   A. Formal Operations
   B. Concrete Operations
   C. Preoperational
   D. Sensorimotor

3. In introducing students to persuasive advertising methods, which of the following approaches would be most apt to lead to student retention?
   A. Determine what students already know about the topic, and connect new information to their prior knowledge.

   B. Have students initially watch several commercials and take notes.
   C. Lecture students on the major persuasive techniques, and have a quiz to assess learning.
   D. Have students form groups to research persuasive techniques.

4. Research studies involving the brain and learning indicate all but which one of the following statements is true?
   A. There is no such thing as "left-brain" and "right-brain" thinking.
   B. The production of new neurons continues into adulthood.
   C. Using different modalities for instruction and activities that draw on different senses may support learning.
   D. Pruning can damage heavily used cognitive pathways.

CONSTRUCTED-RESPONSE QUESTIONS

Case

When planning for instruction, Mr. Gething remembered that students should be neither bored nor frustrated. Although this made sense to him, he was unsure how he would compensate for the diverse group of students he had in his second-period language arts class. Some students had difficulty with the English language, and other students planned to participate in the school's annual Shakespearean play. He knew that by grouping students of mixed ability, he could occasionally draw on the talents of his knowledgeable students to assist the less-advanced students. He also understood that without guidelines, students might not accomplish anything.

5. Explain the theory of learning Mr. Gething is initially drawing on, and identify the individual credited with it.
6. What is the term for the assistance that the more knowledgeable class members may provide to the less-advanced students in order for them to succeed? List some strategies these students might use to assist their peers.

ENHANCEDetext *licensure exam*

CONTENT EXTENSIONS AND EXAMPLES. This enhanced etext includes both videos and podcasts that extend and expand on the chapter content.

- The video examples allow readers to see many concepts and principles *in action*—for instance, in students' behaviors and verbal reflections, in teachers' classroom strategies, and in adult–child interactions.

Video 1.1
A bilingual teacher conducts a discussion with immigrant high school students. She asks students to discuss what teachers can do to help English learners and students from different cultures.

ENHANCEDetext *video example*

- The *AnitaTalks* podcasts are direct links to relevant selections from *Anita Talks about Teaching,* a series of podcasts in which Dr. Woolfolk discusses how chapters of this text relate to the profession of teaching.
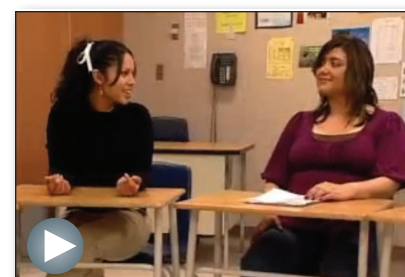
PODCAST 1.1
In this podcast, textbook author Anita Woolfolk talks about the importance of teachers in students' lives. Did you know that "teacher involvement and caring is the most significant predictor of a student's engagement in school from 1st grade through 12th grade?" Listen to learn more.

ENHANCEDetext *podcast*

Additional Text Features

With an unswerving emphasis on educational psychology's practical relevance for teachers and students in classrooms, the text is replete with current issues and debates, examples, lesson segments, case studies, and practical ideas from experienced teachers.

POINT/COUNTERPOINT
What Should Schools Do to Encourage Students' Self-Esteem?

There are over 2,000 books describing how to increase self-esteem. Schools and mental health facilities continue to develop self-esteem programs (Slater, 2002). The attempts to improve students' self-esteem have taken three main forms: personal development activities such as sensitivity training; self-esteem programs where the curriculum focuses directly on improving self-esteem; and structural changes in schools that place greater emphasis on cooperation, student participation, community involvement, and ethnic pride. Are these efforts valuable?

POINT **The self-esteem movement has big problems.** Some people have accused schools of developing programs where the main objective is "to dole out a huge heaping of praise, regardless of actual accomplishments" (Slater, 2002, p. 45). Frank Pajares and Dale Schunk (2002) point to another problem. "[W]hen what is communicated to children from an early age is that nothing matters quite as much as how they feel or how confident they should be, one can rest assured that the world will sooner or later teach a lesson in humility that may not easily be learned. An obsession with one's sense of self is responsible for an alarming increase in depression and other mental difficulties" (p. 16). Sensitivity training and self-esteem courses assume that we encourage self-esteem by changing the individual's beliefs,

Self-Esteem," suggests that we rethink self-esteem and move toward honest self-appraisal that will lead to self-control. She suggests, "Maybe self-control should replace self-esteem as a primary peg to reach for" (p. 47).

COUNTERPOINT **The self-esteem movement has promise** Erik Erikson (1980) warned years ago: "Children cannot be fooled by empty praise and condescending encouragement. They may have to accept artificial bolstering of their self-esteem in lieu of something better. . . ." Erikson explained that a strong and positive identity comes only from "wholehearted and consistent recognition of real accomplishment, that is, achievement that has meaning in their culture" (p. 95). A study that followed 322 sixth-grade students for 2 years found that students' satisfaction with school, their sense that classes were interesting and teachers cared, and teacher feedback and evaluations influenced students' self-esteem. In PE, teachers' opinions were especially powerful in shaping students' conceptions of their athletic abilities (Hoge, Smit, & Hanson, 1990). Being placed in a low-ability group or being held back in school seems to have a negative impact on students' self-esteem, but learning in collaborative and cooperative settings seems to have a positive effect (Covington, 1992; Deci & Ryan, 1985). Interestingly, special pro-

Point/Counterpoint sections in each chapter present two perspectives on a controversial question related to the field; topics include debates on the kinds of research that should guide education (p. 19), brain-based education (p. 40), the self-esteem movement (p. 104), pills or skills for students with ADHD (p. 144), the best way to teach English language learners (p. 193), tracking (p. 220), using rewards to encourage student learning (p. 280), what's wrong with memorization (p. 318), teaching critical thinking and problem solving (p. 358), problem-based education (p. 383), teacher efficacy (p. 423), the value of trying to make learning entertaining (p. 464), zero tolerance (p. 514), homework (p. 546), and holding children back (p. 590).

GUIDELINES
Helping Children of Divorce

Take note of any sudden changes in behavior that might indicate problems at home.
Examples
1. Be alert to physical symptoms such as repeated headaches or stomach pains, rapid weight gain or loss, fatigue, or excess energy.
2. Be aware of signs of emotional distress such as moodiness, temper tantrums, or difficulty in paying attention or concentrating.
3. Let parents know about the students' signs of stress.

Talk individually to students about their attitude or behavior changes. This gives you a chance to find out about unusual stress such as divorce.
Examples
1. Be a good listener. Students may have no other adult willing to hear their concerns.
2. Let students know you are available to talk, and let the student set the agenda.

Watch your language to make sure you avoid stereotypes

3. The student may be angry with his or her parents, but may direct the anger at teachers. Don't take the student's anger personally.

Find out what resources are available at your school.
Examples
1. Talk to the school psychologist, guidance counselor, social worker, or principal about students who seem to need outside help.
2. Consider establishing a discussion group, led by a trained adult, for students whose parents are going through a divorce.

Be sensitive to both parents' rights to information.
Examples
1. When parents have joint custody, both are entitled to receive information and attend parent–teacher conferences.
2. The noncustodial parent may still be concerned about the child's school progress. Check with your principal about state laws regarding the noncustodial parent's rights.

Guidelines appear throughout each chapter, providing concrete applications of theories or principles discussed. See, for example, pages 85, 198, 320.

GUIDELINES
Family and Community Partnerships

Promoting Transfer

Keep families informed about their child's curriculum so they can support learning.
Examples
1. At the beginning of units or major projects, send a letter summarizing the key goals, a few of the major assignments, and some common problems students have in learning the material for that unit.
2. Ask parents for suggestions about how their child's interests could be connected to the curriculum topics.
3. Invite parents to school for an evening of "strategy learning." Have the students teach their family members one of the strategies they have learned in school.

Give families ideas for how they might encourage their children to practice, extend, or apply learning from school.
Examples
1. To extend writing, ask parents to encourage their children to write letters or e-mails to companies or civic organizations asking for information or free products. Provide a shell letter form for structure and ideas, and include addresses of companies that provide free samples or information.
2. Ask family members to include their children in some projects that require measurement, halving or doubling recipes, or estimating costs.

3. Suggest that students work with grandparents to do a family memory book. Combine historical research and writing.

Show connections between learning in school and life outside school.
Examples
1. Ask families to talk about and show how they use the skills their children are learning in their jobs, hobbies, or community involvement projects.
2. Ask family members to come to class to demonstrate how they use reading, writing, science, math, or other knowledge in their work.

Make families partners in practicing learning strategies.
Examples
1. Focus on one learning strategy at a time. Ask families to simply remind their children to use a particular strategy with homework that week.
2. Develop a lending library of books and videotapes to teach families about learning strategies.
3. Give parents a copy of the *Guidelines: Becoming an Expert Student* on page XXX, rewritten for your grade level.

Guidelines: Family and Community Partnerships sections offer specific guidelines for involving all families in their children's learning—especially relevant now, when demand for parental involvement is at an all-time high and the need for cooperation between home and school is critical. See, for example, pages 49, 200, 362.

Teachers' Casebook sections present students with realistic classroom scenarios at the beginning of each chapter and ask "What Would You Do?"—giving students the opportunity to apply all the important topics of the chapter to these scenarios via application questions. Students may then compare their responses to those of veteran teachers appearing at the end of each chapter. See, for example, pages 30, 208, 410.

TEACHERS' **CASEBOOK**

WHAT WOULD YOU DO? UNCRITICAL THINKING

This year's class is worse than any you've ever had. You assigned a research paper, and you find more and more students are using the Web for their information. In itself, using the Web is not bad, but the students appear to be completely uncritical about what they find on the Internet. "If it is on the Web, it must be right" is the attitude of most students. Their first drafts are filled with quotes that seem very biased to you, but there are no sources cited or listed. It is not just that students don't know how to reference their work. You are more concerned that they cannot critically evaluate what they are reading. And all they are reading is the Net!

CRITICAL THINKING

- How would you help your students evaluate the information they are finding on the Web?
- Beyond this immediate issue, how will you help students think more critically about the subjects you are teaching?
- How will you take into account the cultural beliefs and values of your students as you support their critical thinking?

Reaching Every Student sections present ideas for assessing, teaching, and motivating ALL of the students in today's inclusive classrooms. See, for example on page 65.

Reaching Every Student: Teaching in the "Magic Middle"

Both Piaget and Vygotsky probably would agree that students need to be taught in the magic middle (Berger, 2012), or the place of the "match" (J. Hunt, 1961)—where they are neither bored nor frustrated. Students should be put in situations where they have to reach to understand but where support from other students, learning materials, or the teacher is also available. Sometimes the best teacher is another student who has just figured out how to solve the problem, because this student is probably operating in the learner's ZPD. Having a student work with someone who is just a bit better at the activity would be a good idea because both students benefit in the exchange of explanations, elaborations, and questions. In addition, students should be encouraged to use language to organize their thinking and to talk about what they are trying to accomplish. Dialogue and discussion are important avenues to learning (Karpov & Bransford, 1995; Kozulin & Presseisen, 1995; Wink & Putney, 2002). The *Guidelines: Applying Vygotsky's Ideas in Teaching* on the next page gives more ideas for applying Vygotsky's insights.

Lessons for Teachers are succinct and usable principles for teaching based on the research. See, for example, on page 66.

Cognitive Development: Lessons for Teachers

In spite of cross-cultural differences in cognitive development and the different theories of development, there are some convergences. Piaget, Vygotsky, and more recent researchers studying cognitive development and the brain probably would agree with the following big ideas:

1. Cognitive development requires both physical and social stimulation.
2. To develop thinking, children have to be mentally, physically, and linguistically active. They need to experiment, talk, describe, reflect, write, and solve problems. But they also benefit from teaching, guidance, questions, explanations, demonstrations, and challenges to their thinking.
3. Teaching students what they already know is boring. Trying to teach what the student isn't ready to learn is frustrating and ineffective.
4. Challenge with support will keep students engaged but not fearful.

SUPPLEMENTS

This thirteenth edition of *Educational Psychology* provides a comprehensive and integrated collection of supplements to assist students and professors alike in maximizing learning and instruction. Together, these materials immerse students in the content of the text, allowing them and their instructors to benefit from a deeper and more meaningful learning experience. The following resources are available for instructors to download from www.pearsonhighered.com/educator. Enter the author, title of the text, or the ISBN number, then select this text, and click on the "Resources" tab. Download the supplement you need. If you require assistance in downloading any resources, contact your Pearson representative.

INSTRUCTOR'S RESOURCE MANUAL. The *Instructor's Resource Manual* synthesizes all of the resources available for each chapter and sifts through the materials to match the delivery method (e.g., semester, quarter) and areas of emphasis for the course. This manual includes activities and strategies designed to help prospective teachers—and others seeking a career working with children or adolescents—to apply the developmental concepts and strategies they have learned.

POWERPOINT® SLIDES. Slide sets for each chapter include chapter objectives, key concepts, summaries of content, and graphic aids, each designed to support class lectures and help students organize, synthesize, and remember core content. All PowerPoint® slides have been updated for consistency and reflect current content in this new edition.

TEST BANK. Built from the course objectives, the test bank questions offer both lower-level questions that ask students to identify or explain concepts, principles, and theories about development and higher-level questions that require students to apply concepts, principles, and theories to student behavior and teaching strategies.

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 may be created for both print and testing online.

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 Test Bank (zip)
Moodle Test Bank
Sakai Test Bank (zip)

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Special Features

POINT/COUNTERPOINT

1 | LEARNING, TEACHING, AND EDUCATIONAL PSYCHOLOGY

TEACHERS' CASEBOOK

WHAT WOULD YOU DO? LEAVING NO STUDENT BEHIND

It is your second year as a teacher in the Davis East school district. Over the last 4 years, the number of students from immigrant families has increased dramatically in your school. In your class, you have two students who speak Somali, one Hmong, one Farsi, and three Spanish speakers. Some of them know a little English, but many have very few words other than "OK." If there had been more students from each of the language groups, the district would have given your school additional resources and special programs in each language, providing you extra help, but there are not quite enough students speaking most of the languages to meet the requirements. In addition, you have several students with special needs; learning disabilities, particularly problems in reading, seem to be the most common. Your state and district require you to prepare *all* your students for the achievement tests in the spring, and the national emphasis is on readiness for college and career by the end of high school—*for everyone*. Your only possible extra resource is a student intern from the local college.

CRITICAL THINKING

- What would you do to help all your students to progress and prepare for the achievement tests?
- How would you make use of the intern so that both she and your students learn?
- How could you involve the families of your non-English–speaking students and students with learning disabilities to support their children's learning?
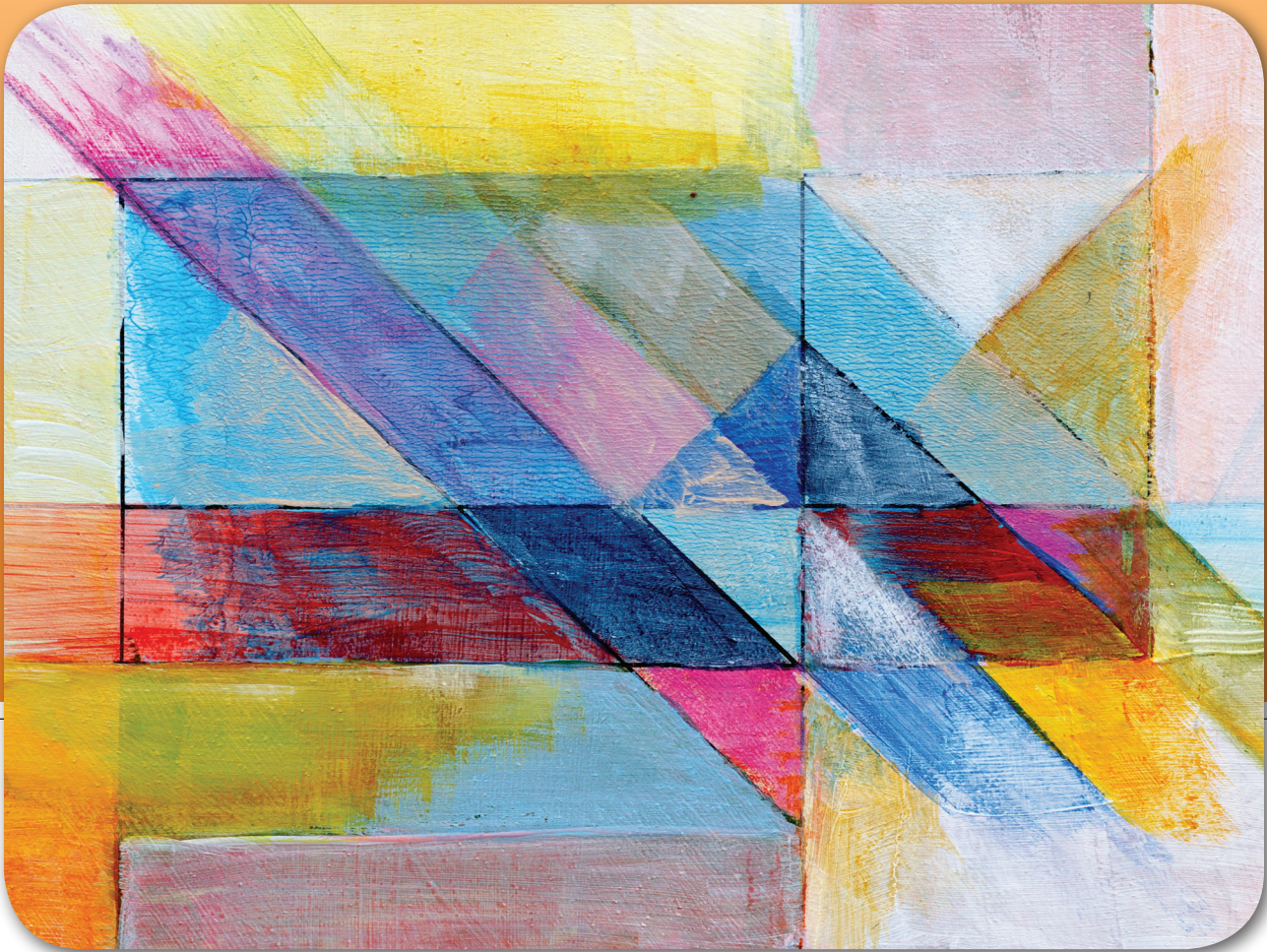
OVERVIEW AND OBJECTIVES

Like many students, you may begin this course with a mixture of anticipation and wariness. Perhaps you are required to take educational psychology as part of a program in teacher education, speech therapy, nursing, or counseling. You may have chosen this class as an elective. Whatever your reason for enrolling, you probably have questions about teaching, schools, students—or even about yourself—that you hope this course may answer. I have written the 13th edition of *Educational Psychology* with questions such as these in mind.

In this first chapter, we begin with the state of education in today's world. Teachers have been both criticized as ineffective and lauded as the best hope for young people. Do teachers make a difference in students' learning? What characterizes good teaching—how do truly effective teachers think and act? What do they believe about student, learning, and themselves? Only when you are aware of the challenges and possibilities of teaching and learning today can you appreciate the contributions of educational psychology.

After a brief introduction to the world of the teacher, we turn to a discussion of educational psychology itself. How can principles identified by educational psychologists benefit teachers, therapists, parents, and others who are interested in teaching and learning? What exactly is the content of educational psychology, and where does this information come from? Finally, we consider an overview of a model that organizes research in educational psychology to identify the key student and school factors related to student learning (J. Lee & Shute, 2010). My goal is that you will become a confident and competent beginning teacher, so by the time you have completed this chapter, you should be able to:

Objective 1.1   Describe the key elements of and changes to the No Child Left Behind Act.

Objective 1.2   Discuss the essential features of effective teaching, including different frameworks describing what good teachers do.

Objective 1.3   Describe the methods used to conduct research in the field of educational psychology and the kinds of questions each method can address.

Objective 1.4   Recognize how theories and research in development and learning are related to educational practice.

LEARNING AND TEACHING TODAY

Welcome to my favorite topic—educational psychology—the study of development, learning, motivation, teaching, and assessment in and out of schools. I believe this is the most important course you will take to prepare for your future as an educator in the classroom or the consulting office, whether your "students" are children or adults learning how to read or individuals discovering how to improve their diets. In fact, there is evidence that new teachers who have course work in development and learning are twice as likely to stay in teaching (National Commission on Teaching and America's Future, 2003). This may be a required course for you, so let me make the case for educational psychology, first by introducing you to classrooms today.

Students Today: Dramatic Diversity and Remarkable Technology

Who are the students in American classrooms today? Here are a few statistics about the United States and Canada (Children's Defense Fund, 2012; Dewan, 2010; Freisen, 2010; Meece & Kurtz-Costes, 2001; National Center for Child Poverty, 2013; National Center for Education Statistics, 2013; U.S. Census Bureau, 2010a).

- In 2010, 13% of the people living in the United States were born outside of the United States, and 20% spoke a language other than English at home—about 60% of these families spoke Spanish. Today, about 22% of children under the age of 18 are Latino. By 2050, Latinos will comprise about one quarter of the U.S. population (U.S. Census Bureau, 2010b).
  - In Canada, projections are that by 2031, one in three Canadians will belong to a visible minority, with South Asians being the largest group represented. About 17% of the population report that their first language is not French or English but instead is one of over 100 other languages.
  - In the 2011–2012 school year, about 60% of students with disabilities spent most of their time in general education classrooms.
  - In America, more than 16 million children—about 22% of all children—live in poverty, defined in 2013 by the U.S. Department of Health and Human Services as an income of $23,550 for a family of four ($29,440 in Alaska and $27,090 in Hawaii). Of those over 16 million, over 7 million live in extreme poverty. The United States has the *second highest* rate of child poverty among the economically advantaged countries of the world. Only Romania has a higher rate of child poverty. Iceland, the Scandinavian countries, Cyprus, and the Netherlands have the lowest rates of child poverty, about 7% or less (UNICEF, 2012; U.S. Census Bureau, 2011a).
  - The average wealth of White households is 18 times the wealth of Hispanic households and 20 times higher than Black households. These are the largest gaps observed since these data were first published a quarter century ago (Children's Defense Fund, 2012).
  - About one in six American children have a mild-to-severe developmental disability such as speech and language impairments, intellectual disabilities, cerebral palsy, or autism (Centers for Disease Control, 2013).
  - Out of 100 graduates in the high school class of 2013, about 71 had experienced physical assault; 51 had used alcohol, cigarettes, or illicit drugs in the previous 30 days, and 7 smoked marijuana every day; 48 were sexually active, but only 27 used condoms the last time they had sex; 39 had been bullied physically or emotionally; 20 watched 4 hours or more of television every day; 17 were employed; 16 had carried a weapon in the previous year; 12 had attention-deficit hyperactivity disorder (ADHD); and 4 had an eating disorder (Child Trends, 2013).

In contrast, because of the effects of mass media, these diverse students share many similarities today, particularly the fact that most are far more technologically literate than their teachers. For example:

- Infants to 8-year-olds spend an average of almost 2 hours each day watching TV or videos, 29 minutes listening to music, and 25 minutes working with

computers or computer games. In 2013, 75% of homes with children under age 8 had a smartphone, tablet, or other mobile device (Common Sense Media, 2012, 2013).
- Among teens, 77% have a cell phone; about one third of these are smartphones. And 90% of 13- to 17-year-olds use social media (Common Sense Media, 2012).

These statistics are dramatic but a bit impersonal. As a teacher, counselor, recreational worker, speech therapist, or family member, you will encounter real children. In this book, you will meet many individuals such as Felipe, a fifth-grade boy from a Spanish-speaking family who is working to learn school subjects and make friends in a language that is new to him; Ternice, an outspoken African American girl in an urban middle school who is hiding her giftedness; Benjamin, a good high school athlete diagnosed with ADHD whose wealthy parents have very high expectations for him and his teachers; Trevor, a second-grade student who has trouble with the meaning of *symbol*; Allison, head of a popular clique and tormentor of the outcast Stephanie; Davy, a shy, struggling reader who is already falling behind in all his second-grade work; Eliot, a bright sixth-grade student with severe learning disabilities; and Jessie, a student in a rural high school who just doesn't seem to care about her sinking grade-point average (GPA) or school in general.

Even though students in classrooms are increasingly diverse in race, ethnicity, language, and economic level, teachers are much less diverse—the percentage of White teachers is increasing (now about 91%), while the percentage of Black teachers is falling, down to about 7%. Clearly, it is important for all teachers to know and be able to work effectively with all their students. Several chapters in this book are devoted to understanding these diverse students. In addition, many times within each chapter, we will explore student diversity and inclusion through research, cases, and practical applications.

Confidence in Every Context

Schools are about teaching and learning; all other activities are secondary to these basic goals. But teaching and learning in the contexts just described can be challenging for both teachers and students. This book is about understanding the complex processes of development, learning, motivation, teaching, and assessment so that you can become a capable and confident teacher.

Much of my own research has focused on **teachers' sense of efficacy**, defined as a teacher's belief that he or she can reach even difficult students to help them learn. This confident belief appears to be one of the few personal characteristics of teachers that predict student achievement (Çakıroğlu, Aydın, & Woolfolk Hoy, 2012; Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Woolfolk & Hoy, 1990; Woolfolk Hoy, Hoy, & Davis, 2009). Teachers with a high sense of efficacy work harder and persist longer even when students are difficult to teach, in part because these teachers believe in themselves and in their students. Also, they are less likely to experience burnout and more likely to be satisfied with their jobs (Fernet, Guay, Senécal, & Austin, 2012; Fives, Hamman, & Olivarez, 2005; Klassen & Chiu, 2010).

I have found that prospective teachers tend to increase in their personal sense of efficacy as a consequence of completing student teaching. But sense of efficacy may decline after the first year as a teacher, perhaps because the support that was there for you in student teaching is gone (Woolfolk Hoy & Burke-Spero, 2005). Teachers' sense of efficacy is higher in schools when the other teachers and administrators have high expectations for students and the teachers receive help from their principals in solving instructional and management problems (Capa, 2005). Another important conclusion from our research is that efficacy grows from real success with students, not just from the moral support or cheerleading of professors and colleagues. Any experience or training that helps you succeed in the day-to-day tasks of teaching will give you a foundation for developing a sense of efficacy in your career. This book was written to provide the knowledge and skills that form a solid foundation for an authentic sense of efficacy in teaching.

High Expectations for Teachers and Students

On January 8, 2002, President George W. Bush signed into law the No Child Left Behind (NCLB) Act. Actually, NCLB was the most recent authorization of the Elementary and Secondary Education Act (ESEA), first passed in 1965. In a nutshell, NCLB required that all students in grades 3 through 8

and once more in high school must take annual standardized achievement tests in reading and mathematics. In addition, they must be tested in science—one test a year in each of three grade spans (3 to 5, 6 to 9, 10 to 12). Based on these test scores, schools were judged to determine if their students were making adequate yearly progress (AYP) toward becoming proficient in the subjects tested. States had some say in defining proficiency and in setting AYP standards. But no matter how states defined these standards, NCLB required that all students must reach proficiency by the end of the 2013–2014 school year. Schools also had to develop AYP goals and report scores separately for several groups, including racial and ethnic minority students, students with disabilities, students whose first language is not English, and students from low-income homes.

For a while, NCLB dominated education. Testing expanded. Often schools and teachers were punished if they did not perform; NCLB was widely criticized. "To date, NCLB's test based accountability and status bar, 100% proficiency targets have been blunt instruments, generating inaccurate performance results, perverse incentives, and unintended negative consequences" (Hopkins et al., 2013, p. 101). For example, expecting students whose first language is not English to perform at the same level as native speakers on tests given in English set the students up for failure and frustration. Under NCLB, too many schools were labeled as failing. Many educators suggested that accountability measures should focus on growth, not a narrow definition of achievement (McEachin & Polikoff, 2012).

NCLB was supposed to be reauthorized in 2007 or 2008. On March 13, 2010, the Obama Administration released *A Blueprint for Reform: The Reauthorization of the Elementary and Secondary Education Act* (2.ed.gov/policy/elsec/leg/blueprint/publicationtoc.html) to describe a vision for the reauthorization of NCLB. One of the major changes suggested was to move from a punishment-based system to one that rewards excellent teaching and student growth. The Blueprint described five priorities (U.S. Department of Education, 2010):

1. *College- and career-ready students.* Regardless of their income, race, ethnic or language background, or disability status, every student should graduate from high school ready for college or a career. To accomplish this goal, the Blueprint recommends *improved assessments* and *turnaround grants* to transform schools. In addition, Arne Duncan, the Secretary of Education, waived the requirement to reach 100% proficiency for states that can demonstrate they have adopted their own testing and accountability programs and are making progress toward the goal of college or career readiness for all their high school graduates (Dillon, 2011).

2. *Great teachers and leaders in every school.* "Research shows that top-performing teachers can make a dramatic difference in the achievement of their students, and suggests that the impact of being assigned to top-performing teachers year after year is enough to significantly narrow achievement gaps" (U.S. Department of Education, 2010, p. 13). To support this goal, the Blueprint proposed a Teacher and Leader Improvement Fund of competitive grants and new pathways for preparing educators. The focus of this book is to create great leaders in every school.

3. *Equity and opportunity for all students.* All students will be included in an accountability system that builds on college- and career-ready standards, rewards progress and success, and requires rigorous interventions in the lowest performing schools.

4. *Raise the bar and reward excellence.* Race to the Top, a series of competitive grants for schools, provided incentives for excellence by encouraging state and local leaders to work together on ambitious reforms, make tough choices, and develop comprehensive plans that change policies and practices to improve outcomes for students.

5. *Promote innovation and continuous improvement.* In addition to the Race to the Top grants, an Investing in Innovation Fund will support local and nonprofit leaders as they develop and scale up programs that have demonstrated success and discover the next generation of innovative solutions.

Time will tell how these proposals unfold, especially in the challenging economic environment we have experienced lately. One possible change in the next reauthorization of the law may be to focus on the bottom 5% of schools, those that have low achievement year after year (McEachin & Polikoff, 2012).

It seems likely that capable and confident teachers will be required to reach these goals. Is that true? But do teachers really make a difference? Good question.

Do Teachers Make a Difference?

You saw in the statistics presented earlier that in America many children are growing up in poverty. For a while, some researchers concluded that wealth and social status, not teaching, were the major factors determining who learned in schools (e.g., Coleman, 1966). In fact, much of the early research on teaching was conducted by educational psychologists who refused to accept these claims that teachers were powerless in the face of poverty and societal problems (Wittrock, 1986).

How can you decide whether teaching makes a difference? Perhaps one of your teachers influenced your decision to become an educator. Even if you had such a teacher, and I hope you did, one of the purposes of educational psychology in general and this text in particular is to go beyond individual experiences and testimonies, powerful as they are, to examine larger groups. The results of many studies speak to the power of teachers in the lives of students. You will see several examples next.

TEACHER–STUDENT RELATIONSHIPS. Bridgett Hamre and Robert Pianta (2001) followed all the children who entered kindergarten one year in a small school district and continued in that district through the eighth grade. The researchers concluded that the quality of the teacher–student relationship in kindergarten (defined in terms of level of conflict with the child, the child's dependency on the teacher, and the teacher's affection for the child) predicted a number of academic and behavioral outcomes *through the eighth grade*, particularly for students with many behavior problems. Even when the gender, ethnicity, cognitive ability, and behavior ratings of the student were accounted for, the relationship with the teacher still predicted aspects of school success. So students with significant behavior problems in the early years are less likely to have problems later in school if their first teachers are sensitive to their needs and provide frequent, consistent feedback. In another study that followed children from third through fifth grade, Pianta and his colleagues found that two factors helped children with lower skills in mathematics begin to close the achievement gap. The factors were higher-level (not just basic skills) instruction and positive relationships with teachers (Crosnoe, Morrison, Burchinal, Pianta, Keating, Friedman, & Clarke-Stewart, 2010).

It appears that the connection between teacher relationships and student outcomes is widespread. Deborah Roorda and her colleagues (2011) reviewed research from 99 studies around the world that examined the connections between teacher–student relationships and student engagement. Positive teacher relationships predicted positive student engagement at every grade, but the relationships were especially strong for students who were at risk academically and for older students. So evidence is mounting for a strong association between the quality of teacher–child relationships and school performance.

THE COST OF POOR TEACHING. In a widely publicized study, researchers examined how students are affected by having several effective or ineffective teachers in a row (Sanders & Rivers, 1996). They looked at fifth graders in two large metropolitan school systems in Tennessee. Students who had highly effective teachers for third, fourth, and fifth grades scored at the 83rd percentile on average on a standardized mathematics achievement test in one district and at the 96th percentile in the other (99th percentile is the highest possible score). In contrast, students who had the least effective teachers 3 years in a row averaged at the 29th percentile in math achievement in one district and 44th percentile in the other—a difference of over 50 percentile points in both cases! Students who had average teachers or a mixture of teachers with low, average, and high effectiveness for the 3 years had math scores between these extremes. Sanders and Rivers concluded that the best teachers encouraged good-to-excellent gains in achievement for all students, but lower-achieving students were the first to benefit from good teaching. The effects of teaching were cumulative and residual; that is, better teaching in a later grade could partially make up for less effective teaching in earlier grades, but could not erase all the deficits. In fact, one study found that at least 7% of the differences in test score gains for students could be traced to their teachers (Hanushek, Rivkin, & Kain, 2005; Rivkin, Hanushek, & Kain, 2001).

PODCAST 1.1

In this podcast, textbook author Anita Woolfolk talks about the importance of teachers in students' lives. Did you know that "teacher involvement and caring is the most significant predictor of a student's engagement in school from 1st grade through 12th grade?" Listen to learn more.

ENHANCEDetext *podcast*

Video 1.1
A bilingual teacher conducts a discussion with immigrant high school students. She asks students to discuss what teachers can do to help English learners and students from different cultures.

ENHANCEDetext *video example*

Another study about test score gains from the Los Angeles public schools may be especially interesting to you. Robert Gordon and his colleagues (2006) measured the test performance of elementary school students in *beginning teachers'* classes. Teachers were ranked into quartiles based on how well their students performed during the teachers' first 2 years. Then the researchers looked at the test performance of students in classes with the top 25% of the teachers and the bottom 25% during their third year of teaching. After controlling for the effects of students' prior test scores, their families' wealth, and other factors, the students working with the top 25% of the teachers gained an average of 5 percentile points more compared to students with similar beginning of the year test scores, while students in the bottom 25% lost an average of 5 percentile points. So students working with a less effective teacher could be an average of 10 percentile points behind the students working with an effective teacher. If these losses accumulate, then students working with poorer teachers would fall farther and farther behind. In fact, the researchers speculated that ". . . having a top-quartile teacher four years in a row would be enough to close the black-white test score gap" [of about 34 percentile points] (R. Gordon, Kane, & Staiger, 2006, p. 8).

Effective teachers who establish positive relationships with their students appear to be a powerful force in those students' lives. Students who have problems seem to benefit the most from good teaching. So an important question is, "What makes a teacher effective? What is good teaching?"

ENHANCEDetext *self-check*

WHAT IS GOOD TEACHING?

Educators, psychologists, philosophers, novelists, journalists, filmmakers, mathematicians, scientists, historians, policy makers, and parents, to name only a few groups, have examined this question; there are hundreds of answers. And good teaching is not confined to classrooms. It occurs in homes and hospitals, museums and sales meetings, therapists' offices, and summer camps. In this book, we are primarily concerned with teaching in classrooms, but much of what you will learn applies to other settings as well.

Inside Three Classrooms

To begin our examination of good teaching, let's step inside the classrooms of three outstanding teachers. The three situations are real. The first two teachers worked with my student teachers in local elementary and middle schools and were studied by one of my colleagues, Carol Weinstein (Weinstein & Romano, 2015). The third teacher became an expert at helping students with severe learning difficulties, with the guidance of a consultant.

A BILINGUAL FIRST GRADE. Most of the 25 students in Viviana's class have recently emigrated from the Dominican Republic; the rest come from Nicaragua, Mexico, Puerto Rico, and Honduras. Even though the children speak little or no English when they begin school, by the time they leave in June, Viviana has helped them master the normal first-grade curriculum for their district. She accomplishes this by teaching in Spanish early in the year to aid understanding and then gradually introducing English as the students are ready. Viviana does not want her students segregated or labeled as disadvantaged. She encourages them to take pride in their Spanish-speaking heritage and uses every available opportunity to support their developing English proficiency.

Both Viviana's expectations for her students and her commitment to them are high. She has an optimism that reveals her dedication: "I always hope that there's somebody out there that I will reach and that I'll make a difference" (Weinstein & Romano, 2015, p. 15). For Viviana, teaching is not just a job; it is a way of life.

A SUBURBAN FIFTH GRADE. Ken teaches fifth grade in a suburban school in central New Jersey. Students in the class represent a range of racial, ethnic, family income, and language backgrounds. Ken emphasizes "process writing." His students complete first drafts, discuss them with others in

the class, revise, edit, and "publish" their work. The students also keep daily journals and often use them to share personal concerns with Ken. They tell him of problems at home, fights, and fears; he always takes the time to respond in writing. Ken also uses technology to connect lessons to real life. Students learn about ocean ecosystems by using a special interactive software program. For social studies, the class plays two simulation games that focus on history. One is about coming of age in Native American cultures, and the other focuses on the colonization of America.

Throughout the year, Ken is very interested in the social and emotional development of his students; he wants them to learn about responsibility and fairness as well as science and social studies. This concern is evident in the way he develops his class rules at the beginning of the year. Rather than specifying dos and don'ts, Ken and his students devise a "Bill of Rights" for the class, describing the rights of the students. These rights cover most of the situations that might need a "rule."

AN INCLUSIVE CLASS. Eliot was bright and articulate. He easily memorized stories as a child, but he could not read by himself. His problems stemmed from severe learning difficulties with auditory and visual integration and long-term visual memory. When he tried to write, everything got jumbled. Dr. Nancy White worked with Eliot's teacher, Mia Russell, to tailor intensive tutoring that specifically focused on Eliot's individual learning patterns and his errors. With his teachers' help, over the next years, Eliot became an expert on his own learning and was transformed into an independent learner; he knew which strategies he had to use and when to use them. According to Eliot, "Learning that stuff is not fun, but it works!" (Hallahan & Kauffman, 2006, pp. 184–185).

What do you see in these three classrooms? The teachers are confident and committed to their students. They must deal with a wide range of students: different languages, different home situations, and different abilities and learning challenges. They must adapt instruction and assessment to students' needs. They must make the most abstract concepts, such as ecosystems, real and understandable for their particular students. The whole time that these experts are navigating through the academic material, they also are taking care of the emotional needs of their students, propping up sagging self-esteem, and encouraging responsibility. If we followed these teachers from the first day of class, we would see that they carefully plan and teach the basic procedures for living and learning in their classes. They can efficiently collect and correct homework, regroup students, give directions, distribute materials, and deal with disruptions—and do all of this while also making a mental note to find out why one of their students is so tired. Finally, they are **reflective**—they constantly think back over situations to analyze what they did and why, and to consider how they might improve learning for their students.

SO WHAT IS GOOD TEACHING? Is good teaching science or art, the application of research-based theories or the creative invention of specific practices? Is a good teacher an expert explainer—"a sage on the stage" or a great coach—"a guide by the side"? These debates have raged for years. In your other education classes, you probably will encounter criticisms of the scientific, teacher-centered sages. You will be encouraged to be inventive, student-centered guides. *But beware of either/or choices*. Teachers must be both knowledgeable and inventive. They must be able to use a range of strategies, and they must also be capable of inventing new strategies. They must have some basic research-based routines for managing classes, but they must also be willing and able to break from the routine when the situation calls for change. They must know the research on student development, and they also need to know their own particular students who are unique combinations of culture, gender, and geography. Personally, I hope you all become teachers who are both sages and guides, wherever you stand.

Another answer to "What is good teaching?" involves considering what different models and frameworks for teaching have to offer. We look at this next.

MODELS OF GOOD TEACHING. In the last few years, educators, policy makers, government agencies, and philanthropists have spent millions of dollars identifying what works in teaching and specifically how to identify good teaching. These efforts have led to a number of models for teaching and teacher evaluation systems. We will briefly examine three to help answer the question, "What is good teaching?" Another reason to consider these models is that when you become a teacher, you
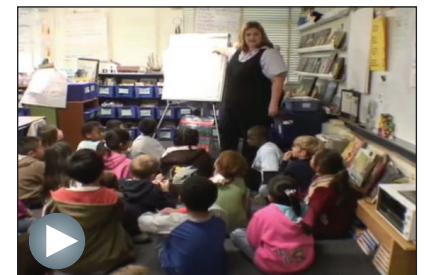
Video 1.2
Teachers must be both knowledgeable and inventive. They must be able to use a range of strategies, and they must also be capable of inventing new strategies. In this video, the teacher knows her students and uses strategies that help each student learn. Observe how she supports students who are English language learners, and observe her method of grouping students to meet diverse needs.

ENHANCEDetext *video example*

may be evaluated based on one of these approaches, or something like them—teacher evaluation is a very hot topic these days! We will look at Charlotte Danielson's Framework for Teaching, the high-leverage practices identified by TeachingWorks at the University of Michigan, and the Measures of Effective Teaching project sponsored by the Bill and Melinda Gates Foundation.

Danielson's Frameworks for Teaching. The Framework for Teaching was first published in 1996 and has been revised three times since then, the latest in 2013 (see danielsongroup.org for information about Charlotte Danielson and the Framework for Teaching). According to Charlotte Danielson (2013):

> The Framework for Teaching identifies those aspects of a teacher's responsibilities that have been documented through empirical studies and theoretical research as promoting improved student learning. While the Framework is not the only possible description of practice, these responsibilities seek to define what teachers should know and be able to do in the exercise of their profession. (p. 3)

Danielson's Framework has four domains or areas of responsibility: Planning and Preparation, Classroom Environment, Instruction, and Professional Responsibilities. Each domain is further divided into components, as you can see in Figure 1.1.

When the Framework is used for teacher evaluation, each of these 22 components is further divided into elements (76 in all), and several indicators are specified for each component. For example, component 1b, demonstrating knowledge of students, includes the elements describing knowledge of

- child and adolescent development
- the learning process
- students' skills, knowledge, and language proficiency
- students' interests and cultural heritage
- students' special needs (p. 13)

Indicators of this knowledge of students includes the formal and informal information about students that the teacher gathers in planning instruction, the student interests and needs the teacher

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FIGURE 1.1

CHARLOTTE DANIELSON'S FRAMEWORK FOR TEACHING

Danielson's Framework for Teaching divides the complex task of teaching into the 22 components shown here, clustered into four domains of teaching responsibility: Planning and Preparation, Classroom Environment, Instruction, and Professional Responsibilities. The two domains of Classroom Environment and Instruction can be observed as teachers work with their classes, but success in all four domains is necessary for distinguished teaching.

Domain 1: Planning and Preparation
1a Demonstrating Knowledge of Content and Pedagogy
1b Demonstrating Knowledge of Students
1c Setting Instructional Outcomes
1d Demonstrating Knowledge of Resources
1e Designing Coherent Instruction
1f Designing Student Assessments

Domain 2: Classroom Environment
2a Creating an Environment of Respect and Rapport
2b Establishing a Culture for Learning
2c Managing Classroom Procedures
2d Managing Student Behavior
2e Organizing Physical Space

Domain 3: Instruction
3a Communicating with Students
3b Using Questioning and Discussion Techniques
3c Engaging Students in Learning
3d Using Assessment in Instruction
3e Demonstrating Flexibility and Responsiveness

Domain 4: Professional Responsibilities
4a Reflecting on Teaching
4b Maintaining Accurate Records
4c Communicating with Families
4d Participating in a Professional Community
4e Growing and Developing Professionally
4f Showing Professionalism

Source: Reprinted with permission from Danielson, C. (2013). The Framework for Teaching Evaluation Instrument: 2013 Edition. *Princeton, NJ: The Danielson Group. Retrieved from http://www.danielsongroup.org/article.aspx?page=frameworkforteaching*

identifies, the teacher's participation in community cultural events, opportunities the teacher has designed for families to share their cultural heritages, and any databases the teacher has for students with special needs (Danielson, 2013).

The evaluation system further defines four levels of proficiency for each of the 22 components: unsatisfactory, basic, proficient, and distinguished, with a definition, critical attributes, and possible examples of what each level might look like in action. Two examples of distinguished knowledge of students are teachers who plan lessons with three different follow-up activities designed to match different students' abilities and a teacher who attends a local Mexican heritage event to meet members of her students' extended families. Many other examples are possible, but these two give a sense of distinguished knowledge of students (component 1b).

You can see that it would take extensive training to use this framework well for teacher evaluation. When you become a teacher, you may learn more about this conception of good teaching because your school district is using it. For now, be assured that you will gain knowledge and skills in all 22 components in this text. For example, you will gain knowledge of students (component 1b) in Chapters 2 through 6.

TeachingWorks. TeachingWorks is a national project based at the University of Michigan and dedicated to improving teaching practice. Project members working with experienced teachers have identified 19 high-leverage teaching practices, defined as actions that are central to teaching and useful across most grades levels, academic subjects, and teaching situations. The TeachingWorks researchers call these practices "a set of 'best bets,' warranted by research evidence, wisdom of practice, and logic" (teachingworks.org/work-of-teaching/high-leverage-practices). These practices are specific enough to be taught and observed, so they can be a basis for teacher education and evaluation. See Figure 1.2 for these 19 practices. Again, you will develop skills and knowledge about all of these practices in this text. (For a more complete description of the 19 high-leverage practices, see teachingworks.org/work-of-teaching/high-leverage-practices.)

FIGURE 1.2

TEACHINGWORKS 19 HIGH-LEVERAGE TEACHING PRACTICES

These practices are based on research evidence, the wisdom of practice, and logic.

1. Making content (e.g., specific texts, problems, ideas, theories, processes) explicit through explanation, modeling, representations, and examples
2. Leading a whole-class discussion
3. Eliciting and interpreting individual students' thinking
4. Establishing norms and routines for classroom discourse and work that are central to the subject-matter domain
5. Recognizing particular common patterns of student thinking and development in a subject-matter domain
6. Identifying and implementing an instructional response or strategy in response to common patterns of student thinking
7. Teaching a lesson or segment of instruction
8. Implementing organizational routines, procedures, and strategies to support a learning environment
9. Setting up and managing small group work
10. Engaging in strategic relationship-building conversations with student
11. Setting long- and short-term learning goals for students referenced to external benchmarks
12. Appraising, choosing, and modifying tasks and texts for a specific learning goal
13. Designing a sequence of lessons toward a specific learning goal
14. Selecting and using particular methods to check understanding and monitor student learning during and across lessons
15. Composing, selecting, and interpreting and using information from quizzes, tests, and other methods of summative assessment
16. Providing oral and written feedback to students on their work
17. Communicating about a student with a parent or guardian
18. Analyzing instruction for the purpose of improving it
19. Communicating with other professionals

Source: Reprinted with permission from TeachingWorks (2014), High-leverage practices. Retrieved from http://www.teachingworks.org/work-of-teaching/high-leverage-practices

When you compare the 19 high-leverage practices in Figure 1.2 with the 22 Danielson components in Figure 1.1, do you see similarities and overlaps?

MEASURES OF EFFECTIVE TEACHING. In 2009, the Bill and Melinda Gates Foundation launched the Measures of Teaching Effectiveness (MET) Project, a research partnership between 3,000 teachers and research teams at dozens of institutions. The goal was clear from the title—to build and test measures of effective teaching. The Gates Foundation tackled this problem because research shows that teachers matter; they matter more than technology or funding or school facilities. In pursuing the goal, the project members made a key assumption. Teaching is complex; multiple measures will be needed to capture effective teaching and provide useful feedback for personnel decisions and professional development. In addition to using student achievement gains on state tests, the MET researchers examined many established and newer measures of effectiveness including the Tripod Student Perception Survey developed by Ron Ferguson at Harvard University (R. F. Ferguson, 2008), the Content Knowledge for Teaching (CKT) test from the University of Michigan (Ball, Thames, & Phelps, 2008), and several classroom observations systems, the Danielson (2013) Framework for Teaching described earlier, and the Classroom Assessment Scoring System (CLASS, Pianta, LaParo, & Hamre, 2008) described in Chapter 14. The MET researchers also examined several other observation approaches specific to certain subjects such as the Stanford University's Protocol for Language Arts Teaching Observations (PLATO) (Stanford University, 2013) and the University of Texas UTeach Teacher Observation Protocol (UTOP) (Marder & Walkington, 2010) for assessing math and science instruction. The final report of the project (MET Project, 2013) identified the following three measures used together as a valid and reliable way of assessing teaching that leads to student learning:

1. Student *gains on state tests.*
2. Surveys of *student perceptions* of their teachers. The Tripod Student Perception Survey asks students to agree or disagree with statements such as "My teacher takes time to help us remember what we learn" (for K–2 students), "In class we learn to correct our mistakes (upper elementary students), and "In this class, my teacher accepts nothing less than our full effort" (secondary students) (from Cambridge Education, tripodproject.org/student-perception-surveys/sample-questions/; for more information about the Tripod Student Perception Survey, go to tripodproject .org/student-perception-surveys).
3. *Classroom observations* from the Danielson (2013) Framework for Teaching.

Remember, teaching is complex. To capture effective teaching, these measures have to be used accurately and together. Also, the best combination of reliability and prediction of student gains in both state tests and tests of higher-level thinking comes when gains on standardized tests are weighted between 33% and 50% in assessing effectiveness, with student perception and class observation results providing the rest of the information (MET Project, 2013).

Are you surprised that teacher's content knowledge for the subject taught did not make the cut in measuring teacher effectiveness? So far math seems to be the one area where teacher knowledge is related to student learning, but with better measures of teacher knowledge, we may find more relationships (Gess-Newsome, 2013; Goe, 2013; MET Project, 2013).

Is all this talk about expert teachers and effective teaching making you a little nervous? Viviana, Ken, and Mia are experts at the science and art of teaching, but they have years of experience. What about you?

Beginning Teachers

STOP & THINK Imagine walking into your first day of teaching. List the concerns, fears, and worries you have. What assets do you bring to the job? What would build your confidence to teach? •

Beginning teachers everywhere share many concerns, including maintaining classroom discipline, motivating students, accommodating differences among students, evaluating students' work, dealing

TABLE 1.1 • **Advice for Student Teachers from Their Students**

The students in Ms. Amato's first-grade class gave this advice as a gift to their student teacher on her last day.

1. Teach us as much as you can.
2. Give us homework.
3. Help us when we have problems with our work.
4. Help us to do the right thing.
5. Help us make a family in school.
6. Read books to us.
7. Teach us to read.
8. Help us write about faraway places.
9. Give us lots of compliments, like "Oh, that's so beautiful."
10. Smile at us.
11. Take us for walks and on trips.
12. Respect us.
13. Help us get our education.

Source: Nieto, Sonia, Affirming Diversity: The Sociopolitical Context of Multicultural Education, MyLabSchool Edition, 4th edition, © 2004. Reprinted by permission of Pearson Education, Inc. Upper Saddle River, NJ.

with parents, and getting along with other teachers (Conway & Clark, 2003; Melnick & Meister, 2008; Veenman, 1984). Many teachers also experience what has been called "reality shock" when they take their first job because they really cannot ease into their responsibilities. On the first day of their first job, beginning teachers face the same tasks as teachers with years of experience. Student teaching, while a critical element, does not really prepare prospective teachers for starting off a school year with a new class. If you listed any of these concerns in your response to the *Stop & Think* question, you shouldn't be troubled. They come with the job of being a beginning teacher (Borko & Putnam, 1996; Cooke & Pang, 1991).

With experience, hard work, and good support, seasoned teachers can focus on the students' needs and judge their success by the accomplishments of their students (Fuller, 1969; Pigge & Marso, 1997). One experienced teacher described the shift from concerns about yourself to concerns about your students: "The difference between a beginning teacher and an experienced one is that the beginning teacher asks, 'How am I doing?' and the experienced teacher asks, 'How are the children doing?'" (Codell, 2001, p. 191).

My goal in writing this book is to give you the foundation for becoming an expert as you gain experience. One thing experts do is listen to their students. Table 1.1 shows some advice a first-grade class gave to their student teacher: It looks like the students know about good teaching, too.

I began this chapter claiming that educational psychology is the most important course you will take. OK, maybe I am a bit biased—I have been teaching the subject for over four decades! So let me tell you more about my favorite topic.

ENHANCEDetext *self-check*

THE ROLE OF EDUCATIONAL PSYCHOLOGY

For as long as the formal study of educational psychology has existed—over 100 years—there have been debates about what it really is. Some people believe educational psychology is simply knowledge gained from psychology and applied to the activities of the classroom. Others believe it involves applying the methods of psychology to study classroom and school life (Brophy, 2003). A quick look at history shows that educational psychology and teaching have been closely linked since the beginning.

In the Beginning: Linking Educational Psychology and Teaching

In one sense, educational psychology is very old. Issues Plato and Aristotle discussed—the role of the teacher, the relationship between teacher and student, methods of teaching, the nature and

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- National Council of Teachers of English (ncte.org)
- International Reading Association (reading.org)
- National Science Teachers Association (nsta.org)
- National Council for the Social Studies (ncss.org)
- National Council of Teachers of Mathematics (nctm.org)

order of learning, the role of emotion in learning—are still topics in educational psychology today. But let's fast forward to recent history. From the beginning, psychology in the United States was linked to teaching. At Harvard in 1890, William James founded the field of psychology and developed a lecture series for teachers entitled *Talks to Teachers about Psychology*. These lectures were given in summer schools for teachers around the country and then published in 1899. James's student, G. Stanley Hall, founded the American Psychological Association. His dissertation was about children's understandings of the world; teachers helped him collect data. Hall encouraged teachers to make detailed observations to study their students' development—as his mother had done when she was a teacher. Hall's student John Dewey founded the Laboratory School at the University of Chicago and is considered the father of the progressive education movement (Berliner, 2006; Hilgard, 1996; Pajares, 2003). Another of William James's students, E. L. Thorndike, wrote the first educational psychology text in 1903 and founded the *Journal of Educational Psychology* in 1910.

In the 1940s and 1950s, the study of educational psychology concentrated on individual differences, assessment, and learning behaviors. In the 1960s and 1970s, the focus of research shifted to the study of cognitive development and learning, with attention to how students learn concepts and remember. More recently, educational psychologists have investigated how culture and social factors affect learning and development and the role of educational psychology in shaping public policy (Anderman, 2011; Pressley & Roehrig, 2003).

Educational Psychology Today

What is educational psychology today? The view generally accepted is that **educational psychology** is a distinct discipline with its own theories, research methods, problems, and techniques. Educational psychologists do research on learning and teaching and, at the same time, work to improve educational policy and practice (Anderman, 2011; Pintrich, 2000). To understand as much as possible about learning and teaching, educational psychologists examine what happens when someone (a teacher or parent or software designer) teaches something (math or weaving or dancing) to someone else (student or co-worker or team) in some setting (classroom or theater or gym) (Berliner, 2006; Schwab, 1973). So educational psychologists study child and adolescent development; learning and motivation—including how people learn different academic subjects such as reading or mathematics; social and cultural influences on learning; teaching and teachers; and assessment, including testing (Alexander & Winne, 2006).

But even with all this research on so many topics, are the findings of educational psychologists really that helpful for teachers? After all, most teaching is just common sense, isn't it? Let's take a few minutes to examine these questions.

Is It Just Common Sense?

In many cases, the principles set forth by educational psychologists—after spending much thought, time, and money—sound pathetically obvious. People are tempted to say, and usually do say, "Everyone knows that!" Consider these examples.

HELPING STUDENTS. When should teachers provide help for lower-achieving students as they do class work?

Commonsense Answer. Teachers should offer help often. After all, these lower-achieving students may not know when they need help or they may be too embarrassed to ask for help.

ANSWER BASED ON RESEARCH. Sandra Graham (1996) found that when teachers provide help before students ask, the students and others watching are more likely to conclude that the helped student does not have the ability to succeed. The student is more likely to attribute failures to lack of ability instead of lack of effort, so motivation suffers.

SKIPPING GRADES. Should a school encourage exceptionally bright students to skip grades or to enter college early?

Commonsense Answer. No! Very intelligent students who are several years younger than their classmates are likely to be social misfits. They are neither physically nor emotionally ready for

dealing with older students and would be miserable in the social situations that are so important in school, especially in the later grades.

ANSWER BASED ON RESEARCH. Maybe. The first two conclusions in the report *A Nation Deceived: How Schools Hold Back America's Brightest Children* are: (1) Acceleration is the most effective curriculum intervention for children who are gifted, and (2) for students who are bright, acceleration has long-term beneficial effects, both academically and socially (Colangelo, Assouline, & Gross, 2004). One example of the positive long-term effects is that mathematically talented students who skipped grades in elementary or secondary school were more likely to go on to earn advanced degrees and publish widely cited articles in scientific journals (Park, Lubinski, & Benbow, 2013). Whether acceleration is the best solution for a student depends on many specific individual characteristics, including the intelligence and maturity of the student as well as the other available options. For some students, moving quickly through the material and working in advanced courses with older students is a very good idea. See Chapter 4 for more on adapting teaching to students' abilities.

STUDENTS IN CONTROL. Does giving students more control over their own learning—more choices—help them learn?

Commonsense Answer. Of course! Students who choose their own learning materials and tasks will be more engaged and thus learn more.

ANSWER BASED ON RESEARCH. Not so fast! Sometimes giving students more control and choice can support learning, but sometimes not. For example, giving lower-ability students choice in learning tasks sometimes means the students just keep practicing what they already do well instead of tackling tougher assignments. This happened when hairdressing students were given choices. The lower-ability students kept practicing easy tasks such as washing hair but were reluctant to try more difficult projects such as giving permanents. When they developed portfolios to monitor their progress and received regular coaching and advice from their teachers, the students made better choices—so guided choice and some teacher control may be useful in some situations (Kicken, Brand-Gruwel, van Merriënboer, & Slot, 2009).

OBVIOUS ANSWERS? Years ago, Lily Wong (1987) demonstrated that just seeing research results in writing can make them seem obvious. She selected 12 findings from research on teaching. She presented 6 of the findings in their correct form and 6 in exactly the opposite form to both college students and experienced teachers. Both the college students and the teachers rated about half of the wrong findings as "obviously" correct. In a follow-up study, another group of subjects was shown the 12 findings and their opposites and was asked to pick which ones were correct. For 8 of the 12 findings, the subjects chose the wrong result more often than the right one.

Recently, Paul Kirschner and Joren van Merriënboer (2013) made a similar point when they challenged several "urban legends" in education about the assertion that learners (like the hairdressing students just described) know best how to learn. These strongly held beliefs about students today as self-educating digital natives who can multitask, have unique learning styles, and always make good choices about how to learn *have no strong basis in research*, but they are embraced nonetheless.

You may have thought that educational psychologists spend their time discovering the obvious. The preceding examples point out the danger of this kind of thinking. When a principle is stated in simple terms, it can sound simplistic. A similar phenomenon takes place when we see a professional dancer or athlete perform; the well-trained performer makes it look easy. But we see only the results of the training, not all the work that went into mastering the individual movements. And bear in mind that any research finding—or its opposite—may sound like common sense. The issue is not what *sounds* sensible, but what is *demonstrated* when the principle is put to the test in research—our next topic (Gage, 1991).

ENHANCEDetext *self-check*

Using Research to Understand and Improve Learning

STOP & THINK Quickly, list all the different research methods you can think of. •

- -

Educational psychologists design and conduct many different kinds of research studies. Some of these are **descriptive studies**—their purpose is simply to describe events in a particular class or several classes.

CORRELATION STUDIES. Often, the results of descriptive studies include reports of correlations. We will take a minute to examine this concept, because you will encounter many correlations in the coming chapters. A **correlation** is a number that indicates both the strength and the direction of a relationship between two events or measurements. Correlations range from 1.00 to –1.00. The closer the correlation is to either 1.00 or –1.00, the stronger the relationship. For example, the correlation between weight and height is about .70 (a strong relationship); the correlation between weight and number of languages spoken is about .00 (no relationship at all).

The sign of the correlation tells the direction of the relationship. A **positive correlation** indicates that the two factors increase or decrease together. As one gets larger, so does the other. Weight and height are positively correlated because greater weight tends to be associated with greater height. A **negative correlation** means that increases in one factor are related to *decreases* in the other, for example, the less you pay for a theater or concert ticket, the greater your distance from the stage. It is important to note that correlations do not prove cause and effect (see Figure 1.3). For example, weight and height are correlated—heavier people tend to be taller than lighter people. But gaining weight obviously does not cause you to grow taller. Knowing a person's weight simply allows you to make a general prediction about that person's height. Educational psychologists identify correlations so they can make predictions about important events in the classroom.

EXPERIMENTAL STUDIES. A second type of research—**experimentation**—allows educational psychologists to go beyond predictions and actually study cause and effect. Instead of just observing and describing an existing situation, the investigators introduce changes and note the results. First, a number of comparable groups of participants are created. In psychological research, the term **participants** (also called **subjects**) generally refers to the people being studied—such as teachers or eighth graders. One common way to make sure that groups of participants are essentially the same is to assign each person to a group using a random procedure. **Random** means each participant has

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FIGURE 1.3

CORRELATIONS DO NOT SHOW CAUSATION

When research shows that landscaped lawns and school achievement are correlated, it does not show causation. Community wealth, a third variable, may be the cause of both school achievement and landscaped lawns.

Faulty Assumption

More Likely Assumption
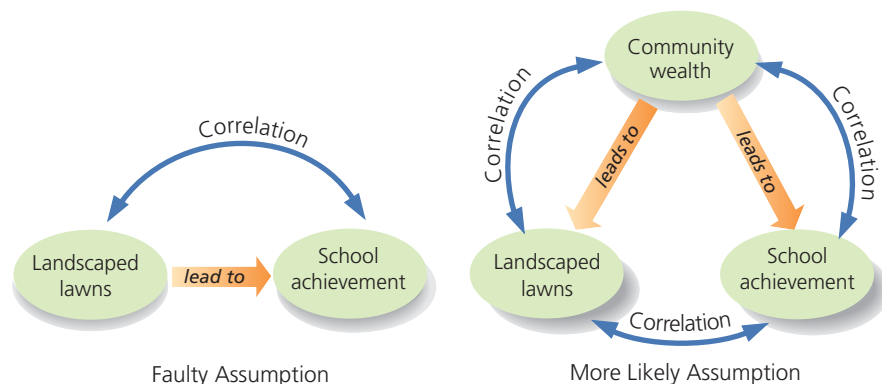
an equal chance of being in any group. **Quasi-experimental studies** meet most of the criteria for true experiments, with the important exception that the participants are not assigned to groups at random. Instead, existing groups such as classes or schools participate in the experiments.

In experiments or quasi-experiments, for one or more of the groups studied, the experimenters change some aspect of the situation to see if this change or "treatment" has an expected effect. The results in each group are then compared. Usually, statistical tests are conducted. When differences are described as **statistically significant**, it means that they probably did not happen simply by chance. For example, if you see $p < .05$ in a study, this indicates that the result reported could happen by chance less than 5 times out of 100, and $p < .01$ means less than 1 time in 100.

A number of the studies we will examine attempt to identify cause-and-effect relationships by asking questions such as this: If some teachers receive training in how to teach spelling using word parts (*cause*), will their students become better spellers than students whose teachers did not receive training (*effect*)? This actually was a *field experiment* because it took place in real classrooms and not a simulated laboratory situation. In addition, it was a *quasi-experiment* because the students were in existing classes and had not been randomly assigned to teachers, so we cannot be certain the experimental and control groups were the same before the teachers received their training. The researchers handled this by looking at improvement in spelling, not just final achievement level, and the results showed that the training worked (Hurry et al., 2005).

SINGLE-SUBJECT EXPERIMENTAL DESIGNS. The goal of **single-subject experimental studies** is to determine the effects of a therapy, teaching method, or other intervention. One common approach is to observe the individual for a baseline period (A) and assess the behavior of interest; try an intervention (B) and note the results; then remove the intervention and go back to baseline conditions (A); and finally reinstate the intervention (B). This form of single-subject design is called an ABAB experiment. For example, a teacher might record how much time students are out of their seats without permission during a week-long baseline period (A), and then try ignoring those who are out of their seats, but praising those who are seated and record how many are wandering out of their seats for the week (B). Next, the teacher returns to baseline conditions (A) and records results, and then reinstates the praise-and-ignore strategy (B) (Landrum & Kauffman, 2006). When this intervention was first tested, the praise-and-ignore strategy proved effective in increasing the time students spent in their seats (C. H. Madsen, Becker, Thomas, Koser, & Plager, 1968).

CLINICAL INTERVIEWS AND CASE STUDIES. Jean Piaget pioneered an approach called the *clinical interview* to understand children's thinking. The clinical interview uses open-ended questioning to probe responses and to follow up on answers. Questions go wherever the child's responses lead. Here is an example of a clinical interview with a 7-year-old. Piaget is trying to understand the child's thinking about lies and truth, so he asks, "What is a lie?"

> "What is a lie?—*What isn't true. What they say that they haven't done.*—Guess how old I am.—*Twenty.* No, I'm thirty.—Was that a lie you told me?—*I didn't do it on purpose.*—I know. But is it a lie all the same, or not?—*Yes, it is the same, because I didn't say how old you were.*—Is it a lie?—*Yes, because I didn't speak the truth.*—Ought you be punished?—*No.*—Was it naughty or not naughty?—*Not so naughty.*—Why?—*Because I spoke the truth afterwards!"* (Piaget, 1965, p. 144).

Researchers also may employ case studies. A **case study** investigates one person or situation in depth. For example, Benjamin Bloom and his colleagues conducted in-depth studies of highly accomplished concert pianists, sculptors, Olympic swimmers, tennis players, mathematicians, and neurologists to try to understand what factors supported the development of outstanding talent. The researchers interviewed family members, teachers, friends, and coaches to build an extensive case study of each of these highly accomplished individuals (B. S. Bloom et al., 1985). Some educators recommend case study methods to identify students for gifted programs because the information gathered is richer than just test scores.

ETHNOGRAPHY. **Ethnographic methods**, borrowed from anthropology, involve studying the naturally occurring events in the life of a group to understand the meaning of these events

to the people involved. In educational psychology research, ethnographies might study how students in different cultural groups are viewed by their peers or how teachers' beliefs about students' abilities affect classroom interactions. In some studies the researcher uses **participant observation**, actually participating in the group, to understand the actions from the perspectives of the people in the situation. Teachers can do their own informal ethnographies to understand life in their classrooms.

THE ROLE OF TIME IN RESEARCH. Many things that psychologists want to study, such as cognitive development (Chapter 2), happen over several months or years. Ideally, researchers would study the development by observing their subjects over many years as changes occur. These are called *longitudinal studies*. They are informative, but time-consuming, expensive, and not always practical: Keeping up with participants over a number of years as they grow up and move can be impossible. As a consequence, much research is *cross-sectional*, focusing on groups of students at different ages. For example, to study how children's conceptions of numbers change from ages 3 to 16, researchers can interview children of several different ages, rather than following the same children for 14 years.

Longitudinal and cross-sectional research examines change over long periods of time. The goal of **microgenetic studies** is to intensively study cognitive processes in the midst of change—while the change is actually occurring. For example, researchers might analyze how children learn a particular strategy for adding two-digit numbers over the course of several weeks. The microgenetic approach has three basic characteristics: the researchers (a) observe the entire period of the change—from when it starts to the time it is relatively stable; (b) make many observations, often using videotape recordings, interviews, and transcriptions of the exact words of the individuals being studied; (c) put the observed behavior "under a microscope," that is, they examine it moment by moment or trial by trial. The goal is to explain the underlying mechanisms of change—for example, what new knowledge or skills are developing to allow change to take place (Siegler & Crowley, 1991). This kind of research is expensive and time-consuming, so often only one or two children are studied.

QUANTITATIVE VERSUS QUALITATIVE RESEARCH. There is a distinction that you will encounter in your journey through educational psychology—the contrast between **qualitative** and **quantitative research**. These are large categories, and, like many categories, a bit fuzzy at the edges, but here are some simplified differences.

Qualitative Research. Case studies and ethnographies are examples of qualitative research. This type of research uses words, dialogue, events, themes, and images as data. Interviews and observations are key procedures. The goal is not to discover general principles, but rather to explore specific situations or people in depth and to understand the meaning of the events to the people involved in order to tell their story. Qualitative researchers assume that no process of understanding meaning can be completely objective. They are more interested in interpreting subjective, personal, or socially constructed meanings.

Quantitative Research. Both correlational and experimental types of research generally are quantitative because measurements are taken and computations are made. Quantitative research uses numbers, measurement, and statistics to assess levels or sizes of relationships among variables or differences between groups. Quantitative researchers try to be as objective as possible and remove their own biases from their results. One advantage of good quantitative research is that results from one study can be generalized or applied to other similar situations or people.

One of the requirements of the landmark NCLB Act was that educational programs and practices receiving federal money had to be consistent with "*scientifically based research*." Specifically, the NCLB Act stated that scientifically based research:

- Uses observations or experiments to systematically gather valid and reliable data.
- Involves rigorous and appropriate procedures for analyzing the data.
- Is clearly described so it can be repeated by others.
- Has been rigorously reviewed by appropriate, independent experts.

This description of scientifically based research fits the quantitative experimental approach described earlier better than qualitative methods such as ethnographic research or case studies, but there is continuing debate about what this means, as you will see in the *Point/Counterpoint*.

POINT/COUNTERPOINT
What Kind of Research Should Guide Education?

In the past decade, policies in both health care and in the treatment of psychological problems have emphasized evidence-based practices (McHugh & Barlow, 2010). The American Psychological Association defines **evidence-based practice in psychology (EBPP)** as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (American Psychological Association Task Force on Evidence-Based Practice for Children and Adolescents, 2008, p. 5). What does this mean in education?

POINT Research should be scientific; educational reforms should be based on solid evidence.

According to Robert Slavin (2002), tremendous progress has occurred in fields such as medicine, agriculture, transportation, and technology because:

> In each of these fields, processes of development, rigorous evaluation, and dissemination have produced a pace of innovation and improvement that is unprecedented in history. . . . These innovations have transformed the world. Yet education has failed to embrace this dynamic, and as a result, education moves from fad to fad. Educational practice does change over time, but the change process more resembles the pendulum swings of taste characteristic of art or fashion (think hemlines) rather than the progressive improvements characteristic of science and technology. (2002, p. 16)

The major reason for extraordinary advances in medicine and agriculture, according to Slavin, is that these fields base their practices on scientific evidence. Randomized clinical trials and replicated experiments are the sources of the evidence.

In his Presidential Address to the First Conference of the International Mind, Brain, and Education Society, Kurt Fischer (2009, pp. 3–4) said:

> What happened to education? If research produces useful knowledge for most of the industries and businesses of the world, then shouldn't it be serving the same function for education? Somehow education has been mostly exempt from this grounding in research. Dewey (1896) proposed the establishment of laboratory schools to ground education in research through combining research with practice in schools, ensuring both formative evaluation and

democratic feedback. Unfortunately, his vision has never been realized. There is no infrastructure in education that routinely studies learning and teaching to assess effectiveness. If Revlon and Toyota can spend millions on research to create better products, how can schools continue to use alleged "best practices" without collecting evidence about what really works?

A recent article in the *New York Times* suggests lack of evidence is still a problem.

> Most [educational] programs that had been sold as effective had no good evidence behind them. And when rigorous studies were done, as many as 90 percent of programs that seemed promising in small, unscientific studies had no effect on achievement or actually made achievement scores worse. For example, Michael Garet, the vice president of the American Institutes for Research, a behavioral and social science research group, led a study that instructed seventh-grade math teachers in a summer institute, helping them understand the math they teach—like why, when dividing fractions, do you invert and multiply? The teachers' knowledge of math improved, but student achievement did not. (Kolata, 2013, p. 3)

COUNTERPOINT Experiments are not the only or even the best source of evidence for education.

David Olson (2004) disagrees strongly with Slavin's position. He claims that we cannot use medicine as an analogy to education. "Treatments" in education are much more complex and unpredictable than administering one drug or another in medicine. And every educational program is changed by classroom conditions and the way it is implemented. Patti Lather, a colleague of mine at Ohio State, says, "In improving the quality of practice, complexity and the messiness of practice-in-context cannot be fantasized away. To try to do so yields impoverishment rather than improvement. That loss is being borne by the children, teachers, and administrators in our schools" (Lather, 2004, p. 30). David Berliner (2002) makes a similar point:

> Doing science and implementing scientific findings are so difficult in education because humans in schools are embedded in complex and changing networks of social interaction. The participants in those networks have

variable power to affect each other from day to day, and the ordinary events of life (a sick child, a messy divorce, a passionate love affair, migraine headaches, hot flashes, a birthday party, alcohol abuse, a new principal, a new child in the classroom, rain that keeps the children from a recess outside the school building) all affect doing science in school settings by limiting the generalizability of educational research findings. Compared to designing bridges and circuits or splitting either atoms or genes, the science to help change schools and classrooms is harder to do because context cannot be controlled (p. 19).

Berliner concludes that "A single method is not what the government should be promoting for educational researchers" (Berliner, 2002, p. 20).

BEWARE OF EITHER/OR: WHAT CAN YOU LEARN?

Complex problems in education need a whole range of methods for study. *Qualitative* research tells us specifically what happened in one or a few situations. Conclusions can be applied deeply, but only to what was studied. *Quantitative* research can tell us what generally happens under certain conditions. Conclusions can be applied more broadly. Today many researchers are using *mixed methods* or *complementary methods*—both qualitative and quantitative—to study questions both broadly and deeply. In the final analysis, the methods used—quantitative, qualitative, or a mixture of both—should fit the questions asked. Different approaches to research can ask different questions and provide different kinds of answers, as you can see in Table 1.2.

TABLE 1.2 • **What Can We Learn?**
Different approaches to research can ask and answer different questions.

RESEARCH METHOD	PURPOSES/QUESTIONS ADDRESSED	EXAMPLE
Correlational	To assess the strength and direction of the relation between two variables; to make predictions.	Is average amount of homework completed weekly related to student performance on unit tests? If so, is the relation positive or negative?
Experimental	To identify cause-and-effect relations; to test possible explanations for effects.	Will giving more homework cause students to learn more in science class?
Single-Subject Experiment	To identify the effects of a treatment or intervention for one individual.	When Emily records the number of pages she reads each night, will she read more pages? If she stops recording, will her amount of reading return to the previous levels?
Case Studies	To understand one or a few individuals or situations in depth.	How does one boy make the transition from a small rural elementary school to a large middle school? What are his main problems, concerns, issues, accomplishments, fears, supports, etc.?
Ethnography	To understand experiences from the participants' point of view: what is their meaning?	How do new teachers make sense of the norms, expectations, and culture of their new school, and how do they respond?
Mixed Methods	To ask complex questions involving causes, meanings, and relations among variables; to pursue both depth and breadth in research questions.	Based on an in-depth study of 10 classrooms, select the classes with the fewest behavior problems, then explore how teachers in those classes established a positive learning climate by interviewing teachers and students and analyzing videotapes made at the beginning of school.

TEACHERS AS RESEARCHERS. Research also can be a way to improve teaching in one classroom or one school. The same kind of careful observation, intervention, data gathering, and analysis that occurs in large research projects can be applied in any classroom to answer questions such as "Which writing prompts seem to encourage the most creative writing in my class?" "When does Kenyon seem to have the greatest difficulty concentrating on academic tasks?" "Would assigning task roles in science groups lead to more equitable participation of girls and boys in the work?" This kind of problem-solving investigation is called **action research**. By focusing on a specific problem

and making careful observations, teachers can learn a great deal about both their teaching and their students.

You can find reports of the findings from all types of studies in journals that are referenced in this book. I have published articles in many of these journals and also have reviewed manuscripts to decide what will be published. For years I was editor of the *Theory Into Practice* journal (tip.ehe.osu .edu). I think this is a terrific journal to inspire and guide action research in classrooms. For a great overview of the past 50 years in educational research and practice, see the Special 50th Anniversary issue of *Theory Into Practice* (Gaskill, 2013).

Theories for Teaching

As we saw earlier, the major goal of educational psychology is to understand what happens when someone teaches something to someone else in some setting (Berliner, 2006; Schwab, 1973). Reaching this goal is a slow process. There are very few landmark studies that answer a question once and for all. There are so many different kinds of students, teachers, tasks, and settings; and besides, human beings are pretty complicated. To deal with this complexity, research in educational psychology examines limited aspects of a situation—perhaps a few variables at a time or life in one or two classrooms. If enough studies are completed in a certain area and findings repeatedly point to the same conclusions, we eventually arrive at a **principle**. This is the term for an established relationship between two or more factors—between a certain teaching strategy, for example, and student achievement.

Another tool for building a better understanding of the teaching and learning processes is *theory*. The commonsense notion of theory (as in "Oh well, it was only a theory") is "a guess or hunch." But the scientific meaning of *theory* is quite different. "A **theory** in science is an inter-related set of concepts that is used to explain a body of data and to make predictions about the results of future experiments" (Stanovich, 1992, p. 21). Given a number of established principles, educational psychologists have developed explanations for the relationships among many variables and even whole systems of relationships. There are theories to explain how language develops, how differences in intelligence occur, and, as noted earlier, how people learn.

You will encounter many theories of development, learning, and motivation in this book. Theories are based on systematic research, and they are the beginning and ending points of the research cycle. In the beginning, theories provide the research *hypotheses* to be tested or the questions examined. A **hypothesis** is a prediction of what will happen in a research study based on theory and previous research. For example, two different theories might suggest two competing predictions that could be tested. Piaget's theory might suggest that instruction cannot teach young children to think more abstractly, whereas Vygotsky's theory might suggest that this is possible. Of course, at times, psychologists don't know enough to make predictions, so they just ask *research questions*. An example question might be: "Is there a difference in Internet usage by male and female adolescents from different ethnic groups?"

Research is a continuing cycle that involves:

- Clear specification of hypotheses, problems, or questions based on current understandings or theories
- Systematic gathering and analyzing of all kinds of information (data) about the questions from well-chosen research participants in carefully selected situations
- Interpreting and analyzing the data gathered using appropriate methods to answer the questions or solve the problems
- Modification and improvement of explanatory theories based on the results of those analyses, and
- Formulation of new and better questions based on the improved theories . . . and on and on.

This empirical process of collecting data to test and improve theories is repeated over and over. **Empirical** means "based on data." When researchers say that identifying an effective antibiotic or choosing a successful way to teach reading is an "empirical question," they mean that you
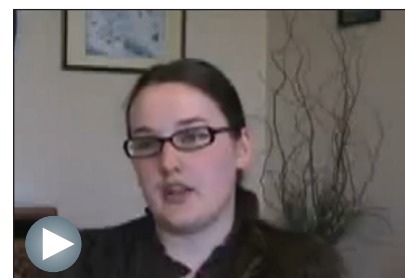
Video 1.3
A Spanish teacher conducts research in her classroom and explains the re-sults and the impact on her students. Notice the types of changes her students reported after the teacher implemented formative assessments.

ENHANCEDetext *video example*

need data and evidence to make the call. Constructing decisions from empirical analyses protects psychologists from developing theories based on personal biases, rumors, fears, faulty information, or preferences (Mertler & Charles, 2005). Answering questions with carefully gathered data means that research is self-correcting. If predictions do not play out or if answers to carefully formulated questions do not support current best understandings (theories), then the theories have to be changed. You can use the same kind of systematic and self-correcting thinking in your work with students.

Few theories explain and predict perfectly. In this book, you will see many examples of educational psychologists taking different theoretical positions and disagreeing on the overall explanations of such broad topics as learning and motivation. Because no one theory offers all the answers, it makes sense to consider what each has to offer.

So why, you may ask, is it necessary to deal with theories? Why not just stick to principles? The answer is that both are useful. Principles of classroom management, for example, will give you help with specific problems. A good theory of classroom management, on the other hand, will give you a new way of thinking about discipline problems; it will give you cognitive tools for creating solutions to many different problems and for predicting what might work in new situations. A major goal of this book is to provide you with the best and the most useful theories of development, learning, motivation, and teaching—those that have solid evidence behind them. Although you may prefer some theories to others, consider them all as ways of understanding the challenges teachers face.

I began this chapter by asserting that Educational Psychology is my favorite topic, as well as a key source of knowledge and skills for teaching. I end this chapter with one more bit of evidence for my enthusiasm. Educational psychology will help you support student learning—the goal of all teaching.

Supporting Student Learning

In an article in the *Educational Psychologist,* a major journal in our field, Jihyun Lee and Valerie Shute (2010) reported sifting through thousands of studies of student learning conducted over the course of 60 years, seeking to identify those that had direct measures of student achievement in reading and mathematics. Then they narrowed their focus to studies with strong effects. About 150 studies met all their rigorous criteria. Using the results from these studies, Lee and Shute identified about a dozen variables that were directly linked to K–12 student achievement. The researchers grouped these factors into two categories: *student personal factors* and *school and social-contextual factors*, as you can see in Table 1.3. When I read this article, I was pleased to see that my favorite subject, educational psychology, provides a base for developing knowledge and skills in virtually every area except principal leadership (for that subject you have to consult a book I wrote with my husband on principals as instructional leaders—Woolfolk Hoy & Hoy, 2013).

As you can see in Table 1.3, this text should help you become a capable and confident teacher who can get students engaged in the classroom learning community—a community that respects its members. This book will guide you toward becoming a teacher who helps students develop into interested, motivated, self-regulated, and confident learners. As a consequence, you will be able to set high expectations for your students, rally the support of parents, and build your own sense of efficacy as a teacher.

ENHANCEDetext *self-check*

TABLE 1.3 • **Research-Based Personal and Social-Contextual Factors that Support Student Achievement in K–12 Classrooms**

STUDENT PERSONAL FACTORS	EXAMPLES	WHERE IN THIS TEXT
Student Engagement		
Engaging Students' Behavior	Make sure students attend classes, follow rules, and participate in school activities.	Chapters 5–7, 13
Engaging Students' Minds and Motivations	Design challenging tasks, tap intrinsic motivation, support student investment in learning, and nurture student self-efficacy and other positive academic beliefs.	Chapters 2, 3, 10, 12
Engaging Students' Emotions	Connect to student interest, pique curiosity, foster a sense of belonging and class connections, diminish anxiety, and increase enjoyment in learning.	Chapters 3, 5, 6, 10, 12
Learning Strategies		
Cognitive Strategies	Directly teach knowledge and skills that support student learning and deep processing of valuable information (e.g., summarizing, inferring, applying, and reasoning).	Chapters 7–9, 14
Metacognitive Strategies	Directly teach students to monitor, regulate, and evaluate their own cognitive processes, strengths, and weaknesses as learners; teach them about when, where, why, and how to use specific strategies.	Chapters 7–9, 11
Behavioral Strategies	Directly teach students strategies and tactics for managing, monitoring, and evaluating their action, motivation, affect, and environment, such as skills in: time management test taking help seeking note taking homework management	Chapters 7–14

SOCIAL-CONTEXTUAL FACTORS	EXAMPLES	WHERE IN THIS TEXT
School Climate		
Academic Emphasis	Set high expectations for your students, and encourage the whole school to do the same; emphasize positive relations with the school community.	Chapters 11–13
Teacher Variables	If possible, teach in a school with the positive qualities of collective efficacy, teacher empowerment, and sense of affiliation.	Chapters 1, 11, 13
Principal Leadership	If possible, teach in a school with the positive qualities of collegiality, high morale, and clearly conveyed goals.	See Woolfolk Hoy and Hoy (2013).
Social-Familial Influences		
Parental Involvement	Support parents in supporting their children's learning.	Chapters 3–6, 12
Peer Influences	Create class and school norms that honor achievement, encourage peer support, and discourage peer conflict.	Chapters 3, 10, 13, 15

Source: Based on Lee, J., & Shute, V. J. (2010). Personal and social-contextual factors in K–12 academic performance: An integrative perspective on student learning. Educational Psychologist, 45, *185–202.*

SUMMARY

- **Learning and Teaching Today (pp. 4–8)**

  What are classrooms like today? In 2010, 13% of the people living in the United States were born in another country, and 20% spoke a language other than English at home—half of these families speak Spanish. By 2050, there will be no majority race or ethnic group in the United States; every American will be a member of a minority group. About 22% of American children currently live in poverty. In the 2009–2010 school year, about 60% of school-age students with disabilities received most of their education in general education classrooms. Even though students in classrooms are increasingly diverse in race, ethnicity, language, and economic level, teachers are less diverse—the percentage of White teachers is increasing, while the percentage of Black teachers is falling. This book is about understanding the complex processes of development, learning, motivation, teaching, and assessment so that you can become a capable and confident teacher with a high but authentic sense of efficacy.

  What is NCLB? The No Child Left Behind Act of 2002 required standardized achievement testing in reading and mathematics every year for all students in grades 3 through 8, and once more in high school. Science was tested once in each grade span: elementary, middle, and high school. Based on these test scores, schools were judged to determine if their students are making adequate yearly progress (AYP) toward becoming proficient in the subjects tested. The NCLB Act required that all students in the schools must reach proficiency by the end of the 2013–2014 school year; it didn't happen. NCLB was supposed to be reauthorized in 2007 or 2008. On March 13, 2010, The Obama Administration released *ESEA Blueprint for Reform* to describe a vision for the reauthorization of NCLB (U.S. Department of Education, 2010). Two ideas are for tests to assess growth, not absolute achievement, and to focus on the bottom 5% of schools.

  What evidence is there that teachers make a difference? Several studies speak to the power of teachers in the lives of students. The first found that the quality of the teacher–student relationship in kindergarten predicted several aspects of school success through the eighth grade. The second study found similar results for students from preschool through fifth grade, a finding confirmed by almost 100 students in countries around the world. The third study examined math achievement for students in two large school districts as they moved through third, fourth, and fifth grades. Again, the quality of the teacher made a difference: Students who had three high-quality teachers in a row were way ahead of peers who spent 1 or more years with less-competent teachers. In a study that followed children from third through fifth grade, two factors helped children with lower skills in mathematics begin to close the achievement gap: higher-level (not just basic skills) instruction and positive relationships with teachers. Similar findings hold for beginning teachers.

- **What Is Good Teaching? (pp. 8–13)**

  Good teachers are committed to their students. They must deal with a wide range of student abilities and challenges: different languages, different home situations, and different abilities and disabilities. They must adapt instruction and assessment to students' needs. The whole time that these experts are navigating through the academic material, they also are taking care of the emotional needs of their students, propping up sagging self-esteem, and encouraging responsibility. From the first day of class, they carefully plan and teach the basic procedures for living and learning in their classes.

  What are some research-based models of effective teaching? Charlotte Danielson describes a Framework for Teaching, which has 22 components organized into four domains or areas of teaching responsibility: Planning and Preparation, Classroom Environment, Instruction, and Professional Responsibilities. This framework is the basis for a widely used system of teacher evaluation. TeachingWorks, a national project based at the University of Michigan and dedicated to improving teaching practice, has identified 19 high-leverage teaching practices, defined as actions that are central to teaching and useful across most grade levels, academic subjects, and teaching situations. Finally, the Bill and Melinda Gates Foundation launched the Measures of Teaching Effectiveness (MET) Project, a research partnership between 3,000 teachers and research teams at dozens of institutions, that has identified a three-part system for evaluating good teaching that includes gains on state achievement tests (weighted at about 33% to 50%), student perceptions of teachers, and classroom observations using the Danielson Framework for Teaching. The latter two make up the 66% to 50% of the weighting in the evaluations.

  What are the concerns of beginning teachers? Learning to teach is a gradual process. The concerns and problems of teachers change as they grow in their ability. During the beginning years, attention tends to be focused on maintaining discipline, motivating students, accommodating differences among students, evaluating students' work,

dealing with parents, and getting along with other teachers. Even with these concerns, many beginning teachers bring creativity and energy to their teaching and improve every year. The more experienced teacher can move on to concerns about professional growth and effectiveness in teaching a wide range of students.

- **The Role of Educational Psychology (pp. 13–23)**

  What is educational psychology? Educational psychology has been linked to teaching since it began in the United States over a century ago. The goals of educational psychology are to understand and to improve the teaching and learning processes. Educational psychologists develop knowledge and methods; they also use the knowledge and methods of psychology and other related disciplines to study learning and teaching in everyday situations. Educational psychologists examine what happens when someone/something (a teacher or parent or computer) teaches something (math or weaving or dancing) to someone else (student or co-worker or team) in some setting (classroom or theater or gym).

  What are the research methods in educational psychology? Correlational methods identify relationships and allow predictions. A correlation is a number that indicates both the strength and the direction of a relationship between two events or measurements. The closer the correlation is to either 1.00 or –1.00, the stronger the relationship. Experimental studies allow researchers to detect causes, not just make predictions. Experimental studies should help teachers implement useful changes. Instead of just observing and describing an existing situation, the investigators introduce changes and note the results. Quasi-experimental studies meet most of the criteria for true experiments, with the important exception being that the participants are not assigned to groups at random. Instead, existing groups such as classes or schools participate in the experiments. In single-subject experimental designs, researchers examine the effects of treatments on one person, often by using a baseline/intervention/baseline/intervention, or ABAB, approach. Clinical interviews, case studies, and ethnographies look in detail at the experiences of a few individuals or groups. If participants are studied over time, the research is called *longitudinal.* If researchers intensively study cognitive processes in the midst of change—as the change is actually happening—over several sessions or weeks, then the research is *microgenetic.* No matter what method is used, results from the research are used to further develop and improve theories, so that even better hypotheses and questions can be developed to guide future research.

  What is the difference between qualitative and quantitative research? There is a general distinction between qualitative and quantitative research. These are large categories and, like many categories, a bit fuzzy at the edges. Case studies and ethnographies are examples of qualitative research. This type of research uses words, dialogue, events, themes, and images as data. Interviews and observations are key procedures. The goal is not to discover general principles, but rather to explore specific situations or people in depth and to understand the meaning of the events to the people involved in order to tell their story. Both correlational and experimental types of research generally are quantitative because measurements are taken and computations are made. Quantitative research uses numbers, measurement, and statistics to assess levels or sizes of relationships among variables or differences between groups. Different types of research can answer different questions.

  Scientifically based research, which is more consistent with quantitative research, systematically uses observations or experiments to gather valid and reliable data; involves rigorous and appropriate procedures for gathering and analyzing the data; is clearly described so it can be repeated by others; and has been rigorously reviewed by appropriate, independent experts. When teachers or schools make systematic observations or test out methods to improve teaching and learning for their students, they are conducting action research.

  Distinguish between principles and theories. A principle is an established relationship between two or more factors—between a certain teaching strategy, for example, and student achievement. A theory is an interrelated set of concepts that is used to explain a body of data and to make predictions. The principles from research offer a number of possible answers to specific problems, and the theories offer perspectives for analyzing almost any situation that may arise. Research is a continuing cycle that involves clear specification of hypotheses or questions based on good theory, systematic gathering and analyzing of data, modification and improvement of explanatory theories based on the results, and the formulation of new, better questions based on the improved theories.

  What key factors support student learning? A synthesis of about 150 studies of student learning found two broad categories of influence: *student personal factors* and *school and social-contextual factors*. When I read this article, I was pleased to see that my favorite subject, educational psychology, provides a base for developing knowledge and skills in virtually every area except principal leadership.

PRACTICE USING WHAT YOU HAVE LEARNED

To access and complete the exercises, click the link under the images below.

Using Research to Understand and Improve Teaching

ENHANCEDetext *application exercise*

Effective Teaching

ENHANCEDetext *application exercise*

KEY TERMS

Action research   20
Case study   17
Correlations   16
Descriptive studies   16
Educational psychology   14
Empirical   21
Ethnography   17
**Evidence-based practice in psychology
    (EBPP)**   19

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Hypothesis/hypotheses   21
Microgenetic studies   18
Negative correlation   16
Participant observation   18
Participants/subjects   16
Positive correlation   16
Principle   21
Qualitative research   18

Quantitative research   18
Quasi-experimental studies   17
Random   16
Reflective   9
Single-subject experimental studies   17
Statistically significant   17
Teachers' sense of efficacy   5
Theory   21

CONNECT AND EXTEND TO LICENSURE

MULTIPLE-CHOICE QUESTIONS

1. Novice teachers face numerous tasks and scenarios with which they have little prior experience. For teachers currently entering the field, which of the following is not a challenge they are apt to encounter?
    A. Students who may exhibit superior technology skills as compared to their teachers
    B. An increasingly diverse population of students and families
    C. Inadequate resources to ensure the safety of their students while using technology in the classroom
    D. Students who face the challenges associated with living in poverty

2. Both students and teachers work harder and persist lon-ger when they have a high sense of efficacy. Which of the following does not enhance self-efficacy in both students and teachers?
    A. Formal school relationships that focus solely on skills
    B. Day-to-day success in achieving tasks
    C. High expectations from those in the environment
    D. Assistance from more knowledgeable partners

3. All the students in Ms. Clare's third-grade class engage in weekly test reviews. Ms. Clare believes that these reviews will enhance student retention when standardized testing occurs in the spring. Which of Ms. Clare's students under the No Child Left Behind Act will have his or her scores reported separately?
    A. Susan Frasier, who was recently identified with a learning disability
    B. Brendan Kincaid, who must wear corrected lenses in order to read

C. Miranda Ruiz, whose English is excellent even though her parents moved to the United States from Mexico 10 years ago
D. Lauren Stone, who is a member of the third grade's cohort of students who are gifted and talented

CONSTRUCTED-RESPONSE QUESTIONS

Case

Sandra Chapman was determined to add to her repertoire of teaching skills as she entered her second year of teaching. Her first year as a high school teacher proved to be more of a challenge than she expected. Her school, located in the heart of the city, drew students from all walks of life and economic circumstances. Last year, she initially hoped that all of her students would master the history curriculum that she had inherited, but by midyear several of her students were not attending class on a regular basis. In an effort to increase attendance, she took points off students' grades when they missed class and intentionally ignored them when they returned. She believed that by not taking an interest in where they were, she would not reinforce their "skipping" behavior. She also thought that by continually reminding students of how much they did not know, she would encourage them to study. Sadly, these methods did not work well, and attendance only further declined. She is now in the process of designing some new strategies.

4. Identify the methods Sandra Chapman uses to encourage attendance, and explain why these methods might have been unsuccessful.
5. What advice would you offer Sandra Chapman as she prepares to develop new methods?

ENHANCEDetext *licensure exam*

TEACHERS' **CASEBOOK**

WHAT WOULD THEY DO? LEAVING NO STUDENT BEHIND

Here is how several expert teachers said they would prepare a highly diverse group of students for spring achievement tests and readiness for college and career.

BARBARA PRESLEY—Transition/Work Study Coordinator— High School Level
BESTT Program (Baldwinsville Exceptional Student Training and Transition Program), C. W. Baker High School, Baldwinsville, NY

As the Transition/Work Study Coordinator and the originator of the BESTT Program, my responsibility was to prepare students who are severely disabled for life post high school. The philosophy of the Baldwinsville School District supported an employment model for training. Employment sites at local businesses were developed, and Job Coaches were hired to work 1:1 with students in a "real-life" work environment with real work assignments and expectations.

While some, but not all, of our students had to sit for exams, we found that the confidence they developed while at "work" and the work ethic they learned in that environment gave them the skills they needed to do their best in the testing situation. Job Coaches (interns) were invaluable in the "community classroom" not only because they taught our students the skills they needed to succeed, but also because they taught the community to recognize and appreciate our students for their capabilities rather than their disabilities. It is education that works two ways.

JENNIFER PINCOSKI—Learning Resource Teacher: K–12
Lee County School District, Fort Myers, FL

One of the advantages for teachers in this situation is that many of the strategies that are effective for students with learning disabilities are also effective for second-language learners. Even students who are meeting benchmarks will benefit from these supports. Some of these strategies include labeling items throughout the classroom for language/vocabulary acquisition, providing visual supports whenever possible, and using a variety of graphic organizers. Cooperative learning groups and the total physical response (TPR) method can also help in the development of both language skills and content knowledge. Activities can be tiered to match students' levels of understanding, and, to demonstrate their learning, students can be offered multiple assignment options from which to choose.

Exposing students to new vocabulary and content through auditory, visual, AND hands-on instruction will yield the best results. Broken down to its most basic level, this philosophy can be summarized by the proverb, "Tell me and I'll forget; show me and I'll remember; involve me and I'll understand." Students should be active participants in the learning process, not spectators.

JESSICA N. MAHTABAN—Eighth-Grade Math Teacher
Woodrow Wilson Middle School, Clifton, NJ

The first thing to address is survival. Each student must learn his/her name, address, and phone number. It is crucial for all students to know this information in case of any type of emergency. Afterward, the students will become familiar with the classroom routines and expectations. Once the students are comfortable with the routines and expectations, they will be able to focus on language. The intern, administration, parents, and I must meet frequently to work cooperatively on making projects and goals for each student.

During any lesson I would provide visual cues (gestures, pictures, objects) with verbal instruction. I would speak to the