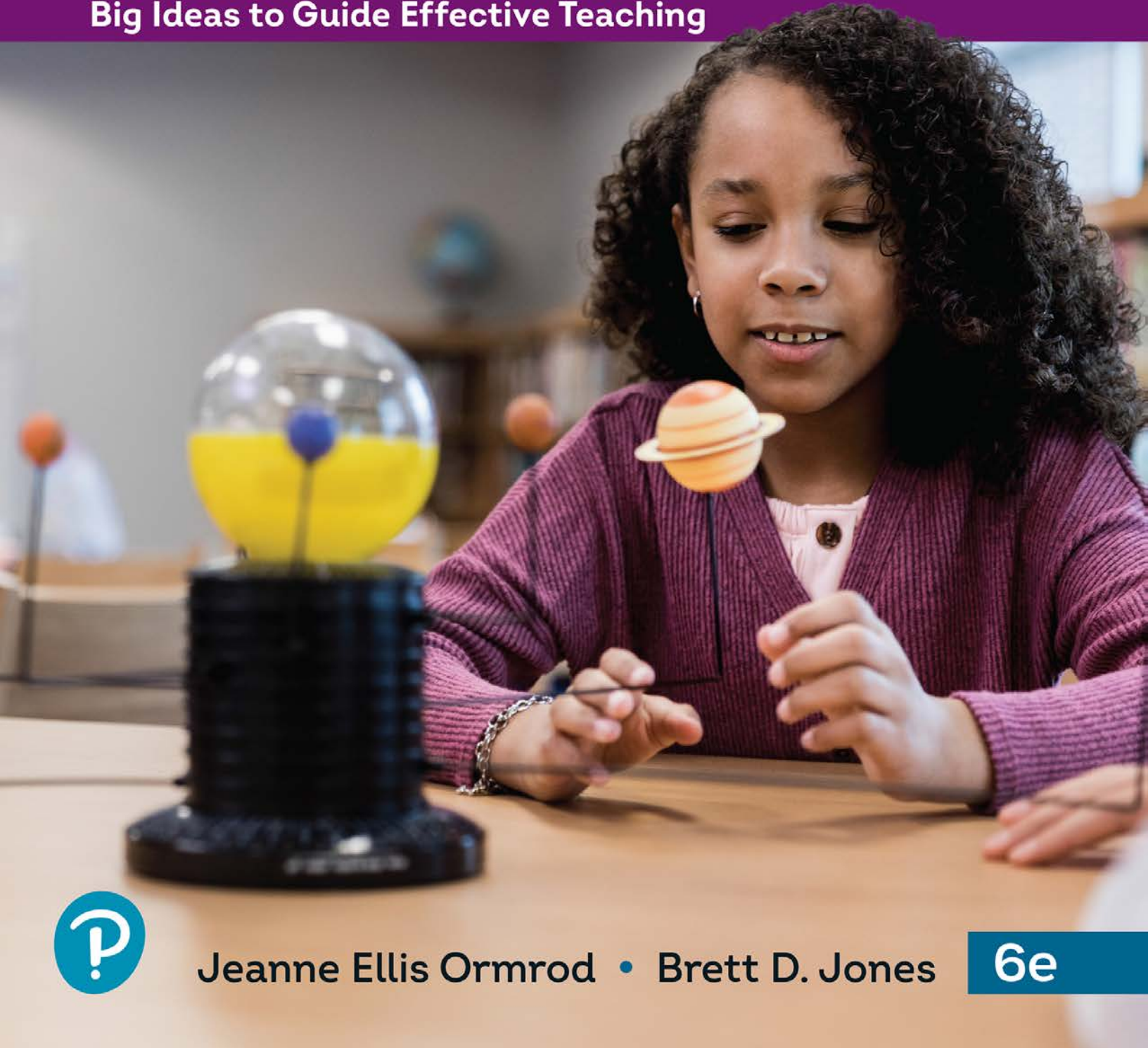


# ESSENTIALS OF EDUCATIONAL PSYCHOLOGY

Big Ideas to Guide Effective Teaching



Jeanne Ellis Ormrod • Brett D. Jones

6e

SIXTH EDITION

# Essentials of Educational Psychology

Big Ideas to Guide Effective Teaching

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*To Olivia, Miles, and Jack Fox (from Jeanne)*



*and*

*To Mia and Jack Jones (from Brett)*



# About the Authors



**Jeanne Ellis Ormrod** received her A.B. in psychology from Brown University and her M.S. and Ph.D. in educational psychology from The Pennsylvania State University. She earned licensure in school psychology through postdoctoral work at Temple University and the University of Colorado at Boulder and has worked as a middle school geography teacher and school psychologist. Dr. Ormrod was Professor of Educational Psychology at the University of Northern Colorado (UNC) until 1998 and is currently Professor Emerita in UNC's School of Psychological Sciences. She has published and presented extensively on cognition and memory, cognitive development, instruction, and related topics but is probably best known for this book and four others: *Human Learning* (currently in its 8th edition); *Educational Psychology: Developing Learners* (10th edition, coauthored with Eric Anderman and Lynley Anderman); *Child Development and Education* (coauthored with Teresa McDevitt, currently in its 7th edition); and *Practical Research* (coauthored with Paul Leedy, currently in its 12th edition). After raising three children (two of whom have become teachers themselves), she now lives in New Hampshire with her husband, Richard. Within the past few years, she has had the good fortune to visit schools in diverse cultural settings, including Rwanda, Tanzania, Thailand, Malaysia, and Peru's Amazon region.



**Brett D. Jones** is Professor of Educational Psychology in the School of Education at Virginia Tech (Virginia Polytechnic Institute and State University). He received his B.A.E. in architectural engineering from The Pennsylvania State University and his M.A. and Ph.D. in educational psychology from the University of North Carolina at Chapel Hill. Dr. Jones has held faculty positions as an educational psychologist at Duke University, the University of South Florida St. Petersburg, and Virginia Tech. He has taught over 20 different types of university courses related to motivation, cognition, and teaching strategies. Dr. Jones has also conducted workshops and invited presentations at many universities and has presented more than 150 research papers at conferences. His research, which includes examining instructional methods that support students' motivation and learning, has led to more than 100 research articles, several book chapters, and two other books (*Motivating Students by Design: Practical Strategies for Professors* and *The Unintended Consequences of High-Stakes Testing*, the latter of which was coauthored with M. Gail Jones and Tracy Hargrove). He and his wife stay busy with their two children, who enjoy school, athletics, and cheering for the Hokies, Nittany Lions, and Tar Heels.

# Preface

## About This Book

Welcome to the interesting field of educational psychology! We're excited to share with you the many psychological concepts and principles that are related to teaching and learning. Our goal in writing this book was not only to make these concepts and principles easy to understand but also to provide readers with research-based teaching strategies that they could use to help their students learn in a developmentally appropriate manner.

Two primary characteristics distinguish this book from most other educational psychology textbooks: its shorter length and its organization into "Big Ideas." We used the word *Essentials* in the title of the book because we've distilled the many ideas in educational psychology down to the essential, big ideas. As a result, this book has only 10 chapters instead of the 15 chapters or so that are typical in many educational psychology textbooks. This shorter book allows students to spend more time understanding concepts in-depth instead of covering more topics in less depth. For example, in a 15-week course, instructors could spend two weeks on some chapters instead of just one. Or, they could provide supplementary readings or case studies to delve deeper into some of the chapter topics.

With respect to the book's organization, each chapter is divided into about four *Big Ideas* that are further divided into important principles and teaching strategies. Organizing the book's chapters by *Big Ideas* focuses students on the most important educational psychology ideas and teaching strategies. The traditional approach to teaching and writing about educational psychology is to cover one theory at a time, explaining its assumptions and principles and then identifying implications for educational practice. But in our extensive experience in teaching educational psychology to college students, we've had success in teaching our courses differently, focusing more on commonalities than differences among theories. In fact, although researchers from different traditions have approached human cognition and behavior from many different angles, they sometimes arrive at more or less the same conclusions. The language they use to describe their observations is often different, to be sure, but beneath all the terminology are certain nuggets of truth that can be remarkably similar. We've tried to integrate these ideas from many theoretical perspectives into what is, for us, a general set of principles and strategies that educational psychology *as a whole* can offer teachers.

Chapter 1 introduces readers to how teachers can develop expertise, how they can use research findings, and how readers can implement strategies to learn and study more effectively. Chapters 2, 3, and 4 focus on many different factors that can affect learning, including the brain, cognition, memory, complex cognitive processes (e.g., self-regulation, transfer, problem solving), and the social and cultural environments in which the learning takes place. We then consider the effects of motivation (Chapter 5) and development (Chapters 6 and 7) on students' learning and achievement. The last three chapters of the book build on the earlier ones to offer recommendations for instruction (Chapter 8), classroom management (Chapter 9), and assessment (Chapter 10).

## Pedagogical Features

The book includes a variety of features that can help readers better understand, remember, and apply what they're reading. These features are provided here in a bulleted list along with an example of each.

- **Big Ideas:** Each chapter begins with about four *Big Ideas*—overarching principles that provide a general organizational scheme for the chapter's content.



### Big Ideas to Master in this Chapter

- **4.1** Learners' behaviors and cognitive processes are influenced by the specific stimuli and consequences in their immediate environment.
  - **4.2** Learners co-construct their knowledge with others.
  - **4.3** The cultural and societal contexts in which learners grow up also influence their behaviors and cognitive processes.
  - **4.4** Although various environmental contexts influence learners and their development, so, too, do learners influence the environments in which they live and grow.
- **Case Studies:** Immediately following the list of Big Ideas presented at the beginning of each chapter is a *Case Study* that introduces some of the ideas and issues that we address in the chapter. Throughout each chapter, we periodically revisit the case to offer new insights and interpretations.

### Case Study: Why Jack Wasn't in School

Jack, a Native American seventh-grader, lived in the Navajo Nation in the American Southwest. Although he enjoyed school, worked hard in his studies, and got along well with classmates, he'd been absent from school all week. In fact, he'd been absent from home as well, and his family (which didn't have a telephone) wasn't sure exactly where he was. Jack's English teacher described the situation to Donna Deyhle, an educator who had known Jack for many years:

That seventh-grader was away from home for 5 days, and his parents don't care! . . . Almost one-third of my Navajo students were absent this week. Their parents just don't support their education. How can I teach when they are not in my classes?

A few days later, Jack's sister explained why her parents had eventually begun to look for Jack:

He went to see [the film] *Rambo II* with friends and never came home. If he was in trouble we would know. But now the family needs him to herd sheep tomorrow.

It was spring—time for the family to plant crops and shear the sheep—and all family members needed to help out. Jack's whereabouts were soon discovered, and the family stopped by Donna's house to share the news:

Jack's dad said, "We found him." His mother turned in his direction and said teasingly, "Now maybe school will look easy!" Jack stayed at home for several days, helping with the irrigation of the corn field, before he decided to return to school.<sup>1</sup>

Before you continue, please answer the following questions:

1. Did you interpret Jack's absence from school in the same way his English teacher did, concluding that "his parents don't care" about his education? If so, how might your own cultural background have influenced your conclusion?
2. Like most parents, Jack's mother and father cared deeply about his school achievement and general well-being. What alternative explanations might account for their behaviors in this situation?

- **Guiding Principles and Key Strategies:** Boldfaced *Guiding Principles* and *Key Strategies* are provided throughout the chapter to highlight key principles and concrete recommendations that can guide teachers in their decision making and classroom practices.

### Help students avoid mental sets when engaging in creative problem solving.

To avoid *mental sets* that exclude potentially effective approaches and solutions, it's helpful to encourage students to encode situations and problems in multiple ways, as demonstrated by these examples:

- **See for Yourself exercises:** We often put readers themselves in the position of a “learner” and ask them to engage in a short learning or thinking activity. Many of these *See For Yourself* exercises are similar to ones we've used in our own educational psychology classes. Our students have found them to be quite helpful in making concepts and principles more “real” for them—and hence more vivid, understandable, and memorable. An example of such an exercise follows.

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### See For Yourself

Carberry and Seville

1. Professor Josiah S. Carberry has just returned the first exam, scored and graded, in your advanced psychoceramics class. You discover that you've received one of the few high test grades in the class, an A-. Why did you do so well when most of your classmates did poorly? Jot down several possible explanations for why you might have received a high grade in Dr. Carberry's class.
  2. An hour later, you get the results of the first test in Professor Barbara F. Seville's sociocosmetology class, and you learn that you *failed* it! Why did you do so poorly? Jot down several possible reasons for your F on this test.
- 

- **Think About It questions:** An additional feature comes in the form of *Think About It* questions in the margin that encourage readers to connect chapter content to their past experiences or current beliefs.

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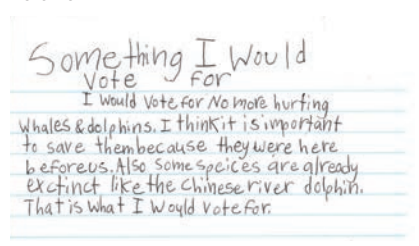
### think about it

Can you think of a recent situation in which you exhibited positive transfer?  
Can you think of one in which you exhibited negative transfer?

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- **Example artifacts from students and teachers:** If you quickly flip through the book, you'll see many classroom artifacts—that is, examples of work created by actual students and teachers. We use artifacts throughout the book to help readers connect concepts, principles, and strategies to students' behavior and to classroom practices.


**Figure 7.15** A strong moral code often encompasses a concern for the welfare of animals, as shown in this 9-year-old's response to the topic “Something I Would Vote For”





- **Developmental Trends:** To a considerable degree, we talk about concepts and principles that apply to children and adolescents at all grade levels. Yet 1st graders often think and act very differently than 6th graders, and 6th graders can, in turn, be quite different from 11th graders. Most chapters have one or more *Developmental Trends* tables that highlight and illustrate developmental differences that teachers are apt to see in grades K–2, 3–5, 6–8, and 9–12. Here is an example from part of a Developmental Trends table.

Table 3.2 Metacognition at Different Grade Levels

GRADE LEVEL	AGE-TYPICAL CHARACTERISTICS	EXAMPLE	SUGGESTED STRATEGIES
 <p>Photo by Urquhart Grades K–2</p>	<ul style="list-style-type: none"> <li>• Awareness of thought in oneself and others, albeit in a simplistic form; limited ability to reflect on the specific nature of one's own thought processes</li> <li>• Considerable overestimation of what has been learned and how much can be remembered</li> <li>• Belief that learning is a relatively passive activity</li> <li>• Belief that the absolute truth about any topic is "out there" somewhere, waiting to be discovered</li> </ul>	<p>An adult tells 6-year-old Brent that she will read him a list of 12 words; she then asks him to predict how many he'll be able to remember. Brent predicts "about 8 or 9 . . . maybe all of them," but in fact he recalls only 6. Later, when the adult asks him what he did to try to remember the words, he says only, "Think" and "Helded it, hold it in my brain."</p>	<ul style="list-style-type: none"> <li>• Talk often about thinking processes (e.g., "I wonder if . . ." "How might you remember to . . . ?")</li> <li>• Provide opportunities for students to "experiment" with their memories (e.g., playing "I'm going on a trip and am going to pack ____," in which each student repeats items previously mentioned and then adds another item to the list).</li> <li>• Introduce simple learning strategies (e.g., rehearsal of spelling words, repeated practice of motor skills).</li> </ul>

- **Classroom Strategies boxes:** Most chapters have two or more *Classroom Strategies* boxes that offer concrete suggestions and examples of how teachers might apply a particular concept or principle. These features should provide yet another mechanism to help our readers apply educational psychology to actual classroom practices. Part of one of these Classroom Strategies boxes is shown here.

### Classroom Strategies

#### Working with Students Who Have Significant Delays in Cognitive Development

- **Introduce new material at a slower pace, and provide many opportunities for practice.**  
An elementary teacher gives a student only two new addition facts a week because any more than two seem to be overwhelming. Every day, the teacher has the student practice writing the new facts and review the facts learned in preceding weeks.
- **Give students explicit guidance about how to study.**  
An elementary teacher tells a student, "When you study a new spelling word, it helps if you repeat the letters out loud while you practice writing the word. Let's try it with the word *house*. Watch how I repeat the letters—H . . . O . . . U . . . S . . . E—as I write the word. Now you try doing what I just did."
- **Explain tasks and expected behaviors concretely and in very specific language.**  
An art teacher gives a student explicit training in the steps needed at the end of each painting session: (1) Rinse the paintbrush out at the sink, (2) put the brush and watercolor paints on the shelf in the back room, and (3) put the painting on the counter by the window to dry. Initially, the teacher needs to remind the student of every step in the process. But with time and practice, the student eventually carries out the process independently.
- **Encourage independence.**  
A middle school teacher teaches a student how to use her calculator to figure out what she needs to pay for lunch every day. The teacher also gives the student considerable practice in identifying the correct bills and coins to use when paying various amounts.
- **Provide technology that can enhance students' self-reliance.**  
Using a task organizer app on a smartphone (e.g., Visulas, Picture Scheduler), a high school life skills teacher creates a sequence of step-by-step pictures that can help a student learn and remember how to cook a hard-boiled egg.

Sources: Feuerstein, Feuerstein, & Falk, 2010; K. L. Fletcher & Bray, 1995; Howard, 2009; Patton, Blackburn, & Fad, 1996; Prout, 2009; Turnbull et al., 2010.

- **Use of footnotes:** Some of our colleagues in the field may be surprised to see our use of footnotes rather than APA (American Psychological Association) citation style throughout the book. Our decision has been strictly a pedagogical one. Yes, students need to know that the principles and recommendations in this book are research-based. But we've found that APA style can be quite distracting for someone who is reading about psychology for the first time and trying to sort out what things are and are not important to learn and remember. Novice psychologists should be concerned more with the *ideas themselves* than with the people behind the ideas. By putting most of the research authors' names in small print at the bottom of the page, we can help novices better focus their attention on what things truly are most important to know and understand.

# Learning Management System (LMS)– Compatible Assessment Bank, and Other Instructor Resources

## **LMS-Compatible Assessment Bank**

With this new edition, assessments are included in LMS-compatible banks for the following learning management systems: Blackboard (ISBN 9780136817758), Canvas (ISBN 9780136817703), D2L (ISBN 9780136817918), and Moodle (ISBN 9780136817871). These packaged files allow maximum flexibility to instructors when it comes to importing, assigning, and grading. Assessment types include:

- **Learning Outcome Quizzes:** Each chapter *Big Idea* is the focus of a *Learning Outcome Quiz* that is available for instructors to assign through their Learning Management System. The *Big Ideas* identify chapter content that is most important for learners and serve as the organizational framework for each chapter. The quiz questions focus almost exclusively on meaningful learning and, often, on application of key concepts and principles related to scenarios and problems. In general, the quizzes have been written with a particular principle in mind: When used in the LMS

environment, these multiple-choice questions are automatically graded and include feedback for the correct answer and for each distractor to help guide students' learning. As we say in Chapter 10, *Assessment activities can be learning experiences in and of themselves.*

- **Application Exercises:** Each chapter provides opportunities for students to apply what they have learned through *Application Exercises*. One *Application Exercise* is available for each Big Idea within the chapter. The exercises require students to watch short videos, read scenarios, or think about situations and then answer open-ended questions. When used in the LMS environment, a model response written by experts is provided after students submit the exercise. This feedback helps guide students' learning and can assist the instructor in grading.
- **Chapter Tests:** Suggested test items for each chapter in the following formats: multiple choice and short answer/essay. Some items (lower-level questions) simply ask students to identify or explain concepts and principles they have learned. But many others (higher-level questions) ask students to apply those same concepts and principles to specific classroom situations—that is, to actual student behaviors and teaching strategies. The lower-level questions assess basic knowledge of educational psychology. But ultimately, it is the higher-level questions that can best assess students' ability to use principles of educational psychology in their own teaching practice.

#### **Instructor's Manual (ISBN 9780136817611)**

The Instructor's Manual is provided as a Word document and includes resources to assist professors in planning their course. These resources consist of suggestions for learning activities, supplementary lectures, group activities, and additional media resources. These have been carefully selected to provide opportunities to support, enrich, and expand on what students read in the textbook.

#### **PowerPoint® Slides (ISBN 9780136817574)**

PowerPoint slides are provided for each chapter and highlight key concepts and summarize the content of the text to make it more meaningful for students. Oftentimes, these slides also include questions and problems designed to stimulate discussion and to encourage students to elaborate and deepen their understanding of chapter topics.

**Note:** All instructor resources—LMS-compatible assessment bank, instructor's manual, and PowerPoint slides—are available for download at [www.pearsonhighered.com](http://www.pearsonhighered.com). Use one of the following methods:

- From the main page, use the search function to look up the lead author (i.e., Ormrod) or the title (i.e., *Essentials of Educational Psychology*). Select the desired search result, then access the "Resources" tab to view and download all available resources.
- From the main page, use the search function to look up the ISBN (provided above) of the specific instructor resource you would like to download. When the product page loads, access the "Downloadable Resources" tab.

## **New to This Edition**

Our knowledge about how children and adolescents learn and develop—and also about how best to *help* them learn and develop—grows every year. Throughout this sixth edition, we've made many changes to reflect new research findings and evidence-based classroom strategies. General changes include the following:

- **More explicit connections between principles and teaching strategies:** For several chapters in the prior edition, we provided most of the teaching strategies in separate

sections near the end of the chapter. In this edition, we integrated those teaching strategies throughout the chapters. As a result, the *Big Idea* sections in many chapters now include a subsection titled *Teaching Strategies* to make the connections between the principles and the teaching strategies more explicit.

- **More explicit connections between theories and principles:** Although our approach in this book is to integrate the concepts, principles, and educational strategies that diverse theoretical perspectives offer, it's also important for teachers to have some familiarity with specific psychological theories and with prominent theorists who have had a significant influence on psychological thinking (e.g., Jean Piaget, Lev Vygotsky, B. F. Skinner). To better connect these theories to the *Big Ideas* and principles presented in the text, we moved the theories from the *Theoretical Perspectives* tables in the prior edition to within the body of the text.
- **New figures to facilitate comprehension:** We added over 90 new figures to summarize or present the concepts explained in the text.
- **Updated references and explanations:** We have included over 500 new references to provide readers with the most current and relevant research.
- **New keywords and definitions:** We added new keywords and definitions that are consistent with current research.

## Key Content Updates by Chapter

More specific, chapter-by-chapter changes include the following additions and modifications:

- **Chapter 1:** Added a second reflection question and explanation related to motivation for the opening “Case Study: The ‘No D’ Policy”; switched the order of the first and second big ideas (Sections 1.1 and 1.2); added an explanation and figure related to the organization of the educational psychology topics within the book; added a brief history of the field of educational psychology; added examples of the types of questions addressed in each chapter in the book; added a definition of *variable* with examples; added a figure to show the relationships between variables, principles, theories, and ideas; added several study strategies, with figures and examples, including spacing study sessions, reviewing previously learned material, previewing material, taking notes during reading, finding examples and nonexamples of concepts, checking and practicing what you have learned, and evaluating your study schedule; and added a principle about being an active participant and putting forth effort in learning and studying.
- **Chapter 2:** Replaced the Case Study at the beginning of the chapter with a new Case Study titled “Studying for a Test”; moved all of the teaching implications in Section 2.5 to within the chapter at the appropriate locations; edited the wording and order of a few of the Big Ideas; deleted Table 2.1 and distributed the text from the table to within the chapter or within other chapters; added a definition of *cognition* at the beginning of the chapter; added more specific information about the brain in Section 2.1 including two new figures (Figures 2.4 and 2.5); added a new Figure 2.6; revised the model of memory in Figure 2.7; added a new Figure 2.8; added the terms and definitions for *mind wandering*, *selective attention*, and *divided attention* in Section 2.2; added an explanation of cognitive load theory; added a new subsection in Section 2.3 with three new theories of concepts (classical theory of concepts, prototype theory, and exemplar theory) along with a new table that includes examples of different concepts; added a new subsection in Section 2.3 with teaching strategies for teaching concepts, including a new Classroom Strategies box; added a new example

for organization along with a new Figure 2.16; added a new example for encouraging elaboration along with a new Figure 2.18; added a new Figure 2.22 to show several different types of constructivism; added a new Figure 2.26 to provide an example of one of the teaching strategies; added an example in Section 2.5 about how memories are retrieved by following pathways; added information in Section 2.5 about the role of forgetting and new findings from neuroscience with updated citations; added a new subsection in Section 2.5 about providing opportunities to practice retrieval, including a new Figure 2.28; added a new subsection in Section 2.5 about intermixing practice problems, including a new See For Yourself exercise and a new Figure 2.29; added a new sub-section in Section 2.5 about spacing review sessions that includes a definition for *spacing effect*; and made minor edits throughout the chapter.

- **Chapter 3:** Deleted Big Ideas 3.5 and 3.6 and moved the principles and practices within them into other sections of the chapter; edited the wording of Big Idea 3.4; added a figure to list many different types of complex cognitive processes; added a new figure illustrating self-regulation, metacognition, and motivation; explained the differences between self-regulation and metacognition in Section 3.1; provided more explanation about metacognition and a figure showing the three categories of metacognitive knowledge; added four new strategies and examples in the Classroom Strategies section titled “Fostering Self-Regulation”; added a new figure related to specific transfer; added a new paragraph using an example about computer programming for general transfer in Section 3.2; revised the definition of *service learning* and provided a new example of it in Section 3.2; added an explanation of critical service learning along with an associated figure; added a new figure showing the components of well-defined and ill-defined problems; expanded the explanation of creativity in Section 3.3; added text and an associated figure related to the creative problem-solving process; added the key term *engineering design* and explained the processes involved in it; added three examples of how teachers can help students avoid mental sets (Section 3.3); added a new section about thinking at the beginning of Section 3.4 along with a figure of the categories of cognitive processes; added the terms *design thinking* and *computational thinking* along with explanations of each; moved the ideas in the Cultural Considerations box (Section 3.4) to within the text in the appropriate section; and added a new figure related to students being critical thinkers.
- **Chapter 4:** Deleted Big Ideas 4.5 and 4.6 and moved the principles and practices within them into other sections of the chapter; edited the wording of Big Idea 4.3; added a definition and explanation of *ecological systems theory* in the introduction; added a definition of *Behaviorism* in Section 4.1; edited Figures 4.3 and 4.6; added a definition and examples of the *Premack Principle* in Section 4.1; added a definition of *social cognitive theory* in Section 4.1; added a definition of *cognitive modeling* in Section 4.1; added new Figures 4.7, 4.8, and 4.12; provided more examples of using verbal praise and a token economy in Section 4.1; added definitions of *social constructivism* and *sociocultural theory* in Section 4.2.; the ideas in the Cultural Considerations box (Section 4.3) were moved to within the text in the appropriate section; added an example of how cultural lenses can affect students’ views in Section 4.3; added a new section in subsection 4.3 related to race and included definitions and examples of *racial ideology*, *color-blind racial ideology*, *racial microaggressions*, and *racial battle fatigue*; added a new Figure 4.16; added another example of stereotypes in Section 4.3; and added two new sections for teaching strategies in Section 4.4.
- **Chapter 5:** The title of the chapter was changed to “Motivation and Emotions”; Big Ideas 5.2 and 5.4 were combined; deleted Table 5.1 and distributed the text from the

- table to within the chapter or within other chapters; added a new figure in Section 5.1 about theoretical approaches; added a new section in Section 5.1 titled “Teacher Beliefs About and Assessment of Students’ Motivation” along with an accompanying section with teaching strategies that include a new figure; included new figures in Section 5.2 related to arousal, self-worth, and interest; added two new See For Yourself activities in Section 5.2 (“Enjoyable Activity” along with an accompanying figure and “Self-Efficacy for Different Activities”); added more explanation about *cost* in Section 5.2; revised a figure related to self-efficacy and added a complementary paragraph to explain it; added a new figure related to appropriate attributions; added a new teaching strategy related to usefulness in Section 5.3; moved the ideas in the Cultural Considerations boxes (previously in Sections 5.3 and 5.4) to within the text in the appropriate section; edited a couple examples in the Classroom Strategies box titled “Enhancing Self-Efficacy and Self-Worth”; added a new figure related to SMART goals; edited some examples and added two new examples (with an accompanying figure) in the Classroom Strategies box titled “Forming Productive Expectations and Attributions;” added a new figure about situational interest in Section 5.3; added more strategies related to caring in Section 5.3; and added definitions of *emotions*, *social and emotional learning*, and *emotion regulation* (along with accompanying explanations) in Section 5.4.
- **Chapter 6:** Deleted Big Idea 6.5 and moved the principles and practices within it into other sections of the chapter; deleted Table 6.1 and distributed the text from the table to within the chapter or within other chapters; updated several figures throughout the chapter; added a figure that shows synaptic connections in Section 6.1; added a paragraph about children’s use of different brain areas in Section 6.1; in Section 6.2, added a figure that shows an example of mental schemes, a figure related to language development, a figure explaining reciprocal teaching, and a figure about apprenticeships; added to the definition and explanation of *scheme* in Section 6.2; edited the examples for assimilation and accommodation in Section 6.2; in Section 6.4, added a figure related to dispositions and a figure about multiple intelligences; and moved the ideas in the Cultural Considerations box (Section 6.4) to within the text in the appropriate section.
  - **Chapter 7:** Edited the wording of Big Ideas 7.1 and 7.2; deleted Big Idea 7.4 and moved the principles and practices within it into other sections of the chapter; in Section 7.1, edited the principles and the order in which some of them appear; added a table for personality traits along with text to accompany it; created several new figures in Section 7.1; in Section 7.1, added definitions and accompanying explanations for *traits*, *sociability*, *activity level*, *environmental sensitivity*, *permissive and uninvolved parenting*, *self-concept*, *self-esteem*, *reciprocal effects model*, *gender identity*, and *sexual orientation identity*; added a new See For Yourself exercise titled “Your Sense of Self” along with an explanation of it; added a new principle related to sexual orientation; added a principle about creating positive environments for all gender identities and sexual orientation identities; added a new definition for *social and emotional learning*; added a new figure for steps in social problem solving; moved the ideas in the Cultural Considerations box (Section 7.3) to within the text in the appropriate section; and reorganized the principles and text in Section 7.4.
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this section; added a paragraph to explain debates and structured controversies; added a new figure related to the procedures for a structured controversy; added a new figure related to the procedures for the Jigsaw approach and the associated text to explain it; added definitions for *problem-based learning*, *project-based learning*, and *engineering design* along with explanations and two new figures; added a definition for *instructional simulations*; added paragraphs to make connections to apprenticeships in Section 8.3 and differentiated instruction in Section 8.4; moved the ideas in the Cultural Considerations box (Section 8.4) to within the text in the appropriate section; added a definition of *flipped classroom* and an associated explanation in the text; and made edits and organizational changes throughout the chapter.

- **Chapter 9:** Added a definition for *social and emotional learning*; revised two figures in Section 9.1; added a new recommendation section in Section 9.1 about creating a psychologically safe environment; added a definition for *psychological safety*; in Section 9.2, reorganized the section on communicating regularly with parents and other primary caregivers; added a paragraph related to community member involvement in Section 9.2; in Section 9.3, added a paragraph explanation to the See For Yourself “Identifying Misbehaviors” section; added an image to the See For Yourself “Putting Yourself in a Parent’s Shoes” section; moved the ideas in the Cultural Considerations box (Section 9.3) to within the text in the appropriate section; added a paragraph and an accompanying figure about engaging strategies; and added a new recommendation and paragraph about using the simplest and least intrusive strategy possible at the end of Section 9.3.
- **Chapter 10:** Added a definition for *diagnostic assessment*; added a new figure and a new table related to diagnostic, formative, and summative assessments; modified Figure 10.5 and added more text explanation related to it; in Section 10.1, added more explanation to how assessments can motivate students; added a new Figure 10.5; added a definition for *rating scale* along with more explanation and checklists; edited Figure 10.8 and added more text to accompany it related to attributes of effective rubrics; added more explanation about dynamic assessment; added new Figure 10.9 about qualities of good assessments; added definitions for *predictive validity* and *construct validity*; added seven more strategies in the Classroom Strategies box titled “Guidelines for Constructing Multiple-Choice Items;” added a new Figure 10.13 and accompanying text about grading multiple-choice items; added a new Figure 10.14 with the examples of performance assessments; added a new principle and associated text in Section 10.4 related to minimizing the negative effects of stereotype threat; moved the ideas in the Cultural Considerations box (Section 10.4) to within the text in the appropriate section; and moved some sections and made minor edits throughout.

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J. E. O.  
B. D. J.



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# Brief Contents

- 1** Introduction to Educational Psychology 2
- 2** Learning, Cognition, and Memory 28
- 3** Complex Cognitive Processes 82
- 4** Learning in Context 130
- 5** Motivation and Emotions 180
- 6** Cognitive Development 238
- 7** Personal, Social, and Moral Development 288
- 8** Instructional Strategies 344
- 9** Strategies for Creating Effective Classroom and School Environments 390
- 10** Assessment Strategies 436

# Contents

## 1 Introduction to Educational Psychology 2

### Case Study: The “No D” Policy 3

#### 1.1 Developing Expertise as a Teacher 5

*Learn as much as you can about the subject matter you teach, about teaching strategies, and about learners and their development. 5*

*Believe that you can make a difference in students' lives. 6*

*Continually reflect on and critically examine your assumptions, inferences, and teaching practices. 6*

*Communicate and collaborate with colleagues. 6*

*Learn as much as you can about the culture(s) of the community in which you are working. 6*

*Keep up to date on research findings and innovative evidence-based practices in education. 7*

*Integrate action research into your ongoing classroom practices. 7*

#### 1.2 Using Research Findings to Make Instructional Decisions 8

*The effectiveness of various classroom practices can best be determined through systematic research. 8*

*Educational psychologists focus on the scientific study of psychological principles that are relevant to education. 10*

*Research can provide quantitative information, qualitative information, or both. 12*

*Different kinds of research lead to different kinds of conclusions. 12*

*Drawing conclusions about cause-and-effect relationships requires that all other possible explanations for an outcome be eliminated. 16*

*Principles and theories can help synthesize, explain, and apply research findings. 17*

#### 1.3 Strategies for Learning and Studying Effectively 18

*Before you study, prepare for your study session. 19*

*During your study session, use effective study strategies. 20*

*At the end of your study session, evaluate your progress and schedule additional study sessions as needed. 24*

*Be an active participant and put forth mental effort in your learning and studying processes. 25*

### Summary 25

### Case Study Practice Exercises 26

## 2 Learning, Cognition, and Memory 28

### Case Study: Studying for A Test 29

#### 2.1 Thinking and Learning in the Brain 31

##### Functions of the Brain 31

*The various parts of the brain work closely with one another. 32*

*Most learning probably involves changes in neurons, astrocytes, and their interconnections. 33*

*The brain functions in close collaboration with—rather than in relative isolation from—the rest of the body. 34*

*Knowing how the brain functions and develops tells us only so much about learning and instruction. 34*

##### Teaching Strategies: Supporting Optimal Brain Functioning 35

*Provide ongoing intellectual stimulation, but don't overdo it. 35*

*Encourage physical exercise. 35*

*Encourage students to get plenty of sleep. 36*

#### 2.2 A Model of Human Memory 36

##### Sensory Register, Attention, and Working Memory 37

*Sensory input stays in a raw form only briefly. 37*

*Attention is essential for most learning and memory. 38*

*Working memory has a short duration and limited capacity. 39*

##### Teaching Strategies: Remembering the Limitations of Attention and Working Memory 40

*Grab and hold students' attention. 40*

*Keep the limited capacity of working memory in mind. 41*

#### 2.3 Long-Term Memory 42

##### The Nature of Long-Term Memory 42

*Long-term memory is composed of declarative and procedural knowledge. 43*

*Long-term memory has a long duration and virtually limitless capacity. 43*

*Some declarative knowledge is stored as concepts. 43*

*Information in long-term memory is interconnected and organized to some extent. 44*

##### Storing Information in Long-Term Memory 47

*Some long-term memory storage processes are more effective than others. 47*

*Practice makes knowledge more automatic and durable. 51*

- Automaticity frees up working memory capacity for other tasks.* 52
- With age and experience, children acquire more effective learning strategies and use them more intentionally.* 53

#### Teaching Strategies: Encouraging Effective Long-Term Memory Storage Processes 53

- Help students learn concepts through the use of defining features, examples, and nonexamples.* 53
- Help students organize ideas by making connections among them.* 54
- Facilitate visual imagery.* 56
- Present questions and tasks that encourage elaboration.* 57
- Suggest mnemonics for hard-to-remember facts.* 58
- Focus assessments on meaningful learning rather than rote learning.* 58
- Provide many opportunities to practice important knowledge and skills.* 60
- Be on the lookout for students who have unusual difficulty with certain cognitive processes.* 61

## 2.4 Learning as Active Construction 62

### Knowledge Construction 62

- Learners use what they already know and believe to help them make sense of new experiences.* 63
- Prior knowledge and beliefs affect new learning, usually for the better but sometimes for the worse.* 65
- Learners differ in the factors that influence their ability to learn and remember.* 66

### Teaching Strategies: Helping Students Construct Knowledge 68

- Relate new ideas to students' prior knowledge and experiences.* 68
- Take advantage of students' diverse background knowledge in designing instruction.* 69
- Provide experiences on which students can build.* 70
- Identify and address students' misconceptions.* 70
- Regularly assess students' understandings.* 70

## 2.5 Why Learners May or May Not Remember What They Have Learned 72

### Recalling Information 72

- How easily something is recalled depends on how it was initially learned.* 72
- Remembering depends on the context and retrieval cues.* 73
- How easily something is recalled and used depends on how often it has been recalled and used in the past.* 74
- Recall often involves construction or reconstruction.* 74
- Long-term memory isn't necessarily forever.* 75

### Teaching Strategies: Facilitating Retrieval 76

- Give students time to think about questions.* 76
- Give hints that help students recall or reconstruct what they've learned.* 77
- Provide opportunities for students to practice retrieving information.* 77
- Intermix practice problems with problems from previous lessons.* 78
- Space review sessions over time.* 79

### Summary 79

### Case Study Practice Exercises 81

# 3 Complex Cognitive Processes 82

## Case Study: Taking Over 83

### 3.1 Self-Regulation and Metacognition 84

#### Effective Self-Regulated Learning 84

- Self-regulating learners establish goals for their performance and plan their actions accordingly.* 86
- Self-regulating learners control and monitor their processes and progress during a learning task.* 86
- Self-regulating learners seek assistance and support when they need it.* 87
- Self-regulating learners monitor and try to control their motivation and emotions.* 87
- Self-regulating learners evaluate the final outcomes of their efforts.* 87
- Self-regulating learners self-impose consequences for their performance.* 87
- Most learners become increasingly self-regulating over the course of childhood and adolescence, partly as a result of maturation in key areas of the brain.* 88

#### The Roles of Metacognition 91

- Some effective study strategies are easily seen in learners' behaviors.* 91
- Study strategies are effective only to the extent that they involve productive cognitive processes.* 92
- Metacognitive knowledge and skills gradually improve with age.* 93
- Learners' beliefs about the nature of knowledge and learning influence their approaches to learning tasks.* 95

#### Teaching Strategies: Promoting Self-Regulation Skills and Metacognitive Development 97

- Guide and support self-regulated learning and behavior.* 97
- Encourage metacognitive self-reflection.* 98
- Explicitly teach effective learning strategies.* 99
- Communicate that acquiring knowledge is a dynamic, ongoing process—that one never knows something completely.* 101

### 3.2 Transfer 102

#### Factors that Affect Transfer 103

*Meaningful learning and conceptual understanding increase the probability of transfer. 103*

*Both positive and negative transfer are more common when a new situation appears to be similar to a previous one. 104*

*Some knowledge and skills can be transferred to very different situations. 105*

*Learning strategies, general beliefs, and attitudes can also transfer to new situations. 106*

*Transfer increases when the learning environment encourages it. 106*

#### Teaching Strategies: Fostering Transfer 106

*Pursue topics in depth rather than superficially. 106*

*Provide numerous and varied opportunities to apply classroom subject matter to new situations and authentic activities. 107*

*Construct assessments that require students to apply their knowledge to new situations. 109*

### 3.3 Problem Solving and Creativity 110

#### General Principles Related to Problem Solving and Creativity 113

*The depth of learners' knowledge influences their ability to solve problems and think creatively. 113*

*Both convergent and divergent thinking are constrained by working memory capacity. 114*

*How learners represent a problem or situation influences their strategies and eventual success. 114*

*Problem solving and creativity often involve heuristics that facilitate but don't guarantee successful outcomes. 116*

*Effective problem solving and creativity require self-regulation and metacognition. 117*

#### Teaching Strategies: Encouraging Problem Solving and Creativity 117

*Create a classroom climate in which problem solving and creativity are both expected and valued. 117*

*Pose questions that require students to engage in divergent thinking. 117*

*Require students to work on complex problems, projects, and designs. 118*

*Use technology to simulate real-world tasks and problems. 118*

*Help students avoid mental sets when engaging in creative problem solving. 119*

### 3.4 Thinking 119

#### Attributes of Critical Thinking 121

*Critical thinking can take a variety of forms. 121*

*Students can have difficulties engaging in critical thinking. 123*

*Critical thinking requires sophisticated epistemic beliefs. 123*

*Critical thinking is a disposition as much as a cognitive process. 123*

#### Teaching Strategies: Developing Students' Critical Thinking Skills 124

*Encourage critical evaluation of information and ideas presented by others and in printed and online materials. 124*

*Support complex cognitive processes through group discussions and projects. 126*

*Teach complex thinking skills within the context of specific topics and content domains. 126*

#### Summary 127

#### Case Study Practice Exercises 128

## 4 Learning in Context 130

### Case Study: Why Jack Wasn't in School 131

#### 4.1 Immediate Stimuli as Context 132

#### Stimuli and Consequences Influence Learners' Behaviors and Cognition 132

*Some stimuli tend to elicit certain kinds of responses. 133*

*Learners are more likely to acquire behaviors that lead to desired consequences. 133*

*Learners are also likely to acquire behaviors that help them avoid or escape unpleasant circumstances. 135*

*Learners tend to avoid behaviors that lead to unpleasant consequences. 137*

*Learners acquire many behaviors by observing other people's actions. 139*

*Learners learn what behaviors are acceptable and effective by observing what happens to people whom they perceive to be similar to themselves. 141*

*By seeing what happens to themselves and others, learners form expectations about the probable outcomes of various actions. 141*

#### Teaching Strategies: Encouraging Productive Behaviors 142

*Create conditions that elicit desired responses. 142*

*Make sure that productive behaviors are reinforced and that unproductive behaviors are not reinforced. 143*

*Make response-reinforcement contingencies clear and appropriate. 144*

*As an alternative to punishment, reinforce productive behaviors that are incompatible with unproductive ones. 145*

*Model desired behaviors. 145*

*Provide a variety of role models. 147*

*Shape complex behaviors gradually over time. 147*

**4.2 Social Interaction as Context 148****Other People Affect Students' Learning 148**

*Learners sometimes co-construct new understandings with more experienced individuals. 149*

*Learners co-construct knowledge and understandings with peers. 150*

*Other people sometimes provide the support learners need to take on challenging new tasks. 151*

**Teaching Strategies: Providing Opportunities for Students to Learn from Others 152**

*Encourage student dialogue and collaboration. 152*

*Use computer technology to support both within-class and across-class communication. 153*

*Create a community of learners. 153*

**4.3 Culture and Society as Contexts 155****Culture as Context 155**

*Any cultural group encourages and models certain behaviors and actively discourages certain other behaviors. 156*

*Every culture passes along many cognitive tools that enhance learners' thinking capabilities. 159*

*Every culture instills certain worldviews that color people's interpretations of events. 159*

*Every culture has certain ways of doing things, and these, too, are passed from generation to generation. 160*

*Inconsistencies between home and school cultures can interfere with school learning and performance. 161*

**Society as Context 162**

*Any large society has multiple layers that all affect children's learning and development either directly or indirectly. 163*

*Different members of a society have different specialties, and they call on one another's areas of expertise as needed. 164*

*In most situations, some society members have greater access to the society's resources than other members do. 164*

**Teaching Strategies: Considering Students' Broader Cultural and Societal Contexts 166**

*Remember that membership in a particular cultural or ethnic group is not an either-or situation but, instead, a more-or-less phenomenon. 166*

*Come to understand your own cultural lens and learn as much as you can about students' cultural backgrounds. 166*

*Be aware of how your beliefs about race affect your behaviors and communications with students and others. 167*

*Incorporate the perspectives and traditions of many cultures into the curriculum. 169*

*Be sensitive to cultural differences in behaviors and beliefs and, when appropriate, adapt instructional methods to students' accustomed ways of learning and behaving. 170*

*Be sensitive to the culture shock that recent immigrants might be experiencing. 171*

*Work hard to break down rigid stereotypes of particular cultural and ethnic groups. 171*

*Provide opportunities for students to interact regularly and productively with people from diverse cultural, ethnic, and racial groups. 173*

*Identify and, if possible, provide missing resources and experiences important for successful learning. 173*

**4.4 How Students Modify Their Environments 174****How Students Influence Their Environment 174**

*Learners alter their current environment through both their behaviors and such internal variables as beliefs, mental processes, feelings, and personality traits. 174*

*Learners actively seek out environments that are a good fit with their existing behaviors and internal variables. 175*

**Teaching Strategies: Attending to Students' Behaviors 176**

*Help students become aware of how they are influencing their environment. 176*

*Be aware of how students' behaviors affect your own thoughts and behaviors. 177*

**Summary 177****Case Study Practice Exercises 178****5 Motivation and Emotions 180****Case Study: Passing Algebra 181****5.1 The Nature of Motivation 182****The Role of Motivation in Education 182**

*A variety of theories are often helpful in explaining students' motivation. 184*

*Researchers have identified some general principles about students' motivation. 185*

**Teacher Beliefs About and Assessment of Students' Motivation 186**

*Teachers should believe that they can affect students' motivation and that it's important to motivate students. 186*

*Teachers can assess students' motivation and engagement. 186*

**Teaching Strategies: Assessing Students' Motivation and Engagement 187**

*Assess students' motivation by observing their behaviors and reactions during class. 187*

*Assess students' motivation by talking to them. 187*

*Assess students' motivation by surveying them. 187*

**5.2 Internal Factors That Affect Learners' Motivation and Engagement 188**

**Learners' Psychological Needs 188**

- Learners have a basic need for arousal. 188*
- Learners want to be in control of their actions to some degree. 189*
- Learners want to believe they are competent and have self-worth. 191*
- Learners want to feel connected to other people. 192*

**Learners' Interests and Enjoyment 193**

- Learners have existing interests, but new interests can be triggered by the environment. 193*
- Learners experience greater enjoyment and interest in school activities when their psychological needs are met. 194*
- Learners can become immersed in an activity when the conditions are right. 195*

**Learners' Values and Goals 196**

- Learners are more likely to choose to devote time and effort to activities that they value. 196*
- Learners' values are affected by their social and cultural environments. 197*
- Learners typically form goals related to their academic achievement; the specific nature of these goals influences learners' cognitive processes and behaviors. 198*
- Learners must juggle their achievement goals with their many other goals. 201*

**Learners' Self-Efficacy, Attributions, and Beliefs 202**

- Learners are more likely to choose activities and try harder at them when they believe that they can succeed at them. 202*
- When learners think their chances of success are slim, they may behave in ways that make success even less likely. 204*
- Learners identify what are, in their minds, the likely causes of their successes and failures. 205*
- Learners' attributions for past successes and failures affect their emotional reactions and future performances. 207*
- Learners' attributions are affected by their teachers' attributions and resulting expectations for students' performance. 209*
- Over time, learners acquire a general attributional style. 210*

**5.3 Teaching Strategies to Support Students' Motivation and Engagement 211**

**Teaching Strategies That Empower Students 211**

- Give students control over some aspects of classroom life. 211*

*Communicate with students in a clear, but less-controlling manner. 214*

*Use extrinsic reinforcers when necessary but do so in ways that preserve students' sense of autonomy. 215*

*Ask students to set some personal goals for learning and performance. 216*

**Teaching Strategies That Demonstrate the Usefulness of Activities 216**

*Explicitly relate class activities to students' values, goals, and everyday lives. 216*

*Ask students to talk or write about how what they are learning is useful to their lives. 216*

*Create conditions that foster internalization of values essential for students' long-term academic and professional success. 217*

**Teaching Strategies That Foster Perceptions of Success 217**

*Protect and enhance students' self-efficacy and overall sense of competence and self-worth. 217*

*Present challenges that students can realistically accomplish. 218*

*Form and communicate optimistic expectations and attributions. 220*

*Minimize competition. 220*

*Focus students' attention more on mastery goals than on performance goals. 222*

**Teaching Strategies That Stimulate Interest 222**

*Conduct interest-arousing lessons and activities. 222*

*Relate activities to students' individual interests. 224*

**Teaching Strategies That Show and Promote Caring 224**

*Show students that you respect them and are concerned about their well-being. 225*

*Provide regular opportunities for students to interact productively with one another. 225*

*Create a classroom environment in which students respect one another. 225*

**5.4 Emotions and Their Effects on Motivation and Learning 226**

**The Role of Emotions in Student Motivation and Learning 226**

*Emotions and motivation are interrelated. 226*

*Emotions are closely tied to learning and cognition. 227*

*Productive emotions can trigger effective learning strategies. 228*

*Emotions can also trigger certain behaviors. 228*

*Some anxiety is helpful, but a lot is often a hindrance. 229*

**Teaching Strategies: Generating Productive Emotions for Learning 230**

*Get students emotionally involved in the subject matter. 230*

*Help students to better regulate their emotions. 230*

*Keep anxiety at a low to moderate level.* 233  
*As students make the transition to middle school or high school, make an extra effort to minimize their anxiety and address their need for relatedness.* 234

### Summary 235

### Case Study Practice Exercises 236

## 6 Cognitive Development 238

### Case Study: Hidden Treasure 239

#### 6.1 General Principles of Development 240

##### Developmental Principles 240

*The brain continues to develop throughout childhood, adolescence, and adulthood.* 240  
*The sequence of development is somewhat predictable.* 242  
*Children develop at different rates.* 242  
*Development is often marked by spurts and plateaus.* 242  
*Development involves both quantitative and qualitative changes.* 243  
*Heredity and environment interact in their effects on development.* 243  
*Children's own behaviors also influence their development.* 244

##### Teaching Strategies: Accommodating Developmental Differences and Diversity 245

*Ideally, teachers individualize instruction for every student.* 245  
*Technology-based instructional strategies can be used to meet students' developmental needs.* 245

#### 6.2 Developmental Processes 246

##### Knowledge Construction 246

*Children have a natural tendency to organize their experiences.* 246  
*Children are naturally inclined to make sense of and adapt to their environment.* 248  
*Inconsistencies between existing understandings and new events promote development.* 248  
*Development builds on prior acquisitions.* 250  
*Observations of the physical environment—and, ideally, frequent interactions with it—promote development.* 250  
*Language development facilitates cognitive development.* 250

##### Knowledge Construction Through Interaction with Others 251

*Interactions with other people promote development.* 251  
*Challenging tasks promote development.* 252

##### Teaching Strategies: Facilitating Learners' Knowledge Construction 252

*Encourage play activities.* 252

*Scaffold students' early efforts at challenging tasks and assignments.* 253

*Involve students in age-appropriate ways in adult activities.* 256

#### 6.3 Trends in Cognitive Development 257

##### Development of Working Memory, Knowledge, and Thinking Processes 258

*Children's growing working memory capacity enables them to handle increasingly complex cognitive tasks.* 258  
*Children's growing knowledge base enhances their ability to learn new things.* 258  
*Children's knowledge, beliefs, and thinking processes become increasingly integrated.* 258

##### Stages of Cognitive Development 259

*Thinking becomes increasingly logical during the elementary school years.* 259  
*Thinking becomes increasingly abstract in the middle school and secondary school years.* 261  
*Several logical thinking processes important for mathematical and scientific reasoning improve considerably during adolescence.* 263  
*Children can think more logically and abstractly about tasks and topics they know well.* 265  
*True expertise comes only after many years of study and practice.* 265

##### Teaching Strategies: Fostering Cognitive Development 266

*Explore students' reasoning with problem-solving tasks and probing questions.* 266  
*Rely heavily on concrete objects and activities, especially in the early elementary grades.* 267  
*Present abstract ideas more frequently in the middle school and high school grades, but tie them to concrete objects and events.* 268  
*Initially introduce sophisticated reasoning processes within the context of familiar situations.* 269

#### 6.4 Intelligence 270

##### The Nature of Intelligence 270

*Intelligence can be measured only imprecisely at best.* 271  
*To some degree, intelligence reflects the general speed, efficiency, and control of cognitive processing.* 273  
*Intelligence also involves numerous specific processes and abilities.* 273  
*Learners may be more intelligent in some domains than in others.* 274  
*Intelligence is a product of both inherited characteristics and environmental influences.* 275  
*Intelligence may take different forms at different age levels.* 276  
*Learners may have specific cognitive styles and dispositions that predispose them to think and act in more or less intelligent ways.* 276



*Learners act more intelligently when they have physical or social support for their efforts. 279*

#### Teaching Strategies: Teaching with a Consideration of Intelligence 279

*Interpret intelligence test results cautiously. 280*

*Look for signs of exceptional abilities and talents. 280*

*Consult with specialists if children show significant delays in development. 281*

*Be optimistic that with appropriate guidance and support, all students can perform more intelligently. 284*

*Be cautious in applying multiple intelligences theory and learning styles to teaching. 284*

#### Summary 286

#### Case Study Practice Exercises 287

## 7 Personal, Social, and Moral Development 288

### Case Study: The School Play 289

#### 7.1 Personal Development 290

##### Personality 290

*Personality traits can be grouped into five general categories. 290*

*Personality traits are influenced by genetic and environmental contexts. 292*

*One personality trait, effortful control, doesn't fully mature until adulthood. 292*

*Parenting styles can affect children's personality traits and behaviors. 293*

*Cultural environments influence the development of personality traits. 294*

##### Sense of Self and Identity 294

*Children construct increasingly multifaceted understandings of their sense of self over time. 295*

*With age, self-perceptions become more realistic, abstract, and stable. 297*

*As children reach puberty, they understand that they are unique individuals, but they may overestimate their uniqueness. 297*

*Self-perceptions influence students' behaviors, and vice versa. 298*

*Other people's behaviors affect students' sense of self. 298*

*Group memberships affect students' sense of self and identity. 299*

*Ethnic and racial identities also affect students' sense of self and identity. 300*

*Gender plays a role in students' sense of self and identity. 300*

*Sexual orientation influences one's sense of self and identity. 302*

*Despite the influence of others, growing children define and socialize themselves to a considerable degree. 302*

*In forming their identity, it's important for adolescents to explore alternative beliefs, values, and career goals. 303*

#### Teaching Strategies: Fostering Personal Development 305

*Accommodate students' diverse personality traits. 305*

*Create a warm, supportive environment with clear standards for behavior and explanations of why some behaviors are unacceptable. 305*

*Help students get a handle on who they are and who they want to become. 306*

*Channel adolescents' risk-taking tendencies into safe activities. 307*

*Create a positive learning environment in which students of all gender identities and sexual orientation identities feel welcome. 308*

#### 7.2 Social Development 308

##### Peer Relationships 309

*Peer relationships promote personal, social, and academic development in ways that adult-child relationships often cannot. 309*

*Peers help define "appropriate" ways of behaving. 310*

*On average, boys and girls interact with their peers in distinctly different ways. 311*

*Social groups become increasingly important in adolescence. 311*

*Romantic relationships in adolescence can provide valuable practice for the intimate relationships of adulthood. 312*

*Truly popular children have good social skills. 313*

##### Social Cognition 314

*As children get older, they become increasingly aware of other people's thoughts and feelings. 315*

*Children's cognitive processes in social situations influence their behaviors toward others. 316*

*Aggressive behavior is often the result of counterproductive cognitive processes. 316*

#### Teaching Strategies: Encouraging Effective Social Cognition and Interpersonal Skills 318

*Foster perspective taking and empathy. 318*

*Talk with students about what it really means to be popular. 319*

*Provide frequent opportunities for social interaction and cooperation. 320*

*Explicitly teach social skills to students who have trouble interacting effectively with others. 320*

*Explain what bullying is and why it cannot be tolerated. 321*

*Be alert for incidents of bullying and other forms of aggression, and take appropriate actions with both the victims and the perpetrators. 322*

*Explicitly discourage inappropriate electronic communications and postings. 323*

*Promote understanding, communication, and interaction among diverse groups. 323*

### **7.3 Moral and Prosocial Development 325**

#### **The Nature of Moral and Prosocial Development 325**

*Children begin applying internal standards for behavior at a very early age. 325*

*Children increasingly distinguish between moral and conventional transgressions. 325*

*Children's capacity to respond emotionally to other people's misfortunes and distress increases throughout the school years. 326*

*With age, reasoning about moral issues becomes increasingly abstract and flexible. 327*

*Challenges to current moral perspectives can promote advancement toward more sophisticated reasoning. 329*

*Cognition, affect, and motivation all influence moral and prosocial behavior. 329*

*Moral values become an important part of some young people's identity. 331*

#### **Teaching Strategies: Promoting Moral Reasoning and Prosocial Behavior 331**

*Expose students to numerous models of moral and prosocial behavior. 332*

*Engage students in discussions of social and moral issues. 332*

*Discourage all forms of cheating. 332*

*Get students actively involved in community service or service-learning experiences. 333*

### **7.4 Students Who Face Exceptional Personal or Social Challenges 333**

#### **Students At Risk for Academic Failure 333**

*Some students face, or have faced, exceptional challenges outside of school. 334*

*Some students do well in school despite hardships. 334*

#### **Teaching Strategies: Supporting Students Who Face Challenges 335**

*Intervene early and often with students who are at risk for dropping out of school. 335*

*Connect students and families to resources. 336*

*Identify additional supportive strategies and services for students who are homeless. 336*

*Watch for signs of abuse. 338*

*Be on the lookout for students who appear to be social outcasts. 338*

*Provide extra support and guidance for students who have disabilities that affect their personal or social functioning. 338*

*Know the warning signs of severe depression and possible suicide. 340*

*Foster resilience in students. 340*

#### **Summary 341**

#### **Case Study Practice Exercises 342**

## **8 Instructional Strategies 344**

### **Case Study: Westward Expansion 345**

#### **8.1 Planning Instruction 346**

*Begin by identifying what students should ultimately know and be able to do. 346*

*Align long-term instructional goals with appropriate standards for various content domains. 348*

*Include goals and objectives at varying levels of complexity and sophistication. 350*

*Ask students to identify some of their own goals for instruction. 351*

*Break complex tasks and topics into smaller pieces, identify a logical sequence for the pieces, and decide how best to teach each one. 352*

*Consider how you might motivate students to actively engage in instructional activities. 354*

*Develop step-by-step lesson plans. 354*

*Use class websites to share information and scaffold students' learning. 355*

#### **8.2 Conducting Teacher-Directed Instruction 355**

*Encourage and support students' cognitive processes and motivation. 356*

*Ask a lot of good questions to promote and assess learning. 358*

*Intermingle explanations with examples and opportunities for practice. 361*

*Help all students achieve mastery of basic knowledge and skills. 362*

*Take advantage of well-designed instructional software and websites. 363*

*Extend the school day with age-appropriate homework assignments. 365*

#### **8.3 Conducting Student-Directed Instruction 366**

*Have students discuss issues that lend themselves to multiple perspectives, explanations, or approaches. 368*

*Create a classroom atmosphere conducive to open debate and the constructive evaluation of ideas. 370*

*Conduct activities in which students must depend on one another for their learning. 371*

*Have students answer questions through their own research or investigations.* 374

*Have students work on complex, real-world problems, projects, and designs.* 374

*When real-world tasks are impractical or impossible, consider using simulations and games.* 377

*Have students work one-on-one with another student or a teacher.* 378

*Use computer technology to enhance communication and collaboration.* 381

#### 8.4 General Instructional Strategies 382

*Take group differences into account.* 382

*Consider how you might productively modify or supplement instructional strategies for the benefit of English learners in your classroom.* 383

*Also take developmental levels, individual differences, and special educational needs into account.* 383

*Provide sufficient scaffolding to ensure successful accomplishment of assigned tasks.* 385

*Combine several instructional approaches into a single lesson.* 385

#### Summary 387

#### Case Study Practice Exercises 388

## 9 Strategies for Creating Effective Classroom and School Environments 390

### Case Study: A Contagious Situation 391

#### 9.1 Creating an Environment Conducive to Learning 392

*Arrange the classroom to maximize attention and minimize disruptions.* 393

*Communicate caring and respect for every student.* 393

*Work hard to improve relationships that have gotten off to a bad start.* 395

*Create a sense of community and belongingness.* 395

*Create a goal-oriented and business-like (but nonthreatening) atmosphere.* 396

*Create a psychologically safe environment for all students.* 396

*Establish reasonable rules and procedures.* 398

*Enforce rules consistently and equitably.* 399

*Keep students productively engaged in worthwhile tasks.* 400

*Plan for transitions.* 401

*Take individual and developmental differences into account.* 401

*Continually monitor what students are doing.* 402

#### 9.2 Expanding the Sense of Community Beyond the Classroom 404

*Collaborate with colleagues to create an overall sense of school community.* 404

*Work cooperatively with other agencies that play key roles in students' lives.* 405

*Communicate regularly with parents and other primary caregivers.* 405

*Invite families and community members to participate in the academic and social life of the school.* 407

*Make an extra effort with seemingly "reluctant" parents.* 407

#### 9.3 Reducing Unproductive Behaviors 409

*Consider whether instructional strategies or classroom assignments might be partly to blame for off-task behaviors.* 409

*Consider whether cultural background might influence students' classroom behaviors.* 410

*Ignore misbehaviors that are temporary, minor, and unlikely to be repeated or copied.* 411

*Give signals and reminders about what is and is not appropriate.* 412

*Get students' perspectives about their behaviors.* 413

*Teach self-regulation techniques.* 415

*When administering punishment, use only those consequences that have been shown to be effective in reducing problem behaviors.* 416

*Confer with parents.* 418

*To address a chronic problem, plan and carry out a systematic intervention.* 422

*Determine whether certain undesirable behaviors might serve particular purposes for students.* 424

*Use the simplest and least intrusive strategy possible to address student misbehaviors.* 426

#### 9.4 Addressing Aggression and Violence at School 426

*Make the creation of a nonviolent school environment a long-term effort.* 428

*Intervene early for students at risk.* 430

*Provide intensive intervention for students in trouble.* 430

*Take additional measures to address gang violence.* 430

#### Summary 433

#### Case Study Practice Exercises 434

## 10 Assessment Strategies 436

### Case Study: B in History 437

#### 10.1 Using Assessments for Various Purposes 439

*Guiding Instructional Decision Making* 440

*Diagnosing Learning and Performance Problems* 441

**Promoting Learning and Motivation 441**

- Assessments can influence students' cognitive processes as they study. 442*
- Assessment activities can be learning experiences in and of themselves. 443*
- Assessments can provide feedback about learning progress. 443*
- Assessments can motivate students to study and learn. 443*
- Assessments can encourage engagement and self-regulation if students play an active role in the assessment process. 444*
- Through both words and deeds, communicate that promoting learning and mastery—not passing judgment—is the ultimate goal. 444*

**Determining What Students Have Learned at the End of Instruction 445****Evaluating the Quality of Instruction 445****10.2 Enhancing Learning Through Classroom Assessment Practices 445**

- Make assessment criteria explicit early in the instructional process. 445*
- Ask students to evaluate their own performance. 448*
- Assess students' ability to learn new things given varying levels of guidance and support. 449*
- Take advantage of technology-based formative assessment tools. 449*

**10.3 Important Qualities of Good Assessment 450**

- A good assessment is reliable. 450*
- A good assessment is standardized for most students. 452*
- A good assessment has validity for its purpose. 453*
- A good assessment is practical. 455*

**10.4 Informally and Formally Assessing Students' Progress and Achievements 456****Conducting Informal Assessments 456**

- Observe both verbal and nonverbal behaviors. 457*
- Ask yourself whether your existing beliefs and expectations might be biasing your judgments. 457*
- Keep a written record of your observations. 458*
- Don't take any single informal observation too seriously; instead, look for patterns over time. 458*

**Designing and Giving Formal Assessments 459**

- Get as much information as possible within reasonable time limits. 459*
- When practical, use authentic tasks. 460*
- Use paper-and-pencil assessment tasks when they are consistent with instructional goals. 461*
- Use performance assessments when necessary to ensure validity. 463*
- Define tasks clearly and give students some structure to guide their responses. 466*

- Carefully scrutinize items and tasks for characteristics that might put some groups at an unfair disadvantage. 467*
- When giving tests, encourage students to do their best, but don't arouse a lot of anxiety. 468*
- Minimize the potential negative effects of stereotype threat during testing. 469*
- Establish conditions for the assessment that enable students to maximize their performance. 471*
- Take reasonable steps to discourage cheating. 471*

**Evaluating Students' Performance on Formal Assessments 472**

- After students have completed an assessment, review evaluation criteria to be sure the criteria can adequately guide scoring. 473*
- Be as objective as possible. 473*
- Make note of any significant aspects of a student's performance that predetermined scoring criteria don't address. 473*
- When determining overall scores, don't compare students to one another unless there is a compelling reason to do so. 473*
- Accompany any test scores with specific, constructive feedback. 474*
- Make allowances for risk taking and the occasional "bad day." 475*
- Respect students' right to privacy. 476*

**10.5 Summarizing Students' Achievement with Grades and Portfolios 477**

- Base final grades largely on final achievement levels and hard data. 477*
- Use many assessments to determine final grades, but don't count everything. 477*
- Share grading criteria with students, and keep students continually apprised of their progress. 477*
- Accompany grades with descriptions of what the grades reflect. 478*
- Also accompany grades with qualitative information about students' performance. 479*
- Use portfolios to show complex skills or improvements over time. 479*
- Keep parents in the loop. 481*

**10.6 Assessing Students' Achievement and Abilities with Standardized Tests 483****High-Stakes Tests and Accountability 485****Using Standardized Achievement Tests Judiciously 485**

- When you have a choice in the test you use, choose one that has high validity for your curriculum and students. 486*
- Teach to the test if—but only if—it reflects important instructional goals. 486*
- When preparing students for an upcoming standardized test, tell them what the test will be like and teach them good test-taking skills. 486*

*When administering the test, follow the directions closely and report any unusual circumstances. 487*

*Make appropriate accommodations for English learners. 487*

*When interpreting test results, take students' ages and developmental levels into account. 488*

*If tests are being used to measure teacher or school effectiveness, advocate for a focus on students' improvement over time rather than on age-group averages. 488*

*Never use a single test score to make important decisions about students. 489*

**Summary 490**

**Case Study Practice Exercises 491**

**Appendix A: Describing Associations with Correlation Coefficients A-1**

**Appendix B: Understanding and Interpreting Standardized Test Results B-1**

**Glossary G-1**

**References R-1**

**Name Index N-1**

**Subject Index S-1**

# Essentials of Educational Psychology

Big Ideas to Guide Effective Teaching

## Chapter 1

# Introduction to Educational Psychology



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## Big Ideas to Master in this Chapter

- 1.1** Effective teachers continually work to enhance their professional knowledge and skills.
- 1.2** Effective teachers use research findings and research-based theories to make decisions about instructional strategies, classroom management, and assessment practices.
- 1.3** Students read, study, and learn more efficiently when they plan appropriately and use effective strategies.

## Case Study: The “No D” Policy

Anne Smith is a ninth-grade English teacher with 10 years of teaching experience, and by all accounts she’s an excellent teacher. Even so, in previous years many of her students haven’t invested much time or energy into their writing assignments and seemingly haven’t been bothered by the low grades they’ve earned in her classes. In an effort to engage this year’s students more fully in their schoolwork, Ms. Smith begins the school year by initiating two new policies.

- First, to pass her course, students must earn at least a C. She won’t give anyone a final grade of D because she knows that everyone can earn a high grade if they put forth effort.
- Second, students will have multiple opportunities to revise and resubmit assignments. She’ll give whatever feedback students need on the assignments to help them improve their work. And if needed, she’ll even give them one-on-one instruction to help them.

She solicits students’ questions and concerns about the new policies, gains their agreement to “try something new,” and engages them in a discussion of specific, concrete characteristics of A-quality, B-quality, and C-quality work.

As the school year progresses, she regularly administers brief surveys to get students’ feedback about her innovations, asking such questions as “How is the ‘no D’ policy working for you?” “Do you think your grade is an accurate reflection of your learning?” and “Any suggestions?” Students’ responses on the surveys are overwhelmingly positive. Students mention noticeable improvements in the quality of their writing and increasingly report that they believe themselves to be in control of both their learning and their grades. Furthermore, they begin to see their teacher in a new light, “as one who will help them achieve their best work, not as one who just gives out grades . . . as a coach encouraging them along the long race of learning.” Final course grades also confirm the value of the new policies: A much higher percentage of students earn grades of C or better than has been true in past years.<sup>1</sup>

Please answer these two questions before you read further:

1. What strategies does Ms. Smith use to develop her students’ writing skills?
2. How might Ms. Smith’s policies and behaviors motivate her students?

---

Effective teachers don’t simply transmit new information and skills to students, they also help students *master* the information and skills. Ms. Smith develops her students’ writing skills by giving them feedback and individualizing instruction when needed to help them improve their skills. By allowing students to revise and resubmit assignments, Ms. Smith gives all students the chance to improve and demonstrates her commitment to helping them learn and develop their writing abilities.

Effective teachers also motivate students to engage in learning activities. Ms. Smith’s policies and behaviors likely motivate her students in many ways. Ms. Smith’s first policy sets high expectations and demonstrates her belief that all students can succeed with effort, which is supported by the second policy: students can revise and resubmit assignments multiple times. These policies can motivate students, especially those who might not have been as engaged otherwise because they perceived themselves to be poor writers. Students’ successes, even minor ones, can motivate them to continue to succeed and improve their writing. In addition, by surveying students and listening to their feedback, Ms. Smith demonstrates that she respects and cares about students’ opinions and their development as writers. If students trust Ms. Smith and feel a connection with her, they’re more likely to listen to her and be motivated to participate in class activities.

Ms. Smith’s case study is an example of how teachers’ decisions to implement classroom strategies and policies can affect what students know, think, do, and feel. However,

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<sup>1</sup> Based on a description in A. K. Smith, 2009.

## Chapter Outline

### Case Study: The “No D” Policy

#### 1.1 Developing Expertise as a Teacher

#### 1.2 Using Research Findings to Make Instructional Decisions

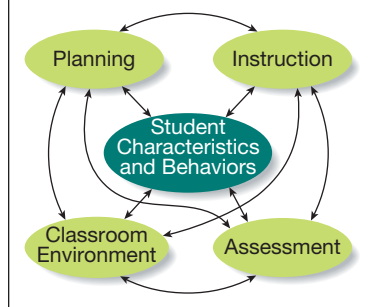
#### 1.3 Strategies for Learning and Studying Effectively

### Summary

### Case Study Practice Exercises: New Instructional App



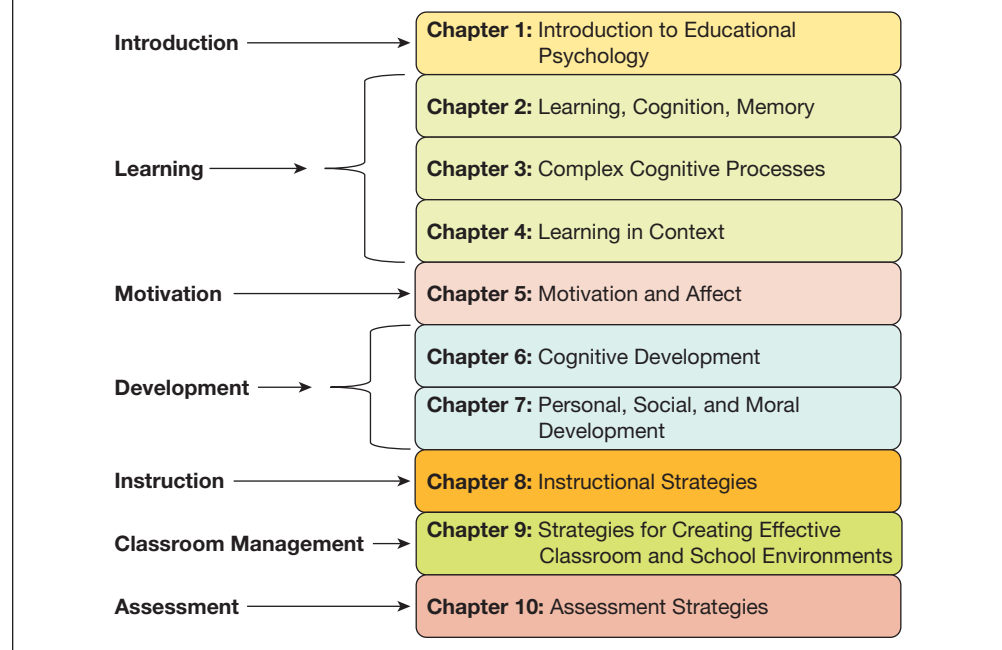
**Figure 1.1** A learner-centered model of instruction.



students' characteristics and behaviors must also influence the decisions teachers make, such as decisions about what topics and skills to teach (*planning*), how to teach those topics and skills (*instruction*), how to keep students on task and supportive of one another's learning efforts (creating an effective *classroom environment*), and how best to determine what students have learned (*assessment*). The relationships among these factors is depicted in Figure 1.1. Notice how *student characteristics and behaviors* are at the center of the figure because these must drive almost everything that teachers do in the classroom. Such an approach to teaching is sometimes known as **learner-centered instruction**.<sup>2</sup>

The purpose of this text is to help you understand children and adolescents: how they learn and develop, how they're likely to be similar to but also different from one another, what activities and assignments are apt to engage them in the classroom, and so on. It will also give you a toolbox of strategies for planning and implementing instruction, creating an environment that keeps students motivated and on task, and assessing students' progress and achievement. These topics are within the field of **educational psychology**, which is an academic discipline that (1) systematically studies the nature of human learning, development, motivation, and related topics and (2) applies its research findings to the identification and development of effective instructional practices, including classroom management and assessment. These topics are presented in this text in the order shown in Figure 1.2. These topics don't always fit neatly into just one chapter; they often overlap and are related to one another. For example, classroom management strategies are built upon theories of learning, development, and motivation. Throughout the text, we've tried to make connections between topics to help you understand the interrelationships among concepts as you further your knowledge of this fascinating field.

**Figure 1.2** Chapter(s) in which each educational psychology topic appears most frequently.



<sup>2</sup> For good general discussions of learner-centered instructional practices, see McCombs, 2005; National Research Council, 2000. You may also want to look at the American Psychological Association's 14 *Learner-Centered Psychological Principles* ([www.apa.org/ed/governance/bea/learner-centered.pdf](http://www.apa.org/ed/governance/bea/learner-centered.pdf)).

Whether you're preparing to become a teacher or you already have teaching experience, the topics in this text help you on your road to becoming a more skillful teacher.<sup>3</sup> We begin the next section by examining some of the ways in which teachers can develop their professional expertise and the important role that educational psychology plays in developing that expertise. Then, we explain the role of research and the scientific study of psychological principles applied to education because effective teachers use research findings to help them make decisions about their instruction. We conclude this chapter by presenting research-based strategies that you can use to study most effectively. Students in our undergraduate and graduate courses have told us that these strategies are very useful in learning the concepts in this text and in other courses or educational settings. You can also teach these study strategies to *your* students to help them become better at studying and learning.

## 1.1 Developing Expertise as a Teacher

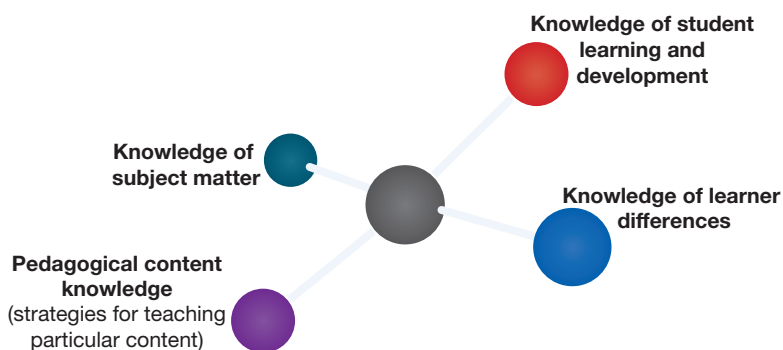
**Big Idea 1.1** Effective teachers continually work to enhance their professional knowledge and skills.

You will become a better teacher by learning to apply the concepts in this text; however, true expertise in teaching takes many years to acquire.<sup>4</sup> In this section, we offer several strategies that you can use over time to develop your knowledge and skills as a teacher—all of them based on research on teacher effectiveness.

**Learn as much as you can about the subject matter you teach, about teaching strategies, and about learners and their development.**

Effective teachers typically know their subject matter extremely well and can usually anticipate and address the difficulties students will have and the kinds of errors students will make in the process of mastering a certain skill or body of knowledge.<sup>5</sup> Effective teachers also know a variety of teaching strategies, including strategies for teaching particular topics and skills, strategies collectively known as **pedagogical content knowledge**.<sup>6</sup> In addition, effective teachers have knowledge of how their students learn and develop in social contexts and how students can differ individually and culturally (see Figure 1.3).<sup>7</sup>

**Figure 1.3** Effective teachers draw on many types of knowledge when making decisions in the classroom.



<sup>3</sup> Bransford et al., 2005; Brouwer & Korthagen, 2005.

<sup>4</sup> Alexander, 2003; Berliner, 2001.

<sup>5</sup> Borko & Putnam, 1996; Cochran & Jones, 1998; H. C. Hill et al., 2008; D. C. Smith & Neale, 1991; Windschitl, 2002.

<sup>6</sup> Baumert et al., 2010; Cochran & Jones, 1998; Krauss et al., 2008; Shulman, 1986.

<sup>7</sup> Bransford et al., 2005; Council of Chief State School Officers, 2013; Russ et al., 2016.

Much of this knowledge—especially knowledge of learning, development, and learner differences—is included in this text because it’s within the field of educational psychology.

To meet the needs of *all* their students, teachers must be prepared to teach students with unique educational needs, including students with disabilities. **Students with disabilities** are different enough from their peers that they may require modifications to their learning goals (e.g., alternative texts or assignments) or accommodations that allow them to access class content (e.g., Braille, recorded texts, assistive technologies). Many of these students are included in general education classrooms, a practice called **inclusion**. At several points in the text we consider students with particular kinds of needs and identify strategies that may be especially useful in working with them.

### **Believe that you can make a difference in students’ lives.**

In Chapter 5 you’ll discover the importance of having high **self-efficacy**—believing that you’re capable of executing certain behaviors or reaching certain goals. Students are more likely to try to learn something if they believe they *can* learn it; in other words, if they have high self-efficacy. But teachers, too, must have high self-efficacy about what they can accomplish. Students who achieve at high levels are apt to be those whose teachers have confidence in what they, *as teachers*, can do—both individually and collectively—for their students.<sup>8</sup> Ultimately, what teachers do in the classroom *matters* for students, not only in the short term but for years to come.<sup>9</sup>

### **Continually reflect on and critically examine your assumptions, inferences, and teaching practices.**

In the opening case study, Anne Smith reflects on her students’ performance in previous years and then institutes new assessment policies that might be more motivating and productive. Like Ms. Smith, effective teachers engage in **reflective teaching**: They continually examine and critique their assumptions, inferences, and instructional practices, and they regularly adjust their beliefs and strategies in light of new evidence.<sup>10</sup>

### **Communicate and collaborate with colleagues.**

Good teachers rarely work in isolation. Instead, they frequently communicate with colleagues in their own school district and across the nation—perhaps with colleagues in other countries as well—through face-to-face meetings, e-mail, regional or national conferences, and professional websites (e.g., [www.oercommons.org](http://www.oercommons.org)). Ideally, teachers and administrators at a single school create a **professional learning community**, in which they share a common vision for students’ learning and achievement, work collaboratively to achieve desired outcomes for all students, and regularly communicate with one another about their strategies and progress.<sup>11</sup> Most experienced teachers are happy to offer beginning teachers advice and support during challenging times. In fact, they’re apt to be flattered to be asked!

### **Learn as much as you can about the culture(s) of the community in which you are working.**

Throughout the text, you’ll see numerous ways in which children from diverse cultural groups may think and behave differently from one another. But a textbook can offer only a sampling of the many cultural differences you might encounter. You can

<sup>8</sup> Holzberger et al., 2013; J. A. Langer, 2000; Skaalvik & Skaalvik, 2008.

<sup>9</sup> Hattie, 2009; Konstantopoulos & Chung, 2011.

<sup>10</sup> Hammerness et al., 2005; T. Hogan et al., 2003; Larrivee, 2006.

<sup>11</sup> DuFour et al., 2008; P. Graham & Ferriter, 2009; Raudenbush, 2009.

become more informed about students' cultural beliefs and practices if you participate in local community activities and converse frequently with parents and other community members.<sup>12</sup>

### Keep up to date on research findings and innovative evidence-based practices in education.

Occasional university coursework and in-service training sessions are good ways to enhance teaching effectiveness.<sup>13</sup> Also, effective teachers typically subscribe to one or more professional journals and, as time allows, they attend professional conferences in their region. Many websites provide teachers with information and ideas about effective classroom practices, including the websites of professional organizations such as the National Council of Teachers of Mathematics ([www.nctm.org](http://www.nctm.org)), the National Council for the Social Studies ([www.socialstudies.org](http://www.socialstudies.org)), the National Association for Music Education ([www.nafme.org](http://www.nafme.org)), the National Science Teachers Association ([www.nsta.org](http://www.nsta.org)), and the International Literacy Association ([www.literacyworldwide.org](http://www.literacyworldwide.org)).

### Integrate action research into your ongoing classroom practices.

Like Anne Smith in the opening case study, practicing teachers sometimes have questions that existing research findings don't fully answer. In **action research**, teachers conduct systematic studies of issues and problems in their own schools, with the goal of seeking more effective strategies for working with students.<sup>14</sup> For example, an action research project might involve examining the effectiveness of a new teaching technique, seeking students' opinions on a new classroom policy (as Ms. Smith does), or ascertaining reasons why many students rarely complete homework assignments.

Action research studies typically involve the following steps:<sup>15</sup>

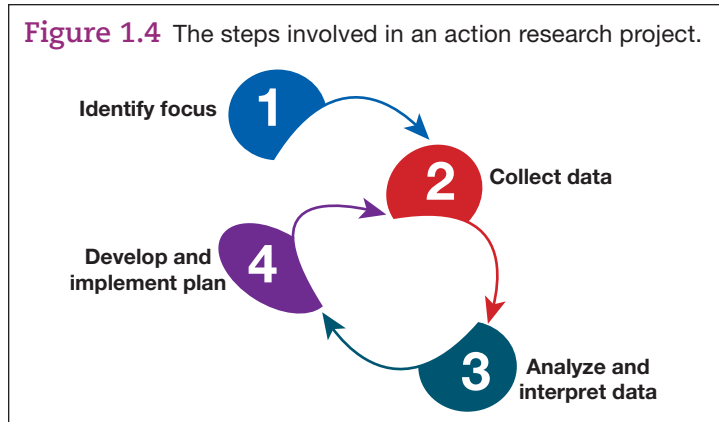
1. *Identify an area of focus.* The teacher-researcher begins with a problem and gathers preliminary information that might shed light on the problem, perhaps by reading relevant books or journal articles, searching the Internet, or discussing the issue with colleagues or students. The teacher-researcher then identifies one or more specific questions to address and develops a research plan for answering those questions (data-collection techniques, necessary resources, schedule, etc.). At this point, the teacher also seeks permission to conduct the study from school administrators and any other appropriate authorities. Depending on the nature of the study, parents' permission may be necessary.
2. *Collect data.* The teacher-researcher collects data relevant to the research questions. Such data might, for example, be obtained from questionnaires, interviews, achievement tests, students' journals or portfolios, existing school records (e.g., attendance patterns, school suspension rates), observations, or any combination of these.
3. *Analyze and interpret the data.* The teacher-researcher looks for patterns in the data. Sometimes the analysis involves computing numerical statistics (e.g., frequencies, percentages, averages, correlation coefficients). At other times, the analysis involves an in-depth inspection of the data without numbers, such as reading students' responses to identify themes and to interpret the meaning of the responses. Or, it could be a combination that includes both statistical analyses and qualitative interpretations of the meaning of the data. The teacher-researcher then relates the findings to the original research questions.

<sup>12</sup> Castagno & Brayboy, 2008; McIntyre, 2010; Rogoff, 2003.

<sup>13</sup> Desimone, 2009; Guskey & Sparks, 2002; Hamre et al., 2012; Hattie, 2009.

<sup>14</sup> Mertler, 2019.

<sup>15</sup> Steps based on those recommended by Mills, 2014.

**Figure 1.4** The steps involved in an action research project.

4. *Develop and implement an action plan.* The teacher-researcher uses the information collected to *take action*; for instance, to change instructional strategies, school policies, or the classroom environment.

After the final step, a teacher-researcher may have all the information needed to work more effectively with students. Or, it may be necessary to go through the process again by collecting more data, analyzing and interpreting the data, and developing and implementing another action plan. This cyclical process is shown in Figure 1.4 and could continue over and over.

## 1.2 Using Research Findings to Make Instructional Decisions

**Big Idea 1.2** Effective teachers use research findings and research-based theories to make decisions about instructional strategies, classroom management, and assessment practices.

Teachers make instructional decisions based on their prior experiences, advice from others, knowledge and skills they learned in their formal schooling, and so on. Although many of these sources of information are potentially useful to teachers' instructional decisions, effective teachers rely on research findings and research-based theories to inform their practices. In the principles that follow, we explain why teachers need to understand research, we examine the different types of research conducted by educational psychologists, and we describe how this research can be synthesized and organized into principles and theories that can be helpful to teachers.

**The effectiveness of various classroom practices can best be determined through systematic research.**

You have been a student for many years now, and you've undoubtedly learned a great deal about how individuals learn and develop and about how teachers can foster their learning and development. But exactly how much *do* you know? To help you find out, please complete the following short pretest that was developed by one of us authors.

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### See For Yourself

Ormrod's Own Psychological Survey (OOPS)

#### True/False

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

- 1. Some children are predominantly left-brain thinkers, whereas others are predominantly right-brain thinkers.
  - 2. Students are good judges of how much they know about a topic.
  - 3. Anxiety sometimes helps students learn and perform more successfully in the classroom.
  - 4. Playing video games can enhance children's cognitive development.
  - 5. The ways in which teachers assess students' learning influence what and how students actually learn.
-

Now let's see how well you did on the OOPS. The answers, along with an explanation for each one, are as follows:

- 1. Some children are predominantly left-brain thinkers, whereas others are predominantly right-brain thinkers.** False—With the development of new medical technologies in recent years, researchers have learned a great deal about how the human brain works and which parts of it specialize in which aspects of human thinking. As you'll discover in Chapter 2, the two halves, or *hemispheres*, of the brain do have somewhat different specialties, but they continually communicate and collaborate in tackling even the simplest of daily tasks. Thinking and learning about almost anything is distributed across many parts of the brain. Therefore, practically speaking, there's no such thing as left-brain or right-brain thinking.<sup>16</sup>
- 2. Students are good judges of how much they know about a topic.** False—Contrary to popular opinion, students are usually *not* the best judges of what they do and don't know. For example, many students think that if they've spent a long time studying a textbook chapter, they must know its contents very well. Yet if they've spent most of their study time inefficiently—perhaps by “reading” while thinking about something else altogether or by mindlessly copying definitions—they may know far less than they think they do. We consider this *illusion of learning* further in Chapter 3.<sup>17</sup>
- 3. Anxiety sometimes helps students learn and perform more successfully in the classroom.** True—Many people think that anxiety is always a bad thing. But actually, a little bit of anxiety can *improve* learning and performance, especially when students perceive a task to be something they can accomplish with reasonable effort.<sup>18</sup> For instance, a small, manageable amount of anxiety can spur students to complete their work carefully and to study for tests. We explore the effects of anxiety and other emotions in Chapter 5.
- 4. Playing video games can enhance children's cognitive development.** Sometimes True—A great deal of time spent playing video games *instead of* reading, doing homework, and engaging in other school-related activities can definitely interfere with children's long-term academic success. But some video games can be powerful tools for promoting important cognitive abilities, such as spatial abilities and the flexible use of attention.<sup>19</sup> And educational technologists have increasingly been designing highly motivating video games that simulate real-world problems and foster complex problem-solving skills.<sup>20</sup> In upcoming chapters (especially Chapter 4 and Chapter 8), we examine many ways in which computer technologies can support students' learning and cognitive development.
- 5. The ways in which teachers assess students' learning influence what and how students actually learn.** True—What and how students learn depend, in part, on how they expect their learning to be assessed.<sup>21</sup> For example, in the opening case study, Anne Smith's “No D” and multiple-submission policies encourage students to seek feedback about their work, benefit from their mistakes, and enhance their writing skills. In Chapter 10 we look more closely at the potential effects of classroom assessment practices on students' learning.

<sup>16</sup> Gonsalves & Cohen, 2010; Schlegel et al., 2016.

<sup>17</sup> Carpenter et al., 2020; Dunlosky & Lipko, 2007; Stone, 2000.

<sup>18</sup> Preckel et al., 2006; Strack & Esteves, 2015; Travis et al., 2020.

<sup>19</sup> Green, 2014; Parong et al., 2017, 2020; Rothbart, 2011; Tobias & Fletcher, 2011.

<sup>20</sup> Blumberg, 2014; Squire, 2011.

<sup>21</sup> Carpenter, 2012; Frederiksen, 1984; Haertel, 2013.