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Eighth Edition

Educational Psychology

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**John W. Santrock
Alysia D. Roehrig**



Educational Psychology

EIGHTH EDITION

John W. Santrock

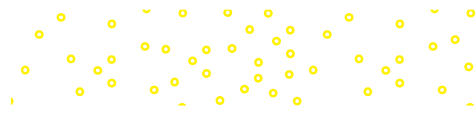
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EDUCATIONAL PSYCHOLOGY

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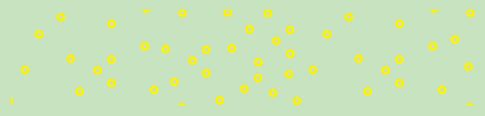
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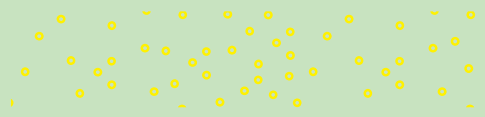
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*For the educators in my family:
My wife, Mary Jo, a teacher; my father,
John F. Santrock, Jr., a teacher,
principal, and superintendent of
schools; my mother, Ruth Smith
Santrock, an administrative
assistant; my grandmother, Della
Karnes Santrock, who taught
all grades in a one-room
school; and my grandfather,
John F. Santrock, Sr., a principal.*



About the Authors

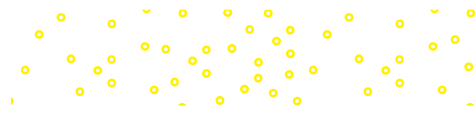


John Santrock with his grandchildren Luke, Alex, and Jordan
Courtesy of John Santrock

John Santrock received his Ph.D. from the University of Minnesota. He taught at the University of Charleston and the University of Georgia before joining the Program in Psychology at the University of Texas at Dallas, where he currently teaches a number of undergraduate courses and was recently given the University's Effective Teaching Award. In 2010, he created the UT-Dallas Santrock undergraduate scholarship, an annual award that is given to outstanding undergraduate students majoring in developmental psychology to enable them to attend research conventions.

John has been a member of the editorial boards of *Child Development* and *Developmental Psychology*. His research on father custody is widely cited and used in expert witness testimony to promote flexibility and alternative considerations in custody disputes. John also has authored these exceptional McGraw-Hill texts: *Children* (13th edition), *Adolescence* (16th edition), *A Topical Approach to Life-Span Development* (8th edition), and *Essentials of Life-Span Development* (5th edition).

For many years, John was involved in tennis as a player, teaching professional, and coach of professional tennis players. At the University of Miami (FL), the tennis team on which he played still holds the NCAA Division I record for most consecutive wins (137) in any sport. John's wife, Mary Jo, has a master's degree in special education and has worked as a teacher and a Realtor. He has two daughters—Tracy, who worked for a number of years as a technology marketing specialist, and Jennifer, who has been a medical sales specialist. However, recently both have followed in their mother's footsteps and are now Realtors. He has one granddaughter, Jordan, age 24, who works for the accounting firm Ernst & Young, and two grandsons, Alex, age 11, and Luke, age 10. In the last two decades, John also has spent time painting expressionist art.



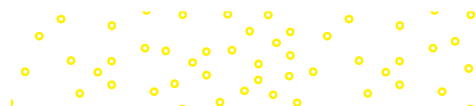
Alysia Roehrig received her Ph.D. in Developmental Psychology from the University of Notre Dame, where she worked with an alternative teacher education program and studied the development of beginning teachers. She is currently a Professor of Educational Psychology at Florida State University, where she also serves as Chair of the Department of Educational Psychology and Learning Systems. Her research focuses on effective teaching, especially for students who are traditionally underserved. In addition, she is Co-director of PURPOSE (Partners United for Research Pathways Oriented to Social Justice in Education), an Institute of Education Sciences funded Pathways to the Education Science Training Program intended to increase the diversity of those with doctorates in education.

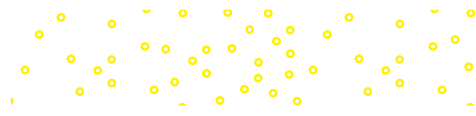
Throughout her career, Alysia has been dedicated to making educational research accessible through projects like curating evidence-based practice briefs for educators, preparing the next generation of researchers to do culturally relevant research in collaboration with school stakeholders, and updating this book for future educators. She teaches courses on learning and cognition, research methods, and college teaching, and she won her University's Transformation Through Teaching award. She has published numerous academic papers and chapters, as well as three books about teaching. She also has been a member of the editorial boards of *Journal of Psychoeducational Assessment* and *Journal of Educational Psychology*.

Alysia is a first-generation college graduate. She is a mother, a servant leader, a scholar activist, an Army wife, and an avid reader. She has two sons, Aaron, who just started high school, and Sebastian, who just started kindergarten. Her husband, Kris, is also a servant leader. He has served for over 30 years in the U.S. Army, in both the Regular Army and the Army National Guard, and he has deployed several times. He has a bachelor's of fine arts and a master's of business administration and currently works for the Florida Department of Education. Together they enjoy playing with their boys and doing home renovations.



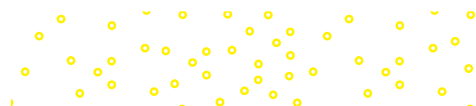
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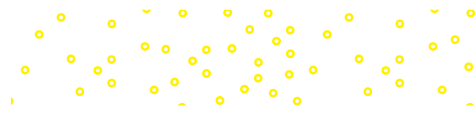
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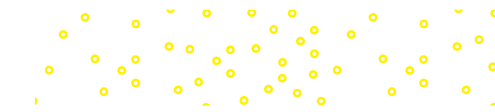
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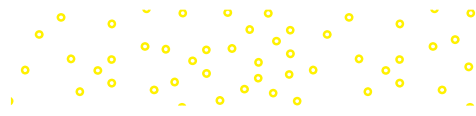
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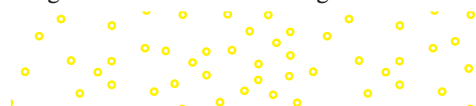
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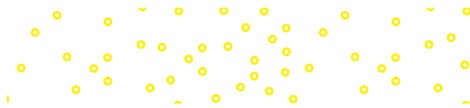
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Expert Consultants for Educational Psychology

Educational psychology has become an enormous, complex field and no single author, or even several authors, can possibly keep up with the rapidly changing content in the main areas of the field. To solve this problem, author John Santrock sought the input of leading experts about content in many different areas of educational psychology. The experts provided detailed evaluations and recommendations for chapter(s) or content in their area(s) of expertise.

The following individuals are among those who served as expert consultants for one or more of the previous editions of this text:

Albert Bandura *Stanford University*
Robert Siegler *Carnegie Mellon University*
Carolyn Everson *Vanderbilt University*
Michael Pressley *Michigan State University*
Karen Harris *Arizona State University*
Kenji Hakuta *Stanford University*
Joyce Epstein *Johns Hopkins University*
James Kauffman *University of Virginia*
Barbara McCombs *University of Denver*
Donna Ford *Vanderbilt University*
Eric Anderman *Ohio State University*
Micki Chi *Arizona State University*
Daniel Hallahan *University of Virginia*
Susan Goldman *University of Illinois at Chicago*
Allan Wigfield *University of Maryland*
Steven Yussen *University of Minnesota*

The biographies and photographs of the experts for the Eighth Edition of Educational Psychology, who literally are a Who's Who in the field of educational psychology, follow.



Courtesy of Carol Dweck

Carol Dweck Dr. Dweck is widely recognized as one of the world's leading experts on motivation and achievement. She is Professor of Psychology at Stanford University, having previously been a professor of psychology at Columbia University. Dr. Dweck obtained her Ph.D. in psychology from Yale University. Her research explores the mindsets individuals use to understand themselves and guide their behavior. Dr. Dweck's studies examine the origins of these mindsets, their role in motivation and self-regulation, and their influence on achievement and interpersonal relationships. Dr. Dweck has received numerous awards, including the Thorndike Career Achievement Award in Educational Psychology, the James McKeen Cattell Lifetime Achievement Award, and the Wilbur Cross Medal from Yale University. Her book *Mindset* also has been given many awards and is widely considered to be a major contribution to the field of motivation.

"John Santrock's chapter on motivation is excellent. He presents the different aspects of motivation in a compelling way with lots of practical tips based on state-of-the-art research." —Dr. Carol Dweck



Courtesy of Richard Mayer

Richard Mayer Dr. Mayer is widely recognized as one of the leading experts on the application of cognitive psychology to children's education. He is Professor of Psychology at the University of California, Santa Barbara (UCSB), where he has served since 1975. Dr. Mayer obtained his Ph.D. in Psychology from the University of Michigan. His current research interests focus on the intersection of cognition, instruction, and technology with a special focus on multimedia learning and computer-supported learning. He has been President of the Division of Educational Psychology of the American Psychological Association, editor of *Educational Psychologist*, co-editor of *Instructional Science*, Chair of the UCSB Department of Psychology, and a recipient of the E. L. Thorndike Award for career achievement in educational psychology. Dr. Mayer has been awarded the Distinguished Contribution of Applications of Psychology to Education and Training Award from the American Psychological Association and has been ranked as the most productive educational psychologist by *Contemporary Educational Psychology*. He has been Vice President for Division C (Learning and Instruction) of the American Educational Research Association and is on the editorial boards of 12 journals, mainly in educational psychology. He has been the Principal Investigator or co-PI on more than 30 grants. Dr. Mayer has served on a local school board in Goleta, California, since 1981. He is the author or editor of more than 500 publications, including 30 books, such as *Computer Games for Learning*, *Multimedia Learning* (3rd ed.), *Handbook of Learning and Instruction* (2nd ed.) (with Patricia Alexander), *E-Learning and the Science of Instruction* (4th ed.) (with R. Clark), *Cambridge Handbook of Multimedia Learning* (3rd ed.), and *Applying the Science of Learning*.

"I enjoyed reading the chapters and appreciate the coverage given to cognitive topics in the book. Dr. Santrock's book is recognized as a leading educational psychology textbook. . . . The coverage of the topics is appropriate and up-to-date, the writing style is clear and friendly, and the book makes good connections to practical educational issues." —Dr. Richard Mayer



Courtesy of Kirsten Butcher

Kirsten Butcher A leading expert on technology and education, Dr. Butcher is Director of the Center for the Advancement of Technology in Education in the Department of Education at the University of Utah. Dr. Butcher also is Director of the Instructional Design and Educational Technology program at the University of Utah and a professor in the Department of Educational

Psychology the University. She obtained her Ph.D. from the University of Colorado–Boulder. Dr. Butcher’s work focuses on how well-designed, interactive technologies can support students’ higher-level cognitive processing of information in areas such as integration, inference, and transfer.

“This text provides an excellent overview of the concepts and concerns essential to modern educators. Dr. Santrock moves seamlessly between theory and practice for a thorough introduction to contemporary instruction. His text covers the essential concepts and approaches to effective instruction for 21st century educators.” —Dr. Kirsten Butcher



Courtesy of Dale Schunk

Dale Schunk Dr. Schunk is one of the world’s leading experts on children’s learning and motivation in educational settings. He is Dean of Education and Professor of Curriculum at the University of North Carolina–Greensboro. Dr. Schunk obtained

his Ph.D. from Stanford University and previously was on the faculty at the University of Houston, University of North Carolina–Chapel Hill, and Purdue University (where he was head of the Department of Educational Studies). He has published over 100 articles and chapters, is the author of *Learning Theories: An Educational Perspective* (8th ed.), co-author of *Academic Self-Efficacy* (3rd ed.) (with Maria DiBenedetto), and co-author of *Motivation in Education* (4th ed.) (with Judith Meece and Paul Pintrich).

“John Santrock’s text provides excellent coverage of major motivational theories and applications to educational contexts. Student activities (such as Praxis® questions, self-reflections) and reviews are very helpful . . . strong section on motivation. . . . Very clearly written—will be easily understood by undergraduates. The chapter on motivation, teaching, and learning reviews current theories and research on key motivational topics with high relevance to education. . . . There are lots of specific applications to different types of students, which students will appreciate. It is nice to see the coverage of social motivation, as this topic often is minimized in favor of motivation for academic learning.” —Dr. Dale Schunk



Courtesy of Kathryn Wentzel

Kathryn Wentzel Dr. Wentzel is a leading expert on the social aspects of motivation and achievement. She is Professor of Human Development in the Department of Human Development, Learning, and Quantitative Methods

at the University of Maryland. Dr. Wentzel obtained her Ph.D. in Psychological Studies in Education at Stanford University, after which she held post-doctoral positions at Stanford and the University of Illinois. Her research focuses on the social aspects of children’s and adolescents’ motivation and achievement. She has published more than 100 articles and book chapters and co-edited a number of books, including *Handbook of Motivation at School* (2nd ed.) and *Handbook of Social Influences in School Contexts*. Dr. Wentzel is past editor of *Educational Psychology* and *Journal of Applied Developmental Psychology*.

“I enjoyed reading the chapters (3, Social Contexts and Socioemotional Development, and 13, Motivation, Teaching, and Learning) and think they are in great shape. My comments are mostly for ‘fine tuning’. . . . This is a well-written and comprehensive introductory chapter on social contexts and socioemotional development as they pertain to schooling. The chapter on motivation does a very good job of covering current work in the field. . . . I especially liked the teachers’ quotes throughout.” —Kathryn Wentzel



Courtesy of William Howe

Bill Howe Dr. Howe is a leading expert on diversity and multicultural education. He has been education consultant for multicultural education, gender equity, and civil rights at the Connecticut State Department of Education. He is Past President of the National Association for Multicultural Education. Dr. Howe is the founder of the New England Conference on Multicultural Education. He serves on the boards of a number of organizations, including the STEM National Advisory Board, Advisory Board for Native Village, Asian Pacific American Coalition of CT (APAC), and Advisory Board for International Educational Resources at Yale University. In recent years, Dr. Howe has trained more than 15,000 educators in multicultural education. Dr. Howe recently co-authored *Becoming a Multicultural Educator* (3rd ed.) (with Penelope Lisi).

“No topics covered should be omitted. . . . I enjoyed reading this text and learned a lot from reading it. . . . I like the format. I like the practical suggestions as they pertain to teaching and learning. . . . Above all, I like the writing style. It is user-friendly. . . . I find this text helpful in that it has many great applicable suggestions.” —Dr. Bill Howe



Courtesy of James McMillan

James McMillan A leading expert on educational assessment, Dr. McMillan is Professor Emeritus of Educational Foundations at Virginia Commonwealth University. Dr. McMillan obtained

his Ph.D. at Northwestern University. He has authored a number of books on educational assessment, including *Fundamentals of Education Research* (8th ed.) and *Classroom Assessment* (7th ed.). Dr. McMillan has published extensively in leading educational journals, including *Educational Psychology*, *Educational Measurement*, and *American Educational Research Journal*. His research focuses on how students’ mistakes and learning errors can facilitate motivation, self-regulation, study skills, and subsequent achievement. Dr. McMillan recently was given his university’s School of Education teaching award. He also has been active in Virginia’s state testing and accountability program.

“The strength of these chapters (1, Introduction, 15, Standardized Tests and Teaching, and 16, Classroom Assessment and Grading) is on identifying issues that can be used for further research and discussion. There is good coverage of essential topics. The connection to Praxis is excellent. I also like the portfolio section at the end of each chapter.” —Dr. James McMillan

Preface

It is gratifying that the first seven editions of *Educational Psychology* have been so well received. One of the goals for each edition has been to write a book that students say this about:

“I love this book.”

“I am using many of the ideas from my educational psychology text in my teaching and they are working great!”

“I teach in the inner city and my educational psychology text is a great resource for me. The focus on diversity and technology have been extremely useful. I am enriched by the book.”

These comments come from Jennifer Holliman-McCarthy, Richard Harvell, and Greg Hill, who have used this text in their educational psychology course and gone on to become public school teachers.

Another goal for each edition of *Educational Psychology* has been to write a book that instructors say this about:

“I wasn’t prepared to like this text. In general, ed psych texts are all too predictable. While people claim to be innovative, in the end they are not. In contrast, John Santrock’s text is a big WOW! His book is different. It is written for the prospective teacher and not the future educational psychologist.”

“Those who are not using Santrock have not seen it. Please communicate my sincere enjoyment of this quality text to John Santrock.”

These comments come from educational psychology instructors Randy Lennon, University of Northern Colorado, and Robert Brown, Florida Atlantic University-Boca Raton.

CONNECTING THEORY AND PRACTICE

A major goal of this text is to make meaningful connections between theory and practice. Students are more engaged when they understand how the concepts and strategies they are learning can be used to teach effectively, understand developmental changes in their students, and foster positive relationships between students and parents.

Four aspects of the text that emphasize this connection are: (1) Connecting with Teachers, (2) Connecting with Students: Best Practices, (3) Connecting with Development, and (4) Connecting with the Classroom: Crack the Case.

Connecting with Teachers

Engaging chapter openers detail experiences of real teachers on topics such as establishing a community of learners, encouraging students to think, and staying ahead of technology in the classroom. Many of these stories were written especially for this text by outstanding teachers.

Connecting with Students: Best Practices

Each chapter includes strategies—many provided by award-winning teachers—on a variety of topics including how to help students improve their memory and tips for preparing engaging lectures.

Connecting with Development

Prospective teachers want to better understand developmental changes in students and the best way to teach students at the grade level at which they will teach. To better understand developmental changes in students across all grade-levels, a number of outstanding early childhood, elementary, middle, and high school teachers provided recommendations that relate to chapter topics. Their comments appear multiple times within chapters.

empathy found a small positive relationship between social media use and affective empathy (Guan et al., 2019). At the beginning of the pandemic another study found that adolescents who reported greater social responsibility attitudes and did more disinfecting and news monitoring, while those who did less social distancing reported valuing their own self-interest over others more (Oosterhoff & Palmer, 2020).

Some teachers were recently asked to describe how they apply Piaget's cognitive stages to their classroom. Following are their comments:

EARLY CHILDHOOD When I teach songs to preschool students who are in the preoperational stage, I use PowerPoint slides projected on the board. The slides have either all the words of the song included, or just key words. I also include corresponding clip art and pictures on the page borders.



—CONNIE CHRISTY, *Aynor Elementary School (Preschool Program)*

ELEMENTARY SCHOOL: GRADES K-5 In my second-grade science class, I use the following method to help students move from concrete thinking to more abstract thinking: Children are given tasks and asked to discuss what happened (e.g., the object sank or floated; when something is added to a system, the outcome changes). Then a theory or idea is developed from the actual observations. When children observe an occurrence and explain what was seen, they can more easily move from the concrete to the more abstract. Although these methods and others like it work well with my students, I need to repeat them often.



—JANINE GUIDA POUTRE, *Clinton Elementary School*

MIDDLE SCHOOL: GRADES 6-8 I challenge my seventh-grade students to share examples of how they've applied our classroom lessons to the real world. They can earn extra credit for doing so, but seem to care less about the points than they do about the opportunity to share their accomplishments. For example, after completing a unit on Progressivism, a student shared how he had gone online on his home computer and donated money to help Darfur refugees. He had previously planned to use this money to buy himself a new guitar. This student took the theory of social activism from the Progressive era 100 years ago and applied it to his life today. This student's actions clearly demonstrate Piaget's formal operational stage in action.



—MARK FODNESS, *Bemidji Middle School*

HIGH SCHOOL: GRADES 9-12 My high school art students take part in creativity competitions in which they build, create, explore, problem solve, and perform solutions to challenges presented to them. The competition—"Destination Imagination"—has challenged my students to brainstorm ideas and solutions to seemingly impossible tasks. As a result of their participation in this event, they have won regional and state titles along with the world championship.



—DENNIS PETERSON, *Deer River High School*

Connecting with the Classroom: Crack the Case

Each chapter concludes with a relevant case study. These real-life teaching examples provide students an opportunity to reflect and think critically about what they have learned in the chapter. At the end of the case study, students are asked a series of questions—in some cases, PRAXIS-type multiple-choice items—that encourage them to reflect on and think critically about the case.

Connecting with the Classroom: Crack the Case

The Book Report

Mr. Johnson assigned his high school senior American government students to read two books during the semester that had "something, anything to do with government or political systems" and to write a brief report about each of their chosen books.

One student in the class, Cindy, chose to read *1984* and *Animal Farm*, both by George Orwell. *1984* is a book about what could happen in "the future" year of 1984, given certain earlier political decisions. In essence, the world turns into a terrible place in which "Big Brother" monitors all of one's actions via two-way television-like screens. Infractions of minor rules are punished severely. *Animal Farm* is a brief novel about political systems in which the characters are portrayed as various farm animals such as pigs and dogs. Cindy enjoyed both books and completed them both before mid-term. Her reports were insightful, reflecting on the symbolism contained in the novels and the implications for present-day government.

Cindy's friend, Lucy, had put off reading her first book until the last minute. She knew Cindy enjoyed reading about government and had finished her reports. Lucy asked Cindy if she knew of a "skinny book" she could read to fulfill the assignment. Cindy gladly shared her copy of *Animal Farm* with her friend, but as Lucy began reading the book she wondered why Cindy had given her this book. It didn't seem to fit the requirements of the assignment at all.

The day before the first reports were due, Mr. Johnson overheard the girls talking. Lucy complained to Cindy, "I don't get it. It's a story about pigs and dogs."

Cindy responded, "They aren't really supposed to be farm animals. It's a story about the promises of communism and what happened in the Soviet Union once the communists took over. It's a great story! Don't you see? The pigs symbolize the communist regime that overthrew the czars during the Russian Revolution. They made all kinds of promises about equality for everyone. The people went along with them because they were sick and tired of the rich and powerful running everything while they starved. Once the czars were eliminated, the communists established a new government but didn't keep any of their promises, controlled

everything. Remember in the book when the pigs moved into the house and started walking on two legs? That's supposed to be like when the communist leaders began acting just like the czars. They even created a secret police force—the dogs in the story. Remember how they bullied the other animals? Just like the secret police in the Soviet Union."

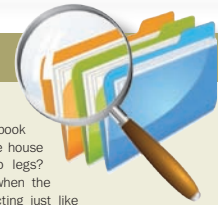
Lucy commented, "I still don't get it. How can a pig or a dog be a communist or a cop? They're just animals."

Cindy looked at her friend, dumbfounded. How could she not understand this book? It was so obvious.

1. Drawing on Piaget's theory, explain why Cindy understood the book.
2. Based on Piaget's theory, explain why Lucy didn't understand the book.
3. What could Mr. Johnson do to help Lucy understand?
4. How could Mr. Johnson have presented this assignment differently, so that Lucy did not need to rush through a book?
5. At which stage of cognitive development would Piaget say that Cindy is operating?
 - a. sensorimotor
 - b. preoperational
 - c. concrete operational
 - d. formal operational

Explain your choice.
6. At which stage of cognitive development would Piaget say that Lucy is operating?
 - a. sensorimotor
 - b. preoperational
 - c. concrete operational
 - d. formal operational

Explain your choice.



THE LEARNING SYSTEM

Now more than ever, students struggle to find the main ideas in their courses, especially in courses like educational psychology that include so much material. *Educational Psychology* provides extensive learning connections throughout the chapter.

The learning system connects the chapter-opening outline, learning goals for the chapter, mini-chapter maps that open each main section of the chapter, a *Review*,

chapter 4

INDIVIDUAL VARIATIONS

chapter outline

1 Intelligence

Learning Goal 1 Discuss what intelligence is, how it is measured, theories of multiple intelligences, the neuroscience of intelligence, and some controversies and issues about its use by educators.

What Is Intelligence?
Intelligence Tests
Theories of Multiple Intelligences
The Neuroscience of Intelligence
Controversies and Issues in Intelligence

2 Learning and Thinking Styles

Learning Goal 2 Describe learning and thinking styles.


Impulsive/Reflective Styles
Deep/Surface Styles
Optimistic/Pessimistic Styles
Criticisms of Learning and Thinking Styles

3 Personality and Temperament

Learning Goal 3 Characterize the nature of personality and temperament.

Personality
Temperament

Individuals play out their lives in different ways.
—Thomas Huxley
English Biologist, Nineteenth Century



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Connecting with Learning: Reach Your Learning Goals

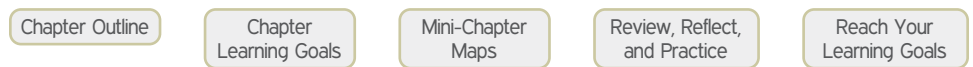
1 WHAT IS LEARNING? Define learning and describe five approaches to studying it.

- What Learning Is and Is Not
 - Learning is a relatively permanent change in behavior, knowledge, and thinking skills that occurs through experience. Learning is not involved in inborn, innate behaviors, such as blinking or swallowing.
- Approaches to Learning
 - Behaviorism is the view that behavior should be explained by experiences that can be directly observed, not by mental processes. Classical conditioning and operant conditioning are behavioral views that emphasize associative learning.
 - Psychology became more cognitive in the last part of the twentieth century, and the cognitive emphasis continues today. This is reflected in four cognitive approaches to learning: social cognitive, information processing, cognitive constructionist, and social constructivist. Social cognitive approaches emphasize the interaction of behavior, environment, and person (cognition) in explaining learning. Information-processing approaches focus on how children process information through attention, memory, thinking, and other cognitive processes. Cognitive constructivist approaches emphasize the child's cognitive construction of knowledge and understanding. Social constructivist approaches focus on collaboration with others to produce knowledge and understanding.

2 BEHAVIORAL APPROACHES TO LEARNING: Compare classical conditioning and operant conditioning.

- Classical Conditioning
 - In classical conditioning, the organism learns to connect, or associate, stimuli. A neutral stimulus (such as the sight of a person) becomes associated with a meaningful stimulus (such as food) and acquires the capacity to elicit a similar response. Classical conditioning involves these factors: unconditioned stimulus (UCS), conditioned stimulus (CS), unconditioned response (UCR), and conditioned response (CR).
 - Classical conditioning also involves generalization, discrimination, and extinction. Generalization is the tendency of a new stimulus similar to the original conditioned stimulus to produce a similar response. Discrimination occurs when the organism responds to certain stimuli and not

Reflect, and Practice feature at the end of each main section, and a chapter summary at the end of each chapter—*Connecting with Learning: Reach Your Learning Goals*:



The learning system keeps the key ideas in front of the student from the beginning to the end of the chapter. Each chapter has no more than five main headings and corresponding learning goals, which are presented in the chapter-opening spread. Mini-chapter maps that link up with the learning goals are presented at the beginning of each major section in the chapter. Then, at the end of each main section of a chapter, the learning goal is repeated in the “Review, Reflect, and Practice” feature, which prompts students to review the key topics in the section and poses a question to encourage them to think critically about what they have read, and as indicated earlier, in many cases how they will incorporate the material into their own teaching. At the end of the chapter, under the heading “Reach Your Learning Goals,” the

learning goals guide students through the bulleted chapter review, connecting with the chapter outline at the beginning of the chapter and the “Review, Reflect, and Practice” feature at the end of major chapter sections.

At the end of each chapter, Portfolio Activities related to the chapter’s content are presented. They are organized into three categories for instructors’ ease of use: Independent Reflection, Research/Field Experience, and Collaborative Work. Each Portfolio Activity is coded to a specific INTASC standard.

MAIN CHAPTER-BY-CHAPTER CHANGES

The eighth edition of *Educational Psychology* includes dozens of new and updated references to ensure students are provided with the most up-to-date research on the topics covered in this book. Here are the biggest changes to the new edition as they relate to each chapter of the book.

Chapter 1:

New discussion in “Goal Setting and Instructional Planning” identifying the difference between online learning and emergency remote teaching.

In “Assessment Knowledge and Skills,” added updated information about states being allowed to apply for waivers of certain accountability provisions in the Every Student Succeeds Act during the 2021–2022 school year due to COVID-19.

Chapter 2:

New explanation of the connections of neurons through pruning in adolescence.

New section on the influence of socialization agents on adolescents’ stress and empathic concern.

Enhanced section on social media influence on adolescents, especially amidst the pandemic.

Added example from research on the benefits of private speech in children.

Chapter 3:

Enhanced information on the authoritarian parenting style in Asian Americans compared to European Americans.

New discussion of parent involvement and student achievement during the COVID-19 pandemic.

New model of explaining risk for peers and research on a social-dynamics intervention that successfully created positive changes for aggressive youth.

Added example of the negative impacts of social media use.

Enhanced section describing the most recent guidelines provided by the NAEYC.

Added research on the Head Start program for children and dropout rates of U.S. 16- to 24-year-olds.

Enhanced information on children’s learning and well-being during COVID-19 under “Coping with Stress.”

Added murder of George Floyd as an example of a more recent traumatic event.

Chapter 4:

New explanation about the relationship between emotional intelligence and academic performance.

Enhanced information on general intelligence and multiple intelligences in children.

Enhanced information describing intellectually gifted students.

New explanation of nature versus nurture influence on intelligence, including identification of genes related to intelligence.

Chapter 5:

Enhanced section on the influence of COVID-19 mandates and remote schooling on excessive screen use in adolescents.

Enhanced information regarding rates on poverty across various demographics.

Enhanced information on the differences between resource availability from schools in higher income areas versus schools in lower-income areas.

Added discussion of the impact the Black Lives Matter movement had on addressing issues of social justice and education inequality.

Enhanced information of the benefits and drawbacks for heritage language learners.

Enhanced information describing the advancements of technology use for teaching, learning, and communicating amidst the pandemic.

New paragraph on the gap closing between gender differences observed in STEM.

Updated information on gender differences on SAT scores.

Enhanced information on gender bias in schools, in particular, teachers’ bias.

Updated number of single-sex public schools in the United States and the number of girls participating in high school sports.

Chapter 6:

Added statistics about the reduction in budget allocations for gifted education in Texas during NCLB.

Chapter 7:

Enhanced section on the prevalence of spanking by parents.

Updated statistics from the National Center for Education.

Chapter 8:

New study about working memory predicting achievement in middle schoolers.

New study about computer-based training in math and working memory improving reading and math achievement.

Chapter 9:

New information from studies about the benefits of mindfulness-based interventions for children and young adults.

Chapter 10:

Updated research findings about the Reading Recovery program, PALS, and CWT.

New studies supporting cooperative learning approach for mathematical problem solving and mitigating the negative effects of reward-removal.

New recommendation to improve equal dialogue among heterogeneous student groups.

Chapter 11:

Updated statistics from the National Assessment of Educational Progress.

New study about reading fluency and comprehension in third and fifth graders.

Updated website URLs for Technology Resources.

Chapter 12:

Enhanced information about how technology gaps may have increased the homework gap for Black teens during the pandemic.

Added information about the importance of communication between teachers and families.

New research about the benefits of integrating augmented reality into problem-based learning activities.

Chapter 13:

Added information about the importance of school belonging, as well as the associations of intrinsic and extrinsic motivation with academic achievement and well-being.

Updates related to the Every Student Succeeds Act.

New research on increasing young children's ability to delay gratification.

Enhanced information about gender and racial biases about students' mathematical abilities.

Chapter 14:

Added information and research about Kahoot!, a flexible student response system that makes quizzing into a game.

Added information and research about restorative justice as a framework for equitable classroom management.

New information about the amount of instructional days students miss due to out-of-school suspensions, by race.

Updated research findings on mentoring.

Added recent findings on the impacts of bullying.

Chapter 15:

Added discussion on how state tests are used as standards-based tests.

Added updates related to the Every Student Succeeds Act.

Included more recent scores for international assessments.

Chapter 16:

Added research connecting self-assessment to self-regulated learning.

Included information about how technology can support the application of universal design for learning as well as enhance accessibility of assessments.

Updated research on grade inflation.

ACKNOWLEDGMENTS

We are deeply indebted to many people at McGraw-Hill who have provided outstanding guidance and support for this text. We especially thank Marketing Manager Kim Schroeder-Freund, for the guidance and support she has provided; Product Development Manager Francesca King, who did excellent work in coordinating many aspects of editing for this project; and also Content Project Manager Lisa Brufoldt and Content Licensing Specialist Gina Oberbroeckling, and the Lumina Datamatics team, who handled developmental editing for this edition of the book, have been terrific to work with and did an excellent job in guiding and editing the revision of the manuscript. We thank Nancy DeFrates-Densch Northern Illinois University, whose experience and understanding of translating theory into practice clearly came through in the examples she created for “Teaching Connections: Best Practices and Strategies for . . .” in every chapter in the text. Nancy also contributed extensively to the book by writing the case studies, the PRAXIS™ Practice items, and creating many examples of Best Practices. Thanks also to the reviewers of this edition: Roy Fish, Zane State College; Tyson Holder, College of DuPage; Kim Marman, University of Mary; Tony Boyd, Maysville Community and Technical College; Dr. Dominique Charlotteaux, Broward College; John Gillham, University of Findlay; Sharon Stringer, Youngstown State University; Vicki Schmidt, McPherson College; Haley Turner, University of the Cumberland; Casey Hamilton, Owensboro Community & Technical College; Christy Tidd, Southwestern Michigan College; Coverna Francis-Denton, Rowan College at Burlington County; and Susan Burden, Moberly Area Community College.

On pages xix–xx of the preface the numerous expert content and research consultants for the book are profiled. As stated earlier, their feedback was invaluable in helping to make the book's content superior to what could have been accomplished alone.

Peer Reviewers from Previous Editions

In developing the prior editions of *Educational Psychology*, we asked a number of educational psychology instructors to provide us with detailed information about the best ways to improve the text. Their recommendations were extremely helpful. Special thanks go to the following peer reviewers of previous editions.

Frank Adams, *Wayne State College*

Irene Aiken, *The University of North Carolina at Pembroke*

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Melissa Lorenson Barstow, *Community College of Rhode Island*

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Richard Benedict, *Madonna University*

John T. Binfet, *California State University–San Bernardino*

Lyanne Black, *Indiana University of PA*

Christopher S. Boe, *Pfeiffer University*

Joseph Braun, *California State University–Dominguez Hills*

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Randy Brown, *University of Central Oklahoma*

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Elizabeth F. Wisner, *Florida Community College at Jacksonville*
Jina Yoon, *Wayne State University*
Michael Young, *University of Connecticut*
Peter Young, *Southern Oregon University*
Steven Yussen, *University of Minnesota*
Samuel Zimmerman, *Pace University*

Early Childhood, Elementary School, and Secondary School Teachers

Following are the outstanding teachers who provided descriptions of their real-world experiences in the classroom for the Developmental Focus feature that appears one or more times in each chapter.

Keren Abra, *School of the Sacred Heart, San Francisco, CA*
Connie Christy, *Aynor Elementary School (Preschool Program), Aynor, SC*
Maureen “Missy” Dangler, *Suburban Hills School, Chatham, NJ*
Mark Fodness, *Bemidji Middle School, Bemidji, MN*
Elizabeth J. Frascella, *Clinton Elementary, Chatham, NJ*
Susan M. Froelich, *Clinton School, Maplewood, NJ*
Valerie Gorham, *Kiddie Quarters, Union, NJ*
Jennifer Heiter, *Bremen High School, Bremen, IN*
Craig Jensen, *Cooper Mountain Elementary, Portland, OR*
Heidi Kaufman, *MetroWest YMCA Child Care and Educational Program, Framingham, MA*
Esther Lindbloom, *Cooper Mountain Elementary, Beaverton, OR*
Casey Maass, *Edison Middle School, West Orange, NJ*
Karen L. Perry, *Cooper Mountain Elementary, Portland, OR*
Dennis Peterson, *Deer River High School, Bemidji, MN*
Felicia Peterson, *Pocantico Hills School, Sleepy Hollow, NY*
Janine Guida Poutre, *Clinton Elementary, Chatham, NJ*
Shane Schwarz, *Clinton Elementary, South Orange, NJ*
Sandy Swanson, *Menomonee Falls High School, Menomonee Falls, WI*
Heather Zoldak, *Ridge Wood Elementary School, Northville, MI*

Expert Consultants From Previous Editions

A number of leading experts in the field of educational psychology provided detailed comments about chapters and topics in their areas of expertise. Special thanks go to the following expert consultants who contributed to previous editions.

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Gary Bitter, *Arizona State University*
Joyce Epstein, *Johns Hopkins University*
Carlos Diaz, *Florida Atlantic University*
Eva Essa, *University of Nevada, Reno*
Carolyn Evertson, *Vanderbilt University*
Kenji Hakuta, *Stanford University*
Daniel Hallahan, *University of Virginia*
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Richard Mayer, *University of California—Santa Barbara*
Barbara McCombs, *University of Denver*
James McMillan, *Virginia Commonwealth University*
Valerie Pang, *San Diego State University*
Michael Pressley, *University of Notre Dame*
Dale Schunk, *University of North Carolina—Greensboro*
Robert Siegler, *Carnegie Mellon University*
Karen Swan, *Kent State University*

Panel of Early Childhood, Elementary, Middle, and High School Teachers

A large panel of individuals who teach at the early childhood, elementary, middle, and high school levels provided the material about special teaching moments that they have experienced. These moments appear in the Teaching Stories and Best Practices boxes throughout the text. We owe these teachers a great deal of thanks for sharing the real world of their teaching experiences.

Karen Abra, *School of the Sacred Heart, San Francisco, CA*
Mrs. Lou Aronson, *Devils Lake High School, Devils Lake, ND*
Daniel Arnoux, *Lauderhill Middle Community School, Broward, FL*
Lynn Ayres, *East Middle School, Ypsilanti, MI*
Fay Bartley, *Bright Horizon Children’s Center, Bronx, NY*
Barbara M. Berry, *Ypsilanti High School, Ypsilanti, MI*
Kristen Blackenship, *Salem Church Elementary, Midlothian, VA*
Wendy Bucci, *Sugar Creek Elementary School, Verona, WI*
Stella Cohen, *Hackley School, Tarrytown, NY*
Connie Christy, *Aynor Elementary, Aynor, SC*
Julie Curry, *Hubbard Elementary School, Forsyth, GA*
Alina Durso, *PS 59-Beekman Hill International School, New York, NY*
Andrea Fenton, *Cortez High School, Glendale Union, AZ*
Mark Fodness, *Bemidji Middle School, Bemidji, MN*
Kathy Fuchser, *St. Francis High School, Humphrey, NE*
Lawren Giles, *Baechtel Grove Middle School, Bibb County, GA*
Jerri Hall, *Miller Magnet Middle School, Bibb County, GA*
Jenny Heiter, *Bremen High School, Bremen, IN*
Anita Marie Hitchcock, *Holley Navarre Primary, Santa Rosa Schools, FL*
Laura Johnson-Brickford, *Nordhoff High School, Ojai, CA*
Heidi Kaufman, *Associate Executive Director of Childcare, MetroWest YMCA, Framingham, MA*
Juanita Kerton, *Gramercy School/New York League for Early Learning, New York, NY*
Chaille Lazar, *Hedgecoxe Elementary, Plano, TX*
Margaret Longworth, *St. Lucie West Middle School, St. Lucie, FL*
Adriane Lonzarich, *Heartwood, San Mateo, CA*
RoseMary Moore, *Angelo State University, Angelo, TX*
Therese Olejniczak, *Central Middle School, East Grand Forks, MN*
Dennis Peterson, *Deer River High School, Bemidji, MN*
Chuck Rawls, *Appling Middle School, Bibb County, GA*
Verna Brown Rollins, *West Middle School, Ypsilanti, MI*
Donna L. Shelhorse, *Short Pump Middle School, Henrico County, VA*
Michele Siegal, *Brockton High School, Brockton, MA*
Jason Stanley, *Syracuse Dunbar Avoca, Syracuse, NE*
Vicky Stone, *Cammack Middle School, Huntington, VA*
Sandy Swanson, *Menomonee Falls High School, Menomonee Falls, WI*
Tamela Varney, *Central City Elementary, Cabell County, WV*
Marlene Wendler, *St. Paul’s Lutheran School, New Ulm, MN*
William Willford, *Perry Middle School, Perry, GA*
Yvonne Wilson, *North Elementary School, Deer River, MN*
Susan Youngblood, *Weaver Middle School, Bibb County, GA*
Heather Zoldak, *Ridge Wood Elementary, Northville, MI*



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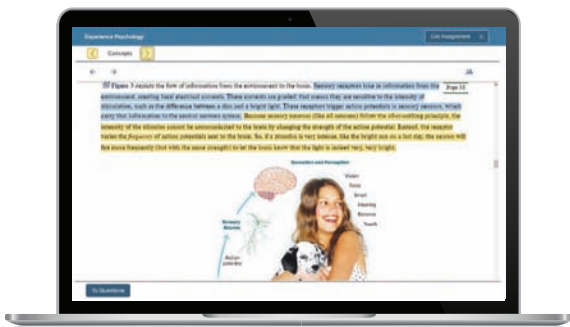
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“I really liked this app—it made it easy to study when you don't have your textbook in front of you.”

- Jordan Cunningham,
Eastern Washington University

iPhone: Getty Images



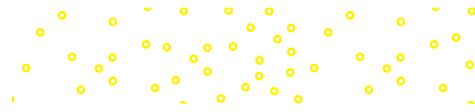
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EDUCATIONAL PSYCHOLOGY: A TOOL FOR EFFECTIVE TEACHING

chapter outline

① Exploring Educational Psychology

Learning Goal 1 Describe some basic ideas about the field of educational psychology.

Historical Background

Teaching: Art and Science

② Effective Teaching

Learning Goal 2 Identify the attitudes and skills of an effective teacher.

Professional Knowledge and Skills

Commitment, Motivation, and Caring

③ Research in Educational Psychology

Learning Goal 3 Discuss why research is important to effective teaching and how educational psychologists and teachers can conduct and evaluate research.

Why Research Is Important

Research Methods

Program Evaluation Research, Action Research, and the Teacher-as-Researcher

Quantitative and Qualitative Research

I touch the future. I teach.

—Christa McAuliffe

American Educator and Astronaut, Twentieth Century



Connecting with Teachers Margaret Metzger

Effective teachers know that principles of educational psychology and educational research will help them guide students' learning. Margaret Metzger has been an English teacher at Brookline High School, in Massachusetts, for more than 25 years. She gave the following advice to a student teacher she was supervising, and it conveys her understanding of basic principles of educational psychology, such as teaching how to learn and the need to apply educational research to teaching practice:

Emphasize *how* to learn, rather than what to learn. Students may never know a particular fact, but they always will need to know how to learn. Teach students how to read with a genuine comprehension, how to shape an idea, how to master difficult material, how to use writing to clarify thinking. A former student, Anastasia Korniaris, wrote to me, "Your class was like a hardware store. All the tools were there. Years later I'm still using that hardware store that's in my head. . . ."

Include students in the process of teaching and learning. Every day ask such basic questions as, "What did you think of this

homework? Did it help you learn the material? Was the assignment too long or too short? How can we make the next assignment more interesting? What should the criteria for assessment be?" Remember that we want students to take ownership of their learning. . . .

Useful research has been conducted lately on learning styles and frames of intelligence. Read that research. The basic idea to keep in mind is that students should think for themselves. Your job is to teach them how to think and to give them the necessary tools. Your students will be endlessly amazed at how intelligent they are. You don't need to show them how intelligent you are. . . .

In the early years of teaching you must expect to put in hours and hours of time. You would invest similarly long hours if you were an intern in medical school or an associate in a law firm. Like other professionals, teachers work much longer hours than outsiders know. . . .

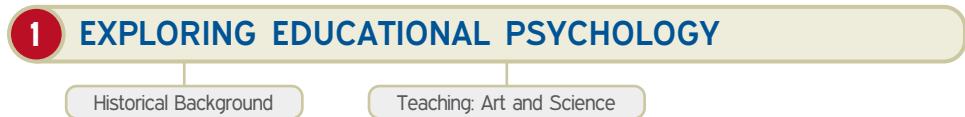
You have the potential to be an excellent teacher. My only concern is that you not exhaust yourself before you begin. Naturally, you will want to work very hard as you learn the craft.

Source: Metzger, M. (1996). Maintaining a life. *Phi Delta Kappan*, 77(5), 346–351.

Preview

In the quotation that opens this chapter, twentieth-century teacher and astronaut Christa McAuliffe commented that she touched the future through her chosen profession of teaching. As a teacher, you will touch the future because children are the future of any society. In this chapter, we explore what the field of educational psychology is all about and how it can help you make a positive contribution to children's futures.

LG 1 Describe some basic ideas about the field of educational psychology.



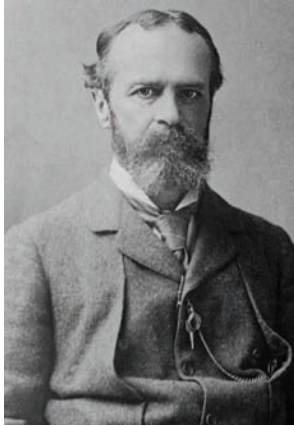
Psychology is the scientific study of behavior and mental processes. **Educational psychology** is the branch of psychology that specializes in understanding teaching and learning in educational settings. Educational psychology is a vast landscape that will take us an entire book to describe.

HISTORICAL BACKGROUND

The field of educational psychology was founded by several pioneers in psychology just before the start of the twentieth century. Three pioneers—William James, John Dewey, and E. L. Thorndike—stand out in the early history of educational psychology.

William James Soon after launching the first psychology textbook, *Principles of Psychology* (1890), William James (1842–1910) gave a series of lectures called “Talks to Teachers” (James, 1899/1993) in which he discussed the applications of psychology to educating children. James argued that laboratory psychology experiments often can't tell us how to teach children effectively. He emphasized the importance of observing teaching and learning in classrooms for improving education. One of his

educational psychology The branch of psychology that specializes in understanding teaching and learning in educational settings.



William James



John Dewey



E. L. Thorndike

James, Dewey, and Thorndike created and shaped the field of educational psychology. *What were their ideas about educational psychology?*

(Left to Right) Paul Thompson/FPG/Getty Images; Hulton Archive/Archive Photos/Getty Images; The Popular Science Monthly, 1912

recommendations was to start lessons at a point just beyond the child's level of knowledge and understanding to stretch the child's mind.

John Dewey A second major figure in shaping the field of educational psychology was John Dewey (1859–1952), who became a driving force in the practical application of psychology. In 1894 at the University of Chicago, Dewey established the first major educational psychology laboratory in the United States. Later, at Columbia University, he continued his innovative work. We owe many important ideas to John Dewey. First, we owe to him the view of the child as an active learner. Before Dewey, it was believed that children should sit quietly in their seats and passively learn in a rote manner. In contrast, Dewey (1933) argued that children learn best by doing. Second, we owe to Dewey the idea that education should focus on the whole child and emphasize the child's adaptation to the environment. Dewey reasoned that children should not be just narrowly educated in academic topics but should learn how to think and adapt to a world outside school. He especially thought that children should learn how to be reflective problem solvers. Third, we owe to Dewey the belief that all children deserve to have access to education. This democratic ideal was not in place at the beginning of Dewey's career in the latter part of the nineteenth century, when quality education was reserved for a small portion of children, especially boys from wealthy families. Dewey pushed for a quality education for all children—girls and boys—as well as children from different socioeconomic and ethnic groups.

E. L. Thorndike A third pioneer was E. L. Thorndike (1874–1949), who focused on assessment and measurement and promoted the scientific underpinnings of learning. Thorndike argued that one of schooling's most important tasks is to hone children's reasoning skills, and he excelled at conducting detailed scientific studies of teaching and learning. Thorndike especially promoted the idea that educational psychology must have a scientific base and should focus strongly on measurement.

Diversity and Early Educational Psychology The most prominent figures in the early history of educational psychology, as in most disciplines, were mainly White males such as James, Dewey, and Thorndike. Prior to changes in civil rights laws and policies in the 1960s, only a few dedicated non-White individuals obtained the necessary degrees and broke through racial exclusion barriers to take up research in the field (Spring, 2014; Webb & Metha, 2017).

Two pioneering African American psychologists, Mamie and Kenneth Clark, conducted research on African American children's self-conceptions and identity (Clark & Clark, 1939). In 1971, Kenneth Clark became the first African American president





Mamie and Kenneth Clark

Like other disciplines, educational psychology had few individuals who were ethnic minorities or women involved in its early history. The individuals shown here were among the few from such backgrounds to overcome barriers and contribute to the field. In celebrating their contributions, it is important to note that those who are ethnic minorities and/or female are still underrepresented in many areas of higher education and research.

Courtesy of Kate C. Harris

of the American Psychological Association. In 1932, Latino psychologist George Sanchez conducted research showing that intelligence tests were culturally biased against ethnic minority children.

Like ethnic minorities, women also faced barriers in higher education and therefore have only gradually become prominent contributors to psychological research. One often overlooked person in the history of educational psychology is Leta Stetter Hollingworth. She was the first individual to use the term *gifted* to describe children who attained exceptionally high scores on intelligence tests (Hollingworth, 1916).

The Behavioral Approach Thorndike's approach to the study of learning guided educational psychology through the first half of the twentieth century. In American psychology, B. F. Skinner's (1938) view, which built on Thorndike's ideas, strongly influenced educational psychology in the middle of the century. Skinner's behavioral approach involved attempts to precisely determine the best conditions for learning. Skinner argued that the mental processes proposed by psychologists such as James and Dewey were not observable and therefore could not be appropriate subject matter for a scientific study of psychology, which he defined as the science of observable

behavior and its controlling conditions. In the 1950s, Skinner (1954) developed the concept of *programmed learning*, which involved reinforcing the student after each of a series of steps until the student reached a learning goal. In an early technological effort, he created a teaching machine to serve as a tutor and reinforce students for correct answers (Skinner, 1958).

The Cognitive Revolution The objectives spelled out in the behavioral approach to learning did not address many of the actual goals and needs of classroom educators (Hilgard, 1996). In reaction, as early as the 1950s, Benjamin Bloom created a taxonomy of cognitive skills that included remembering, comprehending, synthesizing, and evaluating, which he suggested teachers should help students develop and use. The cognitive revolution in psychology began to take hold by the 1980s and ushered in an era of enthusiasm for applying the concepts of cognitive psychology—memory, thinking, reasoning, and so on—to help students learn. Thus, toward the latter part of the twentieth century, many educational psychologists returned to an emphasis on the cognitive aspects of learning advocated by James and Dewey at the beginning of the century. Both cognitive and behavioral approaches—especially cognitive—continue to be a part of educational psychology today (Dunlosky & Rawson, 2019; Fuchs et al. (2016a, 2016b, 2016c); Shapiro & Stolz, 2019; Wang et al., 2016). There will be much more about these approaches later in this text. More recently, educational psychologists have increasingly focused on the socioemotional aspects of students' lives. For example, they are analyzing the school as a social context and examining the role of culture in education (Gauvain, 2016; Jeynes, 2018; Koppelman, 2017; Rowe et al., 2016; Wentzel & Ramani, 2016; Wentzel et al., 2019). We explore the socioemotional aspects of teaching and learning in many chapters of this text.

TEACHING: ART AND SCIENCE



RESEARCH

How scientific can teachers be in their approach to teaching? Both science and the art of skillful, experienced practice play important roles in a teacher's success. Educational psychology draws much of its knowledge from broader theory and research in psychology (Graham & Taylor, 2016; Ryan & Deci, 2016). For example, the

theories of Jean Piaget and Lev Vygotsky were not created in an effort to inform teachers about ways to educate children, but in other chapters you will see that both of these theories have many applications that can guide your teaching. The field also draws from theory and research created and conducted directly by educational psychologists, and from teachers' practical experiences. For example, you will read about Dale Schunk's (2020) classroom-oriented research on self-efficacy (the belief that one can master a situation and produce positive outcomes). Educational psychologists also recognize that teaching sometimes must depart from scientific recipes, requiring improvisation and spontaneity (Borich, 2017; Parkay, 2020).

As a scientific discipline, educational psychology aims to provide you with research knowledge that you can effectively apply to teaching situations and with research skills that will enhance your understanding of the factors that influence student learning (Glesne, 2016). But your teaching will still remain an art. In addition to what you can learn from research, you will also continually make important judgments in the classroom based on your personal skills and experiences as well as the accumulated wisdom shared with you by other teachers (Estes & Mintz, 2016).

Thinking Back/Thinking Forward

Self-efficacy plays an important role in motivation. Connect to "Motivation, Teaching, and Learning."



Review, Reflect, and Practice

- 1 Describe some basic ideas about the field of educational psychology.

REVIEW

- How is educational psychology defined? Who were some key thinkers in the history of educational psychology, and what were their ideas?
- How would you describe the roles of art and science in the practice of teaching?

REFLECT

- John Dewey argued that children should not sit quietly in their seats and learn in a rote manner. Do you agree with Dewey? Why or why not?

PRAXIS™ PRACTICE

- Mr. Smith believes that all children are entitled to an education and that this education should focus on the whole child. His views are most consistent with those of
 - Benjamin Bloom
 - John Dewey
 - B. F. Skinner
 - E. L. Thorndike
- Four teachers are discussing the influences that contribute to effective teaching. Which of the following four statements is likely to be most accurate?
 - Applying information from scientific research is the most important factor in being an effective teacher.
 - You can't beat a teacher's own personal experiences for becoming an effective teacher.
 - Being an effective teacher is influenced by scientific research knowledge, teaching skills, and personal experiences.
 - A teacher's innate skills trump all other factors in being an effective teacher.

Please see answer key at end of chapter

Informed by formal and informal data about her students, this teacher selects evidence-based teaching practices to implement in her classroom. With a fine balance of self-reflection and classroom monitoring, she is often successful in engaging students from diverse backgrounds and skill levels in collaborative problem solving. *To what extent is her teaching likely art, science, or both?*

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LG 2 Identify the attitudes and skills of an effective teacher.**2** EFFECTIVE TEACHING

Professional Knowledge and Skills

Commitment, Motivation, and Caring

Because of the complexity of teaching and individual variation among students, effective teaching is not achievable through a “one size fits all” prescription. Teachers must master a variety of perspectives and strategies and be flexible in their application. This requires the following key ingredients: (1) professional knowledge and skills, and (2) commitment, motivation, and caring.

PROFESSIONAL KNOWLEDGE AND SKILLS

Effective teachers have good command of their subject matter and a solid core of teaching skills (Mayer & Alexander, 2017). They have excellent instructional strategies supported by methods of goal setting, instructional planning, and classroom management. They know how to motivate, communicate, and work effectively with students who have different levels of skills and come from culturally diverse backgrounds. Effective teachers also understand how to use appropriate levels of technology in the classroom.

Subject-Matter Competence In their lists of the characteristics of effective teachers characteristics, secondary school students have consistently mentioned teachers’ knowledge of the subject (NASSP, 1997; Williams et al., 2012). Having a thoughtful, flexible, conceptual understanding of subject matter is indispensable for being an effective teacher (Hamilton & Duschi, 2017). Of course, knowledge of subject matter includes more than just facts, terms, and general concepts. It also includes knowledge about organizing ideas, connections among ideas, ways of thinking and arguing, patterns of change within a discipline, beliefs about a discipline, and the ability to carry ideas from one discipline to another. Clearly, having a deep understanding of the subject matter is an important aspect of being a competent teacher (Anderman & Klassen, 2016; Burden & Byrd, 2016; Guillaume, 2016).

Instructional Strategies At a broad level, two major approaches characterize how teachers teach: constructivist and direct instruction. The constructivist approach was at the center of James’s and Dewey’s philosophies of education. The direct instruction approach has more in common with Thorndike’s view.

The **constructivist approach** is a learner-centered approach that emphasizes the importance of individuals actively constructing their knowledge and understanding with guidance from the teacher. In the constructivist view, teachers should not attempt to simply pour information into children’s minds. Rather, children should be encouraged to explore their world, discover knowledge, reflect, and think critically with careful monitoring and meaningful guidance from the teacher (Robinson-Zanartu et al., 2015; Van de Walle et al., 2016). Constructivists argue that for too long children have been required to sit still, be passive learners, and rote memorize irrelevant as well as relevant information (Parkay, 2020).

Today, constructivism may include an emphasis on *collaboration*—children working with each other in their efforts to know and understand (Gauvain, 2016). A teacher with a constructivist instructional philosophy would not have children memorize information rote but would give them opportunities to meaningfully construct knowledge and understand the material while guiding their learning (Bendixen, 2016).

By contrast, the **direct instruction approach** is a structured, teacher-centered approach characterized by teacher direction and control, high teacher expectations for students’ progress, maximum time spent by students on academic tasks, and efforts by the teacher to keep negative affect to a minimum. An important goal in the direct instruction approach is maximizing student learning time (Borich & Blanchette, 2022; Joyce et al., 2015).

Some experts in educational psychology emphasize that many effective teachers use both a constructivist *and* a direct instruction approach rather than relying exclusively on

constructivist approach A learner-centered approach to learning that emphasizes the importance of individuals actively constructing knowledge and understanding with guidance from the teacher.

direct instruction approach A structured, teacher-centered approach characterized by teacher direction and control, high teacher expectations for students’ progress, maximum time spent by students on academic tasks, and efforts by the teacher to keep negative affect to a minimum.

one or the other (Darling-Hammond & Bransford, 2005). Further, some circumstances may call for a constructivist approach, others for a direct instruction approach. For example, experts increasingly recommend an explicit, intellectually engaging direct instruction approach when teaching students who have a reading or a writing disability (Berninger et al., 2015; Berninger et al., 2015). Whether you teach more from a constructivist approach or more from a direct instruction approach, you can be an effective teacher.

Thinking Skills Effective teachers model and communicate good thinking skills. Among the most important thinking skills for teachers to engage in and guide their students in developing are **critical thinking** skills, which involve thinking reflectively and productively and evaluating evidence. Getting students to think critically is not easy; many students develop a habit of passively learning material and rote memorizing concepts rather than thinking deeply and reflectively (Sternberg & Sternberg, 2017). Thinking critically also means being open-minded and curious on the one hand, yet being careful to avoid making mistakes in interpreting something.

Throughout this text, we will encourage you to think critically about topics and issues. At the end of each main section in a chapter, you will encounter “Reflect” questions related to a topic that you have just read about. In the chapter “Complex Cognitive Processes,” you will read more extensively about critical thinking and other higher-level thinking processes such as reasoning, decision making, and creative thinking, and you will learn how to encourage your students’ critical thinking by building it into your lessons.

Goal Setting and Instructional Planning Whether they take a constructivist or more traditional approach, effective teachers don’t just “wing it” in the classroom. They set high goals for their teaching and organize plans for reaching those goals (Senko, 2016). They also develop specific criteria for success. They spend considerable time in instructional planning, organizing their lessons to maximize students’ learning (Burden & Byrd, 2016). As they plan, effective teachers reflect and think about how they can make learning both challenging and interesting. Good planning requires consideration of the kinds of information, demonstrations, models, inquiry opportunities, discussion, and practice students need over time to understand particular concepts and develop particular skills. Although research has found that all of these features can support learning, the process of instructional design requires that teachers figure out which things students should do when, in what order, and how (Darling-Hammond et al., 2005). The growing emphasis on blended and online learning, particularly in high schools, highlights the role of teachers as instructional designers (Gyabak et al., 2015). Online learning, however, should not be confused with emergency remote teaching, which became widespread during the COVID-19 pandemic and revealed the need to better prepare teachers to make the transition to remote instruction (Hodges et al., 2020; Trust & Whalon, 2020).

Developmentally Appropriate Teaching Practices Competent teachers have a good understanding of children’s development and know how to create instructional materials appropriate for their developmental levels (Bredekamp, 2017; Morrison, 2017). U.S. schools are organized by grade and to some degree by age, but these are not always good predictors of children’s development.

At any grade level, there is usually a two- or three-year span of ages with an even wider span of skills, abilities, and developmental stages. Understanding developmental pathways and progressions is extremely important for teaching in ways that are optimal for each child (Feeny et al., 2016).

Throughout this text, your attention will be drawn to developmental aspects of educating children and examples of teaching and learning that take into account a child’s



What characterizes constructivist and direct instruction approaches to educating students?

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Thinking Back/Thinking Forward

In planning, teachers need to figure out which things students should do, when, in what order, and how. Connect to “Planning, Instruction, and Technology.”



critical thinking Thinking reflectively and productively and evaluating the evidence.

developmental level. Two chapters are devoted exclusively to development: “Cognitive and Language Development” and “Social Contexts and Socioemotional Development.”

Classroom Management Skills An important aspect of being an effective teacher is keeping the class as a whole working together and oriented toward classroom tasks (Emmer et al., 2022). Effective teachers establish and maintain an environment in which learning can occur. To create this optimal learning environment, teachers need a repertoire of strategies for establishing rules and procedures, organizing groups, monitoring and pacing classroom activities, and handling misbehavior (Evertson et al., 2022; Jones & Jones, 2016; see also “Managing the Classroom” chapter in this book).

Motivational Skills Effective teachers have good strategies for helping students become self-motivated and take responsibility for their learning (Kitsantas & Cleary, 2016; Soloman & Anderman, 2017; Wentzel & Miele, 2016). Educational psychologists increasingly stress that this is best accomplished by providing real-world learning opportunities of optimal difficulty and novelty for each student. Students are motivated when they can make choices in line with their personal interests. Effective teachers give them the opportunity to think creatively and deeply about projects.

In addition to guiding students to become self-motivated learners, it is essential to establish high expectations for students’ achievement (Schunk & DiBenedetto, 2016a, 2016b). High expectations for children’s achievement need to come from teachers and parents. Too often children are rewarded for inferior or mediocre performance, and as a result they do not reach their full potential. When high expectations are created, a key aspect of education is to provide children—especially low-achieving children—effective instruction and support to meet these expectations. The chapter, “Motivation, Teaching, and Learning,” covers the topic of motivation in detail.

Thinking Back/Thinking Forward

The best teachers have very few discipline problems, not because they are great disciplinarians but because they are great teachers. Connect to “Managing the Classroom.”

Communication Skills Also indispensable to teaching are skills in speaking, listening, overcoming barriers to verbal communication, tuning in to students’ nonverbal communication, and constructively resolving conflicts (Beebe et al., 2017; Zarefsky, 2017). Communication skills are critical not only in teaching but also in interacting with parents. Effective teachers use good communication skills when they talk “with” rather than “to” students, parents, administrators, and others; keep criticism at a minimum; and have an assertive rather than aggressive, manipulative, or passive communication style. Effective teachers work to improve students’ communication skills as well. This is especially important because communication skills have been rated as the skills most sought after by today’s employers. More on this in “Managing the Classroom” chapter in this book.



Amber Larkin helps fifth-grade student Miya Kpa improve his academic skills. What are some strategies for paying more than lip service to individual variation in students?

Davis Turner

Paying More Than Lip Service to Individual Variations Virtually every teacher knows that it is important to take individual variations into account when teaching, but this is not always easy to do. Your students will have varying levels of intelligence and have different learning preferences, temperaments, and personality traits (Bryce et al., 2018; Sternberg, 2016a). You also are likely to have some gifted students and others with disabilities of various types (Van Tassel-Baska, 2015).

Consider Amber Larkin’s challenges and experiences as a beginning teacher (Wong Briggs, 2007). Her classroom was housed in a trailer, and her students included children who were homeless, non-English speaking, had disabilities, or were refugees who had never worn shoes or experienced any type of formal education. After four years of teaching, she was named one of *USA Today*’s National All-Star Teachers. Almost all of her students pass state-mandated No Child Left Behind tests, but she is just as pleased about her students’ socioemotional growth. Her principal described her in the following manner: “There’s an unspoken

aura that great things are going to happen, and that's how she goes about her day” (Wong Briggs, 2007, p. 6D).

Effectively teaching students with such diverse characteristics requires much thought and effort. **Differentiated instruction** involves recognizing individual variations in students' knowledge, readiness, interests, and other characteristics, and taking these differences into account in planning curriculum and engaging in instruction (Taylor, 2015). Differentiated instruction emphasizes tailoring assignments to meet students' needs and abilities. It is unlikely that a teacher can generate 20 to 30 different lesson plans to address the needs of each student in a classroom. However, differentiated instruction advocates discovering “zones” or “ballparks” in which students in a classroom cluster, thus providing three or four types/levels of instruction rather than 20 to 30. Response to Intervention (RTI) can support this process of differentiation to meet students' needs. In the chapters titled “Individual Variations” and “Learners Who Are Exceptional,” we provide strategies to help you guide students with different levels of skills and different characteristics to learn effectively.

Working Effectively with Students from Culturally Diverse Backgrounds Today, one of every five children in the United States is from an immigrant family, and by 2040 it is estimated that one of every three U.S. children will fit this description. Nearly 80 percent of the new immigrants are people of color from Latin America, Asia, and the Caribbean. Approximately 75 percent of the new immigrants are of Spanish-speaking origin, although children speaking more than 100 different languages are entering U.S. schools. In today's world of increasing intercultural contact, effective teachers are knowledgeable about people from different cultural backgrounds and are sensitive to their needs (Bucher, 2015; Koppelman, 2020). Effective teachers encourage students to have positive personal contact with diverse students and think of ways to create such settings. They guide students in thinking critically about cultural and ethnic issues, forestall or reduce bias, cultivate acceptance, and serve as cultural mediators (Gollnick & Chinn, 2021). Effective teachers also consider culturally relevant education, which is “committed to collective empowerment and social justice” (Aronson & Laughter, 2016, p. 164). An effective teacher also needs to be a broker, or middle person, between the culture of the school and the culture of certain students, especially those who are unsuccessful academically (Sarraj et al., 2015).

Here are cultural questions that competent teachers ask themselves (Pang, 2005):

- Do I recognize the power and complexity of cultural influences on students?
- Are my expectations for my students culturally based or biased?
- Am I doing a good job of seeing life from the perspective of students who come from cultures different from my own?
- Am I teaching the skills students may need to develop in order to talk in class if their culture is one in which they have little opportunity to practice “public” talking?
- Are my assessments fair and unbiased?

Assessment Knowledge and Skills Competent teachers also have good assessment knowledge and skills. There are many aspects to effectively using assessment in the



What are some strategies effective teachers use regarding diversity issues?

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Thinking Back/Thinking Forward

Teachers can follow a number of guidelines for effective multicultural teaching. Connect to “Sociocultural Diversity.”

differentiated instruction Involves recognizing individual variations in students' knowledge, readiness, interests, and other characteristics, and taking these differences into account when planning curriculum and engaging in instruction.