# EDUCATIONAL PSYCHOLOGY

# DEVELOPING LEARNERS

# JEANNE ELLIS ORMROD

University of Northern Colorado (Emerita)

# ERIC M. ANDERMAN

The Ohio State University

### LYNLEY ANDERMAN

The Ohio State University

**NINTH EDITION** 

**GLOBAL EDITION** 



Pearson

ous Indianapolis New York San Francisco

Boston Columbus Indianapolis New York San Francisco Amsterdam Cape Town Dubai London Madrid Milan Munich Paris Montreal Toronto Delhi Mexico City São Paulo Sydney Hong Kong Seoul Singapore Taipei Tokyo



# **Brief Contents**

1	Teaching and Educational Psychology 22
PART I	DEVELOPMENT AND DIVERSITY
2	Cognitive and Linguistic Development 40
3	Personal and Social Development 76
4	Group Differences 116
5	Individual Differences and Special Educational Needs 148
PART II	LEARNING AND MOTIVATION
6	Learning, Cognition, and Memory 190
7	Complex Cognitive Processes 232
8	Learning and Cognition in Context 268
9	Behaviorist Views of Learning 308
10	Social Cognitive Views of Learning 342
11	Motivation and Affect 378
PART III	CLASSROOM STRATEGIES
12	Instructional Strategies 432
13	Creating a Productive Learning Environment 476
14	Classroom Assessment Strategies 516
15	Summarizing Students' Achievements and Abilities 560
Appendix A: Appendix B:	Describing Associations with Correlation Coefficients 598  Determining Reliability and Predictive Validity 600
Appendix C:	Matching Book and MyEdLab Content to the Praxis® Principles of Learning and Teaching Tests 603



# Contents

# Teaching and Educational Psychology 22

Case Study: The "No D" Policy 23

Teaching as Evidence-Based Practice 24

Understanding and Interpreting Research Findings 26

Quantitative Research 26

Qualitative Research 29

Mixed-Methods Research 30

Interpreting Research Results: A Cautionary Note 31

From Research to Practice: The Importance of Principles and Theories 31

Collecting Data and Drawing Conclusions about Your Own Students 33

Assessing Students' Achievements and Interpreting their Classroom Behaviors 33

Conducting Action Research 33

Developing as a Teacher 34

Strategies for Studying and Learning Effectively 36

### — PART I ———

# DEVELOPMENT AND DIVERSITY

# Cognitive and Linguistic Development 40

Case Study: Apple Tarts 41

General Principles of Human Development 42

The Multiple Layers of Environmental Influence: Bioecological Systems and the Importance of Culture 43

Role of the Brain in Learning and Development 45 Piaget's Theory of Cognitive Development 47

Piaget's Basic Assumptions 49

Piaget's Proposed Stages of Cognitive Development 50 Critiquing Piaget's Theory 55

Considering Diversity From the Perspective of Piaget's Theory 56

Contemporary Extensions and Applications of Piaget's Theory 56

### Vygotsky's Theory of Cognitive Development 59

Vygotsky's Basic Assumptions 59

Critiquing Vygotsky's Theory 62

Considering Diversity from the Perspective of Vygotsky's Theory 63

Contemporary Extensions and Applications of Vygotsky's Theory 63

Contrasting Piaget's and Vygotsky's Theories 67

### Language Development 68

Theoretical Issues Regarding Language
Development 68

Diversity in Language Development 70

Second-Language Learning and English Language Learners 71

## 3 Personal and Social Development 76

# Case Study: Hidden Treasure 77 Personality Development 78

Temperament 78

Environmental Influences on Personality
Development 78

The "Big Five" Personality Traits 81

Temperament, Personality, and Goodness of Fit 82

### Development of a Sense of Self 82

Factors Influencing Sense of Self 83

Developmental Changes in Sense of Self 84

Diversity in Sense of Self 87

### Development of Peer Relationships and Interpersonal Understandings 89

Roles of Peers in Children's Development 89

Common Social Groups in Childhood and Adolescence, 91

Popularity and Social Isolation 93

Social Cognition 94

Aggression 97

Technology and Peer Relationships 98

Diversity in Peer Relationships and Social Cognition 99

Promoting Healthy Peer Relationships 100

### Moral and Prosocial Development 103

Developmental Trends in Morality and Prosocial Behavior 103

Factors Influencing Moral and Prosocial Development 107

Diversity in Moral and Prosocial Development 108 Encouraging Moral and Prosocial Development

# 4 Group Differences 116

at School 109

Case Study: Why Jack Wasn't in School 117 Cultural and Ethnic Differences 119

Navigating Different Cultures at Home and at School 120

Examples of Cultural and Ethnic Diversity 121

Creating a Culturally Inclusive Classroom Environment 126

### Gender Differences 132

Research Findings Regarding Gender Differences 132

Origins of Gender Differences 135

Making Appropriate Accommodations for Gender Differences 137

### Socioeconomic Differences 138

Challenges Associated with Poverty 139

Fostering Resilience 141

Working with Homeless Students 142

#### Students at Risk 143

Characteristics of Students at Risk 143 Why Students Drop Out 144 Supporting Students at Risk 144

## 5 Individual Differences and Special Educational Needs 148

Case Study: Tim 149 Intelligence 149

Theoretical Perspectives of Intelligence 150

Measuring Intelligence 154

Nature and Nurture in the Development of Intelligence 156

Cultural and Ethnic Diversity in Intelligence 157

Being Smart about Intelligence and IQ Scores 157

### Cognitive Styles and Dispositions 159

Do Students have Distinct Learning Styles? 159

Does it Make Sense to Teach to Students' "Right Brains" or "Left Brains"? 160

Analytic and Holistic Thinking 160

# Educating Students with Special Needs in General Education

Public Law 94-142: Individuals with Disabilities Education Act (IDEA) 162

Potential Benefits and Drawbacks of Inclusion 163

Identifying Students' Special Needs: Response to Intervention and People-First Language 164

### Students with Specific Cognitive or Academic Difficulties 165

Learning Disabilities 165

Attention-Deficit Hyperactivity Disorder (ADHD) 168

Speech and Communication Disorders 170

General Recommendations 172

### Students with Social or Behavioral Problems 172

Emotional and Behavioral Disorders 172

Autism Spectrum Disorders 175

General Recommendations 176

# Students with General Delays in Cognitive and Social Functioning 177

Intellectual Disabilities 177

### Students with Physical or Sensory Challenges 179

Physical and Health Impairments 179

Visual Impairments 180

Hearing Loss 181

General Recommendations 182

### Students with Advanced Cognitive Development 183

Giftedness 183

Considering Diversity When Identifying and Addressing Special Needs 185

General Recommendations for Working with Students Who Have Special Needs 186

# PART II LEARNING AND MOTIVATION

# 6 Learning, Cognition, and Memory 190

Case Study: Bones 191

Basic Assumptions of Cognitive Psychology 192

A Model of Human Memory 195

The Nature of the Sensory Register 196

Moving Information to Working Memory: The Role of Attention 197

The Nature of Working (Short-Term) Memory 198

Moving Information to Long-Term Memory: Connecting New Information with Prior Knowledge 199 The Nature of Long-Term Memory 200 Learning, Memory, and the Brain 200 Critiquing the Three-Component Model 201

### Long-Term Memory Storage 201

How Knowledge Can Be Organized 203

How Declarative Knowledge Is Learned 205

How Procedural Knowledge Is Learned 209

Roles of Prior Knowledge and Working Memory in Long-Term Memory Storage 211

Encouraging a Meaningful Learning Set and Conceptual Understanding 212

Using Mnemonics in the Absence of Relevant Prior Knowledge 213

# When Knowledge Construction Goes Awry: Addressing Learners' Misconceptions 215

Obstacles to Conceptual Change 217

Promoting Conceptual Change 218

### Long-Term Memory Retrieval 219

Factors Affecting Retrieval 220

Why Learners Sometimes Forget 224

### Diversity in Cognitive Processes 226

Facilitating Cognitive Processing in Students with Special Needs 226

### 7 Complex Cognitive Processes 232

Case Study: Taking Over 233

### Metacognition and Learning Strategies 234

Effective Learning Strategies 234

Factors Affecting Strategy Use 239

Metacognitive Strategies in the Digital Age 243

Diversity, Disabilities, and Exceptional Abilities in Metacognition 244

Transfer 245

Factors Affecting Transfer 247

### Problem Solving 250

Problem Encoding 252

Problem-Solving Strategies: Algorithms and Heuristics 253

Working Memory and Problem Solving 254

Metacognition in Problem Solving 255

Using Computer Technology to Teach Problem-Solving Skills 255

### Creativity 256

Fostering Creativity 258

### Critical Thinking 259

Fostering Critical Thinking 261

Diversity in Creativity, Critical Thinking, and Other Complex Cognitive Processes 263

Accommodating Students with Special Needs 264

### 8 Learning and Cognition in Context 268

Case Study: It's All in How You Look at Things 269

Basic Assumptions of Contextual Theories 270

Social Interactions as Contexts 273

Interactions with More Advanced Individuals 273

Interactions with Peers 274

Creating a Community of Learners 275

### Cultures as Contexts 276

Schemas, Scripts, and Worldviews as Aspects of Culture 277

Communities of Practice as Aspects of Culture 279

### Society and Technology as Contexts 280

Authentic Activities 280

Technological Innovations 282

### Academic Content Domains as Contexts 285

Literacy 286

Mathematics 294

Science 296

Social Studies 300

Taking Student Diversity into Account 303

# 9 Behaviorist Views of Learning 308

Case Study: The Attention Getter 309

Basic Assumptions of Behaviorism 309

Building on Existing Stimulus–Response Associations: Classical Conditioning 311

Classical Conditioning of Involuntary Emotional Responses 313

Common Phenomena in Classical Conditioning 313

Addressing Counterproductive Emotional Responses 314

### Learning from Consequences: Instrumental Conditioning 314

Contrasting Classical Conditioning and Instrumental Conditioning 315

The Various Forms That Reinforcement Can Take 316

The Various Forms That Punishment Can Take 321

### Strategies for Encouraging Productive Behaviors 324

Using Reinforcement Effectively 324

Shaping New Behaviors 329

Bringing Antecedent Stimuli and Responses into the Picture 330

### Strategies for Discouraging Undesirable Behaviors 331

Creating Conditions for Extinction 332

Cueing Inappropriate Behaviors 332

Reinforcing Incompatible Behaviors 332

Using Punishment When Necessary 333

### Addressing Especially Difficult Classroom Behaviors 334

Applied Behavior Analysis 334

Functional Analysis 335

Positive Behavioral Interventions and Supports 336

Diversity in Student Behaviors and Reactions to Consequences 337

Accommodating Students with Special Needs 339

# 10 Social Cognitive Views of Learning 342

Case Study: Parlez-Vous Français? 343

Basic Assumptions of Social Cognitive Theory 343

The Social Cognitive View of Reinforcement and Punishment 345

### Modeling 348

Behaviors and Skills That Can Be Learned through Modeling 349

Characteristics of Effective Models 350

Essential Conditions for Successful Modeling 351

### Self-Efficacy 353

How Self-Efficacy Affects Behavior and Cognition 354 Factors in the Development of Self-Efficacy 355 Teacher Self-Efficacy 358

### Self-Regulation 359

Self-Regulated Behavior 360 Self-Regulated Learning 365 Self-Regulated Problem Solving 367

Diversity in Self-Regulation 368

Revisiting Reciprocal Causation 372

Comparing Theoretical Perspectives of Learning 374

# Motivation and Affect 378

Case Study: Passing Algebra 379

The Nature of Motivation 380

Intrinsic versus Extrinsic Motivation 381

Early Views of Basic Human Needs 384

Arousal 385

### Cognitive and Sociocultural Factors in Motivation 385

Expectancies and Values 386

Interests 387

Self-Determination Theory 388

Diversity in Addressing Needs 394

Attributions 396

Goals 400

Mindsets 406

Diversity in Cognitive and Sociocultural Factors Affecting Motivation 408

### Effects of Teacher Attributions and Expectations on Students' Motivation 413

How Teacher Attributions and Expectations Affect Students' Achievement 414

A TARGETS Mnemonic for Remembering Motivational Strategies 416

Affect and Its Effects 418

How Affect and Motivation Are Interrelated 418

Anxiety in the Classroom 420

Diversity in Affect 425

Motivating Students in Any Environment 427

# PART III **CLASSROOM STRATEGIES**

# 12 Instructional Strategies 432

Case Study: Westward Expansion 433

General Principles That Can Guide Instruction 434

Planning for Instruction 436

Identifying the Goals of Instruction 437

Conducting a Task Analysis 441

Developing a Lesson Plan 442

Creating a Class Website to Share Goals and Facilitate Communication throughout the School Year 443

### Teacher-Directed Instructional Strategies 444

Presenting New Material through Traditional Expository Methods: Lectures and Textbooks 444

Asking Questions and Giving Feedback 446

Providing Practice through In-Class Assignments 447

Giving Homework 448

Conducting Direct Instruction 449

Promoting Mastery 450

Using Instructional Websites 452

Using Technology to Individualize Instruction 453

### Learner-Directed Instructional Strategies 454

Stimulating and Guiding Class Discussions 454

Conducting Reciprocal Teaching Sessions 456

Conducting Discovery and Inquiry Activities 458

Using Technology-Based Simulations

and Games 459

Conducting Cooperative Learning Activities 462

Structuring Peer Tutoring Sessions 465

Conducting Technology-Based Collaborative Learning Activities 468

### Taking Instructional Goals and Student Diversity into Account 468

Considering Group Differences 470
Accommodating Students with Special Needs 471

# 13 Creating a Productive Learning Environment 476

# Case Study: A Contagious Situation 477 Creating a Setting Conducive to Learning 477

Arranging the Classroom 479

Establishing and Maintaining Productive Teacher– Student Relationships 480

Creating an Effective Psychological Climate 482

Setting Limits 484

Planning Activities That Keep Students on Task 487

Monitoring What Students Are Doing 489

Modifying Instructional Strategies 490

Taking Developmental Differences into Account 490

Taking Individual and Group Differences into Account 490

# Expanding the Sense of Community Beyond the Classroom 495

Working with Other Faculty Members 495 Working with the Community at Large 496 Working with Parents 496

### Dealing with Misbehaviors 500

Ignoring Certain Behaviors 501

Cueing Students 502

Discussing Problems Privately with Students 502

Teaching Self-Regulation Skills 504

Conferring with Parents 504

Conducting Planned, Systematic Interventions 506

Taking Students' Cultural Backgrounds into Account 508

### Addressing Aggression and Violence at School 509

A Three-Level Approach 510

Addressing Gang-Related Problems 512

### 14 Classroom Assessment Strategies 516

### Case Study: The Math Test 517

### The Many Forms and Purposes of Assessment 518

Guiding Instructional Decision Making 520

Determining What Students Have Learned from Instruction 520

Evaluating the Quality of Instruction 521

Diagnosing Learning and Performance Problems 521

Promoting Learning 522

### Enhancing Learning through Ongoing Assessments and Regular Feedback 524

Including Students in the Assessment Process 526
Using Digital Technologies in Formative
Assessment 527

### Important Qualities of Good Assessments 528

Reliability 528

Standardization 530

Validity 530

Practicality 535

# Assessing Students' Progress and Achievement Both Informally and Formally 536

Informally Observing Students' Behaviors 536

Using Paper-Pencil Assessments 538

Using Performance Assessments 546

Additional Considerations in Formal Assessment 551

# Taking Student Diversity into Account in Classroom Assessments 555

Accommodating Group Differences 556
Accommodating Students with Special Needs 556

### 15 Summarizing Students' Achievements and Abilities 560

### Case Study: B in History 561

### Summarizing the Results of a Single Assessment 562

Raw Scores 562

Criterion-Referenced Scores 562

Norm-Referenced Scores 563

Using Criterion-Referenced versus Norm-Referenced Scores in the Classroom 567

### Determining Final Class Grades 568

Considering—Or Not Considering—Other Factors in Grading 571

Including Students in the Grading Process 573

### Using Portfolios 573

Types and Purposes of Portfolios 574

Benefits and Limitations of Portfolios 575

Helping Students Construct Portfolios 575

### Standardized Tests 577

Types of Standardized Tests 577

Individual versus Group Administration of Standardized

Guidelines for Choosing and Using Standardized Tests 579

Interpreting Standardized Test Scores 582

### High-Stakes Testing and Teacher Accountability 584

The U.S. No Child Left Behind Act 585

### 20 Contents

Problems with High-Stakes Testing 585 Productive Steps Forward in High-Stakes Testing 587

Taking Student Diversity into Account 588

Cultural Bias in Test Content 589 Cultural and Ethnic Differences 590

Language Differences and English Language Learners 590

Accommodating Students with Special Needs 591

Confidentiality and Communication About Assessment Results 593

# Communicating Assessment Results to Students and Parents 594

Appendix A: Describing Associations with Correlation Coefficients 598

Appendix B: Determining Reliability and Predictive Validity  $\,600\,$ 

Appendix C: Matching Book and MyEdLab Content to the Praxis® Principles of Learning and Teaching Tests 603

Glossary 626

References 638

Name Index 751

Subject Index 767