Learning and Teaching

Research-Based Methods

SIXTH EDITION

Don Kauchak
University of Utah

Paul Eggen
University of North Florida

PEARSON

Boston  Columbus  Indianapolis  New York  San Francisco  Upper Saddle River
Amsterdam  Cape Town  Dubai  London  Madrid  Milan  Munich  Paris  Montreal  Toronto
Delhi  Mexico City  Sao Paulo  Sydney  Hong Kong  Seoul  Singapore  Taipei  Tokyo
About the Authors

DON KAUCHAK
Don has taught and worked in schools and in higher education in nine different states for 35 years. He has published in a number of scholarly journals, including the Journal of Educational Research, Journal of Teacher Education, Teaching and Teacher Education, Phi Delta Kappan, and Educational Leadership. In addition to this text he has co-authored or co-edited six other books on education. He has also been a principal investigator on federal and state grants examining teacher development and evaluation practices and presents regularly at the American Educational Research Association. He currently volunteers as a tutor for first, second, and third graders in a local elementary school.

Don strongly believes in the contribution that public schools make to our democracy, and his two children benefited greatly from their experiences in state-supported K–12 schools and public institutions of higher education.

PAUL EGGEN
Paul has worked in higher education for 38 years. He is a consultant for public schools and colleges in his university service area and has provided support to teachers in 12 states. Paul has also worked with teachers in international schools in 23 countries in Africa, South Asia, the Middle East, Central America, South America, and Europe. He has published several articles in national journals, is the co-author or co-editor of six other books, and presents regularly at national and international conferences.

Paul is strongly committed to public education. His wife is a middle school teacher in a public school, and his two children are graduates of public schools and state universities.
## Contents

**Preface** ix

### Chapter 1

**Learning to Teach** 1

- Defining Good Teaching 3
- The Search for Effective Teaching 5
  - Teacher Characteristics and the Search for the Right Method 5
  - Teacher Effectiveness Research: Teachers Do Make a Difference 5
- Understanding Effective Teaching: A Focus On Student Learning 6
- Contemporary Views of Teaching and Learning 6
  - From Behaviorist to Cognitive Perspectives 6
  - Constructivism: Students as Creators of Understanding 7
- Text Themes 8
  - Standards and Accountability 8
  - Exploring Diversity: The Diversity of Our Learners 13
  - Technology and Teaching: Using Technology to Increase Student Learning 14
- Learning to Teach 14
  - The Importance of Knowledge in Teaching 15
  - Teacher Decision Making 18
  - Educational Reform 20
  - Standards-Based Professional Development 22
  - Developing a Professional Portfolio 23
- Using This Book to Learn to Teach 26

### Chapter 2

**Student Diversity** 31

- Capitalizing on Cultural Diversity 33
  - Multicultural Education: The Challenge 35
  - Theories of Minority Achievement 35
  - Culturally Responsive Teaching 38

### Language Diversity 41

- English Dialects 41
- English Language Development Programs 42
- Language Diversity in the Classroom 43

### Teaching Students with Different Learning Abilities 45

- Intelligence: What Does It Mean? 46
- Multiple Intelligences: The Work of Howard Gardner 47

### Students with Exceptionalities 48

- Inclusion 48
- Support for Classroom Teachers Who Work with Students with Exceptionalities 49
- The Exceptional Student Population 50
- Teachers’ Roles in Working with Students with Exceptionalities 52
- Adapting Instruction for Students with Exceptionalities 53

### At-risk Students 54

- Technology and Teaching: Employing Technology to Support Learners with Disabilities 55

### At-risk Students: Understanding the Problem 57

- Resiliency: Capitalizing on Student Strengths 58
- Teaching At-risk Students 58
- Motivation: The Need for Challenge 60

### Learning Styles 60

- Exploring Diversity: Urban Schools and At-risk Students 61
- Implications for Teachers 63

### Chapter 3

**Creating Productive Learning Environments: Classroom Management** 71

- The Importance of Classroom Management 73
- Classroom Management: A Definition 74
  - Goals for Classroom Management: Learning and Self-Regulation 74
## Contents

- Creating Responsibility-Oriented Classrooms 74
- Classroom Management: A Historical Perspective 75

### Planning for Classroom Management 76
- Student Characteristics 76
- The Physical Environment 76
- Classroom Rules: Establishing Standards for Behavior 78
- Procedures: Creating an Efficient Learning Environment 80

### Implementing Management Plans 82
- Implementing Plans: The First 10 Days 82
- Technology and Teaching: Using Technology to Communicate with Parents 87
- Exploring Diversity: Challenges to Home-School Communication 88
- The Relationship Between Management and Instruction 89

### Management Interventions 91
- An Intervention Continuum 92
- Dealing with Persistent Individual Problems 95
- Serious Management Problems: Violence and Aggression 96

### Chapter 4

## Planning for Learning 105

- Why Do Teachers Plan? 108
- Factors Influencing Instructional Planning 110
  - The Teacher 110
  - Learner Development 111
  - Exploring Diversity: Personalizing Content to Increase Motivation in Students from Diverse Backgrounds 113
  - Teaching Context 114
  - Accountability and Standards-based Education 114
  - Materials and Resources 116
  - Time 116

### A Planning Model 117
- Selecting Topics 117
- Specifying Learning Objectives 118
- Preparing and Organizing Learning Activities 122
- Preparing Assessments 124
- Instructional Alignment 124
- Backward Design 125

- Lesson, Long-Term, and Unit Planning 125
  - Daily Lesson Planning 126
  - Long-Term Planning 129
  - Unit Planning 130
  - Technology and Teaching: Using Technology to Plan 131

### Integrating the Curriculum: Interdisciplinary and Thematic Units 132
- An Integrated Continuum 133
- Designing and Implementing Integrated Units 134
- Research on Integrated Planning 135

### Chapter 5

## Effective Teaching 142

- Classroom Climate: A Prerequisite to Learning 145
  - Acceptance and Caring: The Human Dimension of Teaching 146
  - A Safe and Orderly Learning Environment 148
  - A Learning-Focused Classroom 148

### Characteristics of Effective Teachers 149
- Teacher Attitudes 149
- Exploring Diversity: Teacher Attitudes and Learner Diversity 152
- Effective Communication 153
- Effective Communication: Implications for Your Teaching 155

### Effective Teaching and Teachers’ Use of Time 155
- Allocated Time: Priorities in the Curriculum 156
- Instructional Time: Time from a Teacher’s Perspective 156
- Engaged Time: Time from a Learner’s Perspective 158
- Academic Learning Time: The Role of Success 158

### A General Instructional Model 159
- Effective Lesson Beginnings 159
- Technology and Teaching: Using Technology to Create Lesson Focus 162
- Developing the Lesson 163
- Ending Lessons Effectively 165
Contents

Chapter 6
Increasing Learning Through Student Involvement 175

Student Involvement: A Key to Learning and Motivation 181
Student Involvement: The Need for Clear Learning Objectives 181
Student Involvement: The Role of Content Representations 182
Involving Students Through Teacher Questioning 184
Assessing Current Understanding 184
Increasing Student Motivation 185
Guiding New Learning 185
Elements of Effective Questioning 186
Questioning Frequency 187
Equitable Distribution 187
Open-Ended Questions 188
Prompting 190
Repetition for Emphasis 191
Wait-Time 192
Exploring Diversity: Involving Students from Diverse Backgrounds 193
Classroom Questions: Additional Issues 193
Low- and High-Level Questions 194
Selecting Students 194
Call-Outs 195
Choral Responses 196
Technology and Teaching: Using Technology to Increase Student Involvement 196

Chapter 7
Teaching and Learning in Groups 206

The Need for Social Interaction in Classrooms 208
Why Social Interaction Works 209
Components of Effective Small-Group Activities 211
Using Group Work to Facilitate Learning 212
Organizing and Conducting Group Work Activities 212
Cooperative Learning 216

Chapter 8
Direct Instruction 245

Direct Instruction in the Classroom 249
Why Direct Instruction Works 250
Content Taught by Direct Instruction 251
Goals of Direct Instruction 257
Direct Instruction and Standards and Accountability 259
Planning for Direct Instruction 260
Specifying Clear Learning Objectives 260
Identifying Prerequisite Knowledge 260
Preparing Examples or Problems 261
Implementing Direct Instruction Lessons 261
Phase 1: Introduction 262
Phase 2: Presentation 263
Phase 3: Guided Practice 265
Phase 4: Independent Practice 266
Exploring Diversity: Direct Instruction with Culturally and Linguistically Diverse Students 268
## Technology and Teaching: Capitalizing on Technology in Direct Instruction

- The Role of Assessment in Direct Instruction 269
- The Motivational Benefits of Effective Feedback 272

## Chapter 9

### Lecture Discussions: Interactive Instruction to Promote Learning 279

- Organized Bodies of Knowledge: Integrated Content 283
- The Limitations of Lectures 283
- Lecture Discussions: Alternatives to Standard Lectures 285
  - The Effectiveness of Lecture Discussions 285
  - Planning for Lecture Discussions 286
  - Technology and Teaching: Using Technology to Structure and Organize Content 290
  - Implementing Lecture Discussion Lessons 292
  - Exploring Diversity: Differences in Background Knowledge 293
- Assessing Learning in Lecture Discussions 299

## Chapter 10

### Guided Discovery 306

- Understanding Guided Discovery 312
  - Guided Discovery and Constructivism 313
  - Guided Discovery and Student Motivation 315
  - Misconceptions About Guided Discovery 315
- Planning for Guided Discovery Lessons 317
  - Identifying Topics 317
  - Specifying Learning Objectives 317
  - Selecting Examples and Non-examples 318
  - Types of Examples 318
- Technology and Teaching: Using Databases in Guided Discovery Lessons 321
- Planning for Social Interaction 323
- Planning for Assessment 323
- Conducting Guided Discovery Lessons 324
  - Review and Introduction 324
  - The Open-Ended Phase 325
  - The Convergent Phase 325
  - Closure 326
  - Application 326
  - Using Guided Discovery with Different-Aged Learners 326
  - Exploring Diversity: Using Guided Discovery with Cultural Minorities 328
- Assessing Learning in Guided Discovery Lessons 329
  - Using Assessment to Increase Learning 329

## Chapter 11

### Problem-Based Instruction 336

- Problem-Based Learning: An Overview 338
  - Problem-Based Learning: Why Does It Work? 340
- Project-Based Learning 341
  - Essential Components 341
  - Implementing Project-Based Instruction in the Classroom 343
  - Assessment and Project-Based Learning 345
  - Research on Project-Based Learning 346
- Problem Solving 347
  - Well-Defined and Ill-Defined Problems 349
  - A Problem-Solving Model 350
  - Helping Learners Become Better Problem Solvers 352
- Inquiry Strategies 355
  - Technology and Teaching: Using Technology as a Tool to Teach Problem Solving 356
  - Identifying a Question 359
  - Forming Hypotheses 360
  - Gathering Data 360
  - Assessing Hypotheses 361
  - Generalizing 363
  - Analyzing the Inquiry Process 363
- Critical Thinking 363
  - Knowledge of Content 365
  - Basic Processes 365
  - Metacognition: Awareness and Control of Cognitive Processes 366
Chapter 12
Differentiating Instruction 378

Understanding Differentiated Instruction 379
Principles of Differentiation 381
What Do Teachers Differentiate? 382

Planning for Differentiated Instruction 383
Pre-Assessment: The Beginning Point for All Differentiation 383
Flexible Time Requirements 384
Adapting Instructional Materials 386
Offering Different Learning Activities 387
Varying Learning Objectives 389
Technology and Teaching: Technology as a Tool for Differentiating Instruction 389

Instructional Strategies to Differentiate Instruction 391
Grouping 392
Strategy Instruction 393
Peer Tutoring and Cooperative Learning 395

The Challenge of Assessment in Diverse Classrooms 398
Strategies for Differentiating Assessment 398
Grading 399

Chapter 13
Assessing Learning 407

Classroom Assessment 409
Formal and Informal Assessment 410
Functions of an Assessment System 410
Characteristics of Effective Assessment 410
Teachers' Assessment Patterns 412

Using Assessment to Promote Learning 413
Preparing Students 416
Administering Tests 417
Examining Results 418
Research on Classroom Testing: Implications for Teachers 419
Exploring Diversity: Effective Assessment with Learners from Diverse Backgrounds 420

Alternative Assessment 421
Performance Assessment 422
Portfolio Assessment 425

Designing an Assessment System 426
Standards, Accountability, and Assessment 427
Grades and Grading 429
Communication 431
Technology and Teaching: Using Technology in Assessment 439

References 449
Author Index 461
Subject Index 465
Teachers make an enormous difference in classrooms, and this book is designed to help you become a better teacher. The knowledge base for teaching continues to expand, confirming the powerful influence that teachers have on students and the importance of knowledge for effective teaching (Alexander, 2006). Research also continues to highlight the central role teachers play in determining the quality of learning in classrooms (Darling-Hammond & Bransford, 2005). Teachers do make a difference in how much students learn, and this difference depends on how they teach (Bransford, Darling-Hammond, & LePage, 2005). Teachers’ powerful influence on learning is even more convincingly documented in the research literature today than it was in 1989, when the first edition of this text was published. Translating this research into teaching strategies that teachers can use to increase learning in their classrooms continues to be the central goal of this text.

New to This Edition

■ New Chapter: Chapter 12, Differentiating Instruction
■ New Feature: Exploring Diversity, found in every chapter including the following topics:
  ■ The Diversity of Our Learners (Chapter 1)
  ■ Urban Schools and At-risk Students (Chapter 2)
  ■ Personalizing Content to Increase Motivation in Students from Diverse Backgrounds (Chapter 4)
  ■ Direct Instruction with Culturally and Linguistically Diverse Students (Chapter 8)
  ■ Differences in Background Knowledge (Chapter 9)
  ■ Using Guided Discovery with Cultural Minorities (Chapter 10)
  ■ Problem-Based Instruction with Developmentally Different Learners (Chapter 11)
  ■ Effective Assessment with Learners from Diverse Backgrounds (Chapter 13)

■ New Feature: Technology and Teaching, found in every chapter, including the following topics:
  ■ Using Technology to Increase Student Learning (Chapter 1)
  ■ Using Technology to Communicate with Parents (Chapter 3)
  ■ Using Technology to Plan (Chapter 4)
  ■ Using Technology to Create Lesson Focus (Chapter 5)
  ■ Using Technology to Increase Student Involvement (Chapter 6)
This book connects two areas in education. One is the research on how teaching influences learning, which includes a wide range of studies conducted since the early 1970s. Originally grounded in the research on effective teaching, this literature has expanded to include topics such as teacher and student thinking, constructivist views of learning, teaching for understanding, and the importance of social interaction in learning.

Teaching methodology is the second area addressed in this book. To be usable research findings need to be translated into teaching strategies that teachers can readily apply in their classrooms. This edition combines the best of these two areas. We apply the research on teaching to strategies that are theoretically sound, yet practical and usable.

Goals of This Text

We have two goals in combining these areas:

- To influence how teachers think about teaching
- To expand and improve their instructional strategies

The way teachers think and what they know are two major factors that influence how they actually teach. And, the way teachers think depends on what they know; in other words, teacher thinking and teacher knowledge are interdependent. To meet our goals, this book helps teachers acquire the professional knowledge that influences both their thinking and the way they actually teach in their classrooms.

Without the research to provide a conceptual foundation methods become mechanical applications of rules implemented without understanding. Without practical suggestions for teaching practice the research literature remains abstract and irrelevant. In this sixth edition we again try to avoid both pitfalls by emphasizing the theoretical and conceptual underpinnings of the research and the implications of this research for classroom practice.

Text Themes

Today's schools are changing and these changes present both opportunities and challenges. To address these changes we have organized the sixth edition around three powerful and pervasive forces in education. These forces are translated into three themes that are integrated and applied throughout the text:

- Standards and accountability
- The diversity of our learners
- The use of technology to increase student learning

Standards and accountability are reshaping the ways teachers teach and students learn. Every state has created standards to guide student learning, and there is a movement to create national standards in areas such as reading and math. To respond to this movement, we have made standards and accountability a major theme for this text. We introduce the
theme in Chapter 1 and relate the process of teacher planning to it in Chapter 4. In addition, we discuss how standards influence assessment as well as the implementation of specific teaching strategies in later chapters. The diversity of our learners, the second theme for this text, reflects the growing diversity of our classrooms. This diversity has important implications for the way we teach. In addition to an entire chapter on diversity (Chapter 2) and a new chapter on differentiating instruction (Chapter 12), we also address the topic of diversity in a feature, **Exploring Diversity**, found in every chapter.

Chapter 1: The Diversity of our Learners  
Chapter 2: Urban Schools and At-risk Students  
Chapter 3: Challenges to Home-School Communication  
Chapter 4: Personalizing Content to Increase Motivation in Students from Diverse Backgrounds  
Chapter 5: Teacher Attitudes and Learner Diversity  
Chapter 6: Involving Students from Diverse Backgrounds  
Chapter 7: Using Cooperative Learning to Capitalize on Diversity  
Chapter 8: Direct Instruction with Culturally and Linguistically Diverse Students  
Chapter 9: Differences in Background Knowledge  
Chapter 10: Using Guided Discovery with Cultural Minorities  
Chapter 11: Problem-Based Instruction with Developmentally Different Learners  
Chapter 12: Entire chapter focuses on differentiating instruction  
Chapter 13: Effective Assessment with Learners from Diverse Backgrounds

Technology is the third theme of this edition. Technology is changing the way we live, as well as the way we learn and teach. Various forms of technology, including white boards, document cameras, computers, and the Internet are all changing our classrooms. Tomorrow's teachers need to know how to integrate technology into their teaching. We address applications of technology in the feature, **Technology and Teaching**, found in every chapter.

Chapter 1: Using Technology to Increase Student Learning  
Chapter 2: Employing Technology to Support Learners with Disabilities  
Chapter 3: Using Technology to Communicate with Parents  
Chapter 4: Using Technology to Plan  
Chapter 5: Using Technology to Create Lesson Focus  
Chapter 6: Using Technology to Increase Student Involvement  
Chapter 7: Using Computer-Mediated Communication to Facilitate Cooperative Learning  
Chapter 8: Capitalizing on Technology in Direct Instruction  
Chapter 9: Using Technology to Structure and Organize Content  
Chapter 10: Using Databases in Guided Discovery Lessons  
Chapter 11: Using Technology as a Tool to Teach Problem Solving  
Chapter 12: Technology as a Tool for Differentiating Instruction  
Chapter 13: Using Technology in Assessment

We also added new sections on **Standards in Today’s Schools, Professional Organizations’ Standards, and National Standards** to help teachers understand how this reform will affect
their teaching. These changes reflect the evolving realities of modern classrooms, as well as the new responsibilities today’s teachers are being asked to undertake. In addition we have added feedback for our Preparing for Your Licensure Exam feature to help students master each chapter’s content. We hope these changes in the sixth edition prepare you for the challenges of teaching in the twenty-first century.

Supplements

Instructor Manual/Test Bank

We’ve designed this manual to help you use Learning and Teaching, 6th edition, as effectively as possible. Many of the ideas contained in this manual come from years of using this text in our own classes as well as our continued work in the public schools. Others are the result of feedback and discussions we’ve had with teachers, students and our colleagues. We hope you find the suggestions useful.

The manual is organized by chapters. Each chapter contains chapter overview, objectives, chapter outlines, presentation outlines, multiple choice and short answer test items and an answer key. The presentation outline is organized in terms of the major topics in each chapter. Under these topics you will find teaching suggestions including ways to use large- and small-group activities, as well as ways to integrate the discussion questions and portfolio activities into your instruction. Following the presentation outline you’ll find Feedback for Preparing for Your Licensure Exam: Questions for Analysis prior to the test items and answer key.

The power of classroom practice:

Teacher educators who are developing pedagogies for the analysis of teaching and learning contend that analyzing teaching artifacts has three advantages: it enables new teachers time for reflection while still using the real materials of practice; it provides new teachers with experience thinking about and approaching the complexity of the classroom; and in some cases, it can help new teachers and teacher educators develop a shared understanding and common language about teaching.

(Darling-Hammond & Bransford, 2005)

As Linda Darling-Hammond and her colleagues point out, grounding teacher education in real classrooms—among real teachers and students and among actual examples of students’ and teachers’ work—is an important, and perhaps even an essential, part of training teachers for the complexities of teaching in today’s classrooms. For this reason we have created a valuable, timesaving website—MyEducationLab—that provides you with the context of real classrooms and artifacts that research on teacher education tells us are so important. The authentic in-class video footage, interactive skill-building exercises, and other resources available on MyEducationLab offer you a unique valuable teacher education tool.

MyEducationLab is easy to use and integrate into both your assignments and your courses. Wherever you see the MyEducationLab logo in the margins or elsewhere in the
text, follow the simple instructions to access the videos, strategies, cases, and artifacts associated with these assignments, activities, and learning units. MyEducationLab is organized topically to enhance the coverage of the core concepts discussed in the chapters of your book. For each topic in the course you will find most or all of the following resources:

**Connection to National Standards**  Now it is easier than ever to see how your coursework is connected to national standards. In each topic of MyEducationLab you will find intended learning outcomes connected to the Interstate New Teacher Assessment and Support Consortium (INTASC) standards. All of the Assignments and Activities and all of the Building Teaching Skills and Dispositions in MyEducationLab are mapped to the appropriate national standards and learning outcomes as well.

**Assignments and Activities**  Designed to save instructors preparation time, these assignable exercises show concepts in action (through video, cases, or student and teacher artifacts) and then offer thought-provoking questions that probe your understanding of these concepts or strategies. (Feedback for these assignments is available to the instructor.)

**Building Teaching Skills and Dispositions**  These learning units help you practice and strengthen skills that are essential to quality teaching. First you are presented with the core skill or concept and then given an opportunity to practice your understanding of it multiple times by watching video footage (or interacting with other media) and then critically analyzing the strategy or skill presented.

**Video Examples**  Intended to enhance coverage in your book with visual examples of real educators and students, these video clips (a number of which are referenced explicitly in this text) include segments from classroom lessons as well as interviews with teachers, administrators, students, and parents.

**General Resources on Your MyEducationLab Course**  The Resources section on your MyEducationLab course is designed to help you pass your licensure exam; put together an effective portfolio and lesson plan; prepare for and navigate the first year of your teaching career; and understand key educational standards, policies, and laws. This section includes the following:

- **Licensure Exams.** Access guidelines for passing the Praxis exam. The Practice Test Exam includes practice questions, Case Histories, and Video Case Studies.
- **Portfolio Builder and Lesson Plan Builder.** Create, update, and share portfolios and lesson plans.
- **Preparing a Portfolio.** Access guidelines for creating a high-quality teaching portfolio that will allow you to practice effective lesson planning.
- **Licensure and Standards.** Link to state licensure standards and national standards.
- **Beginning Your Career.** Educate yourself—access tips, advice, and valuable information on
  - **Resume Writing and Interviewing.** Expert advice on how to write impressive resumes and prepare for job interviews.
■ **Your First Year of Teaching.** Practical tips to set up your classroom, manage student behavior, and learn to more easily organize for instruction and assessment.

■ **Law and Public Policies.** Specific directives and requirements you need to understand under the No Child Left Behind Act and the Individuals with Disabilities Education Improvement Act of 2004.

*Visit [www.myeducationlab.com](http://www.myeducationlab.com) for a demonstration of this exciting new online teaching resource and to download a MyEdLab guide correlating MEL course assets to this text.*

### Acknowledgments

In preparing this edition of *Learning and Teaching*, we want to sincerely thank the people who have supported its development. We want to particularly thank our editor, Kelly Villella Canton, for her guidance, support, and cooperation as we attempted to implement a number of new ideas for this edition. She epitomizes what authors look for in an editor. We also want to thank Annalea Manalili and Paula Carroll for their help in bringing the project to fruition, as well as our reviewers: Norbet O. Aneke, City University of New York; Christine K. Lemley, Northern Arizona University; Janet Schiavone, George Washington University; and Alice M. Waddell, Mary Baldwin College.

Finally, we again want to thank the many teachers in whose classrooms we’ve worked and visited, and on whose instruction the case studies in the book are based. They helped make this text more real and true to the realities of classroom life.

P.E.

D.K.
8 Teaching and learning for employability: knowledge is not the only outcome 99 Pauline Kneale. 9 Supporting student learning David Gosling. 113. 17 Key aspects of teaching and learning in mathematics and statistics Joe Kyle and Peter Kahn. 18 Key aspects of teaching and learning in engineering John Dickens and Carol Arlett. 19 Key aspects of teaching and learning in computing science Gerry McAllister and Sylvia Alexander.