

# 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

*Senior Acquisition Editor:* Kelly Villella Canton  
*Editorial Assistant:* Annalea Manalili  
*Senior Marketing Manager:* Darcy Betts  
*Production Editor:* Renata Butera  
*Editorial Production Service:* Integra Software Services Pvt. Ltd.  
*Manufacturing Buyer:* Renata Butera  
*Electronic Composition:* Integra Software Services Pvt. Ltd.  
*Interior Design:* SD Graphics/Debbie Schneck  
*Photo Researcher:* Annie Pickert  
*Cover Designer:* Suzanne Duda

Credits and acknowledgments borrowed from other sources and reproduced, with permission, in this textbook appear on appropriate page within text.

Copyright © 2012, 2007, 2003, 1993, 1989 Pearson Education, Inc, publishing as Allyn & Bacon, 501 Boylston Street, Boston, MA 02116. All rights reserved. Manufactured in the United States of America. This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. To obtain permission(s) to use material from this work, please submit a written request to Pearson Education, Inc., Permissions Department, 501 Boylston Street, Boston, MA 02116, or email [permissionsus@pearson.com](mailto:permissionsus@pearson.com).

#### Library of Congress Cataloging-in-Publication Data

Kauchak, Donald P.

Learning and teaching : research-based methods / Don Kauchak, Paul Eggen.

— 6th ed.

p. cm.

ISBN-13: 978-0-13-217934-8 (alk. paper)

ISBN-10: 0-13-217934-2 (alk. paper)

1. Teaching. 2. Effective teaching. I. Eggen, Paul D., 1940- II. Title.

LB1025.3.K38 2012

371.102—dc22

2010043486

10 9 8 7 6 5 4 3 2 1 [EB] 14 13 12 11 10

#### Photo Credits:

Page 1, Bob Daemmrch Photography; p. 31, iStockPhoto; p. 71, Bob Daemmrch Photography; p. 105, Bob Daemmrch Photography; p. 142, Shutterstock; p. 175, Annie Pickert/Pearson Education; p. 206, iStockPhoto; p. 245, Pearson Scott Foresman; p. 279, Annie Pickert/Pearson Education; p. 306, Annie Pickert/Pearson Education; p. 336, Shutterstock; p. 378, Annie Pickert/Pearson Education; p. 407, Annie Pickert/Pearson Education.



[www.pearsonhighered.com](http://www.pearsonhighered.com)

ISBN-10: 0-13-217934-2

ISBN-13: 978-0-13-217934-8

## About the Authors

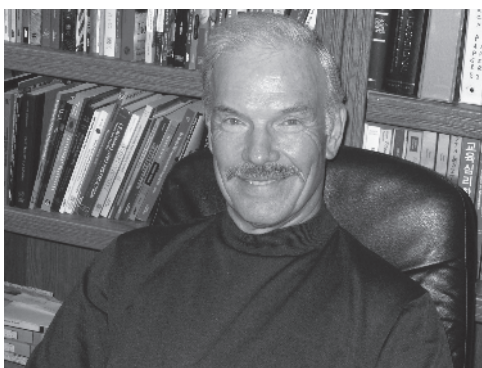


### DON KAUCHAK

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 <i>Do</i> 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
<b>Planning for Classroom Management</b>	<b>76</b>
Student Characteristics	76
The Physical Environment	76
Classroom Rules: Establishing Standards for Behavior	78
Procedures: Creating an Efficient Learning Environment	80
<b>Implementing Management Plans</b>	<b>82</b>
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
<b>Management Interventions</b>	<b>91</b>
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
<b>Factors Influencing Instructional Planning</b>	<b>110</b>
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
<b>A Planning Model</b>	<b>117</b>
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

## 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

Cooperative Learning: Getting  
Started 216

STAD: Student Teams Achievement  
Divisions 218

Jigsaw 222

Group Investigation 224

Technology and Teaching: Using  
Computer-Mediated Communication to  
Facilitate Cooperative Learning 227

Exploring Diversity: Using Cooperative  
Learning to Capitalize on Diversity 228

### Discussions 229

Using Discussions to Promote Student  
Growth 230

Planning for Cognitive Growth in  
Discussions 231

Promoting Cognitive Growth in Discussions:  
Implementation 233

The Teacher's Role 234

Affective Discussions: Promoting Ethical and  
Moral Growth 235

### Assessing Learning in Social Interaction Strategies 237

Assessing Cognitive Achievement 237

Assessing Growth in Social Skills 239

## 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	269	Conducting Guided Discovery Lessons	324
The Role of Assessment in Direct Instruction	271	Review and Introduction	324
The Motivational Benefits of Effective Feedback	272	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
<b>Chapter 9</b>			
<b>Lecture Discussions: Interactive Instruction to Promote Learning</b>	<b>279</b>	<b>Chapter 11</b>	
Organized Bodies of Knowledge: Integrated Content	283	<b>Problem-Based Instruction</b>	<b>336</b>
The Limitations of Lectures	283	Problem-Based Learning: An Overview	338
Lecture Discussions: Alternatives to Standard Lectures	285	Problem-Based Learning: Why Does It Work?	340
The Effectiveness of Lecture Discussions	285	Project-Based Learning	341
Planning for Lecture Discussions	286	Essential Components	341
Technology and Teaching: Using Technology to Structure and Organize Content	290	Implementing Project-Based Instruction in the Classroom	343
Implementing Lecture Discussion Lessons	292	Assessment and Project-Based Learning	345
Exploring Diversity: Differences in Background Knowledge	293	Research on Project-Based Learning	346
Assessing Learning in Lecture Discussions	299	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
<b>Chapter 10</b>			
<b>Guided Discovery</b>	<b>306</b>		
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		

Attitudes and Dispositions	366
Teaching Critical Thinking in the Classroom	366
Exploring Diversity: Problem-Based Instruction with Developmentally Different Learners	367

## **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

<b>References</b>	<b>449</b>
<b>Author Index</b>	<b>461</b>
<b>Subject Index</b>	<b>465</b>



# Preface

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)

- Capitalizing on Technology in Direct Instruction (Chapter 8)
- Using Technology to Structure and Organize Content (Chapter 9)
- Using Databases in Guided Discovery Lessons (Chapter 10)

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

## Preface

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

## Preface

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.Â 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.