

# Learning to Teach

*Tenth Edition*

Richard I. Arends



# *Learning to Teach*

---

**TENTH EDITION**

Richard I. Arends

*Seattle University*





LEARNING TO TEACH, TENTH EDITION

Published by McGraw-Hill Education, 2 Penn Plaza, New York, NY 10121. Copyright © 2015 by McGraw-Hill Education. All rights reserved. Printed in the United States of America. Previous editions © 2012, 2009, and 2007. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of McGraw-Hill Education, including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOW/DOW 1 0 9 8 7 6 5 4

ISBN 978-0-07-811030-6

MHID 0-07-811030-0

Senior Vice President, Products & Markets: *Kurt L. Strand*

Vice President, General Manager, Products & Markets: *Michael Ryan*

Vice President, Content Production & Technology Services: *Kimberly Meriwether David*

Managing Editor: *Penina Braffman*

Marketing Specialist: *Alexandra Schultz*

Director, Content Production: *Terri Schiesl*

Content Project Manager: *Heather Ervolino*

Buyer: *Susan K. Culbertson*

Cover Designer: *Studio Montage, St. Louis, MO*

Cover Image: *Image Source/Getty Images*

Media Project Manager: *Jennifer Bartell*

Compositor: *Laserwords Private Limited*

Typeface: *9.5/12 Palatino LT std*

Printer: *R. R. Donnelley*

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

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

Arends, Richard

Learning to teach/Richard I. Arends.—Tenth edition.

pages cm

ISBN 978-0-07-811030-6 (alk. paper)

1. Teaching—Textbooks. 2. Effective teaching—Textbooks. I. Title.

LB1025.3.A74 2014

371.102—dc23

2013042979

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw-Hill Education, and McGraw-Hill Education does not guarantee the accuracy of the information presented at these sites.

# About the Author



Richard I. Arends is currently a Visiting Professor at Seattle University and Professor of Educational Leadership and Dean Emeritus at Central Connecticut State University, where he served as Dean of the School of Education and Interim Provost of Academic Affairs from 1991 to 2004. Before going to Connecticut, he was on the faculty and chaired the Department of Curriculum and Instruction at the University of Maryland, College Park. He received his Ph.D. from the University of Oregon, where he also served on the faculty. A former elementary, middle school, and high school teacher, his special interests are teaching, teacher education, organization development, and school improvement.

Professor Arends has authored or contributed to over a dozen books on education, including the *Second Handbook of Organization Development in Schools*, *Systems Strategies in Education*, *Exploring Teaching*, *Teaching for Student Learning*, and *Learning to Teach*. The latter is now in its tenth edition and has been translated into several foreign languages. He has worked widely with schools and universities throughout North America, in Jamaica, and in the Pacific Rim, including Australia, Samoa, Palau, and Saipan.

The recipient of numerous awards, Professor Arends was selected in 1989 as the outstanding teacher educator in Maryland and in 1990 received the Judith Ruskin Award for outstanding research in education. From 1995 to 1997, Professor Arends held the William Allen (Boeing) Endowed Chair in the School of Education at Seattle University. Currently, he is retired in Seattle, Washington, where he teaches, pursues his favorite projects and continues to write.

*This page intentionally left blank*

# Brief Contents

## Part 1

---

### *Teaching and Learning in Today's Classrooms* 1

**Chapter 1** *The Scientific Basis for the Art of Teaching* 2

**Chapter 2** *Student Learning in Diverse Classrooms* 40

## Part 2

---

### *The Leadership Aspects of Teaching* 93

**Chapter 3** *Teacher Planning* 94

**Chapter 4** *Learning Communities and Student Motivation* 136

**Chapter 5** *Classroom Management* 176

**Chapter 6** *Assessment and Evaluation* 216

## Part 3

---

### *Overview of More Teacher-Centered Transmission Approaches to Teaching* 267

**Chapter 7** *Presenting and Explaining* 270

**Chapter 8** *Direct Instruction* 302

## Part 4

---

### *Overview of Student-Centered Constructivist Approaches to Teaching* 331

**Chapter 9** *Concept and Inquiry-Based Teaching* 334

**Chapter 10** *Cooperative Learning* 368

**Chapter 11** *Problem-Based Learning* 404

**Chapter 12** *Classroom Discussion* 436

**Chapter 13** *Using Multiple Approaches to Teaching and Differentiation* 470

## Part 5

---

### *The Organizational Aspects of Teaching* 497

**Chapter 14** *School Leadership and Collaboration* 498

*Resource Handbook* 531

*Glossary* 544

*References* 554

*Credits* 575

*Name Index* 577

*Subject Index* 582

# Contents

## Preface *xiii*

## Part 1

---

## Teaching and Learning in Today's Classrooms 1



### Chapter 1

## **The Scientific Basis for the Art of Teaching 2**

- Historical Perspective on Teaching 5
  - Role Expectations in Earlier Times* 5
  - Twentieth-Century Role Expectations* 6
  - Teaching Challenges for the Twenty-First Century* 7
- A Perspective on Effective Teaching for the Twenty-First Century 19
  - The Ultimate Goal of Teaching* 19
  - A View of the Effective Teacher* 20
  - Personal Qualities for Developing Authentic Relationships* 20
  - Democratic and Socially Just Classrooms* 21
  - Knowledge Base to Guide the Art of Practice* 21
  - Repertoire of Effective Practice* 25
  - Reflection and Problem Solving* 29
- Learning to Teach 30
  - Models of Teacher Development* 30
  - Early Influences on Teaching* 32
- Reflections from the Classroom 35
- Summary 36
- Key Terms 37
- Interactive and Applied Learning 38
- Portfolio and Field Experience Activities 38
- Books for the Professional 39



### Chapter 2

## **Student Learning in Diverse Classrooms 40**

- Perspective and Overview 42
- Theoretical and Empirical Support 45
  - Lack of Equity* 45
  - Differential Treatment of Students* 47
  - Learning Abilities, Styles, and Preferences* 50
- Exceptionalities 55
  - Students with Disabilities* 55
  - Gifted and Talented Students* 60
- Culture, Ethnicity, and Race 65
  - Perspectives on Culture, Ethnicity, and Race* 66
  - Working with Students in Racially and Culturally Diverse Classrooms* 68
- Religious Diversity 75
- Language Diversity 76
  - Second-Language Acquisition* 76
  - Working with Language Diversity in the Classroom* 76
  - Dialect Differences* 78
- Gender Differences 78
  - Nature of Gender Differences* 78
  - Origins of Gender Differences* 79
  - Stereotyping and Differential Treatment* 79
  - Working with Gender Differences in the Classroom* 82
  - Sexual Identities, Expressions, and Orientations* 82

Social Class Differences and Poverty	83	Summary	88
<i>Characteristics, Performance, and Differential Treatment of Low-SES Students</i>	84	Key Terms	91
<i>Working with Low-SES Students in the Classroom</i>	85	Interactive and Applied Learning	91
Some Final Thoughts and Schoolwide Issues	86	Portfolio and Field Experience Activities	91
Reflections from the Classroom	87	Books for the Professional	92

## Part 2

# The Leadership Aspects of Teaching 93



### Chapter 3

## Teacher Planning 94

Perspective on Planning	96
<i>Planning—The Traditional View</i>	97
<i>Planning—An Alternative Perspective</i>	97
<i>Mental Planning</i>	98
Theoretical and Empirical Support	98
<i>Planning Influences What Students Learn</i>	99
<i>Planning and the Beginning Teacher</i>	100
Planning Domains	103
<i>Planning and the Instructional Cycle</i>	103
<i>The Time Spans of Planning</i>	104
The Specifics of Planning	105
<i>Planning What to Teach</i>	105
<i>Tools and Strategies for Curriculum Enactment</i>	109
<i>Instructional Objectives</i>	112
<i>Taxonomies for Selecting Instructional Objectives</i>	115
<i>Lesson Plans and Unit Plans</i>	120
<i>Diversity and Differentiation: Differentiation through Planning</i>	125
Planning for Time and Space	126
<i>Time Is of the Essence</i>	127
<i>Space, a Critical Element</i>	129
<i>Planning with Colleagues</i>	129
A Final Thought about Planning	131
Reflections from the Classroom	132
Summary	133
Key Terms	134
Interactive and Applied Learning	135
Portfolio and Field Experience Activities	135
Books for the Professional	135



### Chapter 4

## Learning Communities and Student Motivation 136

Perspective on Classrooms as Learning Communities	140
<i>Fusion of the Individual and the Group</i>	140
Theoretical and Empirical Support	142
<i>Perspectives about Human Motivation</i>	142
<i>Perspectives and Features of Learning Communities</i>	149
<i>Research on Motivation and Learning Communities</i>	155
Strategies for Motivating Students and Building Productive Learning Communities	160
<i>Believe in Students' Capabilities and Attend to Alterable Factors</i>	160
<i>Avoid Overemphasizing Extrinsic Motivation</i>	160
<i>Create Learning Situations with Positive Feeling Tones</i>	161
<i>Build on Students' Interests and Intrinsic Values</i>	162
<i>Structure Learning to Accomplish Flow</i>	162
<i>Use Knowledge of Results and Don't Excuse Failure</i>	163
<i>Attend to Student Needs, Including the Need for Self-Determination</i>	164
<i>Attend to the Nature of Learning Goals and Difficulty of Instructional Tasks</i>	165
<i>Diversity and Differentiation: Using Multidimensional Tasks</i>	166
<i>Facilitate Group Development and Cohesion</i>	167
Some Final Thoughts	169



Reflections from the Classroom 170  
Summary 171  
Key Terms 173  
Interactive and Applied Learning 173  
Portfolio and Field Experience  
Activities 173  
Books for the Professional 174



## Chapter 5

# Classroom Management 176

Perspective on Classroom Management 178  
Theoretical and Empirical Support 180  
    *Behavioral Theory* 180  
    *Classroom Ecology and Group Processes* 181  
    *Effective Teaching Research* 184  
    *Child-Centered Traditions* 184  
Strategies for Effective Classroom Management 185  
    *Preventative Classroom Management* 185  
    *Managing Everyday Misbehavior* 194  
Dealing with More Challenging Discipline Problems 199  
    *Negative Antisocial Behaviors* 199  
    *Special Challenges Presented by Secondary Students* 199  
    *Working with Students who have Special Needs* 201  
    *The Challenges of Bullying* 202  
Classroom Management Programs 204  
    *Traditional Programs Based on Behavioral Theory* 204  
    *The FAIR Approach* 207  
    *Programs That Aim toward Self-Management and Community* 207  
    *The Caring Classroom* 209  
A Final Thought and Look to the Future 211  
Reflections from the Classroom 212  
Summary 213  
Key Terms 214  
Interactive and Applied Learning 214  
Portfolio and Field Experience  
Activities 215  
Books for the Professional 215



## Chapter 6

# Assessment and Evaluation 216

Perspective on Assessment and Evaluation 219  
    *Importance of Assessment and Evaluation* 219  
    *Key Assessment and Evaluation Concepts* 221  
Theoretical and Empirical Support 224  
    *Effects of Assessments and Grades on Student Motivation and Learning* 224  
    *Teacher Bias in Assessment and Grading* 229  
Standardized Tests 229  
    *Nature of Standardized Tests* 231  
    *Norm-Referenced and Criterion-Referenced Tests* 231  
    *Advantages and Disadvantages of Different Approaches* 233  
    *The Teacher's Role in Standardized Testing* 233  
A Teacher's Classroom Assessment Program 235  
    *Primary Purposes of Assessment* 235  
Formative Assessment for Student Learning 235  
    *Diagnosing Prior Knowledge* 235  
    *Monitoring Learning* 237  
    *Providing Corrective Feedback* 237  
    *Assessing Frequently* 238  
Self and Peer Assessment as Learning 239  
    *Self-Assessment* 239  
    *Peer Assessment* 240  
Summative Assessment of Student Learning Using Traditional Measures 241  
    *General Principles* 241  
    *Test Construction* 242  
    *Giving the Traditional Test* 248  
Summative Assessment of Student Learning Using Performance Measures 250  
    *Performance Assessment* 250  
    *What about Authentic Assessments?* 250  
    *Designing and Scoring Performance and Authentic Assessments* 252  
    *Student Portfolios* 256  
    *Assessing Group Effort and Individually Contracted Work* 256  
    *When to Use Different Kinds of Assessments* 257  
Evaluation and Grading 258  
A Final Thought and Look to the Future 261  
Reflections from the Classroom 262  
Summary 263  
Key Terms 265  
Interactive and Applied Learning 265  
Portfolio and Field Experience Activities 266  
Books for the Professional 266


## Part 3

# Overview of More Teacher-Centered Transmission Approaches to Teaching 267



### Chapter 7


## Presenting and Explaining 270

- Overview of Presentation Teaching and Explanations 273
- Theoretical and Empirical Support 273
  - Cognitive Views of Learning* 274
  - Empirical Support* 279
- Planning and Conducting Presentation Lessons 283
  - Planning for Presentations* 283
  -  *Diversity and Differentiation: Adapting Presentations for Differing Student Abilities* 288
  - Conducting Presentation Lessons* 288
- Managing the Learning Environment 296
- Assessment and Evaluation 297
- Reflections from the Classroom 298
- Summary 299
- Key Terms 300
- Interactive and Applied Learning 300
- Portfolio and Field Experience Activities 301
- Books for the Professional 301



### Chapter 8

## Direct Instruction 302

- Overview of Direct Instruction 305
- Theoretical and Empirical Support 305
  - Behavioral Theory* 306
  - Social Cognitive Theory* 306
  - Teacher Effectiveness Research* 307
- Planning and Conducting Direct Instruction Lessons 309
  - Planning for Direct Instruction* 309
  - Conducting Direct Instruction Lessons* 312
  -  *Diversity and Differentiation: Varying Direct Instruction Lessons to Meet Diverse Needs* 323
- Managing the Learning Environment 324
- Assessment and Evaluation 324
- A Final Thought: Considering the Use of Direct Instruction 324
- Reflections from the Classroom 327
- Summary 328
- Key Terms 329
- Interactive and Applied Learning 329
- Portfolio and Field Experience Activities 329
- Books for the Professional 330

## Part 4

# Overview of Student-Centered Constructivist Approaches to Teaching 331



### Chapter 9

## Concept and Inquiry-Based Teaching 334

- Overview of Teaching Students How to Think 336
- Theoretical Perspectives about Teaching Thinking 336
  - Universality of Thinking* 336
  - Types of Thinking* 337
- Concept Teaching 339
  - Nature of Concepts* 339
  - Human Development and Concept Learning* 342
  - Planning for Concept Teaching* 343
  -  *Diversity and Differentiation: Adapting Plans to Meet Diverse Needs* 348
  - Conducting Concept Lessons* 349

Inquiry-Based Teaching 353  
    *Planning for Inquiry-Based Lessons* 354  
    *Conducting Inquiry-Based Lessons* 355

Making Thinking Visible 358  
    *Elements of Thinking* 358  
    *Developing Classrooms with Cultures of Thinking* 359  
    *Making Thinking More Visible* 359  
    *Using Thinking Routines* 360

Developing Learning Environments That Promote Thinking 361

Assessing Thinking Processes and Skills 361

Reflections from the Classroom 362

Summary 364

Key Terms 365

Interactive and Applied Learning 365

Portfolio and Field Experience Activities 366

Books for the Professional 366




## Chapter 10

# Cooperative Learning 368

Overview of Cooperative Learning 370

Theoretical and Empirical Support 372  
    *John Dewey and the Democratic Classroom* 373  
    *Intergroup Relations* 373  
    *Piaget, Vygotsky, and Constructivism* 374  
    *Research and Development* 375

Planning and Conducting Cooperative Learning Lessons 379  
    *Planning for Cooperative Learning* 379  
    *Conducting Cooperative Learning Lessons* 386

 *Diversity and Differentiation: Adapting Cooperative Learning Lessons for Diverse Learners* 390

Managing the Learning Environment 391  
    *Helping with Transitions* 392  
    *Teaching Cooperation* 393

Assessment and Evaluation 396  
    *Testing Academic Learning* 397  
    *Assessing Cooperation* 397  
    *Grading Cooperative Learning* 398  
    *Recognizing Cooperative Effort* 398

Cooperative Learning: A Final Thought 399

Reflections from the Classroom 400

Summary 401

Key Terms 402

Interactive and Applied Learning 402

Portfolio and Field Experience Activities 403

Books for the Professional 403




## Chapter 11

# Problem-Based Learning 404

Overview of Problem-Based Learning 406  
    *Special Features of Problem-Based Learning* 407

Theoretical and Empirical Support 409  
    *Dewey and the Problem-Oriented Classroom* 410  
    *Constructivist Views of Learning* 410  
    *Bruner and Discovery Learning* 411  
    *Is PBL Effective?* 412

Planning and Conducting Problem-Based Lessons 412  
    *Planning for PBL Lessons* 413  
    *Conducting PBL Lessons* 417  
    *Using Learning Centers for Problem-Based Learning* 424

 *Diversity and Differentiation: Adapting Problem-Based Lessons for Diverse Students* 426

Managing the Learning Environment 426  
    *Dealing with Multitask Situations* 427  
    *Adjusting to Differing Finishing Rates* 427  
    *Monitoring and Managing Student Work* 427  
    *Managing Materials and Equipment* 428  
    *Regulating Movement and Behavior outside the Classroom* 428

Assessment and Evaluation 429  
    *Assessing Understanding and Problem-Solving Skills* 429  
    *Using Checklists and Rating Scales* 429  
    *Assessing Adult Roles and Situations* 430  
    *Assessing Learning Potential* 431  
    *Assessing Group Effort* 431

Problem-Based Learning: A Final Thought 431

Reflections from the Classroom 432

Summary 433

Key Terms 434

Interactive and Applied Learning 434


Portfolio and Field Experience Activities 435

Books for the Professional 435



## Chapter 12

### **Classroom Discussion 436**

- Overview of Classroom Discussion 438
- Theoretical and Empirical Support 440
  - Discourse and Cognition* 440
  - Traditional Classroom Discourse Patterns* 441
  - Teacher and Student Questioning* 442
  - Wait-Time* 443
- Planning and Conducting Discussion Lessons 446
  - Planning for Discussion* 446
  - Conducting Discussions* 451
  -  *Diversity and Differentiation: Adapting Discussions for Diverse Learners* 458
- Managing the Learning Environment 459
  - Slow the Pace and Broaden Participation* 460
  - Increase Interpersonal Regard and Understanding* 460
  - Use Tools That Highlight Discourse and Thinking Skills* 462
- Assessment and Evaluation 463
  - Follow-Up Discussions* 463
  - Grading Classroom Discussions* 463
- Classroom Discourse Patterns:
  - A Final Thought 464
- Reflections from the Classroom 465
- Summary 466
- Key Terms 467
- Interactive and Applied Learning 468
- Portfolio and Field Experience Activities 468
- Books for the Professional 469



## Chapter 13

### **Using Multiple Approaches to Teaching and Differentiation 470**

- Introduction and Rationale 472
- Connecting and Using Multiple Approaches 472
  - Repertoire and Choice* 473
  - Connecting and Using Multiple Approaches: Two Classroom Scenarios* 475
- Differentiated Instruction 482
  - Why Differentiate Instruction?* 482
  - The Differentiated Classroom* 483
  - Essential Elements of Differentiation* 483
  - Instructional Strategies for Differentiating Instruction* 485
  - Use of Flexible Grouping in the Differentiated Classroom* 489
- Management and Assessment in the Differentiated Classroom 490
  - Classroom Management* 490
  - Assessing and Evaluating Student Work* 492
- Reflections from the Classroom 493
- Summary 494
- Key Terms 495
- Interactive and Applied Learning 496
- Portfolio and Field Experience Activities 496
- Books for the Professional 496

## Part 5

### **The Organizational Aspects of Teaching 497**



## Chapter 14

### **School Leadership and Collaboration 498**

- Perspective on Schools as Workplaces 501
  - Schools Are Human Systems* 501
  - Schools Have Histories and Cultures* 502
  - Schools Exist in Context* 502
- Schools Have Features in Common with Other Organizations 503
- Schools Have Unique Features 503
- Norms, Roles, and the Culture of Teaching 506
- Theoretical and Empirical Support 508
  - Nature of Teachers' Work* 508
  - Research on School Effectiveness* 509
  - Features of Effective Schools* 511

Organizational Skills for Teachers 513  
    *Working with Colleagues* 513  
    *Working with Administrators and Leadership Personnel* 515  
    *Working with Families* 516  
    *Providing Leadership for School Improvement* 521

Reflections from the Classroom 525  
Summary 526  
Key Terms 527  
Interactive and Applied Learning 528  
Portfolio and Field Experience Activities 528  
Books for the Professional 529

## Resource Handbook

---

### Handbook 1

Reading and Using Research 531  
Key Research Ideas 531  
    *Research Questions and Problems* 531  
    *Model for Research on Teaching* 532  
    *Independent and Dependent Variables* 534  
Approaches to Educational Research 534  
    *Assumptions about Scientific Knowledge* 534  
    *Types of Research Studies* 535  
    *Descriptive Research* 535  
    *Experimental Research* 536  
    *Correlational Research* 536  
    *Causal-Comparative Research* 537

Statistical Concepts and Research Conventions 537  
    *Sampling* 538  
    *Randomness* 538  
    *Numbers and Conventions* 539  
Reading and Keeping Abreast of Research 540  
    *Reading Research with a Critical Eye* 540  
    *Reading a Research Report: An Example* 541  
    *Keeping Abreast of Research* 542

### Handbook 2

Using Learning to Teach to Prepare for the PRAXIS II™: Principles of Learning and Teaching Exam (see Online Learning Center)

**Glossary 544**

**References 554**

**Credits 575**

**Name Index 577**

**Subject Index 582**

# Preface

Learning to be a teacher is a long and complex journey full of excitement and challenge. It begins with the many experiences we have with our parents and siblings; it continues as we observe teacher after teacher through sixteen to twenty years of schooling; and it culminates, formally, with professional training, but continues through a lifetime of teaching experiences.

## *Purpose and Audience*

This is the tenth edition of *Learning to Teach*. It is intended for teacher candidates taking a course commonly labeled General Methods of Teaching, and offered through the elementary, secondary, or general education programs. A variety of other course titles—Analysis of Teaching, Study of Teaching, Principles and Practices of Teaching, or Strategies of Teaching—are sometimes used. Whatever its title, the course’s content normally focuses on general models, strategies, and tactics that apply to teaching in all subject areas and at all grade levels.

Although these courses vary somewhat among institutions, most of them share the following general goals. Most instructors want their students to

- develop a repertoire of basic teaching approaches, strategies, and tactics.
- understand the theoretical foundations behind teaching and student learning.
- understand the dynamics of teaching, both inside and outside the classroom.
- develop an awareness and appreciation of the knowledge base that supports current practices in teaching.
- appreciate the opportunities and challenges of teaching in classrooms characterized by diversity.
- develop understandings and skills for assessing and evaluating student learning.
- know how to adapt instruction to meet the needs of all learners and to guarantee their success.
- acquire skills with which to observe, record, and reflect on teaching.

## *Organization and Content of the Tenth Edition*

The tenth edition of *Learning to Teach* provides a comprehensive and balanced view of teaching. To accomplish this, the book is organized into five parts. Part 1 introduces the book, explores the meaning of effective teaching, and considers the processes and stages that beginning teachers go through on the way to becoming accomplished teachers. It also lays out the major themes of the book as well as the contemporary social context of teaching—a context characterized by student diversity and societal demands that teachers help all students realize their learning potentials.

Parts 2, 3, 4, and 5, the heart of the book, are organized around concepts of what teachers do. These sections assume that all teachers have three important responsibilities: (1) They lead a group of students—the *leadership aspects of teaching*; (2) they provide students with direct, face-to-face instruction—the *interactive aspects of teaching*; and (3) they work with colleagues and parents to perform the *organizational aspects of teaching*. The interactive aspects of teaching have been divided into two parts. Part 3 (Chapters 7–8) describes the more traditional and teacher-centered and transmission approaches to instruction, whereas Part 4 (Chapters 9–13) focuses specifically on contemporary student-centered constructivist approaches as well as on ways to use various approaches together or in tandem to meet a variety of instructional goals.

## Research Applied to the Practical Problems of Teaching

To be successful, teachers must have a solid understanding of the research evidence that supports and defines effective teaching practices. They must also command a deep practical knowledge about students, how they learn, and about the strategies that promote student learning. With this belief, *Learning to Teach* emphasizes how important research is to teaching and learning and shows how ideas from research can be applied to the practical problems faced daily by teachers.

### The Research, Evidence-Based Side of Teaching

Much progress has been made over the past fifty years in clarifying and organizing the knowledge base on teaching and learning. It is important for teachers in the twenty-first century to have a command of the specialized knowledge that has accumulated over the past half-century and more. This knowledge will set teachers apart from the average person and provide them, as professionals, with some guarantees that they are using best practice.

**Theory to Practice Connections.** *Learning to Teach* strives to provide readers with the theory and rationale that underlie and support specific principles and practices. Each chapter has a Theoretical and Empirical Support section that provides a sampling of the research that is the basis of particular practices followed by explanation of why a recommended practice or procedure works the way it does.

**Research Summary Boxes.** Each chapter contains a boxed Research Summary of an important research study pertaining to the chapter topic. The studies have been selected to illustrate not only some aspect of the knowledge base that supports the topics under discussion, but also particular modes of inquiry practiced by educational researchers. Some of the studies are more traditional empirical studies, whereas others represent contemporary qualitative approaches. Many of the studies are considered classics, and together they cover almost fifty years of educational research. Although highly compressed, these summaries are true to the investigators' methods and conclusions.

**Resource Handbook Reading and Using Research,** found at the end of the text contains a succinct guide to reading and understanding the research literature available through professional journals. This handbook provides an introduction to consuming literature—an ability any serious student of teaching must develop.

## The Applied and Practical Side of Teaching

Although teaching is based on knowledge derived from theory and educational research, it also has an important applied and practical side. The content in *Learning to Teach* has been organized to help address many of the everyday problems faced by teachers. It takes those who are learning to teach behind, instead of in front of, the teacher's desk to provide a practical and realistic view of what teaching is all about. Chapters provide concrete guidance on how to plan and conduct a variety of lessons, how to assess and evaluate student learning, and how to create and manage a productive learning environment. The organization of the text and its approach are designed to provide readers with specific understandings and skills so they can apply these understandings to concrete classroom situations.

**Multiple Approaches to Teaching and Differentiation.** While *Learning to Teach* discusses various approaches and models of teaching independently in order to provide a comprehensive, research-based discussion of each, the reality is that teachers rarely use a particular approach alone. They generally use several in any given lesson or unit. In this edition, a chapter describes how to use multiple approaches in a lesson or unit and how to differentiate instruction to support individual student learning.

**Diversity and Differentiation.** The discussion of diversity and differentiation is one that spans the entire text. It begins in Chapter 2 and focuses on student learning in diverse classrooms. The discussion started in Chapter 2 is continued through the rest of the text in sections that focus on diversity and differentiation for student learning in relation to the topic at hand. These special sections describe how teachers can adapt or differentiate their instructional practices to the wide range of abilities, diverse cultural backgrounds, and various special needs they face in their classrooms.

**Enhancing Teaching and Learning with Technology.** It is important for beginning teachers to step into the classroom ready to use computers, digital technology, and the Internet and social media in support of their teaching and to enhance student learning. A boxed feature, Enhancing Teaching and Learning with Technology, can be found in most chapters to help accomplish this goal. Computer and digital technologies pertaining to a particular chapter topic are highlighted and how these technologies are influencing education today and in the future is discussed.

**Home and School.** An increasing amount of evidence suggests that home, family, and community matter a lot in what students learn. This feature was introduced in the eighth edition of *Learning to Teach* and expanded in the current edition. It emphasizes the importance of developing family partnerships and for staying connected to the students' homes and communities. This feature is included in chapters as appropriate, and it provides beginning teachers with concrete guidance on how to work with families and how to involve the community.

## Support for Student Learning

*Learning to Teach* has several features created to support learning and to help readers access and learn information from the text.

- **Learning Goals.** Each chapter begins with Learning Goals that focus the student on key aspects of the chapter.



- **Check, Extend, Explore.** Each major chapter section concludes with “Check” questions to help the reader review the content covered, “Extend” questions that prompt reflection and also ask poll questions that the reader can respond to on the Online Learning Center, and “Explore” listings of related Web site topics that can be linked to through the Online Learning Center.
- **Marginal Notes.** Throughout the chapters, marginal notes highlight main ideas and define important concepts.
- **Summary.** Tied to the chapter-opening Learning Goals, the summary provides a point-by-point review of the chapter’s content.
- **Key Terms.** Key terms with page references are listed at the end of each chapter. Definitions are listed in the book-ending Glossary.
- **Books for the Professional.** At the end of each chapter a list of books deemed important for further exploration of the chapter’s topics is provided. These have been carefully vetted for relevancy and accuracy.

## Application and Interactive Opportunities

Although many aspects of teaching can be guided by the knowledge base, many others can be looked at from more than one point of view and require problem solving and reflection on the part of teachers. *Learning to Teach* includes several applied features that allow teacher candidates to reflect on important issues, compare their ideas and opinions to those of experienced teachers, and practice what they are learning.

- **Reflecting On . . .** Each chapter begins with a short scenario and series of questions designed to prompt readers to reflect on their own lives and classroom experiences to prepare them for the content to follow. Readers can respond to the questions through the Online Learning Center.
- **Reflections from the Classroom—Case Study.** Each chapter concludes with a classroom case or teaching situation that is followed by reactions to the scenario from two experienced classroom teachers.
- **Portfolio and Field Experience Activities.** Organized by *Learning to Teach* chapters, these activities constitute a field guide that assists teacher candidates in gathering and interpreting data, examining their own experiences, and developing a professional portfolio. The activities are on the Online Learning Center and each is matched to one or more of the InTASC Standards.
- **Lesson Planning Exercises and Practice Activities.** The Online Learning Center includes two types of interactive activities that were designed to help teacher candidates apply what they are learning by giving them the opportunity to plan lessons and engage in a variety of practice activities. The *Lesson Planning Exercises* walk the student through planning a lesson based on particular approaches to teaching. The student is given a task and the tools (background information about a real classroom, student descriptions, video clips, sample lesson plans, etc.) to complete it. Each task constitutes one step in planning a lesson based on a particular approach to teaching. The stand-alone *Practice Activities* allow the student to complete an activity that a teacher would typically do.
- **Portfolio Resources.** Many teacher candidates today are required to have a professional portfolio. To help students with the construction of portfolios, the *Portfolio and Field Experience Activities* section of the Online Learning Center includes

an introduction to portfolios as well as many activities that can become portfolio artifacts. Additionally, many of the text features can guide portfolio exhibit development.

## New in the Tenth Edition

As with previous editions, revisions for this edition were based on my own experiences in schools as well as on systematically gathered feedback from users and colleagues across the country. Although the general goals, themes, and features of the previous editions have remained constant, many revisions have been made in response to user feedback, as well as to developments in the expanding knowledge base on teaching and learning and to recent changes in the societal and policy environments.

Based on reviewer comments and on developments in the field, this edition includes new or expanded content on the following topics:

- Continued coverage of the cognitive/constructivist views of teaching and learning, including the growing importance of the neurosciences for understanding human motivation and learning.
- Increased coverage and emphasis on the impact of digital technologies, social media, and global communication on the context of teaching and learning, and their impact on the lives of students.
- Expanded coverage of standards-based education along with challenges and opportunities created as a result of the Common Core Standards that are beginning to be implemented as this edition of *Learning to Teach* is revised.
- New discussion in Chapter 5 (classroom management) with more attention to strategies for secondary teachers and ways to motivate and work with students who are seriously disengaged. A new section on how to deal with “bullying” has also been included, along with a new technology box on “cyberbullying.”
- Continued emphasis on the importance of diversity in today’s classroom and the importance for teachers to be culturally competent.
- Continued emphasis on the importance of formative assessment for enhancing student learning.

The tenth edition also includes important updates and perspectives of the Enhancing Teaching and Learning with Technology feature. This feature has been updated to include new developments in technology and social media and its use in the classroom, as well as a description of the Net generation of students found in today’s classrooms. Additionally, more than 100 new references have been added to ensure the currency of the knowledge base on teaching and learning.

## Supplements

This edition of *Learning to Teach* is accompanied by a wealth of supplemental resources and learning aids for both instructors and students.

### For the Instructor

- **Instructor’s Online Learning Center at [www.mhhe.com/arends10e](http://www.mhhe.com/arends10e).** The password-protected instructor’s section of the Online Learning Center contains the Instructor’s Manual, PowerPoint slides, and a Test Bank along with access to the online student resources. Contact your local sales representative for log-in instructions.

- **Teaching Methods in the Classroom.** This original video includes twelve segments that show teachers implementing the various approaches and strategies described in the text as well as other important teaching processes.
- **PowerPoints.** A complete package of PowerPoint slides for each chapter is available for instructors. It can be found in the Online Learning Center.

### For the Student

- **Student Online Learning Center at [www.mhhe.com/arends10e](http://www.mhhe.com/arends10e).** The Student Online Learning Center contains Lesson Planning Exercises and Practice Activities, Portfolio and Field Experience activities, the *Teachers on Teaching* audio clips referenced in the text, resources for using *Learning to Teach* to prepare for the PRAXIS II™ exam, an Action Research Handbook, the Lesson Plan Builder, and a rich set of student study guide materials. Among the study guide materials are self-grading practice quizzes with feedback, key word flashcards, chapter outlines, and links to outside Web sites for further study. Students can also use the Online Learning Center to respond to the *Reflecting On . . .* and *Extend* poll questions posed in the text and compare their answers to a pool of students nationwide.

## Student and Instructor Feedback

As with previous editions, I encourage students to provide feedback about any and all aspects of the text. Please e-mail me at [arends@ccsu.edu](mailto:arends@ccsu.edu).



## CourseSmart eTextbooks

This text is available as an eTextbook from CourseSmart, a new way for faculty to find and review eTextbooks. It's also a great option for students who are interested in accessing their course materials digitally and saving money. CourseSmart offers thousands of the most commonly adopted textbooks across hundreds of courses from a wide variety of higher education publishers. It is the only place for faculty to review and compare the full text of a textbook online, providing immediate access without the environmental impact of requesting a print exam copy. At CourseSmart, students can save up to 50 percent off the cost of a print book, reduce their impact on the environment, and gain access to powerful Web tools for learning including full text search, notes and highlighting, and e-mail tools for sharing notes between classmates. For further details, contact your sales representative or go to [www.coursesmart.com](http://www.coursesmart.com).



## McGraw-Hill Create [www.mcgrawhillcreate.com](http://www.mcgrawhillcreate.com)

Craft your teaching resources to match the way you teach! With McGraw-Hill Create, you can easily rearrange chapters, combine material from other content sources, and quickly upload content you have written, such as your course syllabus or teaching notes. Find the content you need in Create by searching through thousands of leading McGraw-Hill textbooks. Arrange your book to fit your teaching style. Create even allows

you to personalize your book's appearance by selecting the cover and adding your name, school, and course information. Order a Create book and you'll receive a complimentary print review copy in three to five business days or a complimentary electronic review copy (eComp) via e-mail in about one hour. Go to [www.mcgrawhillcreate.com](http://www.mcgrawhillcreate.com) today and register. Experience how McGraw-Hill Create empowers you to teach *your* students *your* way.

## Acknowledgments

Because the field of teaching and learning is becoming so comprehensive and so complex, I have relied on colleagues to assist in writing about topics outside my own area of expertise. Outstanding contributions were made in previous editions by chapter authors Dr. Richard Jantz, Dr. Virginia Richardson, and the late Dr. Nancy Winitzky.

I also want to acknowledge and extend my thanks to the many co-teachers and colleagues from over the years. Drs. Hilda Borko, Sharon Castle, Pat Christensen, Lenore Cohen, Neil Davidson, Margaret Ferrara, Jim Henkelman, Nancy Hoffman, Shelley Ingram, Paulette Lemma, Frank Lyman, Linda Mauro, Joe McCaleb, Ronald Moss, Karen Riem, Kathy Rockwood, Susan Seider, Carole Shmurak, and Roger Zieger have not only been a source of support but have provided important input for early versions of the manuscript as well as for this revision.

I want to extend a special thanks to Dr. Sharon Castle, a colleague from George Mason University, who was the primary developer of the case exercises and practice activities. Dr. Castle was also responsible for much of the early development and editing of the audio and video clips. Finally, a very, very special thanks to two Vicki's. The first to my wife, Vicki Foreman, who assisted with many final editing tasks, double-checked all the references, and helped me think through my discussions about the Visible Thinking Program and how best to teach students how to think. The second to Vicki Butler, a teacher and IT coordinator at the Seattle Academy, who was so gracious with her time to teach me about how technology can be used to enhance student learning.

The Reflections from the Classroom and Teachers on Teaching features are brought to life by the following classroom teachers who shared their experiences. Thank you.

Angela Adams	Kendra Ganzer
Faye Airey	Mike Girard
Ian Call	Dennis Holt
Amy Callen	Patricia Merkel
Diane Caruso	Jason O'Brien
Lynn Ciotti	Jennifer Patterson
Ellen Covell	Addie Stein
Sandra Frederick	Vickie Williams

Many reviewers also contributed useful reactions and critiques that have resulted in a much-improved text. I would like to extend a special thanks to the reviewers who provided feedback during the revision of the ninth and tenth editions:

Judith Barbour, *Eastern Illinois University*  
 Wendy Burke, *Eastern Michigan University*  
 Richard Cangro, *Western Illinois University*  
 Patricia Hewitt, *The University of Tennessee at Martin*  
 Laura Hopfer, *Lincoln Memorial University*

Deborah MacCullough, *Philadelphia Biblical University*  
Wendy McCarty, *University of Nebraska at Kearney*  
Jane Murphy, *Middlesex Community College*  
Leonard Parker, *Liberty University*  
Michal Lorraine Rosenberger, *Concordia University Texas*  
Donald Shepson, *Montreat College*  
Annette Smith, *South Plains College*  
Robert Townsend, *Indiana Wesleyan University*  
Eileen Lorraine Yantz, *Gaston College*

Thanks to the editorial and production team whose work has supported the book's development, production, and marketing: Craig Leonard, Freelance Developmental Editor; Penina Braffman, Managing Editor; Alexandra Schultz, Marketing Specialist; Heather Ervolino, Content Project Manager; Susan K. Culbertson, Buyer; Marian John Paul, Full-Service Project Manager; and Jennifer Bartell, Media Project Manager.

# PART 1 Teaching and Learning in Today's Classrooms

**P**art 1 of *Learning to Teach* is about teachers and teaching, students and learning. The chapters in Part 1 are designed to provide you with background information about teaching and learning that will serve as a foundation for understanding later chapters that describe a variety of teaching approaches, strategies, and tactics.

Chapter 1, *The Scientific Basis for the Art of Teaching*, provides a brief historical perspective on teaching from colonial times to the present and strives to show how expectations for teachers have been characterized by both constancy and change. As you will read, some aspects of teaching are not much different than they were one hundred years ago. Others have changed dramatically over the past two decades, particularly those aspects of the role needed to address new and important teaching challenges of the twenty-first century.

Most important, Chapter 1 outlines the overall perspective on the purposes and conceptions of effective teaching that has influenced the plan and content of *Learning to Teach*. This perspective holds that teaching is both an art and a science and that effective teachers base their practices on both traditions. On one hand, effective teachers use research on teaching and learning to select practices known to enhance students' learning. On the other hand, teaching has an artistic side that rests on the collective wisdom of experienced teachers. Experienced teachers know that there is no one best way to teach in all situations. Instead, effective teachers have repertoires of practices known to stimulate student motivation and to enhance student learning. Particular practices are selected depending on the goals teachers are trying to achieve, the characteristics of particular learners, and community values and expectations.

Chapter 2, *Student Learning in Diverse Classrooms*, tackles one of the most difficult challenges faced by teachers today: how to ensure that every child reaches his or her potential regardless of the abilities or backgrounds each brings to school. This chapter examines the challenges and opportunities diversity presents and describes how, unlike in earlier times, today's classrooms are characterized by many different kinds of students and are governed by societal beliefs that the learning potential of all children must be realized: "No child can be left behind." The chapter describes diversity at both ends of the spectrum of students labeled exceptional—those with learning disabilities and those who are gifted. Similarly, differences in race, ethnicity, culture, religion, language, and gender are also described in some detail. The chapter introduces several new conceptions of diversity and provides extensive discussion about strategies and guidelines for teaching and working with diverse groups of students in inclusive classrooms.

## Chapter 1

The Scientific Basis for the Art of Teaching 2

## Chapter 2

Student Learning in Diverse Classrooms 40



# CHAPTER 1

## *The Scientific Basis for the Art of Teaching*

### *Learning Goals*

After studying this chapter you should be able to

#### **The Scientific Basis for the Art of Teaching**

Explain the meaning of the “scientific basis for the art of teaching.”

#### **Historical Perspective on Teaching**

Describe how perspectives on effective teaching have changed over time and how teachers’ roles have changed as a result of historical and demographic forces.

#### **A Perspective on Effective Teaching for the Twenty-First Century**

Identify and discuss the essential attributes of the effective teacher for twenty-first-century schools.

#### **Learning to Teach**

Explain how learning to teach is a developmental process and describe the flexible stages teachers go through as they progress from novice to expert status.



### *Reflecting on Learning to Teach*

If you are like many individuals, you begin this book and this course with a sense of excitement and challenge, perhaps also some concerns. You have decided you want to be a teacher, but you also know some of the challenges teachers face today, and you know you have a lot to learn if you are going to meet these challenges. Before you read this chapter, take a few minutes to think about teachers, teaching, and education today.

- Think about the best teachers you have had. Do you still know their names? Why were they good teachers? How did they influence your life?
- Think about teachers you didn’t think were very good. Why didn’t you consider them good teachers? Regardless of how good they were, what kind of influences did they have on your life?
- Which aspects of teaching do you look forward to the most? Which aspects give you the greatest concern? What do you see as the major challenges facing teachers today?
- Think about education in general. Do you believe most schools are doing a good job? Or do you believe schools are in lots of trouble and need serious reform? Do you see yourself as a person who can help schools become better?



Go to the Online Learning Center at [www.mhhe.com/arends10e](http://www.mhhe.com/arends10e) to respond to these questions.



Teaching offers a bright and rewarding career for those who can meet the intellectual and social challenges of the job. Despite the spate of reports over the years critical of schools and teachers, most citizens continue to support schools and express their faith in education. The task of teaching the young is simply too important and complex to be handled entirely by parents or through the informal structures of earlier eras. Modern society needs schools staffed with professional teachers to provide instruction and to care for children while parents work.

Teaching has a scientific basis—its practices are based on research and scientific evidence.

In our society, teachers are given professional status. As professionals, they are expected to use **best practice** to help students learn essential skills and attitudes. It is no longer sufficient for teachers to be warm and loving toward children, nor is it sufficient for them to employ teaching practices based solely on intuition, personal preference, or conventional wisdom. Contemporary teachers are held accountable for using teaching practices that have been shown to be effective, just as members of other professions, such as medicine, law, and architecture, are held to acceptable standards of practice. This book is about how to learn and to use best practice—practice that has a **scientific basis**. It is aimed at helping beginning teachers master the knowledge base and the skills required of professionals whose job it is to help students learn.

This book also explores another side of teaching: the **art of teaching**. Like most human endeavors, teaching has aspects that cannot be codified or guided by scientific knowledge alone but instead depend on a complex set of individual judgments based on personal experiences. Nathaniel Gage (1984), one of the United States' foremost educational researchers, some years ago described the art of teaching as “an instrumental or practical art, not a fine art aimed at creating beauty for its own sake”:

As an instrumental art, teaching is something that departs from recipes, formulas, algorithms. It requires improvisation, spontaneity, the handling of hosts of considerations of form, style, pace, rhythm, and appropriateness in ways so complex that even computers must, in principle, fall behind, just as they cannot achieve what a mother does with her five-year-old or what a lover says at any given moment to his or her beloved. (p. 6)

Carol Ann Tomlinson and Amy Germundson (2007) have also written about the nonscientific aspect of teaching and compared teaching to creating jazz. They write:

Teaching well . . . is like creating jazz. Jazz blends musical sounds from one tradition with theories from another. . . . It incorporates polyrhythm. It uses call-and-response, in which one person comments on the expression of another. And, it invites improvisation. (p. 7)

Teaching is also an art based on teachers' experiences and the wisdom of practice.

Notice some of the words used by Gage and by Tomlinson and Germundson to describe teaching—*form*, *spontaneity*, *pace*, *polyrhythm*, *call-and-response*, *improvisation*. These words describe aspects of teaching that research cannot measure very well but that are nonetheless important characteristics of best practice and are contained in the wisdom of experienced teachers. This book strives to show the complexity of teaching—the dilemmas faced by teachers and the artistic choices that effective teachers make as they perform their daily work. It also presents an integrated view of teaching as a science and as an art, and emphasizes that what we know about teaching does not translate into easy prescriptions or simple recipes.

“The dream begins with a teacher who believes in you, who tugs and pushes and leads you onto the next plateau.”

Dan Rather

This chapter begins with a brief historical sketch of teaching, because the basic patterns of teaching today are intertwined in the web of history and culture, which impact the processes of learning to teach. This introduction is followed by the perspective on effective teaching that has guided the design and writing of *Learning to Teach*. The final section of the chapter describes a portion of what is known about the processes of learning to teach. It tells how beginners can start the process of becoming effective



*Vast changes in the nineteenth century determined many elements of the educational system we have today.*

teachers by learning to access the knowledge base on teaching, accumulating the wisdom of practice, and reflecting on their experiences.

## Historical Perspective on Teaching

Conceptions of teaching reflect the values and social philosophy of the larger society, and as these elements change, so, too, does society's view of its teachers. To understand the role of the teacher in today's society requires a brief historical review of some of the important changes that have taken place in teaching and schooling over the past three centuries.

### Role Expectations in Earlier Times

The role of teacher, as we understand it today, did not exist in the colonial period of our national history. Initially, literate individuals, often young men studying for the ministry, were hired on a part-time basis to tutor or teach the children of the wealthier families in a community. Even when schools started to emerge in the eighteenth century, the teachers selected by local communities did not have any special training, and they were mainly middle-class men who chose to teach while they prepared for a more lucrative line of work.

Common, or public, schools came into existence in the United States between 1825 and 1850. During this era and for most of the nineteenth century, the purposes of schools were few and a teacher's role rather simple, compared to today. Basic literacy and numeracy skills were the primary goals of nineteenth-century education, with the curriculum dominated by what later came to be called the three Rs: reading, writing, and arithmetic. Most young people were not required (or expected) to attend school,

**Standards for teachers in the nineteenth century emphasized the conduct of their personal lives over their professional abilities or abilities to accomplish student learning.**

**Figure 1.1** *Sample Nineteenth-Century Teacher Contract*

I promise to take a vital interest in all phases of Sunday-school work, donating of my time, service and money without stint for the benefit and uplift of the community.

I promise to abstain from dancing, immodest dressing, and any other conduct unbecoming a teacher and a lady.

I promise not to go out with any young man except as it may be necessary to stimulate Sunday-school work.

I promise not to fall in love, to become engaged or secretly married.

I promise to remain in the dormitory or on the school grounds when not actively engaged in school or church work elsewhere.

I promise not to encourage or tolerate the least familiarity on the part of any of my boy pupils.

I promise to sleep eight hours a night, eat carefully...

Source: Brenton (1970), p. 74.

and those who did so remained for relatively brief periods of time. Other institutions in society—family, church, and work organizations—held the major responsibility for child rearing and helping youth make the transition from family to work.

Teachers were recruited mainly from their local communities. Professional training of teachers was not deemed important, nor was teaching necessarily considered a career. Teachers by this time were likely to be young women who had obtained a measure of literacy themselves and were willing to “keep” school until something else came along. Standards governing teaching practice were almost nonexistent, although rules and regulations governing teachers’ personal lives and moral conduct could, in some communities, be quite strict. Take, for example, the set of promises, illustrated in Figure 1.1, that women teachers were required to sign in one community in North Carolina. This list may be more stringent than many others in use at the time, but it gives a clear indication of nineteenth-century concern for teachers’ moral character and conduct and apparent lack of concern for teachers’ pedagogical abilities.

## Twentieth-Century Role Expectations

By the late nineteenth and early twentieth centuries, the purposes of education were expanding rapidly, and teachers’ roles took on added dimensions. Comprehensive high schools as we know them today were created, most states

passed compulsory attendance laws that required all students to be in school until age 16, and the goals of education moved beyond the narrow purposes of basic literacy. Vast economic changes during these years outmoded the apprentice system that had existed in the workplace, and much of the responsibility for helping youth to make the transition from family to work fell to the schools. Also, the arrival of immigrants from other countries, plus new migration patterns from rural areas into the cities, created large, diverse student populations with more extensive needs than simple literacy instruction. Look, for example, at the seven goals for high school education issued by a committee appointed by the National Education Association in 1918, and notice how much these goals exceed the focus on the three Rs of earlier eras:

1. Health
2. Command of fundamental processes
3. Worthy home membership
4. Vocational preparation
5. Citizenship
6. Worthy use of leisure time
7. Ethical character

Such broad and diverse goals made twentieth-century schools much more comprehensive institutions as well as places for addressing some of the societal problems and reforms that characterized the twentieth century. Schools increasingly became instruments of opportunity, first for immigrants from Europe and later for African Americans, Hispanics, Asians, and other minority groups who had been denied access

to education in earlier times. Expanding their functions beyond academic learning, schools began providing such services as health care, transportation, extended day care, and breakfasts and lunches. Schools also took on various counseling and mental health functions—duties that earlier belonged to the family or the church—to help ensure the psychological and emotional well-being of youth.

Obviously, expanded purposes for schooling had an impact on the role expectations for teachers. Most states and localities began setting standards for teachers that later became requirements for certification. Special schools were created to train teachers in the subject matters they were expected to teach and to ensure that they knew something about **pedagogy**. By the early twentieth century, teachers were expected to have two years of college preparation; by the middle of the century, most held bachelor's degrees. Teaching gradually came to be viewed as a career, and professional organizations for teachers, such as the National Education Association (NEA) and the American Federation of Teachers (AFT), took on growing importance, both for defining the profession and for influencing educational policy. Teaching practices of the time, however, were rarely supported by research, and teachers, although expected to teach well, were judged by vague global criteria, such as “knows subject matter,” “acts in a professional manner,” “has good rapport,” and “dresses appropriately.” However, progress was made during this period, particularly in curriculum development for all the major subject areas, such as reading, mathematics, social studies, and science. Also, major work was accomplished in helping to understand human development and potential as well as how students learn.

The study of the art and science of teaching is called pedagogy.

## Teaching Challenges for the Twenty-First Century

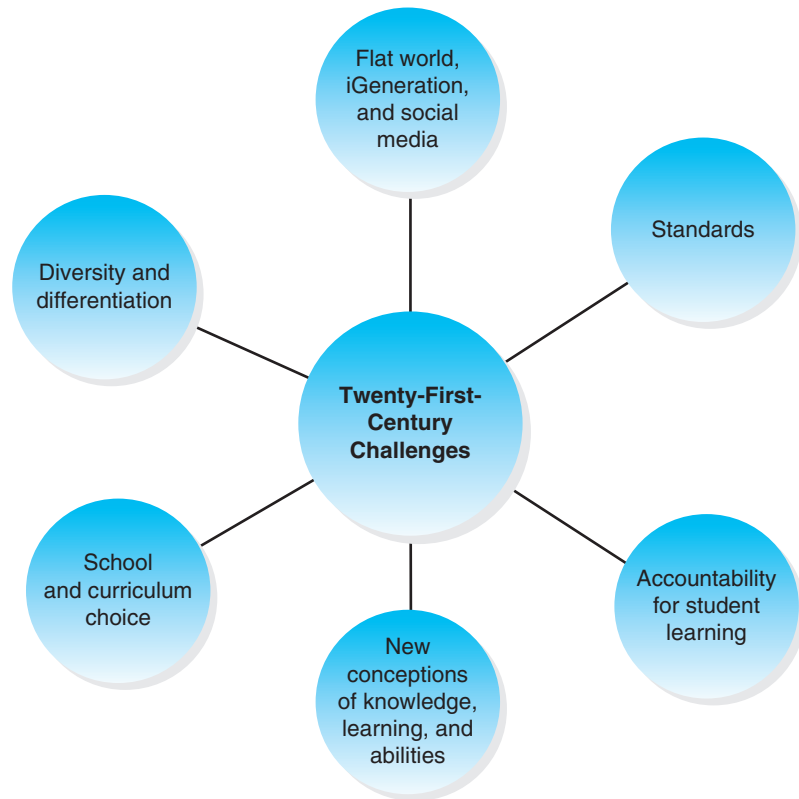
No crystal ball can let us look fully into the future. Certain trends, however, are likely to continue, and some aspects of education and teaching will remain the same, while others may change rather dramatically (see Figure 1.2). On one hand, the tremendous changes occurring in the way information is stored and accessed with computers and digital technologies holds the potential to change many aspects of education. The Internet has already demonstrated its potential of connecting students to a vast array of resources not previously available as well as to other people around the world. Many believe that the Internet will become, if it hasn't already, the primary medium for information and will substantially redefine other forms of print and visual publications. Several commentators, such as Friedman (2005), Gore (2007), Tapscott (2008), and West (2012), have observed that the Internet has replaced television as the primary means for political and social dialogue and has become the “intellectual commons” for globalwide collaborative communities. Obviously, this has important implications for education and the goals and curricula we devise.

On the other hand, it is likely, at least in the immediate future, that society will continue to require young people to go to school. Education will remain committed to a variety of goals and some new ones may be added, but **academic learning** will remain the most important. Also, it is *not* likely that the physical space called *school* will change drastically in the foreseeable future. Organizing and accounting for instruction will change, online education and virtual schooling will expand, but if history is a guide, this change will come slowly. Schools will likely continue to be based in communities, and teachers will continue to provide instruction to groups of children in rectangular rooms.

Academic learning is likely to remain the most important purpose of schooling.

Contemporary reform efforts show the potential of bringing new and radical perspectives about what academic learning means and how it can best be achieved. New

**Figure 1.2** Challenges for Twenty-First-Century Teachers



perspectives also are emerging as to what constitutes *community* and its relationship to the common school. The nature of the student population and the expectations for teachers are additional factors that likely will change in the decades ahead.

**Flat World, the iGeneration, and Social Media.** In a very interesting book, Thomas Friedman (2005) almost a decade ago described how technology has flattened our world and reshaped our lives in rather dramatic ways. By “flattened,” he means that technological advances have provided greater access to information and jobs and that information has become global and instantaneous. Worldwide Internet access makes services and products available to just about anyone, anywhere, and events in one place on the globe affect not only that place, but every other place as well.

As U.S. society completes the transition into the information age described by Friedman, teaching and schools will be required to change, just as they did when we moved from an agrarian to an industrial society in the late nineteenth century. Learning in a flat world, according to Friedman, has become easier for students, but it has also made education more difficult and complex. Students today, including most of you as you were growing up, have had access to information unknown to earlier generations, and the Internet and social media have captured everyone’s attention. At the same time, these elements pose difficulties in determining the validity and reliability of information and have caused some students to become completely turned off to more traditional in-school learning. Tapscott (2010), Rosen (2010), and Giant (2013) have referred to today’s students as the *Net generation* or the *iGeneration*. They argue that tomorrow’s teachers will need to move away from an outdated, broadcast-style pedagogy (i.e., lecture and drilling) toward student-focused, multimodal pedagogy,

where “the teacher is no longer in the transmission of data business, . . . [but rather] in the customizing-learning-experiences-for-students business” (Tapscott, 2010, p. 1). The practice of “flipping classrooms” (Honeycutt, 2013; Sams & Bergmann, 2013), described in more detail later, is one example of how teachers are moving away from the transmission mode.

We don’t know exactly how schools will look by the middle of the twenty-first century. Futurists, however, have argued that formal schooling as currently conceived and practiced will be as out-of-date in the system of learning as the horse and buggy are in the modern transportation system. The fact that over fifteen million K–12 students are currently involved in some form of online education or e-learning is evidence that education is changing.

Integrating technology into teaching is such a critical challenge for twenty-first-century teachers that we have included a special feature in *Learning to Teach* labeled Enhancing Teaching and Learning with Technology. This feature consists of box inserts in every chapter to help you see how teaching today is influenced by technology, how technology impacts the lives of students, and how the use of technology can enhance student engagement and learning. The Enhancing Teaching and Learning with Technology box for Chapter 1 provides an overall perspective about technology and poses the question: Can technology transform education? Later chapters will highlight particular aspects of technology related to the chapter’s content. For instance, effective use of the Web to assist student investigations will be discussed in Chapter 10 on problem-based learning. The concept of “flipping classrooms” as a technological alternative to in-class presentations or demonstrations will be described in Chapter 7. For the most part, the Enhancing Teaching and Learning with Technology feature will not provide a lengthy list of specific resources, such as Web sites or computer software, currently available for teachers to use; there are simply too many and they represent too much diversity to be effectively reviewed in a book like *Learning to Teach*. Instead we will strive to highlight a few resources, describe trends in the use of technology to enhance teaching and learning, and provide road maps for those of you who want to learn more.

**Diversity.** One of the most complex challenges facing twenty-first-century teachers has been how to transform schools and approaches to teaching that were created in the late nineteenth and early twentieth centuries, a time when most of the students in schools had Western European backgrounds and spoke English, to the schools and approaches required today to meet the needs of a much more diverse student population. Schools in the United States have been experiencing a major demographic shock over the past forty years, a shift that will affect schools and teachers well into the twenty-first century. The most important demographic shift involves the increasing number of students who have non-European ethnic or racial heritages, who speak English as a second language, and/or who live in poverty.

As will be described in more detail in Chapter 2, almost 15 percent of students in schools today have disabilities and receive services under the Individuals with Disabilities Act (IDEA). More than one-third of students have non-European heritage, up from one-fifth in 1970. By 2020, it is predicted that as many as one-half to two-thirds of students in public schools will have Latina/Latino, Asian, or African American backgrounds (*The Condition of Education*, 2009, 2012). Similarly, linguistic diversity constitutes a rapidly growing shift as an increasing number of non-English-speaking children attend the public schools. The number of English language learners (ELLs) has more than doubled over the past thirty years. Today they represent more than

We live in a global, multicultural society; it is a condition of our culture.

Today, 20 percent of children in school are English language learners.