Assessment in Early Childhood Education

EIGHTH EDITION



Sue C. Wortham . Belinda). Hardin

Eighth Edition

Assessment in Early Childhood Education

Sue C. Wortham *Professor Emerita University of Texas at San Antonio*

Belinda J. Hardin Associate Professor Emerita The University of North Carolina at Greensboro



Director and Publisher: Kevin Davis Executive Portfolio Manager: Aileen Pogran Managing Content Producer: Megan Moffo Portfolio Management Assistants: Maria Feliberty Development Editor: Krista McMurray Executive Product Marketing Manager: Christopher Barry Executive Field Marketing Manager: Krista Clark Manufacturing Buyer: Carol Melville Cover Design: Pearson CSC Cover Art: Iam_Anupong/ Shutterstock Media Producer: Autumn Benson Full-Service Vendor: Pearson CSC Full-Service Project Management: Pearson CSC, Rowena Saycon and Kabilan Selvakumar Printer/Binder: LSC Communications, Inc. Cover Printer: Phoenix Color/Hagerstown Text Font: 9.5/13 Palatino LT Pro

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

Every effort has been made to provide accurate and current Internet information in this book. However, the Internet and information posted on it are constantly changing, so it is inevitable that some of the Internet addresses in this textbook will change.

Copyright © **2020**, **2016**, **2012**, **2008**, **2005**, **2001** by Pearson Education, Inc. **221** River Street, Hoboken, NJ 07030. 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. For information regarding permissions, request forms, and the appropriate contacts within the Pearson Education Global Rights & Permissions department, please visit www.pearsoned.com/permissions.

PEARSON and ALWAYS LEARNING are exclusive trademarks in the U.S. and/or other countries owned by Pearson Education, Inc. or its affiliates.

Library of Congress Cataloging-in-Publication Data

Wortham, Sue Clark
Assessment in early childhood education/Sue C. Wortham, Belinda Hardin.—Eighth edition.
p. cm.
Includes index.
ISBN 978-0-13-520652-2—ISBN 0-13-520652-9
1. Educational tests and measurements—United States. 2. Psychological tests for children—United
States. 3. Ability in children—United States—Testing. 4. Early childhood education—United States—
Evaluation. I. Hardin, Belinda June II. Title.
LB3060.217.W67 2016
372.21—dc23
2014040128

 $10 \ 9 \ 8 \ 7 \ 6 \ 5 \ 4 \ 3 \ 2 \ 1$



ISBN-13: 978-0-13-520652-2 ISBN-10: 0-13-520652-9

Brief Contents

viii

ix

About the Authors Preface

PA	RT I Introduction to Assessmer Early Childhood	nt in
1	An Overview of Assessment in Early Childhood	1
2	How Infants and Young Children Should Be Assessed	33
3	Communicating with Families	59
PA	RT II Standardized Tests	
4	How Standardized Tests Are Used, Designed, and Selected	78
5	Using and Reporting Standardized Test Results	106

PART III Classroom Assessments			
6	Data-Driven Decision Making, Assessment, and Documentation	137	
7	Observation	153	
8	Checklists, Rating Scales, and Rubrics	187	
9	Teacher-Designed Assessment Strategies	215	
10	Performance-Based Assessment Strategies	244	
11	Portfolio Assessment	271	
Gloss Index	5	299 303	

Contents

Part I Introduction to Assessment in Early Childhood Components of an Assessment System for Infants and Toddlers 4 1 An Overview of Assessment in Early Childhood 1 Using Assessment System for Young Children 4 Understanding the Purposes of Assessment in Infancy and Early Childhood 1 Using Assessment Results to Plan for Instruction and to Using Assessment Results to Report Progress 4 Purposes of Assessment? 2 Using Assessment Results to Report Progress 4 The History of Tests and Measurements in Early Childhood 4 Using Assessment Results to Report Progress 4 The Child Study Movement 5 1 Environmental Assessment 46 Sues and Tends in Assessment in Early Childhood 4 During the School Year with School-Age Children 50 Issues in a New Century: The Accountability Era Concerns about Assessing Young Children with Disabilities 1 1 1 Concerns about Assessing Young Children with Disabilities 1 1 1 1 Suggested Activities 26 3 Communicating with Families 55 Suggested Activities 26 26 1 1 1 1 Suggested Activities 26 <	About tl	he Authors	viii	How Infants and Young Children Are Assessed	39
Introduction to Assessment in Early Childhood Infants and Toddlers 43 I An Overview of Assessment in Early Childhood Infants and Toddlers 43 Understanding the Purposes of Assessment in Infancy and Early Childhood Infants and Toddlers 43 Understanding the Purposes of Assessment in Infancy and Early Childhood Infants and Toddlers 43 What Is Assessment? 2 Using Assessment Results to Plan for Instruction 44 Purposes of Assessment? 2 Using Assessment Results to Plan for Instruction 45 Purposes of Assessment? 2 Using Assessment Results to Plan for Instruction 45 Purposes of Assessment? 2 Using Assessment Results to Plan for Instruction 45 Purposes of Assessment? 2 Using Assessment Results to Plan for Instruction 45 Purposes of Assessment? 2 Using Assessment Results to Plan for Instruction 45 The Child Study Movement 5 Purposes of Assessment? 45 Isues in a New Century: The Accountability Era 2 Challenges Men Assessing Young Children in Early Childhood 5 5 Early Childhood Settings 14 Concerns about Assessing Young Children with Disabilities 18 52 Concerns about Assessing Young Children with Disabilities	Preface		ix	÷ ,	42
1 An Overview of Assessment in Early Childhood 1 Understanding the Purposes of Assessment in Infancy and Early Childhood 1 Understanding the Purposes of Assessment in Infancy and Early Childhood 2 What Is Assessment? 2 Purposes of Assessment 2 Using Assessment Results to Plan for Instruction 45 What Is Assessment? 2 Purposes of Assessment? 2 Childhood 4 The History of Tests and Measurements in Early Childhood 4 Child Study Movement 5 Standardized Tests 6 Head Start and the War on Poverty 7 Issues in a New Century: The Accountability Era Concerns about Assessing Young Children with Disabilities 51 Issues in a New Century 10 Concerns about Assessing Young Children with Disabilities 18 Concerns about Assessing Young Children with Disabilities 18 The How Infants and Young Children with Disabilities 18 Suggested Activities 26 Key Terms 26 Selected Organizations 55 References 56 Suggestet Activities	Part		in	Infants and Toddlers	43
Init Early Childhood1Using Assessment Results to Instruction and toUnderstanding the Purposes of Assessment in Infancy and Early Childhood1Using Assessment Results to Plan for Instruction47Using Assessment Results to Export Progress48Purposes of Assessment?2Using Assessment Results to Evaluate the Instructional Program48Purposes of Assessment?2Using Assessment Results to Evaluate the Instructional Program48Purposes of Assessment?2Using Assessment Results to Evaluate the Instructional Program48The History of Tests and Measurements in Early Childhood4Using Assessment Results to Plan for Instruction46The Child Study Movement55Freassessment Results to Evaluate the Instructional Program46The Child Study Movement55Freassessment50Standardized Tests6Preassessment50Head Start and the War on Poverty Legislation for Young Children with Disabilities7Assessment at the End of Instructional Cycles51Issues in a New Century: The Accountability Era Concerns about Assessing Young Children with Disabilities75Evolution of Early Learning Standards52Summary54Selected Organizations55Selected Organizations55References63Communicating with Families59Summary26Selected Organizations55References6Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Chi	1 \Lambda	a Origination of Assessment		Children	45
Understanding the Purposes of Assessment in Infancy and Early ChildhoodUsing Assessment Results to Plan for Instruction46and Early Childhood2Using Assessment Results to Plan for Instruction46Purposes of Assessment? Purposes of Assessment3Instructional Program Environmental Assessment46Purposes of Assessment? Purposes of Assessment3Instructional Program Environmental Assessment46The Child Study Movement Standardized Tests6Preassessment50Head Start and the War on Poverty Legislation for Young Children with Disabilities7Assessment at the End of Instructional Cycles51Issues and Trends in Assessment in Early Childhood Education11Challenges and Guidelines in Assessing Young Children for Standards51Evolution of Early Learning Standards51Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Disabilities14Trends in a New Century20Selected Organizations52Summary25Selected Organizations55References26Suggested Activities Should Be Assessed26A How Infants and Young Children Should Be Assessed33The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and54			1	-	
Understanding the Purposes of Assessment in InfrarcyUsing Assessment Results to Report Progress48Mat Is Assessment?2Using Assessment Results to Evaluate the Instructional Program46Purposes of Assessment?2Using Assessment Results to Evaluate the Instructional Program46The History of Tests and Measurements in Early Childhood4650The Child Study Movement5050Standardized Tests67Head Start and the War on Poverty77Legislation for Young Children with Disabilities7Assessment at the End of Instructional Cycles50Issues and Trends in Assessing frants and Toddlers7Challenges and Guidelines in Assessing Young50Concerns about Assessing Young Children in Early Childhood Settings11Challenges When Assessing Young Children to Meet Standards52Concerns about Assessing Young Children with Disabilities18Summary54Summary545556Summary563Communicating with Families55Summary563Communicating with Families55Selected Organizations663Children 's Development and Learning60References263Communicating with Families5527How Infants and Young Children Should Be Assessed33Communicating with Families557Frenciples of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in t	1r	Early Childhood	1		47
and Early Childhood2Using Assessment Results to Evaluate the Instructional Program44Purposes of Assessment?314Purposes of Assessment?34The History of Tests and Measurements in Early Childhood4How the Assessment 144The Child Study Movement56150Standardized Tests609450Head Start and the War on Poverty Legislation for Young Children with Disabilities7Assessment at the End of Instructional Cycles51Issues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings11Challenges and Guidelines in Assessing Young Children for Standards52Concerns about Assessing Young Children in Early Childhood Settings1452Concerns about Assessing Young Children with Disabilities18Key Terms55Trends in a New Century20Selected Organizations56Summary25Selected Organizations56Suggested Activities663Communicating with Families59Family-Professional Partnerships that Promote Children 's Development and Learning60Should Be Assessed33Communicating Relationships with Families62The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and	Understa	nding the Purposes of Assessment in Infan	су	0	48
Instructional Program48Purposes of Assessment3Instructional Program48Purposes of Assessment49Environmental Assessment49The History of Tests and Measurements in Early Childhood4How the Assessment Process Should Be Implemented During the School Year with School-Age Children50The Child Study Movement56Preassessment50Standardized Tests6Ongoing Assessment50Head Start and the War on Poverty Legislation for Young Children with Disabilities850Issues and Trends in Assessment in Early Childhood11Challenges and Guidelines in Assessing Young Children for Standards51Evolution of Early Learning Standards52Concerns about Assessing Young Children vith Disabilities51Concerns about Assessing Young Children with Disabilities51Concerns about Assessing Young Children with Disabilities52Summary54Summary54Selected Organizations56Selected Organizations66References662How Infants and Young Children Should Be Assessed53Children Should Use Multiple Sources of Information54The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information54The Role of Families in the Screening and54	and Early	y Childhood	2		48
Purposes of Assessment3Environmental Assessment45The History of Tests and Measurements in Early Childhood4How the Assessment Process Should Be Implemented During the School Year with School-Age Children50The Child Study Movement56Preassessment50Standardized Tests6Preassessment50Head Start and the War on Poverty7Assessment at the End of Instructional Cycles51Legislation for Young Children with Disabilities11Challenges and Guidelines in Assessing Young51Issues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings14Challenges When Assessing Young Children to Meet Standards52Concerns about Assessing Young Children with Disabilities14Summary54Summary5455Summary54Suggested Activities263Communicating with Families59Selected Organizations263Communicating with Families59	What	Is Assessment?	2		10
The History of Tests and Measurements in Early Childhood4How the Assessment Process Should Be Implemented During the School Year with School-Age ChildrenChildhood5The Child Study Movement5Standardized Tests6Head Start and the War on Poverty Legislation for Young Children with Disabilities7Issues and Trends in Assessment in Early Childhood7Issues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings11Concerns about Assessing Young Children in Early Childhood Settings14Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Cultural and Language Differences15Summary54Summary54Selected Organizations56Suggested Activities26Selected Organizations26References26Should Be Assessed33Concerns thoul Use Multiple Sources of Information34The Role of Families in the Screening and54	Purpo	oses of Assessment	3	0	
ClinkindedPreassessmentSciol Year with School-Age ChildrenThe Child Study Movement5Standardized Tests6Head Start and the War on Poverty7Legislation for Young Children with Disabilities8Issues and Trends in Assessment in Early Childhood11Education11Issues in a New Century: The Accountability Era12Concerns about Assessing funds and Toddlers14Concerns about Assessing Young Children in14Early Childhood Settings14Concerns about Assessing Young Children with15Cultural and Language Differences16Concerns about Assessing Young Children with15Disabilities18Key Terms56Sunmary56Suggested Activities26Key Terms26Selected Organizations26References262How Infants and Young Children Should Be Assessed33The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and54	The Histe	ory of Tests and Measurements in Early			
Ine Child Study Movement5Preassessment50Standardized Tests6Ongoing Assessment50Head Start and the War on Poverty7Assessment at the End of Instructional Cycles51Legislation for Young Children with Disabilities8End of the School Year Assessment51Issues and Trends in Assessing Infants and Toddlers11Challenges and Guidelines in Assessing Young52Concerns about Assessing Young Children in12Evolution of Early Learning Standards52Concerns about Assessing Young Children with14Meet Standards52Concerns about Assessing Young Children with15Summary54Disabilities18Key Terms55Suggested Activities263Communicating with FamiliesSelected Organizations26Strategies for Establishing and Maintaining Family- Professional Partnerships that Promote Children 's Development and Learning60The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and64	Childhoo	od	4	*	
Standardized lests6Ongoing Assessment50Head Start and the War on Poverty Legislation for Young Children with Disabilities7Assessment at the End of Instructional Cycles51Issues and Trends in Assessment in Early Childhood11Challenges and Guidelines in Assessing Young51Education11Challenges and Guidelines in Assessing Young51Issues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings51Concerns about Assessing Young Children with Disabilities14Challenges When Assessing Young Children to Meet Standards52Concerns about Assessing Young Children with Disabilities14Key Terms52Summary20Selected Organizations55Summary25References56Sugested Activities263Communicating with Families59Selected Organizations263Communicating with Families59References263Communicating with Families59Should Be Assessed33Communicating Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and60	The C	hild Study Movement	5		
Head Start and the War on Poverty77Legislation for Young Children with Disabilities7Issues and Trends in Assessment in Early Childhood11Issues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings11Concerns about Assessing Young Children with Cultural and Language Differences11Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Disabilities15Concerns about Assessing Young Children with Disabilities16Key Terms56Summary56Selected Organizations56References26Selected Organizations26References262How Infants and Young Children Should Be Assessed37The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and54	Stand	ardized Tests	6		
Legislation for Young Children With Disabilities8End of the School Year Assessment51Issues and Trends in Assessment in Early Childhood11Challenges and Guidelines in Assessing Young51Issues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings12Challenges and Guidelines in Assessing Young Children to Meet Standards52Concerns about Assessing Young Children with Cultural and Language Differences14Challenges When Assessing Young Children to Meet Standards52Concerns about Assessing Young Children with Disabilities15Selected Organizations53Trends in a New Century20Selected Organizations56Suggested Activities26A Communicating with Families59Selected Organizations26Family-Professional Partnerships that Promote Children Should Be Assessed59The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and64	Head	Start and the War on Poverty	7		
Issues and Trends in Assessment in Early Childhood11Challenges and Guidelines in Assessing YoungIssues in a New Century: The Accountability Era Concerns about Assessing Young Children in Early Childhood Settings11Challenges and Guidelines in Assessing YoungConcerns about Assessing Young Children with Cultural and Language Differences14Challenges When Assessing Young Children in an Assessment Setting52Concerns about Assessing Young Children with Disabilities14Challenges When Assessing Young Children in an Assessment Setting53Trends in a New Century20Selected Organizations54Suggested Activities26Selected Organizations55Suggested Activities263Communicating with Families59Selected Organizations26Family-Professional Partnerships that Promote Children's Development and Learning602How Infants and Young Children Should Be Assessed33Communicating with Families593The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and65	Legisl	ation for Young Children with Disabilities	8	-	
InductionInductionInductionInductionInductionInductionIssues in a New Century: The Accountability Era12Children for Standards51Concerns about Assessing Young Children in Early Childhood Settings14Children for Standards52Concerns about Assessing Young Children with Cultural and Language Differences14Children for Standards52Concerns about Assessing Young Children with Cultural and Language Differences15Guidelines for Working with Young Children in an Assessment Setting53Concerns about Assessing Young Children with Disabilities18Key Terms54Trends in a New Century20Selected Organizations55Suggested Activities263Communicating with Families59Selected Organizations26Family-Professional Partnerships that Promote Children's Development and Learning59References26Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and64	Issues an	d Trends in Assessment in Early Childhood	l		51
Issues in a New Century: The Accountability Era12Concerns about Assessing Infants and Toddlers14Concerns about Assessing Young Children in Early Childhood Settings14Concerns about Assessing Young Children with Cultural and Language Differences14Concerns about Assessing Young Children with Cultural and Language Differences14Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Disabilities14Summary54Summary54Summary56Suggested Activities56Key Terms56Selected Organizations56References26A How Infants and Young Children Should Be Assessed31Concerts Should Use Multiple Sources of Information34The Rele of Families in the Screening and54	Educatio	n	11		51
Concerns about Assessing Infants and Toddlers14Concerns about Assessing Young Children in Early Childhood Settings14Concerns about Assessing Young Children with Cultural and Language Differences14Concerns about Assessing Young Children with Disabilities14Concerns about Assessing Young Children with Disabilities14Summary54Summary56Suggested Activities16Key Terms56Selected Organizations56References26A How Infants and Young Children Should Be Assessed31The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Rele of Families in the Screening and54			12		52
Concerns about Assessing Young Children in Early Childhood Settings14Meet Standards52Goncerns about Assessing Young Children with Cultural and Language Differences15Guidelines for Working with Young Children in an Assessment Setting53Concerns about Assessing Young Children with Disabilities18Key Terms54Disabilities18Key Terms56Summary20Selected Organizations56Suggested Activities263Communicating with Families59Selected Organizations263Communicating with Families59Selected Organizations263Communicating with Families59Selected Organizations26Family-Professional Partnerships that Promote Children's Development and Learning602How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and65		0	14	, 0	52
Concerns about Assessing Young Children with Disabilities15in an Assessment Setting53Concerns about Assessing Young Children with Disabilities18Key Terms54Trends in a New Century20Selected Organizations55Suggested Activities26References56Suggested Activities263Communicating with Families59Selected Organizations26Family-Professional Partnerships that Promote Children's Development and Learning602How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and65			14	Meet Standards	52
Concerns about Assessing Young Children with DisabilitiesSummary54Disabilities18Key Terms55Trends in a New Century20Selected Organizations56Summary25References56Suggested Activities263Communicating with Families59Selected Organizations263Communicating with Families59Selected Organizations26677References263Communicating with Families592How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and65			15	in an Assessment Setting	53
Disabilities18Key Terms58Trends in a New Century20Selected Organizations58Summary25References56Suggested Activities263Communicating with Families59Selected Organizations263Communicating with Families59Selected Organizations263Communicating with Families59Selected Organizations266077References263Communicating with Families592How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and				Summary	54
Summary25References56Suggested Activities263Communicating with Families59Key Terms263Communicating with Families59Selected Organizations2660Family-Professional Partnerships that Promote Children's Development and Learning60Professional Partnerships that Promote Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34Using Professional Ethics in School-Family Partnerships6534The Role of Families in the Screening and6565	Disab	ilities	18	Key Terms	55
Suggested Activities26Suggested Activities26Key Terms26Selected Organizations26References262 How Infants and Young Children Should Be Assessed2633Communicating with Families34The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information3434The Role of Families in the Screening and	Trend	s in a New Century	20	Selected Organizations	55
Key Terms263 Communicating with Families59Selected Organizations2626References262 How Infants and Young Children Should Be Assessed33The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information3434The Role of Families in the Screening and	Summar	У	25	References	56
Selected Organizations26 References26 Pamily-Professional Partnerships that Promote Children's Development and Learning602How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families60The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34Using Professional Ethics in School-Family Partnerships6534The Role of Families in the Screening and34The Role of Families in the Screening and65	Suggest	ed Activities	26		
Selected Organizations26 References26 Family-Professional Partnerships that Promote Children's Development and Learning60 602How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families60 6033The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34Using Professional Ethics in School-Family Partnerships6534The Role of Families in the Screening and34The Role of Families in the Screening and65	Key Tern	ns	26	3 Communicating with Families	59
References26Children's Development and Learning602How Infants and Young Children Should Be Assessed33Strategies for Establishing and Maintaining Family- Professional Partnerships that Benefit Children Establishing Relationships with Families6033The Principles of Assessment for All Children Assessment Should Use Multiple Sources of Information34Using Professional Ethics in School-Family Partnerships6534The Role of Families in the Screening and65	Selected	I Organizations	26	0	
Ite Principles of Assessment for All Children33Professional Partnerships that Benefit Children Establishing Relationships with Families63The Principles of Assessment for All Children34Using Professional Ethics in School–Family Partnerships65Information34The Role of Families in the Screening and65	Reference	ces	26	5 1	60
Should Be AssessedProfessional Partnerships that Benefit Children63Should Be Assessed33Professional Partnerships that Benefit Children63The Principles of Assessment for All Children34Using Professional Ethics in School–Family63Assessment Should Use Multiple Sources of34Using Professional Ethics in School–Family65Information34The Role of Families in the Screening and65	2 H	low Infants and Young Children		· · · ·	
The Principles of Assessment for All Children34Using Professional Ethics in School–Family Partnerships65Assessment Should Use Multiple Sources of Information34The Role of Families in the Screening and65		Ũ	33	_	63
Assessment Should Use Multiple Sources of InformationPartnerships6534The Role of Families in the Screening and					63
		-	34	0	65
Principles of Assessment for Young Children 37 Assessment Process 66					
	Princi	ples of Assessment for Young Children	37	Assessment Process	66

Soliciting Parental Input for Assessment and Planning		
Families from Diverse Cultures		
Families of Children with Disabilities		
Conducting Effective Parent Conferences		
Types of Parent Conferences		
Preparing for Family Conferences		
Conducting Family Conferences		
Summary		
Key Terms		
Selected Organizations		
References		

Part II Standardized Tests

4 How Standardized Tests Are Used, Designed, and Selected	78	
How Standardized Tests Are Used with Infants		
and Young Children	79	
Types of Standardized Tests	79	
Tests for Infants	80	
Tests for Preschool Children	82	
Tests for School-Age Children	88	
Steps in Standardized Test Design	92	
Specifying the Purpose of the Test	92	
Determining Test Format	92	
Developing Experimental Forms	93	
Assembling the Test		
Standardizing the Test		
Developing the Test Manual	95	
Differences between Test Validity and Test Reliability		
Factors that Affect Validity and Reliability	97	
Standard Error of Measurement	97	
Considerations in Selecting and Evaluating		
Standardized Tests	98	
Summary	101	
Key Terms		
Selected Organizations		
References		
5 Using and Reporting Standardized Test Results	106	

Distinctions between Norm-Referenced and Criterion-Referenced Tests Uses of Norm-Referenced Tests and

Uses of Norm-Referenced Tests with Preschoo	ol –
Children	109
Uses of Norm-Referenced Tests with	
School-Age Children	110
Uses of Criterion-Referenced Tests with	
Preschool Children	110
Uses of Criterion-Referenced Tests with	110
School-Age Children	113
How Standardized Tests Are Interpreted	116
The Normal Curve	117
Standard Deviations	118
Percentile Ranks and Stanines	119
Z Scores and T Scores	120
How Standardized Test Results Are Reported	121
Reporting Standardized Test Results to	
Professionals	122
Individual Test Record	122
Norm-Referenced Scores	122
Class Reports	122
School and District Reports	124
Reporting Standardized Test Scores to Parents	125
Sharing Assessment Results with Parents of	
Children with Disabilities and/or English	
Language Learners (ELLs)	126
Advantages and Disadvantages of Using	
Standardized Tests with Young Children	126
Advantages of Standardized Tests	127
Disadvantages of Standardized Tests	128
High Stakes Testing	129
Measurement Limitations	129
Assessment of Students with Disabilities	100
and/or English Language Learners (ELLs)	130
Misapplication of Test Results with	101
Young Children	131
Summary	132
Key Terms	133
Selected Organizations	133
References	134

Part III Classroom Assessments

6 Data-Driven Decision Making, Assessment, and Documentation 137

Purposes of Assessment in Data-Driven Decision	
Making	138
Defining Data-Driven Decision Making	138
Purposes of Data-Driven Decision Making	139

vi Contents

The Role of Documentation		
The Influence of Reggio Emilia		
Types of Documentation		
Narratives		
Observations of Progress and Performance		
Child Self-Reflections	146	
Results of Work and Play Activities	147	
Individual Portfolios	148	
Summary	150	
Key Terms	151	
Selected Organizations	151	
References	151	
7 Observation	153	
Purposes of Observation	154	
Understanding Children's Behavior	154	
Evaluating Children's Development	155	
Evaluating Learning Progress	162	
Types of Observation	164	
Anecdotal Record	164	
Running Record	166	
Time Sampling	169	
Event Sampling	170	
Advantages and Disadvantages of Using Event		
Sampling	171	
Checklists and Rating Scales	172	
Observations and Technology	172	
Benefits and Disadvantages of Using Technology for Observations	174	
Observing Development		
Physical Development	174 175	
Social and Emotional Development	176	
Cognitive Development	177	
Language Development	178	
Advantages and Disadvantages of Using		
Observation for Assessment	179	
Observation Guidelines	180	
Determining the Observation Site	180	
Observer Behaviors during the Observation Visit	181	
Ethics during the Observation Visit	181	
Avoiding Personal Bias	182	
Summary		
Key Terms		
Organizations	183 183	
References		
	184	

8	Checklists, Rating Scales, and Rubrics	187
How	Checklists Are Designed and Used with	
	g Children	188
	sing Checklists with Infants, Toddlers, and	
	eschool Children	188
Us	ing Checklists with School-Age Children	189
	ing Checklists to Assess Children with ecial Needs	190
	ing Checklists to Assess English Language arners (ELLs)	190
How	Checklists Are Designed	191
	eps in Designing Checklists	192
	necklists and Standards	194
How	Teachers Evaluate and Assess with Checklists	198
Ev	aluating Checklist Objectives by Observation	198
Ev	aluating Checklist Objectives with Learning	
Ac	tivities	198
	aluating Checklist Objectives with	
*	ecific Tasks	199
	ntages and Disadvantages of Using	100
	klists with Young Children	199
	lvantages of Using Checklists	199
	sadvantages of Using Checklists	199
• •	s of Rating Scales and How They Are Used	200
	Young Children	200
	umerical Rating Scales aphic Rating Scales	200
	ses of Rating Scales	201
	lvantages of Using Rating Scales	201
	sadvantages of Using Rating Scales	205
	s of Rubrics and How They Are Designed	200
and I	, 0	207
	pes of Rubrics	208
1	ow Rubrics Are Designed and Used	210
	lvantages of Using Rubrics	212
	sadvantages of Using Rubrics	212
Sum		212
	Ferms	213
	cted Organizations	213
	rences	214
-		
9	Teacher-Designed Assessment Strategies	215
Purp	oses of Teacher-Designed Assessments	
and T		216

Types of Teacher-Designed Assessments Used with Preschool and Primary-Grade Children	218
Developing Quality Teacher-Designed Assessments	222
Concrete Tasks for Preschool	223
Tests for Primary-Grade Children	223
Steps in Test Design	225
Determining Instructional Objectives	225
Constructing a Table of Specifications	227
Designing Formative and Summative Evaluations	231
Designing Learning Experiences	234
Designing Correctives and Enrichment Activities	235
Advantages and Disadvantages of Using Teacher-	
Designed Assessments	239
Summary	241
Key Terms	242
Selected Organizations	242
References	242
10	
10 Performance-Based	
Assessment Strategies	244
Performance-Based Strategies and How They	
Are Used	244
Understanding Performance Assessment	245
Authentic Learning and Assessment	246
Interrelated Nature of Performance-Based Assessments	246
Purposes for Performance-Based Assessment	248
Types of Performance-Based Assessments	249
Interviews	250
Contracts	252
Directed Assignments	252
Games	253
Work Samples	253
Projects	254
Portfolios	255
Categorizing and Organizing Performance	
Assessments	255
The Role of Observation	256
The Role of Documentation	257
The Role of Rubrics	258
Standards and Performance-Based Assessment	260
Connecting Standards to Authentic Learning	260
Connecting Standards to Performance Assessment	261
Advantages and Disadvantages of Using Performance-Based Assessment	262

Advantages of Using Performance-Based Assessment Disadvantages of Using Performance-Based	262
Assessment	264
Summary	
Key Terms	268
Selected Organizations	268
References	268

11 Portfolio Assessment	271
Purposes and Types of Portfolio Assessments	272
Purposes of Portfolio Assessment	273
Types of Portfolios	274
Strategies for Organizing Portfolios	276
Organizing Portfolios Using a Developmental Approach	276
Organizing Portfolios Using a Subject-Area	

Strategies for Organizing Portionos	270
Organizing Portfolios Using a Developmental	074
Approach	276
Organizing Portfolios Using a Subject-Area	
Approach	278
Setting Up and Using a Portfolio Assessment	
System	279
Steps in Getting Started	280
Collecting and Organizing Work	282
Selecting Portfolio Assessments	282
Analyzing Portfolio Assessments	283
Strategies for Developing Quality Portfolios	283
Advantages and Disadvantages of Using	
Portfolios to Report Student Progress	286
Reporting Progress Using Narrative Reports	289
Using Narrative Reports to Report Student	
Progress	289
Advantages and Disadvantages of Using	
Narrative Reports	290
Model Assessment and Reporting Systems	292
Project Spectrum	293
The Work Sampling System	293
The Preschool Child Observation Record	294
Teacher-Designed Systems	295
Summary	296
Key Terms	297
Selected Organizations	297
References	297
	200

Glossary	299
Index	303

About the Authors

SUE CLARK WORTHAM is Professor Emerita of Early Childhood and Elementary Education at the University of Texas at San Antonio. Prior to beginning a teaching career in higher education in 1979, she taught prekindergarten through second grade in public schools, worked as a school district administrator, and was a consultant at an education service center.

She has authored numerous texts, including *Early Childhood Curriculum: Developmental Bases for Learning and Teaching* (5th ed., 2010), Pearson. She coauthored *Play and Child Development* (4th ed., 2012) with Joe Frost and Stuart Reifel, also published by Pearson. Organizational publications include *Childhood 1892–2002*, published by the Association for Childhood Education International, and *Playgrounds for Young Children: National Survey and Perspectives*, coauthored with Joe Frost, published by the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD).

In 1992, she served as a Fulbright Scholar in Chile. She was president of the Association for

BELINDA J. HARDIN is an Associate Professor Emerita in the Department of Specialized Education Services at The University of North Carolina at Greensboro. Dr. Hardin completed her PhD in Early Childhood, Families, and Literacy at the University of North Carolina at Chapel Hill. Prior to entering higher education in 2004, she was a public school kindergarten and special education teacher, a Head Start director, and the Director of the Special Projects Division at Chapel Hill Training-Outreach Project.

Her research includes cross-cultural studies investigating the effectiveness of services for young children with and without disabilities in the United States and other countries, particularly in Latin America. She is especially interested in measures of program quality with global applicability and how they are informed by sociocultural context. She served as the Co-Principal Investigator of three national studies in the United States that investigated the reliability and validity of Learning Accomplishment Profile assessment instruments, including a dual-language sample Childhood Education International (ACEI) from 1995 to 1997. Since retirement, she has been very active in the development of the Global Guidelines for Early Childhood Education and Care that resulted from an international symposium held in Ruschlikon, Switzerland, in 1999. Subsequently, she has a leadership role in the development, validation, and implementation of the ACEI Global Guidelines Assessment adapted from the original guidelines. She edited *Common Characteristics and Unique Qualities in Preschool Programs: Global Perspectives in Early Childhood Education* for Springer in 2013, which reported on the use of the *Global Guidelines Assessment* in countries around the world.

Dr. Wortham served as volunteer director of educational programs for World Children's Relief and Volunteer Organization, a small nongovernmental organization (NGO), from 2001 to 2011. She engaged in training teachers and principals in Haiti, Senegal, Burkina Faso, and Sierra Leone.

of 2,099 children (half English speakers and half Spanish speakers) to norm the Learning Accomplishment Profile-Diagnostic Edition.

Additionally, Dr. Hardin completed studies investigating the referral, evaluation, and placement of preschool children with disabilities who are English Language Learners and is currently developing a family report questionnaire on preschool language development in English and Spanish. Dr. Hardin has conducted research and professional development activities with professionals and Spanish-speaking families in North Carolina, Guatemala, and the Yucatan Peninsula of Mexico. She was the Co-Principal Investigator of three international studies investigating the reliability and validity of the ACEI Global Guidelines Assessment in multiple countries around the world. Dr. Hardin has served on the Board of Directors for the Association of Childhood Education International and participated in two initiatives spearheaded by UNICEF to improve services for young children in inclusive early childhood settings worldwide.

Preface

Substitution of the early primary of the early primary of the early primary of the early primary of the early children who are in the period of development called *early childhood*. Tests and other types of assessments designed for young children are different from those intended for children in later grades in elementary school. Because infants and children under age 8 have developmental needs different from those of older children, a textbook that includes discussion of assessment in the early childhood years must be written from a developmental perspective.

In the second decade of the 21st century, early childhood educators have been challenged in their efforts to assess very young children using the most important strategies for their ongoing development. As a result, it is especially important that future teachers and teachers who are struggling with these issues be fully informed about the range of assessment possibilities and when they are the most beneficial for young children.

Traditional and Authentic Assessment Strategies

This book is written for future teachers and current teachers of young children. It includes information about standardized tests and, more importantly, other types of assessments that are appropriate for young children, such as screening tools, observations, checklists, and rating scales. Assessments designed by teachers are explained both for preschool children and for kindergarten and primary-grade children who are transitioning into literacy. With the ever-growing trend toward performance assessment, portfolios, and other methods of reporting a child's performance, chapters describing these strategies have been expanded and enhanced. The approach of this edition is the development of an assessment system that includes traditional as well as authentic assessment strategies in a comprehensive plan. Thus, in this new edition, we seek to inform the reader about all types of assessments and their appropriate use.

New to This Edition

- Search and Share activities in each chapter give students an opportunity to identify pertinent information from the web for further understanding and discussion.
- Chapter 3, Communicating with Families, was previously located as Chapter 11 and has now been moved forward and expanded to increase the role of the family-professional relationship. Parents are recognized as equal partners with their child's teacher.
- Chapter 4, How Standardized Tests Are Used, Designed, and Selected, includes new information about current editions of screening and assessment instruments.
- Chapter 6, Data-Driven Decision Making, Assessment and Documentation, changes the emphasis from classroom assessments in general to specific information on how data from assessments are used to make instructional decisions.
- Relevant information about the Common Core State Standards and Early Learning Standards has been integrated where appropriate throughout the text.
- Expanded information on children with disabilities and English language learners (ELLs) appears in all chapters throughout the text.

How to Assess Young Children

Earlier editions of this book were developed in response to the expressed needs of teachers and graduate students who must understand and use current trends in assessment and put them into perspective within the reality of public schools that are required to focus intensively on standardized tests. Fortunately, commercial publishers of curriculum kits and textbooks for public schools are increasingly including performance assessments along with traditional assessments in their guides for teachers. Portfolios are becoming common as well. Nevertheless, teachers still need help in maintaining a balance between these new strategies and standardized testing. An important factor in the assessment of young children is determining when and how they should be measured. This is a controversial issue. The strengths and weaknesses of each type of assessment presented are discussed, as is research on the problems surrounding testing and evaluation in early childhood. Because many sources in the literature and other textbooks do not include the limitations in addition to the merits of assessment techniques, this text provides an objective perspective on issues surrounding the efficacy and effectiveness of assessment strategies.

Organization

The book is divided into three parts. Part I provides an introduction to assessment in early childhood in **Chapters 1** and **2**. **Chapter 3** addresses the partnership between families and school professionals. Part II is devoted to standardized tests and how they are designed, used, and reported in **Chapters 4** and **5**. Classroom assessments are discussed in Part III. **Chapter 6** is a new chapter that focuses on data-driven assessment and documentation, while **Chapter 7** includes expanded information on observation. Checklists, rating scales, and rubrics are covered in **Chapter 8**. **Chapter 9** discusses teacher-designed strategies, while **Chapter 10** focuses on performance-based assessment strategies. Finally, **Chapter 11** brings all the assessment strategies together into a portfolio system.

Instructor Supplements

The supplements for this edition have been revised, upgraded, and made available for instructors to download on www.pearsonhighered.com/educators.

- Instructor's Resource Manual This manual contains chapter overviews and activity ideas to enhance chapter concepts.
- Test Bank. The Test Bank includes a variety of test items, including multiple-choice and short-answer items.
- PowerPoint Slides. PowerPoint slides highlight key concepts and strategies in each chapter and enhance lectures and discussions.

Acknowledgments

We would like to thank the reviewers who provided valuable suggestions and feedback for this eighth edition, including Natalie Williams, University of Nebraska-Lincoln; Dr. Sandra Plata-Potter, University of Mount Olive; and Cathy Jones, Coastal Carolina University. Their comments were perceptive and their suggestions constructive. The reviewers were thoughtful in their ideas for how the text could be improved.

It is also important to thank the staff at Pearson, who helped in the conceptualization of important revisions as well as in the production process, including Megan Moffo, content producer; Aileen Pogran, portfolio manager; Krista McMurray, development editor; and Rowena Saycon, who coordinated production at Pearson CSC, Inc.

Chapter 1 An Overview of Assessment in Early Childhood



Chapter Learning Outcomes

As a result of reading this chapter, you will be able to:

- **1.1** Explain the purposes of assessment in early childhood.
- **1.2** Describe the history of tests and measurements in early childhood.
- **1.3** Discuss issues and trends in assessing all young children.

Understanding the Purposes of Assessment in Infancy and Early Childhood

Not too long ago, resources on early childhood assessment were limited to occasional articles in journals, chapters in textbooks on teaching in early childhood programs, and a few small textbooks that were used as secondary texts in an early childhood education course. Very few teacher preparation programs offered a course devoted to assessment in early childhood. Now, in the 21st century, assessment of very young children has experienced a period of rapid growth and expansion. In fact, it has been described as a "virtual explosion of testing in public schools" (Meisels & Atkins-Burnett, 2005, p. 1). Some of the most recent concerns relate to the mandated tests used with the Common Core State Standards Initiative. Other issues arise from the increased use of tests selected by individual school districts (DeWitt, 2014; Lazarin, 2014).

There has also been an explosion in the numbers of infants, toddlers, and preschoolers in early childhood programs and the types of programs that serve them. Moreover, the diversity among these young children increases each year. For example, Head Start programs serve children and families who speak at least 140 different languages. In some Head Start classrooms, 10 different languages might be spoken. Currently, nearly a third of children enrolled in Head Start speak Spanish as their first language (HHS/ ACF/OHS, 2017). Head Start teaching teams may be multilingual, also representing growth in the diversity of the U.S. population (David, 2005; HHS/ACF/OHS, 2010).

What Is Assessment?

What do we need to know about all the diverse children found in services for infants and young children from all kinds of families, cultures, and languages? The study of individuals for measurement purposes begins before birth with assessment of fetal growth and development. At birth and throughout infancy and early childhood, various methods of measurement are used to evaluate the child's growth and development. Before a young child enters a preschool program, he or she is measured through medical examinations. Children are also measured through observations of developmental milestones, such as saying the first word or walking independently, by parents and other family members. Children might also be screened or evaluated for an early childhood program or service. Assessment is really a *process*. A current definition describes the assessment process as follows: "Assessment is the process of gathering information about children from several forms of evidence, then organizing and interpreting that information" (McAfee, Leong, & Bodrova, 2004, p. 3). The U.S. Department of Education describes assessment as a comprehensive system that includes screening measures, formative assessment, measures of environmental quality, and measures of the quality of adult-child interactions (U.S. Department of Education, n.d). The U.S. Department of Education's approach considers factors beyond the child to include the family and other adults that can affect that child.

Assessment of children from birth through the preschool years is different from assessment of older people. Not only can young children not yet write or read, but the assessment of young, developing children also presents different challenges that influence the choice of measurement strategy, or how to measure or assess the children. Assessment methods must be matched with the level of mental, social, and physical development at each stage. Developmental change in young children is rapid, and there is a need to assess

whether development is progressing normally. If development is not normal, the measurement and evaluation procedures used are important in making decisions regarding appropriate intervention services during infancy and the preschool years (Jiban, 2013).

The term *assessment* can have different meanings when used with different age groups. An infant or toddler can be assessed to determine instructional needs in Early Head Start programs or to determine eligibility for early intervention services, for example. A preschool child may be assessed to determine school readiness or special education needs. A school-age child may be assessed to understand his or her academic achievement and/or whether the child is ready for the next grade level.

Purposes of Assessment

Assessment is used for various purposes. An *evaluation* may be conducted to assess a young child's development overall or in a specific developmental domain such as language or mathematics. Evaluations usually include multiple sources of assessment. When we need to learn more, we may assess the child by asking her or him to describe what she or he has achieved. For example, a first-grade teacher may use measurement techniques to determine what reading skills have been mastered and what weaknesses exist that indicate a need for additional instruction.

Assessment strategies may be used for *diagnosis*. Just as a medical doctor conducts a physical examination of a child to diagnose an illness, psychologists, teachers, and other adults who work with children can conduct an informal or formal assessment to diagnose a developmental delay or causes for poor performance in learning, as well as to identify strengths. Assessment for this purpose may be one part of the initial evaluation process, which may also include observation, a review of medical records, and information from parents to identify their concerns, priorities, and resources.

If medical problems, birth defects, or developmental delays in motor, language, cognitive, or social development are discovered during the early, critical periods of development, steps can be taken to correct, minimize, or remediate them before the child enters school. With many developmental deficits or differences, the earlier they are detected and the earlier intervention is planned, the more likely the child will be able to overcome them or compensate for them. For example, if a serious hearing deficit is identified early, the child can learn other methods of communicating and acquiring information.

Assessment of young children is also used for *placement*—to place them in infant or early childhood programs or to provide special services. To ensure that a child receives the best services, careful **screening** followed by more extensive testing and observation may be conducted before selecting the combination of intervention programs and other services that will best serve the child.

Program planning is another purpose of assessment. After children have been identified and evaluated for an intervention program or service, assessment results can be used in planning the individualized programs that will serve them. These programs, in turn, can be evaluated to determine their effectiveness.

Besides identifying and correcting developmental problems, assessment of very young children is conducted for other purposes. One purpose is *research*. Researchers study young children to better understand their behavior or to measure the appropriateness of the experiences that are provided for them.

Early Intervention for a Child with Hearing Impairment

Julio, who is 2 years old, was born prematurely. He did not have regular checkups during his first year, but his mother took him to a community clinic when he had a cold and fever at about 9 months of age. When the doctor noticed that Julio did not react to normal sounds in the examining room, she stood behind him and clapped her hands near each ear. Because Julio did not turn toward the clapping sounds, the doctor suspected that he had a hearing loss. She arranged for Julio to be examined by an audiologist at an eye, ear, nose, and throat clinic.

Julio was found to have a significant hearing loss in both ears. He was fitted with hearing aids and is attending a special program twice a week for children with hearing deficits. Therapists in the program are teaching Julio to speak. They are also teaching his mother how to make Julio aware of his surroundings and help him to develop a vocabulary. Had Julio not received intervention services at an early age, he might have entered school with severe cognitive and learning deficits that would have put him at a higher risk for failing to learn.

How were these assessment strategies developed? In the next section, we describe how certain movements or factors, especially during the past century, have affected the development of testing instruments, procedures, and other measurement techniques that are used with infants and young children.

The History of Tests and Measurements in Early Childhood

Interest in studying young children to understand their growth and development dates back to the initial recognition of childhood as a separate period in the life cycle. Johann Pestalozzi, a pioneer in developing educational programs specifically for children, wrote about the development of his 3-year-old son in 1774 (Irwin & Bushnell, 1980). Early publications also reflected concern for the proper upbringing and education of young children. *Some Thoughts Concerning Education* by John Locke (1699), *Emile* by Rousseau (1762/1911), and Frederick Froebel's *Education of Man* (1896) were influential in focusing attention on the characteristics and needs of children in the 18th and 19th centuries. Rousseau believed that human nature was essentially good and that education must allow that goodness to unfold. He stated that more attention should be given to studying the child so that education could be adapted to meet individual needs (Weber, 1984). The study of children, as advocated by Rousseau, did not begin until the late 19th and early 20th centuries.

Scientists throughout the world used observation to measure human behaviors. Ivan Pavlov proposed a theory of conditioning to change behaviors. Alfred Binet developed the concept of a normal mental age by studying memory, attention, and intelligence in children. Binet and Theophile Simon developed an intelligence scale to determine mental age that made it possible to differentiate the abilities of individual children (Weber, 1984). American psychologists expanded these early efforts, developing instruments for various types of measurement.

The study and measurement of young children today has evolved from the child study movement, the development of standardized tests, Head Start and other federal programs first funded in the 1960s, the passage of Public Law 94-142 (now called the Individuals with Disabilities Education Improvement Act of 2004), and Public Law 99-457 (an expansion of PL 94-142 to include infants, toddlers, and preschoolers). Most recently, there has been a movement toward more meaningful learning or authentic achievement and assessment (Newmann, 1996; Wiggins, 1993). At the same time, continuing progress is being made in identifying, diagnosing, and providing more appropriate intervention for infants and young children with disabilities (Epstein, Schweinhart, DeBruin-Parecki, & Robin, 2004; Meisels & Fenichel, 1996).

The Child Study Movement

G. Stanley Hall, Charles Darwin, and Lawrence Frank were leaders in the development of the child study movement that emerged at the beginning of the 20th century. Darwin, in suggesting that by studying the development of the infant one could glimpse the development of the human species, initiated the scientific study of the child (Kessen, 1965). Hall developed and extended methods of studying children. After he became president of Clark University in Worcester, Massachusetts, he established a major center for child study. Hall's students—John Dewey, Arnold Gesell, and Lewis Terman—all made major contributions to the study and measurement of children. Dewey advocated educational reform that affected the development of educational programs for young children. Gesell first described the behaviors that emerged in children at each chronological age. Terman became a leader in the development of psychological tests (Irwin & Bushnell, 1980; Wortham, 2002).

Research in child rearing and child care was furthered by the establishment of the Laura Spelman Rockefeller Memorial child development grants. Under the leadership of Lawrence Frank, institutes for child development were funded by the Rockefeller grants at Columbia University Teacher's College (New York), the University of Minnesota, the University of California at Berkeley, Arnold Gesell's Clinic of Child Development at Yale University, the Iowa Child Welfare Station, and other locations.

With the establishment of child study at academic centers, preschool children could be observed in group settings, rather than as individuals in the home. With the development of laboratory schools and nursery schools in the home economics departments of colleges and universities, child study research could also include the family in broadening the understanding of child development. Researchers from many disciplines joined in an ongoing child study movement that originated strategies for observing and measuring development. The results of their research led to an abundant literature. Between the 1890s and the 1950s, hundreds of children were studied in academic settings throughout the United States (Weber, 1984). Thus, the child study movement taught us to use observation and other strategies to assess the child. Investigators today continue to add new knowledge about child development and learning that aids parents, preschool teachers and staff members, and professionals in institutions and agencies that provide services to children and families. In the last decade of the 20th century and in the 21st century, brain research has opened up a whole new perspective of the nature of cognitive development and the importance of the early years for optimum development and later learning (Begley, 1997; National Scientific Council on the Developing Child, 2004, 2010; Shore, 1997). These new findings have caused early childhood educators to reflect on the factors that affect early development and the implications for programming for children in infancy and early childhood. Recent research has focused on longitudinal studies of children as they grow up, children's development globally, and psychophysiological and neuroscience experiments to measure influences on child growth and development.

Standardized Tests

Standardized testing also began around 1900. When colleges and universities in the East sought applicants from other areas of the nation in the 1920s, they found the high school transcripts of these students difficult to evaluate. The *Scholastic Aptitude Test* (*SAT*) was established to permit fairer comparisons of applicants seeking admission (Cronbach, 1990).

As public schools expanded to offer 12 years of education, a similar phenomenon occurred. To determine the level and pace of instruction and the grouping of students without regard for socioeconomic class, objective tests were developed (Gardner, 1961). These tests grew out of the need to sort, select, or otherwise make decisions about both children and adults.

The first efforts to design tests were informal. When a psychologist, researcher, or physician needed a method to observe a behavior, he or she developed a procedure to meet those needs. This procedure was often adopted by others with the same needs. When many people wanted to use a particular measurement strategy or test, the developer prepared printed copies for sale. As the demand for tests grew, textbook publishers and firms specializing in test development and production also began to create and sell tests (Cronbach, 1990).

American psychologists built on the work of Binet and Simon in developing the intelligence measures described earlier. Binet's instrument, revised by Terman at Stanford University, came to be known as the *Stanford–Binet Intelligence Scale*. Other Americans, particularly educators, welcomed the opportunity to use precise measurements to evaluate learning. Edward Thorndike and his students designed measures to evaluate achievement in reading, mathematics, spelling, and language ability (Weber, 1984). Because of the work of Terman and Thorndike, testing soon became a science (Scherer, 1999). By 1918, more than 100 standardized tests had been designed to measure school achievement (Monroe, 1918).

The Industrial Revolution in the 1800s was a major influence in the development of standardized tests. School-age children were taken out of factories and farms to attend school. Standardized tests made it possible to assess the new, large numbers of students. The SAT and ACT college entrance exams became the most prevalent standardized tests used to assess college eligibility. The SAT was founded in 1926. It remained largely unchanged until 2005, when a writing section was added. The current version of the SAT, published in 2016, was revised to be more reflective of education in the United States and has received positive reviews by users (The College Board, 2017). The ACT was developed to compete with the SAT in 1959. The ACT assesses accumulated knowledge. Both tests are widely used today (Fletcher, 2009). However, colleges and universities are in the process of developing other measures beyond standardized tests to access other accomplishments that can contribute toward success in higher education.

After World War II, the demand for dependable and technically refined tests grew, and people of all ages came to be tested. As individuals and institutions selected and developed their own tests, the use of testing became more centralized. Statewide tests were administered in schools, and tests were increasingly used at the national level.

The expanded use of tests resulted in the establishment of giant corporations that could assemble the resources to develop, publish, score, and report the results of testing to a large clientele. Centralization improved the quality of tests and the establishment of standards for test design. As individual researchers and teams of psychologists continue to design instruments to meet current needs, the high quality of these newer tests can be attributed to the improvements and refinements made over the years and to the increased knowledge of test design and validation (Cronbach, 1990).

Head Start and the War on Poverty

Prior to the 1960s, medical doctors, psychologists, and other professionals serving children developed tests for use with infants and preschool children. Developmental measures, IQ tests, and specialized tests to measure developmental deficits were generally used for noneducational purposes. Child study researchers tended to use observational or unobtrusive methods to study the individual child or groups of children. School-age children were assessed to measure school achievement, but this type of test was rarely used with preschool children.

After the federal government decided to improve the academic performance of children from low-income homes and those from non-English-speaking backgrounds, test developers moved quickly to design new measurement and evaluation instruments for these preschool and school-age populations.

In the late 1950s, there was concern about the consistently low academic performance of children from poor homes. As researchers investigated the problem, national interest in improving education led to massive funding for many programs designed to reduce the disparity in achievement between poor and middle-class children. The major program that involved preschool children was Head Start. Models of early childhood programs ranging from highly structured academic, child-centered developmental approaches to more traditional nursery school models were designed and implemented throughout the United States (White, 1973; Zigler & Valentine, 1979). Developers of Head Start programs were influenced by the work of Urie Bronfenbrenner, one of the cofounders of Head Start, who studied the impact of environments on children's development and learning (Bronfenbrenner, 2004). The emphasis on family involvement in Head Start was largely due to Bronfenbrenner's work (1995, 2004).

All programs funded by the federal government had to be evaluated for effectiveness. As a result, new measures were developed to assess individual progress and the programs' effectiveness (Laosa, 1982). The quality of these measures was uneven, as was comparative research designed to examine the overall effectiveness of Head Start. Nevertheless, the measures and strategies developed for use with Head Start projects added valuable resources for the assessment and evaluation of young children (Hoepfner, Stern, & Nummedal, 1971).

Other federally funded programs developed in the 1960s, such as bilingual programs, Title I, the Emergency School Aid Act, Follow Through, and Home Start, were similar in effect to Head Start. The need for measurement strategies and assessment tools to evaluate these programs led to the improvement of existing tests and the development of new ones to evaluate their success accurately.

Legislation for Young Children with Disabilities

Efforts to improve education for children who do not experience typical development were a major focus in the last three decades of the 20th century. Prior to legislation to address atypical development, young children with disabilities were served in separate classrooms in special education programs. The first law passed in 1975 started a new approach to identifying children with special needs and designing individual plans for their education. A series of laws were passed to develop suitable programs for these children. Later, infants and toddlers were also included to provide early identification and efforts to minimize the disabilities.

PL 94-142 Perhaps the most significant law affecting the measurement of children with disabilities was Public Law (PL) 94-142, the Education for All Handicapped Children Act, passed by Congress in 1975. This law mandated that all children ages 6 to 21 with special needs receive services within public schools. The law further required the use of nondiscriminatory testing and evaluation of these children.

PL 99-457 Many of the shortcomings of PL 94-142 for young children were addressed in PL 99-457 (Education of the Handicapped Act Amendments), passed in 1986. The newer law authorized two new programs: the Preschool Grant Program, mandated for children 3 to 5 years old, and the Early Intervention State Grant Program for infants and toddlers. Under PL 94-142, the state could choose whether to provide services to children with disabilities between ages 3 and 5. Under PL 99-457, states had to prove they were meeting the needs of all children with disabilities ages 3 to 21 if they wished to receive federal funds under PL 94-142. These two laws were later amended, combined, and renamed the Individuals with Disabilities Education Act (IDEA).

INDIVIDUALS WITH DISABILITIES EDUCATION IMPROVEMENT ACT OF 2004 The U.S. Congress reauthorized the Education for All Handicapped Children Act of 1975 in 1997 (IDEA). The reauthorization of the 1997 law required special education students to participate in state tests, and states were to report the results of those tests to the public. Many states were slow to comply with the law, and there were no consequences for states that did not comply. The most recent amendments to IDEA were passed in December 2004, called the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004). Final regulations were published in 2006 that included Part B for children ages 3 to 21 and, in September 2011, Part C regulations for infants and toddlers (National Dissemination Center for Children with Disabilities, 2012).

IDEA 2004 guarantees all children 3 to 21 years old with disabilities the right to a free, appropriate public education and placement in the least restrictive learning environment under the Part B program. This means that preschool services must also be provided for children under age 6. For these children, the public schools have the legal responsibility for implementing early childhood programs for children with disabilities, whether the services take place in a public school or another setting such as private child-care centers or Head Start (Guralnick, 1982; Spodek & Saracho, 1994; U.S. Congress, 2004).

The law also includes the Part C program, or Early Intervention Program, ensuring early intervention services for all children with disabilities from birth through age 2 and their families. All participating states must provide intervention services for every eligible child (McCollum & Maude, 1993; Meisels & Shonkoff, 1990; Shackelford, 2006).

The implications of these laws were far reaching. Testing, identification, and placement of students with intellectual disabilities and other disabilities were difficult. Existing tests were no longer considered adequate for children with special needs. Classroom teachers had to learn the techniques used to identify students with disabilities and determine how to meet their educational needs (Kaplan & Saccuzzo, 1989). Measures had to be revised or developed to assess infants, toddlers, and preschool children.

One Family's Experience with Head Start

Rosa is a graduate of the Head Start program. For 2 years, she participated in a class housed in James Brown School, a former inner-city school that had been closed and remodeled for other community services. Two Head Start classrooms were in the building, which was shared with several other community agencies serving low-income families. In addition to learning at James Brown School, Rosa went on many field trips, including trips to the zoo, the botanical garden, the public library, and a nearby McDonald's restaurant.

This year, Rosa is a kindergarten student at West Oaks Elementary School with her older brothers, who also attended Head Start. Next year, Rosa's younger sister, Luisa, will begin the program. Luisa looks forward to Head Start. She has good memories of the things she observed Rosa doing in the Head Start classroom while visiting the school with her mother.

Luisa's parents are also happy that she will be attending the Head Start program. Luisa's older brothers are good students, which they attribute to the background they received in Head Start. From her work in kindergarten, it appears that Rosa will also do well when she enters first grade.

The law requires that a team of teachers, parents, diagnosticians, school psychologists, medical personnel, specialists (e.g., occupational or physical therapists), school administrators, and perhaps social workers or representatives of government agencies or institutions be used to determine eligibility and placement of children with disabilities. When appropriate, the child must also be included in the decision-making process. Once a child is determined to be eligible for the Part C program (for infants and toddlers) or the Part B program (for children 3 to 21 years of age), an individualized plan is developed by the team. For infants and toddlers, this plan is called the Individualized Family Services Plan (IFSP). For children in the Part B program, it is called the Individualized Education Program (IEP).

MAINSTREAMING, LRE, INCLUSION, AND NATURAL ENVIRONMENTS The term **mainstreaming** came to define the requirement that a child be placed in the **least restrictive environment (LRE)**. This meant that as often as possible, a child would be placed with children with typical development, rather than in a segregated classroom for students in special education. How much mainstreaming was beneficial for the individual student? The question was difficult to answer. In addition, the ability of teachers to meet the needs of students with and without disabilities simultaneously in the same classroom is still debated. Nevertheless, classroom teachers were expected to develop and monitor the educational program prescribed for students with disabilities (Clark, 1976).