

voyages in development

second canadian edition



VOYAGES IN DEVELOPMENT

VOYAGES IN DEVELOPMENT

SECOND CANADIAN EDITION

Spencer A. Rathus

THE COLLEGE OF NEW JERSEY

Christina M. Rinaldi

UNIVERSITY OF ALBERTA



Australia • Brazil • Canada • Mexico • Singapore • United Kingdom • United States

Voyages in Development, Second Canadian Edition

Spencer A. Rathus and Christina M. Rinaldi

Vice President, Editorial Higher Education:
Anne Williams

Publisher: Lenore Taylor-Atkins

Marketing Manager: Ann Byford

Developmental Editor: Suzanne Simpson Millar

Photo Researcher: Christine Elliott

Permissions Coordinator: Christine Elliott

Production Project Manager: Christine Gilbert

Production Service: MPS Limited

Copy Editor: Madelyn Odell

Proofreader: Joan Templeton

Indexer: Beverlee Day

Design Director: Ken Phipps

Managing Designer: Franca Amore

Interior Design: Cathy Mayer

Cover Design: Cathy Mayer

Cover Image: Christopher T Stein/Getty Images

Compositor: MPS Limited

© 2021, 2015, 2009 Cengage Learning Canada, Inc.

Adapted from *Childhood & Adolescence: Voyages in Development*, Fifth Edition by Spencer A. Rathus, Copyright © Cengage Learning, Inc., 2014. All Rights Reserved. Unless otherwise noted, all content is © Cengage.

ALL RIGHTS RESERVED. No part of this work covered by the copyright herein may be reproduced or distributed in any form or by any means, except as permitted by Canadian copyright law, without the prior written permission of the copyright owner.

Cognero and Full-Circle Assessment are registered trademarks of Madeira Station LLC.

For product information and technology assistance, contact us at
Canada Support, canadasupport.cengage.com.

For permission to use material from this text or product, submit all requests online at **www.cengage.com/permissions**.

Library and Archives Canada Cataloguing in Publication:

Rathus, Spencer A. [Childhood and adolescence]

Voyages in development / Spencer A. Rathus, The College of New Jersey, Christina M. Rinaldi, University of Alberta. — Second Canadian edition.

Revision of: Childhood and adolescence : voyages in development / Spencer A. Rathus, Christina M. Rinaldi. — 1st Canadian ed. — Toronto : Nelson Education, ©2009.

Includes bibliographical references and index.

ISBN 978-0-17-650222-5 (pbk.)

1. Child development— Textbooks. 2. Adolescence— Textbooks. I. Rinaldi, Christina M., 1970–, author II. Title. III. Title: Childhood and adolescence

HQ767.9.R347 2014

305.231 C2014-903864-X

ISBN-13: 978-0-17-650222-5

ISBN-10: 0-17-650222-X

Cengage Canada

1120 Birchmount Road
Toronto, ON M1K 5G4
Canada

Cengage is a leading provider of customized learning solutions with employees residing in nearly 40 different countries and sales in more than 125 countries around the world. Find your local representative at **www.cengage.com**.

To learn more about Cengage platforms and services, register or access your online learning solution, or purchase materials for your course, visit **www.cengage.ca**.

*To my mother
Angela
my first teacher*

ABOUT THE AUTHORS



Photos courtesy of Spencer A. Rathus

Spencer A. Rathus

Numerous personal experiences enter into Spencer Rathus's textbooks. For example, he was the first member of his family to go to college, and he found college textbooks to be cold and intimidating. Therefore, when his opportunity came to write college textbooks, he wanted them to be different—warm and encouraging, especially to students who were also the first generation in their families to be entering college. Rathus's first professional experience was in teaching high school English. Part of the task of the high school teacher is to motivate students and make learning fun. Through this experience he learned the importance of using humour and personal stories, which later became part of his textbook approach. Rathus wrote poetry and novels while he was an English teacher, and some of the poetry was published in poetry journals. The novels never saw the light of day (which is just as well, Rathus now admits in mock horror).

Rathus earned his Ph.D. in psychology and he entered clinical practice and teaching. He went on to publish research articles in journals such as *Adolescence*, *Behavior Therapy*, *Journal of Clinical Psychology*, *Behaviour Research and Therapy*, *Journal of Behavior Therapy and Experimental Psychiatry*, and *Criminology*. His research interests lie in the areas of human growth and development, psychological disorders, methods of therapy, and psychological assessment. Foremost among his research publications is the Rathus Assertiveness Schedule, which remains widely used in research and clinical practice. Rathus has since poured his energies into writing his textbooks, while teaching at Northeastern University, New York University, and currently at The College of New Jersey. His introductory psychology textbook, *Psychology: Concepts and Connections*, is soon to be in its 11th edition.

Rathus is proud of his family. His wife, Lois, is a successful author and a professor of art at The College of New Jersey. Their daughter, Allyn, obtained her M.A. from NYU's Steinhardt School, and is teaching in New York City. Their daughter, Jordan, completed her MFA in fine arts at Columbia University and is launching her career as a video artist. Their youngest daughter, Taylor, can dance the pants off both of them. Taylor completed her BFA at NYU's Tisch program in musical theatre and is lighting up the stage. Rathus's eldest daughter, Jill, has become a psychologist and teaches at C. W. Post College of Long Island University.

The author is shown at various stages of development in these four photos.

Christina M. Rinaldi

Christina Rinaldi is a professor of educational psychology at the University of Alberta in Edmonton and a registered psychologist in both Alberta and Quebec. Since earning her Ph.D. in school/applied child psychology at McGill University, she has published research articles in journals such as *Early Childhood Research Quarterly*, *Eating Behaviors*, *Infant and Child Development*, and the *Journal of Adolescence and Youth*.

Dr. Rinaldi's professional experience working in schools, hospitals, and mental health settings has informed her research. Her research focuses on how parent-child relationships in early childhood and adolescence support social and emotional learning and development. She also studies the assessment of social functioning and how to support optimal social development. Her research has been funded by Social Sciences and Humanities Research Council of Canada (SSHRC) and the Alberta Centre for Child, Family, and Community Research (ACCFRC). She teaches undergraduate and graduate courses in learning and development in childhood, social development, adolescent development, and consultation in school and clinical child psychology. She presently serves on the Council of the College of Alberta Psychologists, and is on the Board of Directors of the Society for Safe and Caring Schools and Communities. Finally, Rinaldi values and cherishes the time spent with her family and friends. She especially enjoys playing and sharing quality time with her children, who never cease to amaze her and teach her something new each day.



Photos courtesy of Christina Rinaldi.

BRIEF CONTENTS

Preface xxix

1 Childhood and Adolescence

Chapter 1 History, Theories, and Methods 3

2 Beginnings

Chapter 2 Heredity and Conception 49

Chapter 3 Prenatal Development 81

Chapter 4 Birth and the Newborn Baby: In the New World 117

3 Infancy

Chapter 5 Infancy: Physical Development 155

Chapter 6 Infancy: Cognitive Development 189

Chapter 7 Infancy: Social and Emotional Development 223

4 Early Childhood

Chapter 8 Early Childhood: Physical Development 263

Chapter 9 Early Childhood: Cognitive Development 293

Chapter 10 Early Childhood: Social and Emotional Development 327

5 Middle Childhood

Chapter 11 Middle Childhood: Physical Development 367

Chapter 12 Middle Childhood: Cognitive Development 393

Chapter 13 Middle Childhood: Social and Emotional Development 439

6 Adolescence (Online)

Chapter 14 Adolescence: Physical Development

Chapter 15 Adolescence: Cognitive Development

Chapter 16 Adolescence: Social and Emotional Development

Appendix A: Answer Key to Active Reviews A-1

Appendix B: WHO Growth Charts for Canadian Children and Youth by Sex B-1

Glossary G-1

References R-1

Name Index I-1

Subject Index I-9

CONTENTS

Preface xxix

Part I Childhood and Adolescence

1 HISTORY, THEORIES, AND METHODS 3

Truth or Fiction? 3

1.1 What Is Child Development? Coming to Terms with Terms 4

Why Do We Study Child Development? 5

The Development of Child Development 6

1.2 Historical Review of Theories of Child Development 7

What Are Theories of Child Development? 8

The Psychoanalytic Perspective 9

Concept Review 1.1: Comparison of Freud's and
Erikson's Stages of Development 10

The Learning Perspective: Behavioural and Social
Cognitive Theories 13

A CLOSER LOOK: Research The Bell-and-Pad Method for
Treating Bed-Wetting 14

A CLOSER LOOK: Research Operant Conditioning of
Vocalizations in Infants 16

The Cognitive Perspective 18

Concept Review 1.2: Jean Piaget's Stages of Cognitive
Development 20

The Biological Perspective 21

The Ecological Perspective 22

The Sociocultural Perspective 24

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Zone of
Proximal Development 25

Concept Review 1.3: Perspectives on Child Development 28

1.3 Dominant Themes in Child Development 31

The Interplay of Nature–Nurture 31

The Continuity–Discontinuity Theme 32

The Active–Passive Theme 32

1.4 How Do We Study Child Development? 33

The Scientific Method 33

Methods of Observation 34



Gyuzko-Photo/Shutterstock.com

A CLOSER LOOK: Research Surveying High School Seniors' Attitudes toward Living Together before Getting Married 36

Correlation: Putting Things Together 36

The Experiment: Trying Things Out 38

Longitudinal Research: Studying Development over Time 39

Concept Review 1.4: Comparison of Cross-Sectional, Longitudinal, and Cross-Sequential Research 41

1.5 Ethical Considerations 42

A CLOSER LOOK: Research The Conditioning of "Little Albert": A Case Study in Ethics 43

Recite an Active Summary 44

Key Terms 45

Active Learning Resources 46

Part 2 Beginnings

2 HEREDITY AND CONCEPTION 49

Truth or Fiction? 49

2.1 The Influence of Heredity on Development: The Nature of Nature 50

Chromosomes and Genes 50

Mitosis and Meiosis 51

Identical and Fraternal Twins 52

Dominant and Recessive Traits 52

2.2 Chromosomal and Genetic Abnormalities 54

Chromosomal Abnormalities 54

Genetic Abnormalities 56

Genetic Counselling and Prenatal Testing 59

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Prenatal Assessment 62

2.3 Heredity and the Environment: Considering the Interplay between Nature and Nurture 63

Reaction Range 63

Canalization 63

Genetic-Environmental Correlation 63

Kinship Studies: Are the Traits of Relatives Related? 65

Twin Studies: Looking in the Genetic Mirror 65

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Twins 66

Adoption Studies 66

2.4 Conception: Against All Odds 67

Ova 67

A CLOSER LOOK: Diversity Where Are the Missing Chinese Girls? 68

Sperm Cells 69



brenkel/Stockphoto

2.5 Infertility and Assisted Reproductive Technology 71

Causes of Infertility 71

A CLOSER LOOK: **Diversity** LGBT Family Building 72

Helping People with Fertility Problems Become Parents 73

A CLOSER LOOK: **Research** Selecting the Sex of Your Child:
Fantasy or Reality? 73

Recite an Active Summary 76

Key Terms 77

Active Learning Resources 78

3 PRENATAL DEVELOPMENT 81

Truth or Fiction? 81

3.1 The Germinal Stage: Wanderings 82

Without Visible Means of Support ... 82

3.2 The Embryonic Stage 83

Sexual Differentiation 85

The Amniotic Sac: A Shock Absorber 86

The Placenta: A Filtration System 87

3.3 The Fetal Stage 87

Concept Review 3.1: Highlights of Prenatal Development 90

3.4 Environmental Influences on Prenatal Development 92

Nutrition 92

A CLOSER LOOK: **Diversity** Birth Rates around the
World 93

A CLOSER LOOK: **Real Life** Healthy Pregnancy 95

Teratogens and Health Problems of the Mother 96

A CLOSER LOOK: **Real Life** Advice for Expectant
Fathers 97

A CLOSER LOOK: **Real Life** Preventing One's Baby from Being
Infected with HIV 99

Drugs Taken by the Parents 100

**OBSERVING CHILDREN, UNDERSTANDING
OURSELVES** Antidepressants in Utero 101

A CLOSER LOOK: **Research** Can We Trust the Research on the
Effects of Caffeine Taken during Pregnancy? 105

Environmental Hazards 106

Concept Review 3.2: Risks of Various Agents to the Embryo and
Fetus 108

Maternal Stress 110

A CLOSER LOOK: **Diversity** The Effects of Parents' Age on
Children—Do Men Really Have All the Time in the World? 110



© Brooke Fasani Auctincloss/Corbis

Recite an Active Summary 112

Key Terms 113

Active Learning Resources 114

4 BIRTH AND THE NEWBORN BABY: IN THE NEW WORLD 117

Truth or Fiction? 117

4.1 Countdown ... 118

4.2 The Stages of Childbirth 118

The First Stage 119

The Second Stage 119

The Third Stage 121

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Birth 121

4.3 Methods of Childbirth 122

Anesthesia 122

Hypnosis and Biofeedback 123

Prepared Childbirth 124

Cesarean Section 124

Home Birth 126

4.4 Birth Problems 126

Oxygen Deprivation 126

Preterm and Low-Birth-Weight Infants 127

A CLOSER LOOK: Diversity Maternal and Infant Mortality around the World 130

4.5 The Postpartum Period 132

Maternal Depression 132

Bonding 134

A CLOSER LOOK: Research Have We Found the Daddy Hormones? 135

4.6 Characteristics of Neonates 136

Assessing the Health of Neonates 136

Reflexes 138

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Reflex Development in Infancy 139

Sensory Capabilities 140

A CLOSER LOOK: Research Studying Visual Acuity in Neonates—How Well Can They See? 140

Learning: Really Early Childhood “Education” 144

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Early Learning 144

Sleeping and Waking 146

Crying 147

4.7 Sudden Infant Death Syndrome (SIDS) 149

The Children’s Hospital Boston Study 150



TO COME

Part 3 Infancy

5 INFANCY: PHYSICAL DEVELOPMENT 155

Truth or Fiction? 155

5.1 Physical Growth and Development 156

Sequences of Physical Development: Head First? 156

Concept Review 5.1: Sequences of Physical Development 156

Growth Patterns in Height and Weight: Heading toward the Greek Ideal? 157

Failure to Thrive 159

5.2 Nutrition: Fuelling Development 160

A CLOSER LOOK: Real Life Food Timeline for the First Two Years 161

Reasons to Breast-Feed 162

A CLOSER LOOK: Diversity Wasting Away from Hunger 162

5.3 Development of the Brain and Nervous System 166

Development of Neurons 166

Development of the Brain 168

Nature and Nurture in the Development of the Brain 169

5.4 Motor Development: How Moving 170

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Early Gross Motor Development 171

Lifting and Holding the Torso and Head: Heads Up 171

Control of the Hands: Getting a Grip on Things 171

Locomotion: Getting a Move On 172

Nature and Nurture in Motor Development 173

5.5 Sensory and Perceptual Development: Taking In the World 175

Development of Vision: The Better to See You With 175

OBSERVING CHILDREN, UNDERSTANDING OURSELVES The Visual Cliff 177

A CLOSER LOOK: Research Strategies for Studying the Development of Shape Constancy 179

Development of Hearing: The Better to Hear You With 180

A CLOSER LOOK: Real Life Effects of Early Exposure to Garlic, Alcohol, and—Gulp—Veggies 181

Development of Coordination of the Senses: If I See It, Can I Touch It? 182



OBSERVING CHILDREN, UNDERSTANDING

OURSELVES Sensation and Perception in Infancy 182

The Active–Passive Controversy in Perceptual
Development 183

Nature and Nurture in Perceptual Development 184

Recite an Active Summary 185

Key Terms 186

Active Learning Resources 187

6 INFANCY: COGNITIVE DEVELOPMENT 189

Truth or Fiction? 189

6.1 Cognitive Development: Jean Piaget 190

The Sensorimotor Stage (0–24 Months) 190

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Piaget's
Sensorimotor Stage 192

Development of Object Permanence 193

Concept Review 6.1: The Six Substages of the Sensorimotor
Stage, According to Piaget 196

Evaluation of Piaget's Theory 197

A CLOSER LOOK: **Research** Counting in the Crib? Findings
from a “Mickey Mouse Experiment” 197

6.2 Information Processing 198

Infants' Memory 198

Imitation: Infant See, Infant Do? 199

A CLOSER LOOK: **Research** On Mirror Neurons and Really
Early Childhood Imitation 200

6.3 Social Influences on Early Cognitive Development 201

6.4 Individual Differences in Cognitive Functioning among Infants 202

Testing Infants: Why and with What? 202

Instability of Intelligence Scores Attained
in Infancy 203

Use of Visual Recognition Memory: An Effort to Enhance
Predictability 203

6.5 Language Development 204

What Is Language? 205

Early Vocalizations 205

Development of Vocabulary 207

A CLOSER LOOK: **Diversity** Babbling Here, There, and
Everywhere 208

A CLOSER LOOK: **Real Life** Teaching Sign Language to
Infants 209

Development of Sentences: Telegraphing Ideas 210



WilliamJr/Thinkstock

6.6 Theories of Language Development: Can You Make a Houseplant Talk? 211

Views That Emphasize Nurture 212

A CLOSER LOOK: **Diversity** Two-Word Sentences Here, There, and ... 212

Enhancing Language Development 214

Views That Emphasize Nature 215

Recite an Active Summary 218

Key Terms 219

Active Learning Resources 220

7 INFANCY: SOCIAL AND EMOTIONAL DEVELOPMENT 223

Truth or Fiction? 223

7.1 Attachment: Bonds That Endure 224

Patterns of Attachment 224

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Early Attachment and Anxiety 226

Establishing Attachment 226

Stability of Attachment 228

Stages of Attachment 228

Theories of Attachment 229

OBSERVING CHILDREN, UNDERSTANDING OURSELVES The Social Smile 231

Concept Review 7.1: Theories of Attachment 232

7.2 When Attachment Fails 233

Social Deprivation 234

Child Abuse and Neglect 237

A CLOSER LOOK: **Real Life** Prevention of Sexual Abuse of Children 239

A CLOSER LOOK: **Research** How Child Abuse May Set the Stage for Psychological Disorders in Adulthood 242

Autism Spectrum Disorders: Alone among the Crowd 243

7.3 Child Care 247

A CLOSER LOOK: **Real Life** Finding Child Care You (and Your Child) Can Live With 248

7.4 Emotional Development 249

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Emotional Development 249

Emotional Development and Patterns of Attachment 250

Fear of Strangers 250

Social Referencing: What Should I Do Now? 251

Emotional Regulation: Keeping on an Even Keel 251



© PM/Getty Images

7.5 Personality Development 253

The Self-Concept 253

Temperament: Easy, Difficult, or Slow to Warm Up? 254

7.6 Gender Differences 257

OBSERVING CHILDREN, UNDERSTANDING

OURSELVES Gender 257

Behaviour of Infant Girls and Boys 257

Adults' Behaviours toward Infant Girls and Boys 258

Parents' Behaviours toward Sons and Daughters 258

Recite an Active Summary 259

Key Terms 260

Active Learning Resources 261

Part 4 Early Childhood

8 EARLY CHILDHOOD: PHYSICAL DEVELOPMENT 263

Truth or Fiction? 263

8.1 Growth Patterns 264

Height and Weight 264

Development of the Brain 264

8.2 Motor Development 266

Gross Motor Skills 266

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Gross

Motor Skills 267

Physical Activity 267

A CLOSER LOOK: **Diversity** Gender Differences in Motor Activity 269

Fine Motor Skills 270

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Fine

Motor Skills 270

Children's Drawings 270

Handedness: On Being Right or ... Left? 272

8.3 Nutrition 274

Nutritional Needs 274

Patterns of Eating 274

8.4 Health and Illness 276

Minor Illnesses 277

Major Illnesses 277

A CLOSER LOOK: **Real Life** Ten Things You Need to Know about Immunizations 278

Accidents 280

A CLOSER LOOK: **Real Life** Protecting Children from Lead Poisoning 280



TO COME

8.5 Sleep 282

A CLOSER LOOK: Research Cross-Cultural Differences in Sleeping Arrangements 283

Sleep Disorders 284

8.6 Elimination Disorders 285

Enuresis 286

A CLOSER LOOK: Real Life What to Do about Bed-Wetting 287

Encopresis 287

Recite an Active Summary 288

Key Terms 289

Active Learning Resources 289

9 EARLY CHILDHOOD: COGNITIVE DEVELOPMENT 293

Truth or Fiction? 293

9.1 Jean Piaget's Preoperational Stage (2–7 years) 294

Symbolic Thought 294

Symbolic or Pretend Play: “We Could Make Believe” 294

Operations: “Transformers” of the Mind 295

Egocentrism: It’s All about Me 295

Causality: Why? Because 296

Confusion of Mental and Physical Events: On “Galaprocks” and Dreams That Are Real 297

Focus on One Dimension at a Time: Mental Blindness 298

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Piaget’s Preoperational Stage 298

Concept Review 9.1: Features of Preoperational Cognition According to Piaget 300

A CLOSER LOOK: Diversity Development of Concepts of Ethnicity and Race 301

Evaluation of Piaget 301

9.2 Vygotsky’s Views on Early Childhood Cognitive Development 302

Scaffolding and the Zone of Proximal Development 303

A CLOSER LOOK: Research Effects of Scaffolding on Children’s Abilities to Recall and Retell Stories 303

9.3 Other Factors in Early Childhood Cognitive Development: The Home Environment, Preschool, and Screen Time 304

The Effect of the Home Environment 304

Early Childhood Education 305

Television and Screen Time 307



© Per Breichagen/Getty Images

9.4 Theory of Mind: What Is the Mind? How Does It Work? 310

False Beliefs: Just Where Are Those Crayons? 310
Origins of Knowledge: Where Does It Come From? 311
The Appearance–Reality Distinction: Appearances Are More
Deceiving at Some Ages Than at Others 312

**9.5 Development of Memory: Creating Documents,
Storing Them, Retrieving Them 313**

Memory Tasks: Recognition and Recall 313
Competence of Memory in Early Childhood 314
Factors Influencing Memory 314
Memory Strategies: Remembering to Remember 316

**9.6 Language Development: Why “Daddy Goed
Away” 317**

Development of Vocabulary: Words, Words, and More
Words 317
Development of Grammar: Toward More Complex Language 318

OBSERVING CHILDREN, UNDERSTANDING OURSELVES An
Explosion In Vocabulary 320

Pragmatics: Preschoolers Can Be Practical 320
Language and Cognition 321

A CLOSER LOOK: Diversity Canada’s Languages: A Multilingual
Nation 321

Recite an Active Summary 323

Key Terms 324

Active Learning Resources 325

**10 EARLY CHILDHOOD: SOCIAL AND EMOTIONAL
DEVELOPMENT 327**

Truth or Fiction? 327

**10.1 Influences on Development: Parents, Siblings,
and Peers 328**

Dimensions of Child Rearing 328
How Parents Set (or Enforce) Boundaries 329
Parenting Styles: How Parents Transmit Values and
Standards 330
Effects of the Situation and the Child on Parenting Styles 333
Influence of Siblings 333

A CLOSER LOOK: Diversity Individualism, Collectivism, and
Patterns of Child Rearing 335

Birth Order: Not Just Where in the World But Also
Where in the Family 337
Peer Relationships 338

A CLOSER LOOK: Diversity What about Dads? 339



Diego Cervo/Shutterstock.com

10.2 Social Behaviour: In the World, among Others 340

Play—Child's Play, That Is 340

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Types of Play 340

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Early Childhood Play 342

Prosocial Behaviour: It Could Happen! And It Does 344

A CLOSER LOOK: Research Do You Have to Be Taught to Hate? 346

Development of Aggression: The Dark Side of Social Interaction 347

Theories of Aggression 347

10.3 Personality and Emotional Development 352

The Self 352

Initiative versus Guilt 353

Fears: The Horrors of Early Childhood 353

A CLOSER LOOK: Real Life Helping Children Cope with Fears 354

10.4 Development of Gender Roles and Gender Differences 355

Gender Differences 357

Theories of the Development of Gender Differences 357

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Gender 359

Concept Review 10.1: Theories of the Development of Gender Differences 362

Recite an Active Summary 363

Key Terms 365

Active Learning Resources 365

Part 5 Middle Childhood

11 MIDDLE CHILDHOOD: PHYSICAL DEVELOPMENT 367

Truth or Fiction? 367

11.1 Growth Patterns 368

Brain Development 368

Nutrition and Growth 368

Gender Similarities and Differences in Physical Growth 369

Vision and Hearing 369

11.2 Overweight Children 370

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Childhood Obesity 370



Causes of Being Overweight 372

A CLOSER LOOK: Real Life Helping Overweight Children
Manage Their Weight 373

11.3 Childhood Asthma 375

11.4 Motor Development 376

Gross Motor Skills 376

Concept Review 11.1: Development of Motor Skills during Middle
Childhood 376

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Middle
Childhood: Gross Motor Skills 377

Fine Motor Skills 377

Gender Similarities and Differences in Motor Development 377

Exercise and Fitness 378

11.5 Disorders That Affect Learning 380

Attention-Deficit/Hyperactivity Disorder (AD/HD) 380

Learning Disabilities 384

Concept Review 11.2: Kinds of Learning Disabilities 384

Communication Disorders 386

Educating Children with Learning and Communication
Disorders 387

Recite an Active Summary 389

Key Terms 390

Active Learning Resources 390

12 MIDDLE CHILDHOOD: COGNITIVE DEVELOPMENT 393

Truth or Fiction? 393

12.1 Piaget: The Concrete-Operational Stage 394

Conservation 394

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Piaget's
Concrete-Operational Stage 395

Transitivity 395

Class Inclusion 396

Applications of Piaget's Theory to Education 397

Concept Review 12.1: Aspects of Concrete-Operational
Thinking 397

Evaluation of Piaget's Theory 398

12.2 Moral Development: The Child as Judge 399

Piaget's Theory of Moral Development 399

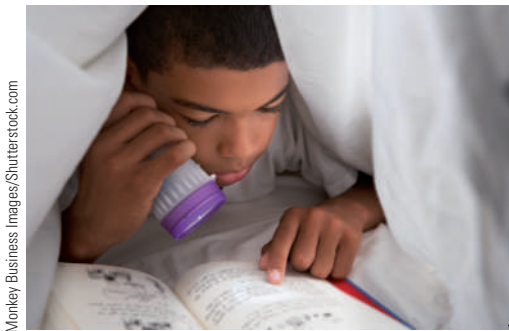
Kohlberg's Theory of Moral Development 400

12.3 Information Processing: Learning, Remembering, Problem Solving 403

Development of Selective Attention 403

Developments in the Storage and Retrieval of Information 404

A CLOSER LOOK: Research The Long-Term Effects of Good
Teaching 406



Monkey Business Images/Shutterstock.com

OBSERVING CHILDREN, UNDERSTANDING
OURSELVES Rehearsal Strategies 407

A CLOSER LOOK: **Research** Early Math Matters: Does a Child's
Education in Math Need to Begin Prior to Kindergarten? 409

Development of Recall Memory 410

A CLOSER LOOK: **Research** Children's Eyewitness Testimony 410

Development of Metacognition and Metamemory 411

OBSERVING CHILDREN, UNDERSTANDING
OURSELVES Suggestibility 412

**12.4 Intellectual Development, Creativity, and
Achievement 412**

12.5 Theories of Intelligence 413

Factor Theories 413

The Triarchic Theory of Intelligence 414

The Theory of Multiple Intelligences 415

Concept Review 12.2: Theories of Intelligence 416

Emotional Intelligence and Social Intelligence 417

Measurement of Intellectual Development 417

Patterns of Intellectual Development 423

Differences in Intellectual Development 424

A CLOSER LOOK: **Diversity** Socioeconomic and Ethnic
Differences in IQ 425

Creativity and Intellectual Development 426

Determinants of Intellectual Development 428

12.6 Language Development 431

Vocabulary and Grammar 431

Pragmatic Language Skills 431

Reading Skills 431

Methods of Teaching Reading 432

12.7 Bilingualism 432

Recite an Active Summary 434

Key Terms 436

Active Learning Resources 437

**13 MIDDLE CHILDHOOD: SOCIAL AND
EMOTIONAL DEVELOPMENT 439**

Truth or Fiction? 439

**13.1 Theories of Social and Emotional
Development in Middle Childhood 440**

Psychoanalytic Theory 440

Social Cognitive Theory 441

Cognitive-Developmental Theory and Social
Cognition 441

Development of the Self-Concept in Middle
Childhood 442

OBSERVING CHILDREN, UNDERSTANDING
OURSELVES Self-Concept 442



Self-Esteem 443

13.2 The Family 445

Parent–Child Relationships 445

Lesbian and Gay Parents 446

Generation X or Generation Ex? 447

A CLOSER LOOK: Real Life How to Answer a Seven-Year-Old's
Questions about—Gulp—Sex 448

13.3 Peer Relationships 451

Peers as Socialization Influences 452

Peer Acceptance and Rejection 452

Development of Friendships 453

13.4 The School 454

Entry into School: Getting to Know You 455

The School Environment: Setting the Stage for Success or ... 456

A CLOSER LOOK: Research Is Bullying Murder? 457

Teachers: Setting Limits, Making Demands, Communicating
Values, and—Oh, Yes—Teaching 458

OBSERVING CHILDREN, UNDERSTANDING OURSELVES

Self-Fulfilling Prophecies 459

13.5 Social and Emotional Problems 461

Conduct Disorders 461

A CLOSER LOOK: Research When Doom Leads to ...
Doom 462

Childhood Depression 463

Concept Review 13.1: Social and Emotional Problems That May
Emerge during Middle Childhood 466

Childhood Anxiety 466

Recite an Active Summary 470

Key Terms 471

Active Learning Resources 472

Part 6 Adolescence (Online)

14 ADOLESCENCE: PHYSICAL DEVELOPMENT W14-3

Truth or Fiction? W14-3

14.1 Adolescence W14-4

14.2 Puberty: The Biological Eruption W14-5

The Adolescent Growth Spurt: Changed Forever W14-6

Concept Review 14.1: Five Stages of Male Development
during Puberty W14-10

Early versus Late Maturers: Does It Matter
When You Arrive, as Long as You Do? W14-13

Concept Review 14.2: Five Stages of Female
Development during Puberty W14-14



Palmer Kane LLC/Shutterstock.com

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Puberty
and Body Image W14-16

Body Image in Adolescence W14-17

14.3 Brain Development W14-17

14.4 Emerging Sexuality and the Risks of Sexually Transmitted Infections W14-19

HIV/AIDS W14-20

Risk Factors W14-20

Prevention of Sexually Transmitted Infections W14-21

14.5 Health in Adolescence W14-21

OBSERVING CHILDREN, UNDERSTANDING OURSELVES Risk
Taking W14-22

Causes of Death W14-22

Sleep W14-22

Nutrition W14-23

A CLOSER LOOK: Real Life Schools and Adolescent
Nutrition W14-23

14.6 Eating Disorders: When Dieting Turns Deadly W14-24

Perspectives on Eating Disorders W14-27

14.7 Substance Abuse and Dependence: Where Does It Begin? Where Does It End? W14-29

Depressants W14-30

Stimulants W14-31

Hallucinogenics W14-31

Prevalence of Substance Abuse W14-32

Factors in Substance Abuse and Dependence W14-32

A CLOSER LOOK: Diversity Gender, College Plans, Ethnicity,
and Substance Abuse W14-34

Treatment and Prevention W14-35

Recite an Active Summary W14-36

Key Terms W14-37

Active Learning Resources W14-38

15 ADOLESCENCE: COGNITIVE DEVELOPMENT W15-3

Truth or Fiction? W15-3

15.1 The Adolescent in Thought: My, My, How “Formal” W15-4

Piaget’s Stage of Formal Operations W15-4

**OBSERVING CHILDREN, UNDERSTANDING
OURSELVES** Piaget’s Formal-Operational Stage:
Hypothetical Propositions W15-5

Sophisticated Use of Symbols W15-5

A CLOSER LOOK: Research The Puzzle and the
Pendulum W15-6

Adolescent Egocentrism: Centre Stage W15-7



Gender Differences in Cognitive Abilities W15-9

A CLOSER LOOK: Diversity Women in STEM Fields W15-12

15.2 The Adolescent in Judgment: Moral Development W15-12

The Postconventional Level W15-12

Cross-Cultural Differences in Moral Development W15-14

Gender Differences in Moral Development—Justice
versus Caring? W15-15

Moral Behaviour and Moral Reasoning:

Is There a Relationship? W15-16

Evaluation of Kohlberg's Theory W15-16

15.3 The Adolescent in School W15-17

Making the Transition from Elementary School W15-17

Dropping Out of School W15-18

A CLOSER LOOK: Research How Parents Can Help Early
Adolescents in School W15-19

15.4 The Adolescent at Work: Career Development and Work Experience W15-21

Career Development W15-21

A CLOSER LOOK: Diversity Ethnic Identity and Gender in
Career Self-Efficacy Expectancies W15-23

Adolescents in the Workforce W15-24

Recite an Active Summary W15-26

Key Terms W15-26

Active Learning Resources W15-27

16 ADOLESCENCE: SOCIAL AND EMOTIONAL DEVELOPMENT W16-3

Truth or Fiction? W16-3

16.1 Development of Identity and the Self-Concept: “Who Am I?” (And Who Else?) W16-4

Erikson's View of Identity Development W16-4

“Identity Statuses”: Searching for the Self, Making a
Commitment W16-5

Concept Review 16.1: Marcia's Identity Statuses W16-6

Ethnicity and Development of Identity W16-7

OBSERVING CHILDREN, UNDERSTANDING

OURSELVES Development in Multiracial Individuals W16-8

Gender and Development of Identity W16-8

Development of the Self-Concept in Adolescence W16-9

Self-Esteem in Adolescence: Bottoming? Rising? W16-10

16.2 Relationships with Parents and Peers W16-11

Peer Groups W16-14

Dating and Romantic Relationships W16-15



Corbis/Jupiterimages

16.3 Sexuality: When? What? (How?) Who? Where? and Why?—Not to Mention, “Should I?” W16-18

Masturbation W16-19

Oral Sex W16-19

Sexual Orientation W16-19

Gender Identity W16-20

The Origins of Sexual Orientation W16-21

A CLOSER LOOK: Real Life Sexting: One More Way for
Adolescents to Stay in Touch W16-21

Effects of Puberty W16-24

A CLOSER LOOK: Research Do Sexy TV Shows Encourage
Sexual Behaviour in Teenagers and Lead to Teenage
Pregnancy? W16-24

Teenage Pregnancy W16-25

Consequences of Teenage Pregnancy W16-26

A CLOSER LOOK: Real Life Sexual Health Education W16-28

16.4 Juvenile Delinquency W16-29

Gender and Juvenile Delinquency W16-29

Who Are the Delinquents? What Are They Like? W16-29

16.5 Suicide: When the Adolescent Has Nothing— Except Everything—to Lose W16-31

A CLOSER LOOK: Diversity Ethnicity, Gender,
and Suicide W16-32

A CLOSER LOOK: Real Life Warning Signs of Suicide W16-33

16.6 Epilogue: Emerging Adulthood—Bridge between Adolescence and the Life Beyond W16-34

The Meaning of Adulthood W16-35

An End to Traditional Gender Roles W16-35

Features of Emerging Adulthood W16-36

Recite an Active Summary W16-38

Key Terms W16-40

Active Learning Resources W16-40

Appendix A: Answer Key to Active Reviews A-1

*Appendix B: WHO Growth Charts for Canadian Children and Youth by
Sex B-1*

Glossary G-1

References R-1

Name Index I-1

Subject Index I-9

PREFACE

*My heart leaps up when I behold
A rainbow in the sky:
So was it when my life began;
So is it now I am a man;
So be it when I shall grow old,
Or let me die!
The Child is father of the Man;
And I could wish my days to be
Bound each to each by natural piety.*

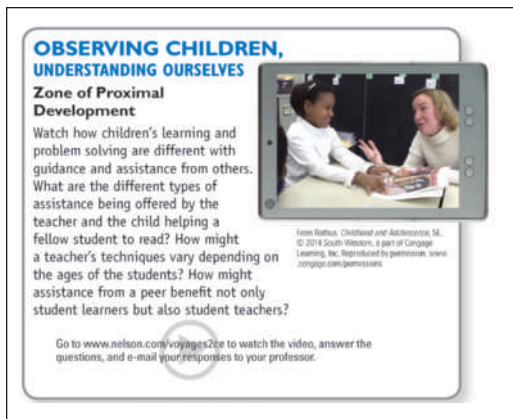
William Wordsworth, 1802

Yes, the child is father of the man and, no less certainly, the mother of the woman. In our children, we have the making of ourselves. In children, parents have the most impetuous, comical, ingratiating, delightful, and—at times—infuriating versions of themselves. It is hard to believe, but true, that the babies we hold in our hands at birth may someday be larger and stronger, more talented, and more insightful than we are.

Portraying the Fascination of Children: Personal and Scientific

Our goal in writing this book has been to capture the wonder of child and adolescent development, while portraying the field of development as the rigorous science it is. Our approach is designed to help motivate students by showing them the joy of observing children and adolescents. How can one hope to convey a true sense of development if one is blind to its marvels?

Voyages in Development evolved from our scientific interest and research in human growth and development and also from our experiences with our families and professional work. While our intention is to keep the tone of this text engaging and accessible, this book is rigorous in its reporting of research methods and science. On the other hand, the book is also “hands on”; it contains many applications, which range from preventing infant malnutrition and understanding why it is important to know about immunizations to helping children overcome enuresis and handling bullying in school.



Key Features

The second Canadian edition of *Voyages in Development* contains the following key features:

- A thorough and rigorous update.
- **Observing Children, Understanding Ourselves:** a video feature that enables students to observe different stages of development. There are 34 of these *Observing Children, Understanding Ourselves* videos throughout this edition. As they read each chapter, students can watch the videos by going to the text's website and can even take a quiz to test their comprehension of the concept.
- **Concept Reviews:** visual presentations of complex developmental concepts.
- **A Closer Look—Diversity:** interesting and timely topics that show how culture—especially diverse cultural backgrounds—influences the many aspects of child and adolescent development.
- **A Closer Look—Research:** features that offer expanded coverage of important research studies and also present research issues of great timeliness and interest.
- **A Closer Look—Real Life:** applications that enable readers to “take this book home with them”—to apply what they are learning with children and adults in their own lives.

A Thorough Update

This is an exciting time to be studying child and adolescent development. Every day, new research and new insights help us to better understand the mysteries and marvels of many aspects of development. Nearly 500 new citations refer the reader to research studies and broader documents, such as the federal government's most recent recommendations on childhood nutrition, healthy development during pregnancy, updated Canadian Physical Activity and Sedentary Behaviour Guidelines, relevant Canadian statistics throughout the text, an updated “10 Things You Need to Know about Immunizations,” (see page 278) updated information on childhood disabilities and mental disorders in alignment with the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (APA, 2013), recently published research on substance abuse, and brain and neuroscience in infancy through adolescence.

Chapter Previews

The second Canadian edition contains chapter preview sections that include *Major Topics*, *Features*, and *Truth or Fiction?* items. These previews help shape students' expectations and enhance the effectiveness of their learning by helping them create mental templates, or “advance organizers,” into which they categorize the subject matter.

Chapter-by-Chapter Updates

Every chapter has undergone updating in terms of the coverage of topics and pedagogy. Following is a sampling of what is new:

Chapter 1—History, Theories, and Methods

- New subsection: “The Survey” in the section on methods of observation
- Updated Canadian immigration statistics

- New “A Closer Look—Research” feature: “Surveying High School Seniors’ Attitudes toward Living Together before Getting Married”
- New “A Closer Look—Research” feature: “The Bell-and-Pad Method for Treating Bed-Wetting”
- New “A Closer Look—Research” feature: “Operant Conditioning of Vocalizations in Infants”
- New “Observing Children, Understanding Ourselves” video feature: “Zone of Proximal Development”
- Inclusion of Neuroscience and Dynamic Systems Theory
- New “A Closer Look—Research” feature: “The Conditioning of ‘Little Albert’: A Case Study in Ethics”
- Addition of James Marcia’s research on identity development
- General updating: 21 new references

Chapter 2—Heredity and Conception

- New coverage of genetic transmission of hair colour
- New coverage of change in calcium ions as influencing movement of sperm
- New “A Closer Look—Diversity” feature: “LGBT Family Building”
- New “A Closer Look—Diversity” feature: “Where Are the Missing Chinese Girls?”
- New “Observing Children, Understanding Ourselves” video feature: “Twins”
- Expansion of niche-picking description
- New “A Closer Look—Research” feature: “Selecting the Sex of Your Child: Fantasy or Reality?”
- New contemporary perspectives and theories (codominance, epigenetics, and nature and nurture refocus)
- Canadian Cystic Fibrosis Association information
- Updated Canadian statistics related to prenatal development
- General updating: 11 new references

Chapter 3—Prenatal Development

- Updated United Nations information on fertility rates around the world
- New “A Closer Look—Diversity” feature: “Birth Rates around the World”
- New “A Closer Look—Real Life” feature: “Advice for Expectant Mothers”
- New “A Closer Look—Real Life” feature: “Advice for Expectant Fathers”
- New “A Closer Look—Real Life” feature: “Preventing One’s Baby from Being Infected with HIV”
- New “Observing Children, Understanding Ourselves” video feature: “Antidepressants in Utero”
- Updated Health Canada guidelines on Healthy Pregnancy; HIV/AIDS, Rubella, and tobacco and alcohol use
- New “A Closer Look—Research” feature: “Can We Trust the Research on the Effects of Caffeine Taken during Pregnancy?”
- New “A Closer Look—Diversity” feature: “The Effects of Parents’ Age on Children—Do Men Really Have All the Time in the World?”
- Updated information on fetal alcohol spectrum disorders
- Inclusion of sensitive periods of development
- Follow-up on the Canadian ice storm of 1998
- General updating: 31 new references

Chapter 4—Birth and the Newborn Baby: In the New World

- New “Observing Children, Understanding Ourselves” video feature: “Reflex Development in Infancy”

- Updated “A Closer Look—Diversity” feature: “Maternal and Infant Mortality around the World”
- New “A Closer Look—Research” feature: “Have We Found the Daddy Hormones?”
- New “Observing Children, Understanding Ourselves” video feature: “Early Learning”
- New coverage of hypnosis and biofeedback as methods to help women during childbirth
- Updated information on the use of the cesarean section and on vaginal birth after cesarean section (VBAC), as well as alternative birthing options for Canadian women
- Updated information from Save the Children on maternal and infant mortality around the world
- Expanded coverage of the kinds of maternal depression that may follow childbirth
- Updated information on sudden infant death syndrome (SIDS)
- General updating: 2 new references

Chapter 5—Infancy: Physical Development

- New coverage of infants living in poverty, how infant poverty varies with race and ethnicity, and the relationship of poverty to infant nutrition
- New “A Closer Look—Real Life” feature: “Food Timeline for the First Two Years”
- New “A Closer Look—Diversity” feature: “Wasting Away from Hunger,” containing information from the World Hunger Organization
- New “Observing Children, Understanding Ourselves” video feature: “Early Gross Motor Development”
- New “Observing Children, Understanding Ourselves” video feature: “The Visual Cliff”
- New “A Closer Look—Research” feature: “Strategies for Studying the Development of Shape Constancy”
- A reference to Canada Health Agency report on “Attachment across cultures”
- Updated Canadian-based guidelines for breast-feeding
- General updating: 14 new references

Chapter 6—Infancy: Cognitive Development

- New “A Closer Look—Research” feature: “On Mirror Neurons and Really Early Childhood Imitation”
- New Language Development overview
- General updating: 4 new references

Chapter 7—Infancy: Social and Emotional Development

- New “Observing Children, Understanding Ourselves” video feature: “Early Attachment and Anxiety”
- Thoroughly revised and updated section on child abuse and neglect in Canada
- Thoroughly revised and updated section on day care
- Inclusion of research on fathers
- New “A Closer Look—Real Life” feature: “Prevention of Sexual Abuse of Children”
- New “A Closer Look—Research” feature: “How Child Abuse May Set the Stage for Psychological Disorders in Adulthood”

- New “Observing Children, Understanding Ourselves” video feature: “Emotional Development”
- New workforce statistics
- Canadian child care information
- General updating: 31 new references

Chapter 8—Early Childhood: Physical Development

- Revised “Observing Children, Understanding Ourselves” video feature: “Gross Motor Skills”
- Revised “Observing Children, Understanding Ourselves” video feature: “Fine Motor Skills”
- New coverage of the relationship between prenatal testosterone and handedness
- Updated coverage of healthy eating and *Canada’s Food Guide*
- Updated Canadian obesity rates
- Updated coverage of major illnesses around the world
- Updated immunization schedule
- Updated “A Closer Look—Real Life” feature: “Ten Things You Need to Know about Immunizations”
- Updated “A Closer Look—Real Life” feature: “Protecting Children from Lead Poisoning”
- Expanded coverage of rough-and tumble play
- New coverage estimates for school-entry vaccinations
- Updated coverage of the leading causes of death for Canadian children
- New coverage of children’s drawing and cognitive development
- Canadian Dental Association recommendations for oral health hygiene
- New information on how much sleep is needed at various ages
- New coverage of risk factors for developing encopresis
- Leading causes of injury and death in Canada
- General updating: 26 new references

Chapter 9—Early Childhood: Cognitive Development

- New coverage of Feuerstein theory was added
- New updated research and theories for theory of mind, memory, influence of TV
- New “A Closer Look—Research” feature: “Effects of Scaffolding on Children’s Abilities to Recall and Retell Stories”
- Updated “A Closer Look—Real Life” feature: “Helping Children Use Television Wisely”
- New “Observing Children, Understanding Ourselves” video feature: “An Explosion in Vocabulary”
- Updated “A Closer Look—Diversity” feature: “Canada’s Languages: A Multilingual Nation”
- New information on self-regulation
- Expanded preschool education for disadvantaged children
- Canadian bilingualism
- Information on Canadian and Aboriginal Head Start preschool programs
- General updating: 19 new references

Chapter 10—Early Childhood: Social and Emotional Development

- New “Observing Children, Understanding Ourselves” video feature: “Types of Play”
- New “Observing Children, Understanding Ourselves” video feature: “Early Childhood Play”

- Added review of hostile attribution bias in section on aggression
- New “A Closer Look—Research” feature: “Do You Have to Be Taught to Hate?”
- New information on parenting and fathers
- Updated coverage of the effects of media violence
- Expanded coverage of cultural stereotypes of “masculine” and “feminine” traits
- Updated coverage of biological factors in the development of gender differences
- General updating: 33 new references

Chapter 11—Middle Childhood: Physical Development

- New “Observing Children, Understanding Ourselves” video feature: “Childhood Obesity”
- Updated “A Closer Look—Real Life” feature: “Helping Overweight Children Manage Their Weight”
- New “Observing Children, Understanding Ourselves” video feature: “Middle Childhood: Gross Motor Skills”
- Updating of the section on overweight children
- New coverage of the Canadian physical exercise and guidelines for children
- New information on childhood disorder reflective of *DSM-V* updates
- Updated coverage of Canadian inclusive educational practices
- General updating: 11 new references

Chapter 12—Middle Childhood: Cognitive Development

- New “A Closer Look—Research” feature: “The Long-Term Effects of Good Teaching”
- New “Observing Children, Understanding Ourselves” video feature: “Rehearsal Strategies”
- New “A Closer Look—Real Life” feature: “Early Math Matters: Does a Child’s Education in Math Need to Begin Prior to Kindergarten?”
- New “Observing Children, Understanding Ourselves” video feature: “Suggestibility”
- Expanded coverage of organization in long-term memory
- Updated section on theories of intelligence
- Updated discussion of intellectual disability to reflect *DSM-V* updates
- Updated discussion of the determinants of intellectual development
- Updated discussion of languages other than English that are most often spoken in the home in Canada
- Eyewitness memory has been updated but remains in this chapter
- New addition of the social side of language development
- Brief history on IQ
- Addition of domain theory
- Updated Canadian statistics and figures on bilingualism
- General updating: 21 new references

Chapter 13—Middle Childhood: Social and Emotional Development

- New “A Closer Look—Real Life” feature: “How to Answer a Seven-Year-Old’s Questions about—Gulp—Sex”
- Revised “A Closer Look—Research” feature: “Is Bullying Murder?” with Canadian resources and studies cited

- New “Observing Children, Understanding Ourselves” video feature: “Self-Fulfilling Prophecies”
- New “A Closer Look—Research” feature: “When Doom Leads to... Doom”
- Expanded family type descriptions to include intergenerational, extended, and adoptive families
- Revised peer literature on peer rejection and popularity included with Canadian studies embedded throughout
- Revised Canadian divorce rates
- General updating: 24 new references

Chapter 14—Adolescence: Physical Development

- New “A Closer Look—Real Life” feature: “Schools and Adolescent Nutrition”
- New “Observing Children, Understanding Ourselves” video feature: “Puberty and Body Image”
- New “Observing Children, Understanding Ourselves” video feature: “Risk Taking”
- New “A Closer Look—Diversity” feature: “Gender, College Plans, Ethnicity, and Substance Abuse”
- Updated information on sexually transmitted infections (STIs) and HPV vaccine
- New information on brain structures and plasticity
- Inclusion of health figures
- General updating: 10 new references

Chapter 15—Adolescence: Cognitive Development

- New “A Closer Look—Diversity” feature: “Women in STEM Fields”
- Expanded and updated coverage of gender differences in cognitive abilities
- New “A Closer Look—Diversity” feature: “Ethnic Identity and Gender in Career Self-Efficacy Expectancies”
- Expanded discussion of sex differences in verbal/visual ability
- Updated Canadian information on dropping out of school
- General updating: 9 new references

Chapter 16—Adolescence: Social and Emotional Development

- New “A Closer Look—Real Life” feature: “Sexting: One More Way for Adolescents to Stay in Touch”
- New “A Closer Look—Research” feature: “Do Sexy TV Shows Encourage Sexual Behaviour in Teenagers and Lead to Teenage Pregnancy?”
- New “A Closer Look—Real Life” feature: “Sexual Health Education”
- New “Observing Children, Understanding Ourselves” video feature: “Development in Multiracial Individuals”
- New “Observing Children, Understanding Ourselves” video feature: “Peers and Domain Influences”
- New “A Closer Look—Diversity” feature: “Ethnicity, Gender, and Suicide”
- Revised and updated information on the origins of sexual orientation
- New information on adolescent sexual behaviour from Canadian data sources and reports
- Revised and updated information on the incidence of teenage pregnancy in Canada

- Revised material related to sexual orientation and gender identity
- Expanded and updated coverage of emerging adulthood
- General updating: 27 new references

Appendix B

- Current World Health Organization growth charts

What Carries through from Edition to Edition

The second Canadian edition of *Voyages in Development* continues to present cutting-edge topic coverage, emphasizing the latest findings and research in key areas. The text is organized chronologically. It begins with introductory theoretical material. Then it traces the physical, cognitive, and social and emotional sequences that characterize development from infancy through early and middle childhood to adolescence and emerging adulthood.

“Observing Children, Understanding Ourselves” Video Features

One of the themes of this text is how children learn by observation. College students and other adults also learn by observation. One of the best ways to learn about child development is to observe the behaviour of children. Unfortunately, many students do not have everyday access to children and therefore cannot observe for themselves how the many concepts and theories discussed in this textbook are embodied in the everyday lives of children.

All users of *Voyages in Development* will find the “Observing Children, Understanding Ourselves” feature integrated throughout the book. This feature showcases a series of observational videos that illustrate a wide range of topics. Each video is accompanied by Critical Thinking Questions in the text and a quick quiz can be taken online as part of watching the video. The second Canadian edition includes these videos:

- Chapter 1: “Zone of Proximal Development”
- Chapter 2: “Prenatal Assessment”
“Twins”
- Chapter 3: “Antidepressants in Utero”
- Chapter 4: “Birth”
“Reflex Development in Infancy”
“Early Learning”
- Chapter 5: “Early Gross Motor Development”
“The Visual Cliff”
“Sensation and Perception in Infancy”
- Chapter 6: “Piaget’s Sensorimotor Stage”
- Chapter 7: “Early Attachment and Anxiety”
“Emotional Development”
“Gender”
- Chapter 8: “Gross Motor Skills”
“Fine Motor Skills”
- Chapter 9: “Piaget’s Preoperational Stage”
“An Explosion in Vocabulary”
- Chapter 10: “Types of Play”
“Early Childhood Play”
“Gender”

- Chapter 11: “Childhood Obesity”
“Middle Childhood: Gross Motor Skills”
- Chapter 12: “Piaget’s Concrete-Operational Stage”
“Rehearsal Strategies”
“Suggestibility”
- Chapter 13: “Self-Concept”
“Self-Fulfilling Prophecies”
- Chapter 14: “Puberty and Body Image”
“Risk Taking”
- Chapter 15: “Piaget’s Formal-Operational Stage: Hypothetical Propositions”
- Chapter 16: “Development in Multiracial Individuals”
“Peers and Domain Influences”

The *Observing Children, Understanding Ourselves* videos are available by going to Cengage.ca to access this textbook’s CourseMate, where you will find an interactive ebook, flashcards, pre-lecture quizzes, section quizzes, exam practice, videos, and more.

Concept Reviews

Concept Reviews are more than simple summaries. They take complex developmental concepts, such as theories of intelligence, and present them in dynamic layouts that readily communicate the key concepts and the relationships among concepts. Many of them include photographs and figures as well as text. Here is a sampling of the Concept Reviews found in *Voyages in Development*:

- Concept Review 1.3: “Perspectives on Child Development”
- Concept Review 6.1: “The Six Substages of the Sensorimotor Stage, According to Piaget”
- Concept Review 14.2: “Five Stages of Female Development during Puberty”

“A Closer Look—Diversity” Features

These features address the most challenging issues related to the way children and adolescents are influenced by ethnic background, gender roles, sexual orientation, and age, in areas ranging from intellectual development to substance abuse. In many cases, cultural and ethnic factors affect the very survival of the child. This coverage helps students understand why parents of different backgrounds and genders rear their children and adolescents in certain ways, why children and adolescents from various backgrounds behave and think in different ways, and how the study of child and adolescent development is enriched by addressing those differences. Here are some examples of such topics:

- Chapter 2: “LGBT Family Building”
- Chapter 3: “The Effects of Parents’ Age on Children—Do Men Really Have All the Time in the World?”
- Chapter 4: “Maternal and Child Mortality around the World” (the latest information from the Save the Children Organization)
- Chapter 8: “Gender Differences in Motor Activity”
- Chapter 15: “Ethnic Identity and Gender in Career Self-Efficacy Expectancies”

“A Closer Look—Research” Features

This research-focused feature expands the book’s treatment of the ways in which researchers carry out their work. Examples of topics include

- Chapter 1: “Operant Conditioning of Vocalizations in Infants”
- Chapter 4: “Studying Visual Acuity in Neonates: How Well Can They See?”
- Chapter 5: “Strategies for Studying the Development of Shape Constancy”
- Chapter 6: “On Mirror Neurons and Really Early Childhood Imitation”
- Chapter 9: “Effects of Scaffolding on Children’s Abilities to Recall and Retell Stories”

“A Closer Look—Real Life” Features

This feature enables readers to “take the book home with them”—that is, to apply what they are learning with children and adults in their own lives. Examples of topics include

- Chapter 3: “Advice for Expectant Fathers”
- Chapter 8: “Ten Things You Need to Know about Immunizations”
- Chapter 9: “Helping Children Use Television Wisely” (includes teaching children not to imitate the violence they observe in the media)

An Enhanced Pedagogical Package: PQ4R

PQ4R discourages students from believing that they are sponges who will automatically soak up the subject matter in the same way that sponges soak up water. The PQ4R method stimulates students to *actively* engage the subject matter. Students are encouraged to become *proactive* rather than *reactive*.

PQ4R is the abbreviation for *Preview, Question, Read, Review, Reflect, and Recite*, a method that is related to the work of educational psychologist Francis P. Robinson. PQ4R is more than the standard built-in study guide. It goes well beyond a few pages of questions and exercises that are found at the ends of the chapters of many textbooks. It is an integral part of every chapter. It flows throughout every chapter. It begins and ends every chapter, and it accompanies the student page by page.

Preview

Revised chapter previews include *Major Topics*, *Features*, and *Truth or Fiction?* items to help shape students’ expectations. The previews enable students to create mental templates, or “advance organizers,” into which they categorize the subject matter. The *Truth or Fiction?* items stimulate students to examine their own assumptions and prepare to delve into the subject matter by challenging folklore and common sense (which is often common *nonsense*). *Truth or Fiction Revisited* sections in the chapter inform students whether or not they were correct in their assumptions. The *Major Topics* list outlines the material in the chapter, creating mental categories that guide the students’ reading.

Following is a sample of challenging *Truth or Fiction?* items from various chapters.

- T|F** You can carry the genes for a deadly illness and not become sick yourself.
- T|F** More children die from sudden infant death syndrome (SIDS) than from cancer, heart disease, pneumonia, child abuse, HIV/AIDS, cystic fibrosis, and muscular dystrophy combined.

- T|F** Infants need to have experience crawling before they develop fear of heights.
- T|F** It is dangerous to awaken a sleepwalker.
- T|F** Three-year-olds usually say, “Daddy goed away” instead of “Daddy went away” because they *do* understand rules of grammar.
- T|F** Children who watch two to four hours of TV a day will see 8000 murders and another 100 000 acts of violence by the time they have finished elementary school.

Question

Devising questions about the subject matter, before reading it in detail, is another feature of the PQ4R method. Writing questions gives students goals: They attend class or read the text *in order to answer the questions*. Questions are strategically inserted in all primary sections of the text to help students use the PQ4R method most effectively. They are printed in **purple**. When students come to such a question, they can read the following material in order to answer it. And if they wish, they can also write the questions and answers in their notebooks, as Francis Robinson recommended.

Read

The first R in the PQ4R method stands for Read. Although students will have to read for themselves, they are not alone. The text helps by providing

- A *Major Topics* list that helps students organize the material in each chapter
- *Truth or Fiction?* items that stimulate students by challenging common knowledge and folklore
- Presentation of the subject matter in clear, stimulating prose
- A running glossary that defines key terms in the margin of the text, near where the terms first appear
- Development of concepts in an orderly fashion so that new concepts build on previously presented concepts

We have chosen a writing style that is “personal.” It speaks directly to the student and employs humour and personal anecdotes designed to motivate and stimulate students.

Review

The second R in PQ4R stands for Review. Regular reviews of the subject matter help students learn. Therefore, reviews are incorporated into *Active Review* sections that follow all major sections in the text.

Active Reviews contain two types of items that foster active learning, retention, and critical thinking. First come fill-in-the-blank questions. In some of these, the student indicates which of two words or phrases in parentheses accurately completes a given statement. Other questions offer no such prompt; these items challenge students to *produce*, not simply *recognize*, the answer. For example, an *Active Review* from Chapter 2, “Heredity and Conception,” includes the following items:

13. The sets of traits that we inherit are referred to as our (genotype or phenotype?).
14. The actual traits that we display at any point in time are the product of genetic and environmental influences and are called our (genotypes or phenotypes?).
15. Parents and children have a ___ percent overlap in their genetic endowments.

16. ____ (MZ) twins share 100 percent of their genes.

17. ____ (DZ) twins have a 50 percent overlap, as do other siblings.

Items are numbered, and answers are found at the end of the book.

Because reviewing the subject matter is so important, and because of the value of visual cues in learning, *Concept Reviews* are also found throughout the text (see page xxxvii of this Preface).

Reflect and Relate

Students learn more effectively when they *reflect* on (the third R in PQ4R is for Reflect), or *relate* to, the subject matter. Psychologists who study learning and memory refer to reflection on subject matter as *elaborative rehearsal*. One way for students to reflect on a subject is to *relate* it to things they already know about, whether the “subject” is academic material or events in their own lives. Reflecting on, or relating to, what they are learning makes it meaningful and easier to remember. It also makes it more likely that they will be able to *apply* the information to their own lives. Through effective reflection, students can embed material firmly in their memory so that rote repetition is unnecessary.

Because reflecting on the material is intertwined with relating to it, the second kind of item in each *Active Review* section is termed *Reflect & Relate*. Here is the *Reflect & Relate* item from an *Active Review* in Chapter 13 that follows a section on theories of social and emotional development in middle childhood:

Reflect & Relate: Are you “responsible” for your own self-esteem, or does your self-esteem pretty much vary with the opinion that others have of you? Why is this an important question?

Recite

The PQ4R method recommends that students recite the answers to the questions aloud. Reciting answers aloud helps students remember them by means of repetition, by stimulating students to produce concepts and ideas they have learned, and by associating these ideas with spoken words and gestures.

A *Recite* section is found at the end of each chapter. These sections help students summarize the material, but they are active summaries. For this reason, the sections are termed *Recite—An Active Summary*. They are written in question-and-answer format. To provide a sense of closure, the Active Summaries repeat the questions found within the chapters. The answers are concise but include most of the key terms found in the text.

Themes

Voyages in Development continues to emphasize three themes:

- Human diversity in development
- Biology: neuroscience, evolution, genes, hormones, and behaviour
- Applications

Coverage of these themes is summarized as follows:

Human Diversity in Development

- Ecological circumstances that affect development (pp. 22–24)
- Study of students from different ethnic backgrounds and their environments in relationship to their happiness (p. 24)
- The sociocultural perspective and human diversity (pp. 26–27)

- Naturalistic observations in children of different cultures (p. 35)
- Ethnic differences in the incidence of bearing fraternal twins (p. 52)
- Ethnic differences in chromosomal and genetic disorders (p. 57)
- Birth rates around the world (p. 93)
- Cross-cultural differences in using a doula during delivery (p. 124)
- Maternal and infant mortality around the world (pp. 130–131)
- Socioeconomic status and nutrition (pp. 162–163)
- Differences in preference for breast-feeding (pp. 164–165)
- Ethnic differences in infant capacity to walk (pp. 172–173)
- Differences in babbling across cultures (p. 208)
- Two-word sentence development across different languages (pp. 212–213)
- Low-income families and levels of child attachment (p. 226)
- Attachment of Ugandan and Scottish infants (pp. 228–229)
- Social deprivation in a Guatemalan tribe (p. 236)
- Stranger anxiety across cultures (p. 251)
- Gender differences in personality (pp. 257–258)
- Cultural differences in rough-and-tumble play (p. 258)
- Gender differences in motor activity (p. 269)
- Cultural differences in the perception of handedness (pp. 272–273)
- Ethnicity and immunization (pp. 277–278)
- Differences in accidental death rate (pp. 280–282)
- Cross-cultural differences in sleeping arrangements (p. 283)
- Development of concepts of ethnicity and race (p. 310)
- Cultural and gender differences in authoritarian parenting and the effects on children (p. 331)
- Cross-cultural differences in effects of parental styles (p. 333)
- Individualism, collectivism, and patterns of child rearing (pp. 335–336)
- Fathers in Canada (p. 339)
- Gender differences in play (pp. 343–344)
- Cultural differences in empathy (pp. 344–345)
- Gender differences in effects of TV violence (pp. 350–351)
- Development of gender roles and gender differences (pp. 355–357)
- Possible gender differences in organization of the brain (pp. 358–359)
- Sex hormones (p. 359)
- Cross-cultural differences in gender identity, stability, and constancy (pp. 361–362)
- Ethnicity and percent of children and adolescents who are overweight (pp. 370–371)
- Gender differences and motor skills (pp. 377–378)
- Education for children with disabilities (pp. 384–386)
- Discrimination in standardized testing (pp. 406–407)
- Testing bias and culture-free tests (p. 422)
- Intellectual disability and giftedness (pp. 424–426)
- Socioeconomic and ethnic differences in IQ (pp. 425–426)
- Gender differences in self-concept (p. 442)
- Gender differences in self-esteem (p. 444)
- Gender differences in learned helplessness (p. 445)
- Effects of divorce across cultures (p. 449)
- Gender differences in coping with divorce (pp. 449–450)
- Gender differences in the development of friendships (p. 453)
- Differences in preparedness for school (p. 456)
- Sexism in the classroom (p. 460)
- Gender differences in the social impact of acne (pp. W14-9)
- Cultural impact of menarche (pp. W14-12–W14-13)
- Ethnicity and causes of death among adolescents (p. W14-22)

- Gender differences in anorexia nervosa (p. W14-26)
- Gender, college plans, ethnicity, and substance abuse (p. W14-34)
- Differences in formal-operational thought (p. W15-4)
- Gender differences in verbal ability (p. W15-9)
- Gender differences in visual-spatial ability (p. W15-9)
- Gender differences in mathematical ability (pp. W15-10–W15-11)
- Adolescent girls' vulnerability to stereotypes concerning female math ability (p. W15-11)
- Cross-cultural differences in moral development (p. W15-14–W15-15)
- Gender differences in moral development (p. W15-15–W15-16)
- Differences in postconventional thought (p. W15-16)
- Ethnic identity and gender in career self-efficacy expectancies (p. W15-23)
- Ethnicity and development of identity (pp. W16-7–W16-8)
- Gender and development of identity (pp. W16-8–W16-9)
- Ethnicity, gender, and adolescent friendships (pp. W16-13–W16-14)
- Differences in sexual orientation (pp. W16-19–W16-20)
- The origins of sexual orientation (pp. W16-21–W16-23)
- Ethnicity, gender, and juvenile delinquency (pp. W16-29–W16-30)
- Gender differences in delinquent behaviour (p. W16-29)
- Ethnicity, gender, and suicide (p. W16-32)

Biology: Neuroscience, Evolution, Genes, Hormones, and Behaviour

- Ethology (p. 21)
- The nature–nurture controversy (p. 31)
- Frequency of fraternal twins (p. 52)
- Chromosomal and genetic disorders (p. 57)
- Ethnic differences in chromosomal and genetic disorders (p. 58)
- The possible evolution of reflexes (p. 138)
- Pain as adaptive (p. 144)
- Nature and nurture in the development of the brain (pp. 169–170)
- Nature and nurture in motor development (pp. 173–174)
- Are humans prewired to prefer human stimuli to other stimuli? (pp. 176–177)
- Nature and nurture in perceptual development (pp. 184–185)
- Imitation as adaptive (pp. 197–198)
- Nature and nurture in language development (pp. 212–217)
- The nativist view of language development (p. 215)
- Nature and nurture in theories of attachment development (pp. 229–232)
- Genetic factors in handedness (p. 273)
- Evolutionary theory of aggression (p. 268)
- Genetic/hormonal factors in aggression (p. 268)
- Possible genetic influences on self-esteem (p. 352)
- Organization of the brain (pp. 358–359)
- Genetic factors in obesity (p. 372)
- Genetic factors in dyslexia (pp. 385–386)
- Genetic influences on intelligence (pp. 428–429)
- Possible genetic factors in conduct disorder (p. 462)
- Depression and serotonin (p. 465)
- The biology of puberty (pp. W14-5–W14-6)
- Hormonal regulation of the menstrual cycle (p. W14-12)
- Serotonin and eating disorders (p. W14-28)
- Genetic factors in eating disorders (p. W14-28)
- Biological factors in substance abuse (p. W14-35)

- Possible evolutionary factors in visual-spatial ability (p. W15-9)
- The origins of sexual orientation (pp. W16-21–W16-23)
- Biological effects of puberty (p. W16-24)

Applications

- Problems associated with the use of punishment (pp. 14–16)
- Ways of reversing infertility (p. 73)
- Choosing the gender of one's child (pp. 73–74)
- Maternal nutrition during pregnancy (pp. 92–93)
- Effects of maternal health problems on the embryo and fetus (pp. 96–100)
- Effects of environmental hazards on the embryo and fetus (p. 109)
- Using the Lamaze method to decrease fear and pain during delivery (p. 124)
- Using C-section to avoid disease transmission from mother to infant (pp. 124–125)
- How interaction, talking, and stimulation can help preterm infants develop (pp. 129–130)
- How a woman can work to get beyond postpartum depression (pp. 132–133)
- Understanding visual accommodation (p. 141)
- How to soothe an infant and ease crying (pp. 148–149)
- Teaching sign language to infants (pp. 209–210)
- “Motherese” (pp. 214–215)
- Establishing attachment (pp. 226–227)
- Preventing sexual abuse of children (pp. 239–240)
- How child abuse may lead to psychological disorders in adulthood (p. 242)
- Neurological differences in autistic children (pp. 244–245)
- Finding day care you and your child can live with (p. 248)
- How to comfort a child who doesn't know you (p. 251)
- Brain development and visual skills (p. 264)
- Right brain/left brain (p. 265)
- Plasticity of the brain (p. 265)
- Teaching a child to enjoy healthful food (pp. 275–276)
- Ten things you need to know about immunizations (p. 278)
- Assessing and minimizing the risk of lead poisoning (p. 280)
- What to do about bed-wetting (p. 287)
- Watching how children show (or don't show) conservation (pp. 298–299)
- Memory strategies (p. 316)
- Techniques for restricting children's behaviour (pp. 329–330)
- Helping children cope with fears (pp. 354–355)
- Piaget's theory applied to education (pp. 397–398)
- How teachers can help motivate students (pp. 406–407)
- Rehearsal strategies for memory (p. 410)
- How to ask children questions that elicit truthful answers (p. 410–411)
- How to help children with conduct disorders (p. 463)
- How parents and teachers can help children with mild depression (p. 465)
- How parents and teachers can help children with school phobia (pp. 468–469)
- Prevention of HIV/AIDS and other STIs (p. W14-21)
- Treatment and prevention of eating disorders (pp. W14-28–W14-29)
- Using different parenting styles to combat adolescent substance abuse (p. W14-33)
- Treatment and prevention of substance abuse (p. W14-35)
- How parents can help early adolescents in school (p. W15-19–W15-20)

Ancillaries

About the Cengage Education Teaching Advantage

Instructor Resources

All and other key instructor ancillaries are provided on the Instructor Companion Site at www.cengage.com/voyages2ce, giving instructors the ultimate tool for customizing lectures and presentations. Instructor materials can also be accessed through <http://login.cengage.com>.

Test Bank: This resource was written by Karen McLaren. It includes over 2100 multiple-choice questions written according to guidelines for effective construction and development of higher-order questions. The test bank was copyedited by a trained editor. Also included are matching, true/false, and essay questions with model answers.

The Test Bank is available in a new, cloud-based platform. **Testing Powered by Cognero®** is a secure online testing system that allows you to author, edit, and manage test bank content from any place you have Internet access. No special installations or downloads are needed, and the desktop-inspired interface, with its drop-down menus and familiar, intuitive tools, allows you to create and manage tests with ease. You can create multiple test versions in an instant, and import or export content into other systems. Tests can be delivered from your learning management system, your classroom, or wherever you want. Testing Powered by Cognero for *Voyages in Development* can be accessed through <http://login.cengage.com>. Printable versions of the test bank in Word and PDF formats are available with the instructor resources for this textbook.

Instructor's Manual: This resource was written by Jason Daniels, University of Alberta. It is organized according to the textbook chapters and addresses key educational concerns, such as typical stumbling blocks student face and how to address them. Other features include lecture topics, student exercises, and file and video suggestions.

PowerPoint: Microsoft® PowerPoint® lecture slides for every chapter have been created by Patrice Esson, Sheridan College. Slides include many featuring key figures, tables, and photographs from *Voyages in Development*, Second Canadian Edition. In addition, instructor discussions are included in the Notes section, and embedded videos bring the content to life. Principles of clear design and engaging content have been incorporated throughout, making it simple for instructors to customize the deck for their courses.

Image Library: This resource consists of digital copies of figures, short tables, and photographs used in the book. Instructors may use these jpegs to customize the PowerPoint or create their own PowerPoint presentations.

DayOne: Day One—Prof InClass is a PowerPoint presentation that instructors can customize to orient students to the class and their text at the beginning of the course.



Student Ancillaries

The more you study, the better the results. Make the most of your study time by accessing everything you need to succeed in one place. The *Voyages in Development* **CourseMate** includes:



- Interactive learning tools, including:
 - Pre-lecture quizzes
 - Interactive Flashcards
 - Videos: *Observing Children, Understanding Ourselves*
 - Video Quizzes: *Observing Development*
 - Glossary
 - ... and more!

Visit Cengage.ca to start using **CourseMate**. Enter the Online Access Code from the card included with your text. If a code card is *not* provided, you can purchase instant access at Cengage.ca. Only new books include Access Codes.

Acknowledgments

This book is about human development. This section is about the development of this book. Its existence reflects the input and aid of a significant cast of characters.

First among these are my professional academic colleagues—the people who teach the course, the people who conduct the research. They know better than anyone else what’s going on “out there”—out there in the world of children and adolescents, out there in the classroom. The book you hold in your hands would not have been what it is without their valuable insights and suggestions. Thank you to reviewers for this edition:

Wendy Ellis, *King’s University College*

Ed Maruska, *Medicine Hat College*

Ann McDonald, *Fleming College*

Ulrich Mueller, *University of Victoria*

William L Roberts, *Thompson Rivers University*

Noella Surette, *Nova Scotia Community College*

With a group like this looking over your shoulder, it’s difficult to make mistakes. But if any remain, we are responsible.

We acknowledge that the book you read would not have been what it is without the insights and suggestions of academic colleagues and students over the years. It also owes much to the fine editorial and production team at Cengage and assembled by Cengage: Lenore Taylor-Atkins, publisher; Suzanne Simpson Millar, developmental editor; Ann Byford, marketing manager; Sarah Fisher, editorial assistant; Christine Gilbert, production project manager; Christina Elliott, permissions researcher; and Daniela Glass, project manager, rights acquisition.



Major Topics

- 1.1 What Is Child Development? Coming to Terms with Terms
- 1.2 Historical Review of Theories of Child Development
- 1.3 Dominant Themes in Child Development
- 1.4 How Do We Study Child Development?
- 1.5 Ethical Considerations

HISTORY, THEORIES, AND METHODS

Truth or Fiction?

- T | F** During the Middle Ages in Europe, children were often treated as miniature adults. **p. 6**
- T | F** Children come into the world as “blank tablets”—without inborn differences in intelligence and talents. **p. 6**
- T | F** Nail biting and smoking cigarettes are signs of conflict experienced during early childhood. **p. 9**
- T | F** Children should not be punished. **p. 16**
- T | F** Research with monkeys has helped psychologists understand the formation of attachment in humans. **p. 39**
- T | F** To learn how a person develops over a lifetime, researchers have tracked some individuals for more than 50 years. **p. 39**

This book has a story to tell. An important story. A remarkable story. It is your story. It is about the remarkable journey you have already taken through childhood. It is about the unfolding of your adult life. Billions have made this journey before. You have much in common with them. Yet you are unique, and things will happen to you, and because of you, that have never happened before.

Development of children, from a Canadian context, is what this book is about. In a very real sense, we cannot hope to understand ourselves as adults—we cannot catch a glimpse of the remarkable journeys we have taken—without understanding children. And for those of us who work with children or will be working with children, this understanding and appreciation of children and childhood is a critical part of professional training and development.

In this chapter, we explore some of the reasons for studying child development. We then take a brief tour of the history of child development. It may surprise you that until relatively recent times, people were not particularly sensitive to the ways in which children differ from adults. Next, we examine some controversies in child development, such as whether there are distinct stages of development. We see how theories help illuminate our observations and how theories help point the way toward new observations. Then we consider methods for the study of child development. Scientists have devised sophisticated methods for studying children, and ethics helps to determine what types of research are deemed proper and what types are deemed improper.



ziggy_mars/Thinkstock

1.1 What Is Child Development?

Coming to Terms with Terms

QUESTION » What is child development? You have heard the word *child* all your life, so why bother to define it? We do so because words in common usage are frequently used inaccurately. A **child** is a person experiencing the period of development from *infancy* to *puberty*—two other familiar words that are frequently used inaccurately. The term **infancy** derives from Latin roots meaning “not speaking,” and infancy is usually defined as the first two years of life, or the period of life before the development of *complex* speech. We stress the word *complex* because many children have a large vocabulary and use simple sentences before their second birthday.

Western researchers commonly speak of two other periods of development that lie between infancy and adolescence: early childhood and middle childhood. This book takes a western approach to understanding child development by presenting studies and statistics relevant to Canadian children and youth, using developmental definitions based in western education, health and psychological traditions. However, as we will explore “human development is a cultural process” (Rogoff, 2003, p. 3). Early childhood encompasses the ages from 2 to 5 years. Middle childhood generally is defined as the years from 6 to 12. For example, in Canadian society, the beginning of this period usually is marked by the child’s entry into Grade 1. Because there is great cultural diversity in Canada, it is important to question the generalizability of the research presented (who were the participants in the studies being referred to and does this generalize

to other populations within Canada). To study development, we must also look further back to the origin of sperm and ova (egg cells), the process of conception, and the prenatal period. Yet this is not far enough to satisfy scientists. We also describe the mechanisms of heredity that give rise to traits in humans and other animals.

Development is the orderly appearance, over time, of physical structures, psychological traits, behaviours, and ways of adapting to the demands of life. The changes brought on by development are both *qualitative* and *quantitative*. Qualitative changes are changes in type or kind. Consider motor development. As we develop, we gain the abilities to lift our heads, sit up, crawl, stand, and walk. These changes are qualitative. However, within each of these qualitative changes are quantitative developments, or changes in *amount*. After babies begin to lift their heads, they lift them higher and higher. Soon after children walk, they begin to run. Then they gain the capacity to run faster.

Development occurs across many dimensions—biological, cognitive, social, emotional, and behavioural. Development is spurred by internal factors, such as genetics, and it is shaped by external factors, such as nutrition and culture.

The terms *growth* and *development* are not synonymous, although many people use them interchangeably. **Growth** is generally used to refer to changes in size or quantity, whereas development also refers to changes in quality. During the early days following conception, the fertilized egg cell develops rapidly. It divides repeatedly, and cells begin to take on specialized forms. However, it does not “grow” in that there is no gain in mass. Why? It has not yet become implanted in the uterus and therefore is without any external source of nourishment. Language development is the process by which the child’s use of language becomes progressively more sophisticated and complex during the first few years of life. Vocabulary growth, by contrast, consists of the accumulation of new words and their meanings.



Motor Development

This infant has just mastered the ability to pull herself up to a standing position. Soon she will be able to stand alone, and then she will begin to walk.

child A person undergoing the period of development from infancy through puberty.

infancy The period of very early childhood, characterized by lack of complex speech; the first two years after birth.

development The processes by which organisms unfold features and traits, grow, and become more complex and specialized in structure and function.

growth The processes by which organisms increase in size, weight, strength, and other traits as they develop.

Child development, then, is a field of study that tries to understand the processes that govern the appearance and growth of children's biological structures, psychological traits, behaviour, understanding, and ways of adapting to the demands of life.

Professionals from many fields are interested in child development. They include psychologists, educators, anthropologists, sociologists, nurses, and medical researchers, just to list a few. Each brings his or her own brand of expertise to the quest for knowledge. Intellectual cross-fertilization enhances the skills of developmentalists and enriches the lives of children.

Why Do We Study Child Development?

QUESTION » Why do researchers study child development? An important motive for studying child development is curiosity—the desire to learn about children. Curiosity may be driven by the desire to answer questions about development that remain unresolved. It may also be driven by the desire to have fun. (Yes, children and the study of children can be fun.) There are other motives as well:

To Gain Insight into Human Nature

For centuries, philosophers, scientists, and educators have argued over whether children are aggressive or loving, whether children are conscious and self-aware, whether they have a natural curiosity that demands to unravel the mysteries of the universe, or whether they merely react mechanically to environmental stimulation. The quest for answers has an impact on the lives of children, parents, educators, and others who interact with children.

To Gain Insight into the Origins of Adult Behaviour

How do we explain the origins of empathy in adults? Of antisocial behaviour? How do we explain the assumption of “feminine” and “masculine” behaviour patterns? The origins of special talents in writing, music, athletics, and math?

To Gain Insight into the Origins of Sex Differences and Gender Roles, and into the Effects of Culture on Development

How do gender roles—that is, culturally induced expectations for stereotypical feminine and masculine behaviour—develop? Are there sex differences in cognition and behaviour? If so, how do they develop?

To Gain Insight into the Origins of Learning

How do humans acquire language? Why is it easier to learn languages in early childhood than later in life? How do children interact with their environments to learn new things every day?

To Gain Insight into the Origins, Prevention, and Treatment of Developmental Concerns

Fetal alcohol syndrome, PKU (see Chapter 2), SIDS (see Chapter 4), Down syndrome, autism, hyperactivity, dyslexia, child abuse—these are but a few of the buzzwords that strike fear into parents and parents-to-be. A major focus in child development research is the search for the causes of such problems so that they can be prevented and/or treated.

To Optimize Conditions of Development

Most parents want to provide the best in nutrition and medical care so that their children will develop strong and healthy bodies. Parents want their