FatCamera/E+/Getty Images

Paul Burns/Getty Images

Purestock/Getty Images

12th Edition

Early Childhood Experiences in Language Arts

Alison Zimbalist
Jeanne M. Machado

Cengage

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

Cengage

***Early Childhood Experiences in Language Arts:* Twelfth Edition**
Alison Zimbalist and Jeanne M. Machado

SVP, Higher Education Product Management: Erin Joyner

VP, Product Management, Learning Experiences: Thais Alencar

Product Director: Jason Fremder

Product Manager: Bianca L Fiorio

Product Assistant: Dallas Dudley

Content Manager: Anupam Bose, MPS Limited

Digital Delivery Quality Partner: Jessica Witczak

VP, Product Marketing: Jason Sakos

Portfolio Marketing Manager: Ian Hamilton

IP Analyst: Ashley Maynard

IP Project Manager: Haneef Abrar, Lumina Datamatics Ltd.

Production Service: MPS Limited

Designer: Felicia Bennett

Cover Image Source: FatCamera/E+/Getty Images

Interior Image Source: FatCamera/E+/Getty Images

Library of Congress Control Number: 2022902293

ISBN: 978-0-357-51308-8

Cengage
200 Pier 4 Boulevard
Boston, MA 02210
USA

Printed in the United States of America
Print Number: 01 Print Year: 2023

Brief Contents

Contents

Preface

Early Childhood Experiences in Language Arts: Early Literacy is a teacher-training text designed to help those working in the early childhood education field provide an opportunity-rich program full of interesting, appropriate, and developmental language arts activities that reflect current standards. It is both a practical "how-to" manual and a collection of resources that includes numerous classic, tried-and-true activities.

Because a comprehensive, dynamically planned early childhood language arts curriculum consists of four broad interrelated areas—speaking (oral), listening, writing, and reading—each is fully explored and described in separate chapters. Visual literacy is also covered because it is closely tied to the other language arts areas and because young children today have frequent interactions with visual technology.

The text recommends that early childhood education students create, design, and prepare classroom activities and environments based on newborn through kindergarten-age children's assessed needs, interests, developmental levels, and potential. Beginning teachers are urged to use their own unique teaching talents, skills, and creativity—along with their memories of the enjoyed childhood language-related experiences—to help guide their instruction. It is hoped that the confidence and skills readers gain will help to provide young children with enthusiastic, knowledgeable teacher-companions who enjoy and encourage children in their discovery of the language arts.

Organization and Content

Section 1

In Section 1, the first three chapters present a detailed account of language acquisition, young children's early communicative capacities, growth milestones, and age-level milestones (infancy through preschool), along with suggested professional techniques to promote each child's self-esteem and potential. In Chapter 1, the characteristics of attuned and sensitive caregiver behaviors have been highlighted to emphasize their significance. Infant and toddler chapters (Chapters 1 and 2) increase the reader's ability to both tailor and individualize their own actions, comments, and activity plans to suit the needs of diverse children. Educators become better equipped to identify child progress or suspected lags in language use and growth. Toddlers' physical development and concurrent mushrooming verbal skills appear in a predictable, yet individual, pattern. Chapter 3 provides the reader with an accurate portrait of preschoolers' emerging language and literacy accomplishments, and it also covers other concurrently developing growth systems that affect language and literacy. These are physical, cognitive, perceptive, and socioemotional areas. Finding a typical or average preschooler may be an impossible task since preschoolers, like adults, display infinite variety. The well-known and well-documented characteristics of the preschool-aged child are presented.

Section 2

Special attention is paid to second-language learners and children with special needs in Chapter 4, *Understanding Differences.* With the number of second-language learners and children with special needs continuing to grow, it has become more critical than ever for early childhood teachers to create language-rich environments and interact as enthusiastic, supportive, and observant companions and collaborators. Chapter 5 covers the basics of developing language arts programs based on identified goals, as well as assessment strategies, and includes information about children's literacy portfolios. Specific teaching strategies are addressed in Chapter 6, *Promoting Language and Literacy*, and Chapter 7, *Developing Listening Skills*, to aid a teacher's knowledge and practice of professional responses and interchanges in daily conversation and discussions. Tips and suggestions are designed to get the most "literacy-developing mileage" possible from daily happenings. Since listening well is a learned skill, Chapter 7 does not leave it to chance, but instead promotes the teacher's role as cultivator of each child's growing ability.

Section 3

Children's literature is introduced in Chapter 8 and begins with a brief history of picture-book development and changes over time. Readers

are urged to discover new and older classics and skillfully share them with children in a way that increases each child's love of story and joy in acquiring new knowledge and skill. This chapter is extensive and alerts readers to the many types of books available and their appeal to young listeners. Text discussions include teacher techniques that build children's comprehension of stories and also their understanding of books' connection to writing (print), viewing, reading, and oral expression. During book readings, educators are directed to share their thinking aloud and to define new words to increase children's vocabulary, analysis, and problem-solving abilities.

Chapters 9, 10, and 11 concentrate on developmentally appropriate vehicles to widen children's background and knowledge and experience in storytelling, poetry, and flannel board activities. Teacher skill in the presentation of these language arts subsections is recommended, and suggested stories, poems, and flannel board sets give beginning teachers an initial collection to immediately try out and enjoy with young children. The use of puppetry and classroom dramatization is also included in these chapters.

Section 4

To increase children's ability to express their ideas and dramatize real-life or fantasy experience, Chapter 12 discusses an early childhood educator's promotion of children's oral expression and symbolic (dramatic) play. The beginning teacher's ability to plan, conduct, and manage small and large groups in a competent and professional manner is the subject of Chapter 13, which also focuses upon the language and literacy producing aspects of children's group experiences. Many circle time hints are provided, along with suggested games and activities, such as finger plays, poems, songs, chants and choruses, and body movements connected to words.

Section 5

Quality language arts programs in early childhood centers are increasingly focused on the promotion of each child's ability to learn to read with ease when formal reading instruction begins. The alphabetic principle, orthographic and print awareness, sight reading, and invented spelling are clearly explained in Chapter 14, *Print—Early Knowledge and Emerging Interest*. This chapter introduces and outlines the probable sequence of events that proceeds a child's printing their first alphabet letter. Using the appropriate form of printscript letters is emphasized as teachers' model and write alphabet letters. Several print-related child activities are included, as well as sample print alphabets with construction arrows. Print-rich and print-appropriate classroom environments are suggested. Children's natural curiosity and their innate ability aids their emergence as competent readers when formal instruction begins in kindergarten. Chapter 15 describes the desirable skills, knowledge, and abilities that promote children's progress in learning to read. The differences in reading instruction methodology are discussed so that early childhood educators become aware of what types of instruction are used in the first grades of school.

Section 6

Chapter 16 looks at the physical features and equipment needed to enhance learning in a literacy-based classroom. Chapter 17 discusses the critical importance of increasing a family's ability to partner with their children's school and teachers. Suggestions are included to increase the beginning teacher's ability to establish fruitful school-home relationships. Parent tips to extend language and provide literacy-enriched home environments and activities are listed. The text urges educators to honor children's homegrown literacy knowledge and skills. Well-prepared educators recognize that families may use various and diverse vocabulary- and literacy-building strategies. Cultural differences are increasingly commonplace in America's classrooms, and each child's unique difference is respected and dignified as teachers promote the English language arts.

New Features

The twelfth edition includes the following new features to aid the student's mastery of each chapter's content.

- **NEW and improved integration of early childhood professional standards** helps students make connections between what they are learning in the textbook and the standards. A list of standards and benchmarks to be covered appears at the beginning of each chapter, including NAEYC's Early Childhood Accreditation Standards and Assessment Items (2019); NAEYC'S DAP: Developmentally Appropriate Practice Guidelines (2020); and Common Core Standards for English Language Arts & Literacy. Icons identify standards-related content throughout the text; a complete list of the standards appears in the standards correlation chart on the book's inside covers.
- **NEW stronger emphasis on diversity and inclusion**, with a focus on the importance of respecting and understanding each child's uniqueness and of creating language-rich environments to address the needs of children from various cultural backgrounds, English language learners, and children with special needs. New lists of materials and references at the end of many chapters provide recommended books for the classroom, readings, and other resources that celebrate diversity and inclusion.

Other Features

- **Chapter Learning Objectives** correlate with main headings within the chapter and the summary at the end of the chapter. The objectives highlight what students need to know to process and understand the information in the chapter. After completing the chapter, students should be able to demonstrate how they can use and apply their new knowledge and skills.
- **TeachSource Digital Downloads** are downloadable, sometimes customizable, practical and professional resources that allow students to immediately implement and apply the textbook's content in the field. Students can download these tools and keep them forever, enabling preservice teachers to begin building a library of practical, professional resources. A TeachSource Digital Download label identifies these items.
- **TeachSource Video footage** from the classroom, introduced in the text and viewable online, helps students relate key chapter content to real-life scenarios.
- **Brain Connection** boxes place additional emphasis on brain-based learning practices.
- **Separate chapters on infants and toddlers** enhance understanding of their communication abilities and of the important role of adult behavior in promoting language growth.
- **Updated coverage of technology and literacy learning** including information about the joint position statement from NAEYC, the Fred Rogers Center for Early Learning, and Children's Media at St. Vincent College.
- **Discussion Vignettes** introduce chapters with real-life classroom teaching situations that promote student analysis. The Questions to Ponder that follow promote reflection and class discussion.
- **An Additional Resources section** follows each chapter's summary. It presents readings for students wanting further depth, reinforcement of chapter topics, and/or pursuit of special interests. Resources such as commercial educational materials, professional organizations in which further information can be obtained, and helpful websites are also included.
- In addition to current research, the twelfth edition continues to use classic findings and recommendations.

Supplements

Additional instructor resources for this product are available online. Instructor assets include an Instructor's Manual, Educator's Guide, PowerPoint® slides, and a test bank powered by Cognero®. Sign up or sign in at **www.cengage.com** to search for and access this product and its online resources.

About The Authors

Alison Zimbalist's experience in early childhood education has primarily focused on professional development, mentorship, school leadership, and curriculum development. She is the former Director of Early Childhood Services at the Macks Center for Jewish Education in Baltimore, where she oversaw the professional learning opportunities and provided licensing and best practices guidance for the city's 19 Jewish preschools. In this role, she developed and led several communities of practice to strengthen the skills and leadership among multiple groups: center directors, assistant directors, teacher-leaders, new educators, and educators interested in specific methodologies, topics, and practices. There she also managed a creative reuse center and hosted hands-on workshops and informal learning opportunities for educators, as well as oversaw an experiential play-space for parents and children. Ms. Zimbalist was the curriculum consultant for PJ Goes to School, Grades K–2, providing literacy-based curriculum and professional learning for teachers nationwide. Ms. Zimbalist previously founded and co-directed a private preschool in Montebello, New York.

A graduate of Emory University (Master's in Education, B.A. in English), Ms. Zimbalist's roots in education began in the mid-1990s in the high school English classroom, where she taught for four years. She then moved into the curriculum development realm, working as the founding education specialist for the New York Times Learning Network and eventually becoming the education editor and product manager at NYTimes.com. Ms. Zimbalist has also been a content developer for EL Education, Scholastic, Insight Education Group, Carnegie Learning, LearnZillion, and Public Consulting Group, Inc., where she served as a lead writer on the Grade 10 English Language Arts team for the Chicago Public Schools Curriculum Equity Initiative, the central curriculum used in the nation's third largest school district, launched in August 2021.

Jeanne Machado's experience in the early childhood education field has included full-time assignment as community college instructor and department chairperson. Her duties included supervision of early childhood education students at two on-campus laboratory child development centers at San Jose City College and Evergreen Valley College, as well as child centers in the local community. Her teaching responsibilities encompassed early childhood education, child development, and parenting courses.

She received her Master's Degree from San Jose State University and her community college life credential with coursework from the University of California at Berkeley. Her experience includes working as an elementary school teacher, preschool owner/director, work experience instructor/advisor, early childhood and family studies community college and university instructor, and an education consultant in public, private, and parent cooperative programs. Ms. Machado is an active participant in several professional organizations concerned with the education and well-being of young children and their families. She is a past president of California Community College Early Childhood Educators (CCCECE) and the Peninsula Chapter of the California Association for the Education of Young Children. In addition to *Early Childhood Experiences In Language Arts*, she co-authored with Dr. Helen Meyer-Botnarescue a text for student teachers called *Student Teaching: Early Childhood Practicum Guide,* Seventh Edition, ©2011. She also co-authored *Employment Opportunities in Education: How to Secure Your Career*, ©2006, with Romana Reynolds. Ms. Machado consults with parents, teachers, and administrators, and interacts with young children in classrooms in Cascade, Idaho, and San Jose, California.

Acknowledgments

The authors wish to express their appreciation to the following individuals and agencies.

The students at San Jose City College, AA Degree Program in Early Childhood Education

Arbor Hill Child Care Center, Albany, NY

San Jose City College Child Development Center's director and teachers

Evergreen Valley College Child Development Center's director and staff members, San Jose, CA

James Lick Children's Center, Eastside High School District, San Jose, CA

Kiddie Academy, Albany, NY

Piedmont Hills Preschool, San Jose, CA

Pineview Preschool, Albany, NY

St. Elizabeth's Day Home, San Jose, CA

W.I.C.A.P. HeadStart, Donnelly, ID

Cascade Elementary School—Pre–K Class, Cascade, ID

Macks Center for Jewish Education, Baltimore, MD

The directors, educators, and children of Baltimore's Jewish preschools

The Paradigm Project

The staff at Cengage Learning

In addition, special appreciation is due the reviewers involved in the development of this edition

Cecile Arquette, Bradley University

Katrin Blamey, DeSales University

Johnny Castro, Brookhaven College

Roseann Chavez, Warren County Community College

Tina Dekle, Vance-Granville Community College

Deirdre Englehart, University of Central Florida

Randa Gamal, Central New Mexico Community College

April Grace, Madisonville Community College

Jeanne Helm, Richland Community College

Annemarie Hindman, Temple University

Colleen Lelli, Cabrini College

Jeannie Morgan-Campola, Rowan Cabarrus Community College

Crystal Stephens, Western Piedmont Community College

Maria Vazquez, Florida International University

Wendy Fletcher, Wiregrass Georgia Technical College

Karen Ray, Wake Technical Community College

To The Student

Because you are a unique, caring individual who has chosen an early childhood teaching career or who is currently working with children, this text is intended to help you discover and share your developing language arts gifts and talents. Create your own activities using your college coursework and life experiences and an assessment of what would be valuable growing opportunities for the children you teach. Design and base your activities on an understanding of current research and theory. Consider the wisdom you have gained through your past experiences with children. Share your specialness and make your classroom memorable as a place where literature and communication thrive.

In this text, we urge you to become a skilled teacher who interacts, converses, and collaborates, and acts as "a subtle opportunist," getting the most possible out of each child–adult interaction. Make your joy in the language arts the children's joy. You can make a difference in young children's lives. Ideally, this text will help you become the kind of teacher who does. Because we are growing, too, we invite your suggestions and comments, so that in future editions we can refine and improve this text's value.

1 Beginnings of Communication

Objectives

After reading this chapter, you should be able to:

- **1-1** Describe the reciprocal behaviors of infants, parents, and caregivers.
- **1-2** Name four important influences that may affect an infant's language growth and development.
- **1-3** Compare two theories of human language emergence.
- **1-4** Name two areas of particular importance to infant care addressed in Developmentally Appropriate Practice (DAP) guidelines.
- **1-5** Discuss the behaviors and vocalizing efforts that infants use to communicate their needs and desires.
- **1-6** Describe what caregiver actions should take place when infants develop joint attentional focus.
- **1-7** Name and comment upon early reading and writing activities in late infancy.
- **1-8** Explain ways in which infant centers monitor each infant's language and communicating behaviors.

NAEYC NAEYC Program Standards

- **1.B** Building Positive Relationships Between Teachers and Children (Accreditation Assessment Items 1B.2, 1.B3, 1B.5, 1B.6, 1B.7)
- **1.C** Helping Children Make Friends (Accreditation Assessment Item 1C.1)
- **1.F** Promoting Self-Regulation (Accreditation Assessment Item 1F.2)
- **2.B** Social and Emotional Development (Accreditation Assessment Item 2B.2)
- **2.D** Language Development (Accreditation Assessment Item 2D.2)

DAP Developmentally Appropriate Practice (DAP) Guidelines in Action

- **2** Engaging in Reciprocal Partnerships with Families and Fostering Community Connections (Guidelines 2.E, 2.F)
- **3** Observing, Documenting, and Assessing Children's Development and Learning (Guidelines 3.A, 3.B, 3.C, 3.D)
- **4** Teaching to Enhance Each Child's Development and Learning (Guidelines 4.A, 4.B, 4.E, 4.H)
- **5** Planning and Implementing an Engaging Curriculum to Achieve Meaningful Goals (Guidelines 5.A, 5.C)

Common Core Common Core State Standards for English Language Arts and Literacy

- **CCRA.L.3** Apply knowledge to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

A New Sign

Noah, 10 months, had a new sign for *cracker* that he had used a few times during the day at the infant center. He was very pleased when knocking his fist to his elbow resulted in his teacher, Miss Washington, bringing him a cracker. At pickup time, Miss Washington felt it was important to share this discovery with Noah's dad. Mr. Soares did not really understand what the teacher was talking about when she said *signing*. Miss Washington gave Mr. Soares a quick explanation and even demonstrated Noah's communication, holding up a cracker to elicit a broad smile as Noah knocked on his elbow and reached for the treat. Mr. Soares smiled proudly and then said, "That's great! I'll talk to his mom and let her know."

Questions to Ponder

1. Miss Washington had a new language-related topic for the next staff meeting. What would you suspect it was?
2. What might this episode tell you about the language-developing quality of the infant center?
3. What do you know about the use of sign language in infants and toddlers?

In this chapter, the reader becomes acquainted with those elements in an infant's life that facilitate optimal growth in communication and language development. It explores socioemotional, physical, cognitive, and environmental factors that influence, promote, or deter language acquisition and growth. The recommended interaction techniques and strategies presented in the chapter are supported by research and reflect accepted appropriate practices and standards. As foundational aspects of infant communication are presented, *boxed* descriptions of the attuned and reciprocal behaviors caregivers make with infants are provided.

Caregivers establish a relationship with each infant in their care, and the quality of that relationship serves to motivate each infant to engage in learning. The quality of caregiver practices has been linked to children's brain development and cognitive functioning:

> A baby's early experiences in relationships, whether at home or in an early education environment, set the stage for future brain functioning. The information gathered in these early relationships is at the heart of a rich and complex brain-building process. As babies experience responses from their caregivers, their brains start to form expectations for how they will be treated and how they should respond. (Lally & Mangione, 2017)

Long before speaking their first words, infants are able and natural communicators. Communication begins at birth, as a baby's sounds, gestures, and facial expressions help the child to express their needs and react to their environment and surroundings. Infant care facilities with well-planned, positive, and growth-producing environments—and that are staffed with skilled, knowledgeable, and well-trained adults who offer developmentally appropriate activities and experiences—provide a place where infants can and do thrive in many ways, including in language acquisition and growth.

Some suggest that an infant is the most powerful learning machine in the world. Each infant is a unique combination of inherited traits and environmental influences, and responses to sound begin before a child is even born. During the third trimester of pregnancy, most mothers notice that their babies kick and move in response to music or loud noises. The sound of speech may draw a less spirited reaction, but there is little question that fetuses hear and react to a wide variety of sounds and seem to recognize the rhythm of their mother's voice. However, sometimes structural, hormonal, and chemical influences present before birth may have affected the growth and development of the fetus, modifying their natural potential.

Newborns seem to assimilate information immediately and are interested in their surroundings. Technology can monitor the slightest physical changes in an infant's breathing, heartbeat, eye movement, and sucking rhythm and rates. Babies begin learning how to carry on "conversations" quickly, and sucking patterns produce a **rhythm** that mimics that of give-and-take dialogues. Infants respond to very specific maternal signals, including tone of voice, facial changes, and head movements.

Greenspan (1999) suggests what may happen when interacting with a one- or two-month-old baby at a relaxed time after a nap or feeding:

> [W]hen you hold him at arm's length and look directly into his eyes with a broad smile on your face, watch his lips part as if he's trying to imitate your smile. (p. 31)

rhythm—uniform or patterned recurrence of a beat, accent, or melody in speech.

Babies gesture and make sounds and seem to hold up their ends of conversations, but at times, they appear to suppress their output and channel their energy into only seeing and hearing. Their eye contact with their caregivers, called **gaze coupling**, is believed to be one of their first steps in establishing communication. Infants are able to shut off background noises and pay attention to slight changes in adult voice sounds.

An attuned adult responds with sensitivity and accuracy based on an understanding of an infant's (or young child's) cues.

an attuned adult would:

- notice infant actions, including gestures, body positioning, noisemaking, eye gazing, and any shift from listening to watching.
- make face-to-face contact frequently.
- display admiration, affection, and pleasure, and smile frequently.
- provide verbal and nonverbal communication.
- seek to maintain and prolong eye contact. <

McMillen (2013) posits that babies are captivating, wondrous, and beguiling beings coming into the world fully equipped to enchant and draw us in. The qualities an infant inherits from parents, as well as the events that occur in the child's life and the environments in which they interact, help shape the child's language development. Gender, temperament, and a timetable for the emergence of intellectual, emotional, and physical capabilities are tied into genetics and influenced by the environment. In the short four to five years after birth, the child's speech becomes purposeful and similar to adult speech. Growing language skills are useful in satisfying needs and exchanging thoughts, hopes, and dreams with others. As communication abilities grow, the child understands and uses more of their available resources for knowledge and is well on the way to becoming a literate being.

The natural capacities to categorize, invent, and remember information aids in a child's language acquisition and development. Although our species has the unique ability to speak, human beings are not the only ones who can communicate. Birds and animals also imitate sounds and signals and are believed to communicate. And chimpanzees exposed to experimental language techniques (American Sign Language, specially equipped machines, and plastic tokens) have surprised researchers with their language abilities. Some have learned to use symbols and follow linguistic rules with a sophistication that rivals that of some two-year-olds. Researchers continue to probe the limits of their capabilities.

However, a basic difference between human beings and other species exists; it is the development of the cerebral cortex that sets humans apart from less intelligent animals. Our advanced mental capabilities—such as thought, memory, language, mathematics, and complex problem-solving—are unique to human beings. Humans have the unique species-specific ability to test hypotheses about the structure of language. They can also develop rules for a particular language and remember and use them to generate appropriate language.

Infant research has advanced by leaps and bounds to reveal amazing newborn abilities. Long before they can talk, for example, babies are able to remember events and solve problems. They can recognize faces, see colors, hear voices, discriminate speech sounds, and distinguish basic tastes. When you combine the psychological and neurological evidence, it is hard not to conclude that babies are just plain smarter than adults. This is especially true when it comes to learning something new.

Begley (2009) urges teachers to be aware that a child's genes (inherited DNA) by themselves do not determine intelligence or any other complex human trait. However, other inherited traits such as appearance and

TeachSource Video 1-1

Observing and Monitoring Language Development in Infants: The Importance of Assessment

This video provides an example of a body motion play that is taking place with infants.

1. How long were the infants able to attend to the body play before they started turning away?
2. The babbling of a consonant was demonstrated by a child; do you know which consonant?
3. What teacher actions did infants imitate?
4. Did teachers really understand why toddlers were distressed, or did they have to guess? How do you know?

gaze coupling—extended eye contact between infant and caregiver

temperament may elicit particular parent and teacher behaviors. These can include the adult's responsiveness and ability to pay attention to, interact with, speak with, and provide intellect-building interaction to the child. NAEYC

1-1 Infant Actions Prompt Caregiver Behaviors NAEYC

The human face becomes the most significantly important communication factor for the infant, and the facial expressions—which are varied and complex—eventually will influence an infant's body reactions (interior and exterior). Caregivers strive to understand the infant's state of well-being by interpreting the infant's face and postures, as infants also search faces in the world around them in order to learn and understand communication.

Figure 1-1 identifies a number of signals infants use and their probable meanings. Response and intentional behavior become apparent as infants age and gain experience. Infants initially respond with various preprogrammed gestures, such as smiling, intent and interested looking, crying, satisfied sucking, and snuggling. Soon these behaviors are followed by active demanding and attention-seeking patterns in which attempts to attract and solicit caregiver attention rapidly become unmistakable and intentional.

Figure 1-1 Born communicators.

Infant Acts	Probable Meaning
turning head and opening mouth	feeling hungry
quivering lips	adjusting to stimuli
sucking on hand, fist, thumb	calming self, feeling overstimulated
averting eyes	tuning out for a while
turning away	needing to calm down
yawning	feeling tired or stressed
looking wide-eyed	feeling happy
cooing	feeling happy
appearing dull with unfocused eyes	feeling overloaded, needing rest
waving hands	feeling excited
moving tongue in and out	feeling upset or imitating

Photo 1-1 "Wow, that is interesting!"

Researchers are studying the roles of facial expressions, gestures, and body movements in human social communication (Photo 1-1). Early expressions that look like smiling may occur minutes after birth and are apparent in the faces of sleeping babies, whose facial expressions seem to constantly change. When studying infant smiling during an infant's first week of life, observers note that infants smile during brief alertness periods, when drowsy, in active and quiet sleep, and randomly when nothing seems to provoke it. Many parents have noticed that smiling most often occurs in deep sleep.

Caregivers observe that infants search for the source of a voice. An infant may become wide-eyed and crane their neck and lift their chin toward the source. Their body tension increases as they become more focused on the face and somewhat inactive. Most caregivers respond to these signals by picking up the infant and cuddling the child. The 2013 publication *Developmentally Appropriate Practice* by the National Association for the Education of Young Children (NAEYC) points out that it is a care-giver's responsibility to cultivate young children's delight in exploring and understanding their world. Early childhood should be a time of laughter, love, play, and great fun.

an attuned adult would:

- be aware of opportunities to soothe and touch and engage in some way with an infant.
- pick up and hold an infant gently while providing firm support.
- note an infant's well-being and comfort.
- attempt to interpret an infant's facial and body signals. <

1-1a Definitions

Language, as used in this text, refers to a system of intentional communication and self-expression through sounds, signs (gestures), or symbols that are understandable to others. Language also refers to a symbol-based, rule-governed, multidimensional system that is used to represent the world internally and to others through the process of communication (Pence et al., 2008). The language-development process includes both sending and receiving information. Input (receiving) comes before output (sending); input is organized mentally by an individual long before there is decipherable output.

Communication is a broader term, defined as giving and receiving information, signals, or messages. A person can communicate with or receive communications from animals, infants, or foreign speakers in a variety of ways. Even a whistling teakettle sends a message that someone can understand. Infants appear to be focused and "in tune" with the communication provided by the human voice just hours after birth.

Effective communication is complex, and the use of language is much more than simple parroting or a primitive social function. The power of language enables humans to dominate over all other species, and the ability to use language effectively has secured our survival by giving us a vehicle to both understand and transmit language and to work cooperatively with others. Language can facilitate peaceful solutions, mutual understandings, and empathy between people.

1-2 Influences on Development

A child's ability to communicate involves an integration of body parts and systems that work together to allow hearing, understanding, organizing thoughts, learning, and using language. Most children succeed with communication tasks readily, but many factors influence the acquisition and use of language.

Research suggests that babies instinctively turn their heads to face the source of sound and can remember sounds heard before birth. This has prompted mothers to talk to, sing to, and read classic literature and poetry to their unborn children. But of all sounds, nothing attracts and holds the attention of infants as well as the human voice—especially the higher-pitched female voice. This is true across languages and around the world. "Motherese," a distinct caregiver speech, is discussed later in this chapter. Dietrich et al. (2007) note:

> Infants begin to acquire their language by learning phonetic categories. At birth, infants seem to distinguish most of the phonetic contrasts used by the world's languages. However, over the first year, this "universal" capacity shifts to a language-specific pattern in which infants retain or improve categorization of native-language sounds but fail to discriminate many non-native sounds. (p. 16030)

Rhythmic sounds and continuous, steady tones soothe some infants. A number of commercial sound-making products that attempt to soothe can be attached or placed next to cribs or are embedded in plush stuffed animals. Most emit a type of static or heartbeat sound or a combination of the two. Too much sound in the infant's environment—especially loud, excessive, or high-volume sounds—may have the opposite effect. Excessive household noise can come from televisions or other sources. Many have described sensory-overload situations during which infants try to turn off sensory input by turning away and somehow blocking that which is at the moment overwhelming, whether the stimulus is mechanical or human. This blocking includes falling asleep.

Although hearing ability is not fully developed at birth, newborns can hear moderately loud sounds and can distinguish different pitches. Newborns' auditory systems are better developed than their visual systems, so the importance of language and voices to a child's development is evident from the start (Galinsky, 2010). During the last weeks of pregnancy, a child's auditory system becomes ready to receive and remember sounds.

language—the systematic, conventional use of sounds, signs, or written symbols in a human society for communication and self-expression. It conveys meaning that is mutually understood.

communication—the giving (sending) and receiving of information, signals, or messages.

Photo 1-2 Sound-making toys attract attention.

Auditory acuity develops swiftly. Infants inhibit motor activity in response to strong auditory stimuli or when listening to the human voice and attempt to turn toward it. Some researchers see this as an indication that infants are geared to orient their entire bodies toward any signal that arouses interest (Photo 1-2). Infants' body responses to human verbalizations are a rudimentary form of speech development (Figure 1-2).

Sensory-motor development, which involves the use of sensory organs and the coordination of motor systems (body muscles and parts), is vital to language acquisition. Sensory organs gather information through seeing, hearing, smelling, tasting, and touching. These organs' impressions of people, objects, and life encounters are sent to the brain, and each **perception** (impression received through the senses) is recorded and stored, serving as a base for future oral and written language.

Newborns and infants are no longer viewed as passive, unresponsive "mini-humans." Instead, infants are seen as dynamic individuals, preprogrammed to learn, with functioning sensory capacities, motor abilities, and a wondrous built-in curiosity. Families and caregivers can be described as guides who provide opportunities and act *with* newborns rather than *on* them.

1-2a Beginning Socialization

A child's social and emotional environments play a leading role in both the quality and the quantity of beginning language. Many researchers

Figure 1-2 Auditory perception in infancy.

Age	Appropriate Hearing Behaviors
birth	awakens to loud sounds startles, cries, or reacts to sounds looks toward then looks away from environmental sounds
0–3 months	turns head to hear parent's or others' speech reacts to speech by smiling opens mouth as if to imitate adult's speech coos seems to recognize a familiar voice calms down when adult's voice is soothing repeats own vocalizations seems to listen to and focus on familiar adults' voices
4–6 months	looks toward environmental noise (e.g., barking, vacuum, doorbell, radio, TV) attracted to noisemaking toys babbles consonant-like sounds makes wants known with voice seems to understand "no" reacts to speaker's change of tone of voice
7–12 months	responds to own name may say one or more understandable but not clearly articulated words babbles repeated syllables or consonant and vowel sounds responds to simple requests enjoys playful word games like peekaboo, pat-a-cake, etc. imitates speech sounds frequently uses sound-making to gain others' attention

auditory—relating to or experienced through hearing.

acuity—how well or clearly one uses the senses; the degree of perceptual sharpness.

sensory-motor development—the control and use of sense organs and the body's muscle structure.

perception—mental awareness of objects and other data gathered through the five senses.

describe communicative neonatal behaviors that evoke tender feelings in adults. Our social dependency is crucial to our individual survival and growth. Human children have the longest infancy stage among animal species. Much learning occurs through contact and interaction with others in family and social settings. Basic attitudes toward life, self, and other people form early as life's pleasures and pains are experienced. The young child depends on parents and other caregivers to provide what is needed for growth and **equilibrium** (a balance achieved when consistent care is given and needs are satisfied). This side of a child's development has been called the **affective sphere**, referring to the affectionate feelings—or lack of them—shaped through experience with others (Photo 1-3). Most experts believe that each time an infant takes in information through the senses, the experience is double-coded as both a physical/cognitive reaction and as an emotional reaction to those sensations.

Photo 1-3 Care and attention in the early years influence language development.

Photo 1-4 An infant who feels comfortable and whose needs are satisfied is alert to the world.

Textbooks often speak indirectly about the infant's need to feel loved consistently, using words like *nurturance*, *closeness*, *caring*, and *commitment*. The primary goal of parents and caregivers should be handling the infant and satisfying the child's physical needs in a way that leads to mutual love and a bond of trust (Photo 1-4). This bond, often called **attachment**, is of utmost importance to the infant's progress. Attachment is formed through mutual gratification of needs and reciprocal communication influenced by the infant's growing cognitive ability. The two-way nature of the attachment process is also referred to as **bonding**. A developmental milestone is reached when a baby responds with an emotional reaction of their own by indicating obvious pleasure or joy in the company of a parent or caregiver (Figure 1-3). The infant

equilibrium—a balance attained with consistent care and satisfaction of needs that lead to a sense of security and lessens anxiety.

affective sphere—the affectionate feelings (or lack of them) shaped through experience with others.

attachment—a two-way process formed through mutual gratification of needs and reciprocal communication influenced by the infant's growing cognitive abilities.

bonding—the two-way nature of the attachment process.

Figure 1-3 Milestones in developing language behavior.

Infant's Age	Stages of Language Development
before birth	Listens to sounds. Reacts to loud sounds.
at birth	Birth cry is primal, yet individual, and is vowel-like. Cries to express desires (for food, attention, and so on) or displeasure (pain or discomfort). Makes eating, sucking, and small throaty sounds. Hiccups. Crying becomes more rhythmic and resonant during first days. Shows changes in posture—tense, active, or relaxed.
first days	Half-cries become vigorous; whole cries begin to take on depth and range. Coughs and sneezes.
1 month	Three to four vowel sounds apparent. Seems to quiet movements and attend to caregiver's voice. Eating sounds mirror eagerness. Sighs and gasps. Smiles in sleep.
2–3 months	Coos and makes pleasurable noises (babbling) and blowing and smacking sounds. Most vowel sounds are present. Open vowel-like babbles may begin. Consonant sounds begin, usually those made at the front of the mouth (*b*, *d*, *l*, *m*, *n*, *p*, *t*). Markedly less crying. Smiles and squeals and may coo for half a minute. Peers into faces. Adults may recognize distinct variations in cries (e.g., cries that signal fear, tiredness, hunger, pain, and so on). Focuses on caregiver's face and turns head to their voice. May be frightened by loud or unfamiliar noise. May blow bubbles and move tongue in and out.
4–5 months	Sound play is frequent. Social smiling more pronounced. Can whine to signal boredom. May laugh. Reacts to tone of voice. Seems to listen and enjoy music. Likes adult vocal play and mimicking. Favorite people seem to induce verbalness. Babbles several sounds in one breath. Body gestures signal state of comfort or discomfort. Attracted to sounds. Approaching six months of age, may start to show understanding of words often used in household. Turns head and looks at speaking family members. Consonant sounds more pronounced and frequent.
6–8 months	Increased babbling and sound making. Repeats syllables. Imitates motions and gestures. Uses nonverbal signals. Vocalizes all vowel sounds. Reduplication of utterances. More distinct intonation. Increases understanding of simple words. Enjoys making noise with toys and household objects. Repeats actions to hear sounds again. May blow toy horn. Delights in rhythmic vocal play interchange, especially those that combine touching and speaking. Twists and protrudes tongue, smacks, and watches caregiver's mouth and lips intently. May look at picture books for short period or watch children's television programs.
9–10 months	May make kiss sounds. Increasing understanding of words like *no-no*, *mommy*, *daddy*, *ball*, *hat*, and *shoe*. May play Pat-a-cake and wave bye-bye. May hand books to adults for sharing. Uses many body signals and gestures. May start jargonlike strings of sounds, grunts, gurgles, and whines. Listens intently to new sounds. Imitates.
11–14 months	Reacts to an increasing number of words. Speaks first word(s) (usually words with one syllable or repeated syllable). Points to named objects or looks toward named word. Makes sounds and noises with whatever is available. Imitates breathing noises, animal noises (like dog's bark or cat's meow), or environmental noises (like "boom" or train toot). Uses many body signals, especially "pick me up" with arms outstretched and "come with me" by reaching for another's hand. May understand as many as 40 to 50 words. At close to 15 months, one word has multiple meanings. Jargonlike strings of verbalness continue. The child's direction of looking gives clues to what the child understands, and the child may have a speaking vocabulary of 10 or more words. Uses first pretend play gestures such as combing hair with a spoon-shaped object, drinking from a pretend cup, pretending to eat an object, and pretending to talk with another person on a toy telephone.

develops a beginning mental picture of the way people in their life interact with one another in systematic and loving relationships. Bardige (2009) describes early bonding in this way:

> Call it chemistry, natural attraction, or falling in love—babies lure adults from the start, and adults who tune in are easily lured. Bonding begins when parent and baby see each other for the first time—and it's a two-way street. With their large eyes and sweet expressions, babies are as cute as they are helpless. Adults naturally soften in their presence, and soon baby and parent are gazing into each other's eyes and forging a connection. (p. 20)

The special feelings an infant develops for a main caregiver later spread to include a group of beloved family members or others who are in their immediate circle, such as nannies or teachers at infant care centers. Lally and Mangione (2017) note this about the lasting impact of strong attachment bonds in early brain development:

> Based on the feedback babies receive from early exchanges, they direct attachment behaviors toward developing secure relationships with their primary caregivers. Research has shown that this attachment-seeking fits with the finding that during the first two years of brain development, emotional wiring is the dominant activity. The brain builds crucial structures and pathways of emotional functioning that serve as the base for attachment, future emotional and social activity, and the language and intellectual development that will follow (Schore 2000).

Newborns seem to have an individual preferred level of arousal—a **moderation level**—which is neither too excited nor too bored. They seek change and stimulation and seem to search out newness. Each human may possess an optimal level of arousal—a state when learning is enhanced and pleasure peaks. Parents and experienced caregivers try to keep infants at moderate levels of arousal, neither too high nor too low. One can perceive three states during an older infant's waking hours: (1) a state in which everything is all right and life is interesting; (2) a reactive state to something familiar or unfamiliar, when an observer can see an alert "what's that?" or "who's that?" response; and (3) a crying or agitated state. One can observe a switch from feeling safe or happy to feeling unsafe or unhappy in a matter of seconds (Photo 1-5). Loud noises can startle the infant and elicit distressed crying. Infants control input and turn away or turn off by moving their eyes and head or body and by becoming fussy or falling asleep.

Photo 1-5 With tears still wet, this once-upset infant has been redirected and has moved on to observing another feature of his environment

Greenspan (1999) urges parents and caregivers of infants to improve their observational skills. As a caregiver sharpens their observational skills and pays attention to the times when a baby seems to have more trouble becoming calm and sharing attention, the caregiver will begin to assemble a truly revealing developmental profile of the child. The caregiver will start recognizing whether an unpleasant smell, an unexpected hug or cuddle, or a piercing noise overwhelms the child. The caregiver should keep in mind, however, that even a crying, finicky baby is capable of a lot of looking and listening. One may receive some very expressive looks from a three-month-old that has a gas bubble in their stomach! If you rub their back while murmuring sympathetically, the baby may be encouraged to keep their looking and listening skills even when not feeling so well. They may be able to use the soothing sounds and touches to calm themselves. Practicing under slightly stressful conditions will make the baby into a stronger looker and listener later on (Greenspan, 1999, p. 201).

moderation level—an individual preferred state of arousal between bored and excited when learning and pleasure peak.

an **attuned** adult would:

- observe closely.
- assess infants' needs and work to satisfy them.
- notice reactions to room sounds—sound intensity, rhythm, or other features.
- calm infants when necessary by trying a variety of strategies.
- use an attention-getting voice, voice variety, and/or high-pitched tones. <

1-2b Parent and Caregiver Attitudes and Expectations

As mentioned earlier, research indicates that parent and caregiver attitudes and expectations about infants' awareness and sensory abilities may be predictive of developmental growth. Bornstein (2012) notes that adult responsiveness encourages even the youngest children to be motivated to interact and results in positive effects on the course of the child's development.

How we perceive children (infants) shapes how we treat them and therefore what experiences we give them (Begley, 2009). Lise Eliot, a neuroscientist and author of *Pink Brain, Blue Brain* (2009), believes there is little solid evidence that communication differences between the sexes exist in young children's brains. She maintains the differences in adult male and female brains are the result of parent actions and expectancies and life experiences in infancy and childhood.

Eliot points out that baby boys are often more irritable than girls, making parents less likely to interact with their thought-to-be nonsocial sons. She notes that, at four months, infant boys and girls differ in the amount of eye contact, sociability, emotional expressivity, and verbal ability they exhibit. This, she feels, is not an innate trait but a self-fulfilling prophecy arising from a misperception that males are nonverbal and emotionally distant. Eliot entreats educators to not act in ways that make these perceived characteristics come true.

1-2c Growing Intellect

Other important factors related to the child's mental maturity or ability to think are ages, stages, and sequences of increased mental capacity that are closely related to language development. Language skill and intellect seem to be growing independently at times, with one or the other developing at a faster rate. The relationship of intelligence and language has been a subject of debate for a long time. Most scholars, however, agree that these two areas are closely associated. Researchers suspect the mind's most important faculties are rooted in emotional experiences from very early in life.

The natural curiosity of humans requires discussion here. Curiosity can be defined as a compulsion (drive) to make sense of life's happenings. Over time, exploring, searching, groping, and probing by infants shift from random to controlled movements. At approximately eight months of age, infants begin to possess insatiable appetites for new things—touching, manipulating, and trying to become familiar with everything that attracts them. Increasing motor skill allows greater possibilities for exploration. Skilled caregivers of infants are kept busy trying to provide novelty, variety, and companionship while monitoring safety. The curiosity of infants seems to wane only when they are tired, hungry, or ill, but even then, they are learning. Galinsky (2010) notes, "Some people think babies aren't learning about talking until they start to babble or say actual words, but that couldn't be farther from the truth" (p. 112).

Cultural Ideas Concerning Infant Communication. Cultural and social forces affect language acquisition. They influence young lives through contact with group attitudes, values, and beliefs. Some cultures expect children to look downward when adults speak, showing respect by this action. Other cultures make extensive use of gestures and signaling. Still others seem to have limited vocabularies or believe that engaging in conversations with infants is inappropriate.

1-3 Theories of Language Emergence

Many scholars, philosophers, linguists, and researchers have tried to pinpoint exactly how language is learned. People in major fields of scientific study—human development, linguistics, sociology, psychology, anthropology, speech-language pathology, and animal study (zoology)—have contributed to current theory. The following are major theoretical positions.

1-3a Behaviorist/Environmentalist (or Stimulus-Response) Theory

This theory, attributed to the work of B. F. Skinner—a pioneer researcher in the field of learning theory—conjectured that as parents and main caregivers reward, correct, ignore, or punish the young child's communication, they exert considerable influence over both the quantity and quality of language usage and the child's attitudes toward communicating. Under this theory, the reactions of the people in a child's environment have an important effect on a child's language development. In other words, positive, neutral, and negative reinforcement play a key role in children's emerging communicating behaviors.

The child's sounds and sound combinations are thought to be uttered partly as imitation and partly at random or on impulse, without pattern or meaning. The child's utterances may grow, seem to reach a standstill, or become stifled, depending on feedback from others (Photo 1-6).

1-3b Maturational (Normative) Theory

This theory, developed by Dr. Arnold Gissell, represents the position that children are primarily a product of genetic inheritance and that environmental influences are secondary. Children are seen as moving from one predictable stage to another, with "readiness" the precursor of actual learning. This position was widely accepted in the 1960s, when linguists studied children in less-than-desirable circumstances and discovered consistent patterns of language development. Using this theory as a basis for planning instruction for young children includes first identifying predictable stages of growth in language abilities and then offering appropriate readiness activities to aid children's graduation to the next higher level.

Photo 1-6 Enjoyable two-way conversational interactions occur early in life.

1-3c Predetermined/Innatist Theory

Under this theory, language acquisition is considered innate (a predetermined human capacity). Each new being is believed to possess a mental ability that enables that being to master any language to which they have been exposed from infancy. Noam Chomsky (1968), a linguistic researcher, theorizes that each person has an individual language acquisition device (LAD). Chomsky also theorizes that this device (capacity) has several sets of language system rules (grammar) common to all known languages. As the child lives within a favorable family climate, their perceptions spark a natural and unconscious device, and the child learns the "mother tongue." Imitation and reinforcement are not ruled out as additional influences.

Chomsky notes that two- and three-year-olds can utter understandable, complicated sentences that they have never heard. More current theory also suggests that young children are equipped with an implicit set of internal rules that allows them to transform the sequences of sounds they hear into sequences of ideas—a remarkable thinking skill. Theorists who support this position note the infant's ability to babble sounds and noises used in languages the child has never heard.

1-3d Cognitive-Transactional and Interaction Theory

Under a fourth theory, language acquisition develops from basic social and emotional drives. Children are naturally active, curious, and adaptive and are shaped by transactions with the people in their environment. Language is learned as a means of relating to people. Others provide social and psychological supports that enable the child

to be an effective communicator. Lev Vygotsky's major work, *Thought and Language* (first published in 1962), suggests that children's meaningful social exchanges prepare them for uniting thought and speech into "verbal thought." This inner speech development, he theorizes, promotes oral communication and is the basis for written language. Drives stem from a need for love and care, and the need prompts language acquisition.

Children are described as reactors to the human social contact that is so crucial to their survival and well-being. They are natural explorers and investigators. The adult's role is to prepare, create, and provide environments and events. Children's views of the world consist of their mental impressions, which are built as new life events are fit into existing ones or as categories are created for new events. Language is an integral part of living; consequently, children seek to fit language into some pattern that allows understanding. With enough exposure and with functioning sensory receiving systems, children slowly "crack the code" and eventually become fluent speakers. There is a wide acceptance of this theory by early childhood professionals.

Vygotsky (1980) argues that language learning is, in part, biological, but that children need instruction in the zone between their independent language level and the level at which they can operate with adult guidance and support. An early childhood practitioner adopting Vygotsky's ideas would believe that both the teacher's behaviors and the child's active physical manipulation of the environment influence and mediate what and how a young child learns or mentally constructs. In other words, without the teacher's social interaction, a child does not learn which characteristics are most important or what to notice and act on. The teacher's role is to find out through thoughtful conversation, observation, and collaboration what concept a child holds during a jointly experienced happening and to guide and aid the child to further mental construction. Consequently, under Vygotskian theory, teachers can affect young children's cognitive processes—the way they think and use language. Other individual and societal features that affect children's thinking in language, numerical systems, and technology are family, other children and people in their lives, and society at large. Children learn or acquire a mental process by sharing or using it in situations with others, and then move forward in an independent manner.

1-3e Constructivist Theory

Proponents of constructivist theory propose that children acquire knowledge by constructing it mentally in interaction with the environment. Children are believed to construct theories (hypothesize) about what they experience and then put happenings into relationships. Later, with more life experiences, revisions occur and more adequate explanations are possible. Constructivists point to young children's speech errors in grammar. Internal rules have been constructed and used for a period of time, but with more exposure to adult speech, these rules change and speech becomes closer to adult forms. The rules young children used previously were their own construct and never modeled by adult speakers.

Planning for language development and early literacy using a constructivist perspective would entail offering wide and varied activities while emphasizing their interrelatedness. Teachers and parents are viewed as being involved jointly with children in literacy activities from birth onward. The overall objective of a constructivist's approach is to promote children's involvement with interesting ideas, problems, and questions. Teachers would also help children put their findings and discoveries into words, notice relationships, and contemplate similarities and differences. Children's hands-on activity is believed to be paired with mental action. A secure, unstressed environment encourages the development of children's ability to cooperate, respect one another, exercise curiosity, gain confidence in themselves, and figure things out on their own. They become autonomous learners.

1-3f Other Theories

There is no all-inclusive theory of language acquisition substantiated by research. Current teaching practices involve many different styles and approaches to language arts activities. Some teachers may prefer using techniques in accord with one particular theory. One goal common among educators is to provide instruction that encourages social and emotional development while also offering activities and opportunities in a warm, language-rich, and supportive classroom, center, or home. Educators believe that children should be treated as competent language partners.

This text promotes many challenging activities that go beyond simple rote memorization or passive participation. It offers an enriched program of literary experience that encourages children to think and use their abilities to relate and share their thoughts. The text is based on the premise that children's innate curiosity, their desire to understand and give meaning to their world, and their predisposition equip them to learn language. Language growth occurs simultaneously in different-yet-connected language arts areas and all other curriculum offerings. Children continually form, modify, rearrange, and revise internal knowledge as they encounter activities, opportunities, experiences, and social interactions. Children's unconscious mental structuring of experience proceeds in growth spurts as well as in seeming regressions, with development in one area influencing development in another.

1-4 Developmentally Appropriate Practice—Infant Care DAP

NAEYC's 2020 Developmentally Appropriate Practice (DAP) guidelines for early childhood are consistent with available research and have the acceptance and the consensus of most early childhood educators. The practice guidelines address the six areas of particular importance to young children's optimum development. These include "(1) creating a caring community of learners; (2) engaging in reciprocal partnerships with families and fostering community connections; (3) observing, documenting and assessing children's development and learning; (4) teaching to enhance each child's development and learning; (5) planning and implementing an engaging curriculum to achieve meaningful goals; and (6) demonstrating professionalism as an early childhood educator" (NAEYC, 2020, p. 14). These guidelines have tried to capture the major aspects of practice that one might see in an excellent program rather than in a program that has not reached that level. Almost all recommended practice mentioned in the material affects young children's language development in some way. The author suggests that teachers in training study the complete publication.

1-4a Research on Infants' Brain Growth NAEYC

Researchers of **neurolinguistics** are making new discoveries about infants' and young children's brain growth and their early experience with their families and caregivers. Although awed by the brain's exceptional malleability and plasticity during the early years and its ability to "explode" with new **synapses** (connections), scientists also warn of the effects of abuse or neglect on the child's future brain function. It is estimated that at birth, each neuron in the cerebral cortex has approximately 2,500 synapses, and the number of synapses reaches its peak at two to three years of age, when there are about 15,000 synapses per neuron.

A discipline called cognitive science unites psychology, philosophy, linguistics, computer science, and neuroscience. Recent technology gives researchers additional tools to study brain energy, volume, blood flow, oxygenation, and cross-sectional images. Neuroscientists have found that throughout the entire process of development, beginning even before birth, the brain is affected by environmental conditions, including the kind of nourishment, care, surroundings, and stimulation an individual receives. The brain is profoundly flexible, sensitive, and plastic and is deeply influenced by events in the outside world.

Early experience has gained additional importance and attention. Newer scientific research does not direct families to provide special "enriching" experiences to infants over and above what they experience in everyday life. It does suggest, however, that a radically deprived environment could cause damage. Ayre and Krishnamoorthy (2020) report that various types of unpredictable, traumatic, chaotic, or neglectful environments can physically change the infant's brain, including "changes to the structure and chemical activity of the brain (e.g., decreased size or connectivity in some parts of the brain) and in the emotional and behavioural functioning of the child (e.g., over-sensitivity to stressful situations)" (p. 148). Life experiences are now believed to control both how the infant's brain is "architecturally formed" and how intricate brain circuitry is wired. Infant sight and hearing

neurolinguistics—a branch of linguistics that studies the structure and function of the brain in relation to language acquisition, learning, and use.

synapses—gap-like structures over which the axon of one neuron beams a signal to the dendrites of another, forming a connection in the human brain. They affect memory and learning.

acuity need to be assessed as early as possible given this information. Research shows that if a newborn's hearing disability is diagnosed and treated within six months, the child usually develops normal speech and language on schedule (Yoshinaga-Itano et al. 2017). With newer technology, hearing tests are far more accurate and can pinpoint the level of hearing loss in babies who are only a few hours old. (The American Academy of Pediatrics recommends that all infants be examined by six months of age and have regular checkups after age three.)

Infants are also far more sophisticated intellectually than we once believed. Babies, as young as four months old, have advanced powers of deduction and an ability to decipher intricate patterns. They have a strikingly nuanced visual palette, which enables them to notice small differences, especially in faces. This is an ability that adults or older children lose. Until a baby is three months old, he can recognize a scrambled photograph of his mother just as quickly as a photograph in which everything is in the right place.

Older debates about nature (genetic givens) versus nurture (care, experiential stimulations, parental teaching, etc.) are outdated (Figure 1-4). Nature and nurture are inseparably intertwined. Genetics lays out our neurological blueprints, but parents, significant caregivers, and life experiences wire infants' brain (Raftery, 2009).

Many scientists believe that in the first few years of childhood there are a number of critical or sensitive periods, or "windows," when the brain demands certain types of input. If a child's brain is not stimulated during a specific window of time, consequences occur. For example, researchers posit that vision will not be normal if, by approximately six months, an infant is not seeing varied things in the world around them. In neurobiological literature, these special periods are described as "critical periods" or "plastic periods," and they are believed to be one of nature's provisions for humankind to be able to use environmental exposure to change the anatomy of the brain and make it more efficient. A span of time from about nine months of age to roughly five years of age is believed to be a period when a natural human opportunity to acquire new skills and use higher cognition exists. This includes learning a second language. This silent and invisible infant language ability is used when a main caregiver or family is bilingual and converses consistently in both languages around the infant. As the child ages, they may become a functioning bilingual. Increasingly research is showing that the brains of people who know two or more languages are different from those of monolinguals. Bilinguals can be better at reasoning, multitasking, and grasping and reconciling conflicting ideas (Kluger, 2013). Kluger believes that bilinguals are not smarter but rather that they just have more flexible and resourceful brains.

Explosive language growth takes place during the early years and is scattered throughout the brain, but as early as toddlerhood, a pruning or scaling back action happens, making the brain more cognitively and categorically efficient.

Figure 1-4 Rethinking the brain.

Old Thinking . . .	New Thinking . . .
How a brain develops depends on the genes you are born with.	How a brain develops hinges on a complex interplay between the genes you are born with and the experiences you have.
The experiences you have before age three have a limited impact on the architecture of the brain and on later development.	Early experiences have a decisive impact on the architecture of the brain and on the nature and extent of adult capacities.
A secure relationship with a primary caregiver creates a directly favorable context for early development and learning.	Early interactions do not just create a context, they affect the way the brain is "wired."
Brain development is linear: The brain's capacity to learn and change grows steadily as an infant progresses toward adulthood.	Brain development is nonlinear: there are prime times for acquiring different kinds of knowledge and skills.
A toddler's brain is much less active than the brain of a college student.	By the time children reach age three, their brains are twice as active as those of adults. Activity levels drop during adolescence.

Brain Connection

Brain Researchers' Recommendations

- Talk to babies frequently.
- Cuddle babies.
- Use hands-on parenting techniques, such as infant massage.
- Use **parentese**, the high-pitched, vowel-rich, sing-song speech. The way we typically talk to infants—speaking more slowly, enunciating words, pausing between sounds, and varying the pitch of our voice—makes learning language much easier (Galinsky 2010).
- Give babies the freedom to explore within safe limits.
- Provide safe objects to explore and manipulate.
- Give babies interesting visual opportunities.
- Ensure loving, stress-reduced care for the child's emotional development.
- Provide regular vision and hearing screenings or examinations.
- Believe an infant's brain is actively seeking meaning in speech sounds and is trying to understand the actions, intentions, and behaviors of others.

This is a "use it or lose it" phenomenon and is important to bilingual parents who speak a language other than English. They should be continuing to use their native language around their children if they wish them to become true bilinguals. Many educators support programs for early second-language learning. Second-language learning creates new neural networks that increase the brain's capacity for all sorts of future learning, not just language learning.

Gopnik (2013) notes that current research suggests infants and toddlers are designed to be especially open to experience and are not encumbered by the executive function of older children's and adults' brains. This makes very young children vividly conscious of every common sight that habit has made invisible to adults. Babies and toddlers are enchanted with the world around them, including things the adult doesn't find the least bit fascinating, like a water bottle, a buzzing fly, or the sound of a small horn. Educators and families agree that infant care should be provided by knowledgeable adults who realize that a broad range of early experiences and opportunities may have long-term developmental consequences (Photo 1-7). Caregivers should also provide rich, language-filled experiences and opportunities, as well as the skills to recognize delayed development. Experts describe possible infant learning difficulties related to brain function:

- 0–3 months: Infant does not turn head toward a speaker or try to make vocal sounds.
- 4–6 months: Infant does not respond to *no* or note changes in other's tone of voice; does not search for sources of sounds or babble and make consonant-like sounds.
- 7–12 months: Infant does not react to their name, imitate speech sounds, or use actions or sounds to gain attention.

Photo 1-7 Knowledgeable teachers respond with attention and warmth.

parentese—a high-pitched, rhythmic, singsong, crooning style of speech. It is also known as *motherese* or baby talk.

Greenspan's (1999) observations suggest that certain kinds of emotional nurturing propel infants and young children to intellectual and emotional health and that affective experience helps them master a variety of cognitive tasks. He states:

> As a baby's experience grows, sensory impressions become increasingly tied to feelings. It is the **dual coding** of experience that is the key to understanding how emotions organize intellectual capacities and indeed create the sense of self. (Greenspan, 1999, p. 78)

Bornstein (2012) also points out that growing evidence suggests that thinking is an inseparable interaction of both **cognition** and emotion (feelings, desires, enthusiasms, antipathies, etc.). Interactive emotional exchanges with caregivers and their reciprocal quality are increasingly viewed as being critical to human infants' growth and development, including language development:

> How powerful is caregiver responsiveness? Tamis-LeMonda and Bornstein (2002) looked at five language milestones, including when children understood their first word, spoke their first word, reached a vocabulary of 50 words, put two words together, and talked about the past. Children whose mothers were more responsive reached these developmental milestones as much as six months earlier than children of less responsive mothers. (Bornstein, 2012, p. 16)

The importance of environmental feedback is considerable. Feedback by caregivers includes giving words of approval and providing caregiver attention, and it promotes the emotional satisfaction an infant feels when they are successful in doing something they set out to do.

Some developers of infant materials, equipment, books, and services suggest they can speed brain development. Families may feel that they need to find ways to accelerate early childhood experiences and believe that it is up to them to find products and services. Most educators believe this is unnecessary and suggest instead spending time with infants and providing natural parenting, such as playing, engaging in reciprocal talk, and simply engaging the infant with everyday items to examine and explore. Peterson et al. (2016) concur and point out that when an infant works toward a goal—for example, mastering hitting a dangling ball—that work is rewarding in and of itself; the child is both delighting in getting the desired effect and engaging in growth, in this case in such areas as hand–eye coordination and adjusting use of force.

1-5 Communicative Abilities in Infancy

Common Core

Newborns quickly make their needs known. They cry and their parents or caregivers respond. Adults feed, hold, and keep infants warm and dry. The sounds of footsteps or voices or a caring touch often stops infants' crying. Babies learn to anticipate. The sense perceptions they receive begin to be connected to stored impressions of the past.

Infants are very powerful in shaping their relationships with significant caregivers. They possess a wonderful combination of development, potential development, and cognitive flexibility. An infant can perceive from caregivers' behaviors a willingness to learn from and respond to the infant's patterns of behavior and rhythms of hunger. This is accomplished by a caregiver's close observation of the infant's vocal and body clues, which indicate the child's state of being. At some point, the caregiver notices that a pattern of mutual gazing is established. Then a type of proto-conversation begins, with caregiver vocalizations followed by infant response and noisemaking. Infants confront two important developmental tasks in these moments: learning to regulate and calm themselves and learning to interact and "play" with caregivers.

The infant is a noisemaker from birth. The child's repertoire includes sucking noises, lip-smacking, sneezes, coughs, hiccups, and, of course, different types of cries. As an infant grows, he makes specific vocal noises, such as **cooing** after feeding. During feeding, slurping and guzzling sounds indicate eagerness and pleasure. Cooing seems to be related to a child's comfort and satisfaction. Cooing consists of relaxed, low-pitched **vowel** sounds that are made

dual coding—the belief that infants' experiences and emotions influence cognition.

cognition—the process that creates mental images, concepts, and operations.

cooing—an early stage during the prelinguistic period in which vowel sounds are repeated, particularly the *u-u-u* sound.

vowel—(1) a voiced speech sound made without stoppage or friction of airflow as it passes through the vocal tract and (2) an alphabet letter used in representing any of these sounds.

in an open-mouthed way—for example, *e* (as in see), *e* (get), *a* (at), *ah*, and *o*, *oo*, *ooo*. The infant appears to be in control of this sound making. Discomfort, by comparison, produces **consonant** sounds, made in a tense manner with the lips partly closed and the tongue and the ridge of the upper or lower jaw constricting airflow.

Families who attend to infant crying promptly and who believe that crying stems from legitimate needs rather than attempts to control tend to produce contented, trusting infants. Advice for caregivers of colicky babies consists of holding and carrying the infant more frequently and in different positions in an effort to soothe. Infants differ in their soothing needs in numerous ways. In speaking to parents about the unique differences in infants, Greenspan (1999) notes the following:

> For most babies, swaddling (gently but firmly bundling the baby's arms and legs in a receiving blanket wrapped around their bodies) is soothing. Other babies enjoy a body massage in which their limbs are gently flexed and extended.
>
> Up until recently, scientists assumed that all human beings experienced sensations in similar ways. We now know that individuals perceive the same stimulus very differently. Your feathery touch could feel tickly and irritating on your newborn's skin, while another baby might take delight in the same caress. (p. 91)

The individual pace of development varies. Pediatric experts and researchers agree that whether an infant reaches developmental milestones on the early or late side of normal seems to bear little relation to either cognitive skills or future abilities or disabilities. However, in most cases, milestones in language development are reached at about the same age and in a recognizable sequence (Figure 1-5 and Photo 1-8).

Babies learn quickly that communicating is worthwhile because it results in action on the part of another. Greenspan (1999) warns that unless a child masters the level we call two-way intentional communication, normally achieved by eight months, the child's language, cognitive, and social patterns ultimately develop in an idiosyncratic, piecemeal, disorganized manner. There is a high degree of relationship between a caregiver's responsiveness and a child's language competence. By 9 to 18 months of age, the more

Figure 1-5 Examples of the typical order of emergence of types of nonword vocalizations in the first year.

Age	Nonword Vocalizations
Newborn	Cries
1–3 months	makes cooing sounds in response to speech (e.g., *oo*, *goo*) laughs cries in different ways when hungry, angry, or hurt begins to make more speechlike sounds in response to speech
4–6 months	plays with some sounds, usually single syllables (e.g., *ba*, *ga*)
6–8 months	babbles with duplicated sounds (e.g., *bababa*) attempts to imitate some sounds
8–12 months	babbles with consonant or vowel changes (e.g., *badaga, babu*) babbles with sentence-like intonation (expressive jargon/conversational babble) produces protowords

Photo 1-8 Infants often babble to toys, especially ones that make noise.

consonant—(1) a speech sound made by partial or complete closure of the vocal tract, which obstructs airflow and (2) an alphabet letter used in representing any of these sounds.

responsive caregivers promoted greater language facility and growth.

Infants quickly recognize subtle differences in sounds. This helps infants to calm down and pay attention—in other words, to listen. Infants move their arms and legs in synchrony to the rhythms of human speech. Random noises, tapping sounds, and disconnected vowel sounds do not produce this behavior.

Different people in an infant's life communicate with the child in different ways. Some talk calmly and touch gently. Others show delight through their vocal inflections and volume. Some pause after speaking and seem to wait for a response. The child either "locks on" to the conversationalist, focusing totally, or breaks eye contact and looks away. It is almost as though the infant controls what they want to receive. Of course, hunger, tiredness, and other factors also influence this behavior and may stop the child's interest in being social.

The special people in the infant's life adopt observable behaviors when "speaking" to the infant, just as the infant seems to react in special ways to their attention. Talking to babies differs from other adult speech in that the lyric or musical quality of speech seems more important than words. Infants listening to these long, drawn-out vowels experience an increase in heart rate. At the same time, the brain's ability to recognize connections between words and objects speeds up. The attention-holding ability of this type of adult speech may help the infant become aware of the linguistic function of vocalizations (Sachs, 1997). Caregivers sometimes raise voice pitch to a falsetto, shorten sentences, simplify syntax and vocabulary, use nonsense sounds, use a slower tempo, and use longer pauses than in adult conversations. They maintain prolonged eye contact during playful interchanges. Most infants are attracted to high-pitched voices, but a few infants seem to overreact and prefer lower speech sounds. Infants can pick up higher-pitched sounds better than lower-frequency ones, which may be why they are entranced by the high-pitched coos and singsong nature of parent talk. Parents' voices when talking to their infants can be described as playful, animated, warm, and perhaps giddy. Researchers are discovering the universal nature of these speech changes. Piazza et al. (2017) found that in infant-directed speech, mothers in cultures around the world were shown to significantly alter statistical properties of vocal timbre—as if their voices are musical instruments—when speaking to their infants. This research has implications for infant learning and speech recognition technology.

A mutual readiness to respond to each other appears built into warm relationships. The infant learns that eye contact can hold and maintain attention and that looking away usually terminates both verbal and nonverbal episodes. Infants learn a great deal about language before they ever say a word. Most of what they learn at a very early age involves the sound system of language.

1-5a Crying

Crying is one of the infant's primary methods of communication. Cries can be weak or hearty, and they provide clues to the infant's general health. Crying may be the only way an infant can affect their situation of need or discomfort. Infants begin early in life to control the emotional content of their cries. Many parents believe they can recognize different types of crying, such as sleepy, frightened, hungry, and so on, especially if infant body actions are observed concurrently. Researchers have discovered that parents do indeed accurately infer the intensity of an infant's emotional state from the sound of the cry itself, even if the baby is not visually observed. Even adults inexperienced with infants seem to possess this ability.

Child development specialists advise adult alertness and responsiveness to minimize crying. Crying will take place in the best of circumstances, and research has indicated that there are some positive aspects of crying, including stress reduction, elimination of toxins in tears, and reestablishment of physical and emotional balance. However, although crying may have its benefits, it is not recommended that infants be left to cry for long periods but, rather, that adults continue to attempt to soothe and satisfy infants' needs. Narvaez (2012) believes the "cry it out" strategy adopted by some parents and sometimes endorsed by infant pediatricians can have negative effects on a child's moral and cognitive development. She suggests the practice can threaten the child's sense of safety and security. Stepping in to comfort a crying infant every two or so minutes allows a child a period to calm down. This has been called the "every few minutes approach." It may result in reducing stress that allows sleep—a preferred alternative to crying it out. Most caregivers check for conditions that might cause discomfort or distress periodically as a preventative measure.

Photo 1-9 A child may fall asleep while being soothed.

A baby's crying may cause strong feelings in some adults, including anger, frustration, irritation, guilt, and rejection. Successful attempts at soothing the infant and stopping the crying give the infant and the caregiver satisfaction, feelings of competence, and a possible sense of pleasure. When an out-of-sorts infant ceases crying, alertness, attentiveness, and visual scanning usually happen and/or the infant falls asleep (Photo 1-9). Infant–caregiver interaction has been described as a rhythmic drama, dance, or melody, touching on the beauty and coordination of sound-filled moments between the adult and child.

Emotions are expressed frequently in crying as the infant nears their first birthday. Fear, frustration, uneasiness with novelty or newness, separation from loved ones, and other strong emotions can provoke crying through childhood and beyond. Infant care providers in group programs engage in frank staff discussions concerning infant crying. Normal and natural staff feelings concerning crying need to be openly discussed so that strategies can be devised in the best interests of both the infants and the staff members. Many techniques exist to minimize crying and to monitor the crying levels of individual infants so that health or developmental problems can be spotted quickly.

1-5b Smiling and Laughing

True smiling can occur before six weeks of age and is usually associated with a caregiver's facial, auditory, or motor stimuli. Laughter may occur as early as four months of age and is believed to be a good predictor of cognitive growth. Some developmental experts suggest that the earlier the baby laughs, the higher the baby's developmental level is. In the second half of the first year, infants smile at more complex social and visual items. Laughter at this age may be full of squeals, howls, hoots, giggles, and grins. Incongruity may be noticed by the infant, and laughter follows. If an infant laughs when seeing the family dog in the driver's seat with its paws on the wheel, the child may be showing recognition of incongruity; the child has learned something about car drivers and what does or does not make sense in the situation.

Responsive caregivers promote infant smiling. Ainsworth and Bell (1972) concluded that **responsive caregivers**—those who are alert in caring for the infants' needs—had babies who cried less frequently and had a wider range of different modes of communication (Photo 1-10).

Photo 1-10 A quick adult response to crying is appropriate and recommended.

responsive caregivers—caregivers who are alert and timely in responding to and giving attention to infants' needs and communications.

These responsive caregivers created a balance between showing attention and affording the infant autonomy (offering a choice of action within safe bounds) when the infant became mobile. They also provided body contact and involved themselves playfully at times.

an attuned adult:

- notices infant reactions to auditory stimuli.
- is aware of infant preferences.
- notices if an infant has an attachment to a caregiver and/or expresses pleasure in another's company.
- seeks to help the infant maintain a state of balance and a level of comfort.
- is attentive and consistent in recognizing and satisfying a child's needs.
- has sufficient energy and seeks to engage frequently with an infant.
- monitors an infant's health and safety and observes closely.
- provides a variety of experiences and sensory materials for exploration.
- uses words to accompany child and adult actions.
- records milestones in development and uses them to guide caregiver interactions.
- is playful, gives attention, and provides feedback to an infant's efforts. <

1-5c Infant Imitation and Babbling

Acredolo and Goodwyn (2000) suggest that infants as young as one or two days old may imitate parent head movements and facial behaviors:

> This inborn push to mimic others gets babies into a problem-solving mode from the very beginning. . . . [Babies] thrive on problem solving. The payoff is such a pleasant one—Dad sticks around to interact some more, and baby is amused. Imitation is such an important developmental component that Mother Nature has not left it up to chance. She has made sure that each of us begins life's journey with a necessary tool in hand. (p. 185)

Early random sound making is often called **babbling**. Infants the world over babble sounds they have not heard and that they will not use in their native language. This has been taken to mean that each infant has the potential to master any world language. Close inspection of babbling shows repetitive sounds and babbling "practice sessions." Babbling starts at about the fourth to sixth month and continues in some children through the toddler period. However, a peak in babbling is usually reached between 9 and 12 months. Periods before the first words are spoken are marked by a type of babbling that repeats syllables, as in *dadadada*. This is called **echolalia**. Infants seem to echo themselves and others. Babbling behavior overlaps the stages of making one and two or more words and may end for some children at about 18 months of age.

Infants who are deaf also babble. In play sessions, they will babble for longer periods without hearing either adult sound or their own sounds, as long as they can see the adult responding. However, these children stop babbling at an earlier age than do hearing children. It is not clearly understood why babbling occurs, either in hearing or in hearing-impaired children, but it is thought that babbling gives the child the opportunity to use and control the mouth, throat, and lung muscles. Researchers trying to explain babbling suggest that infants are not just exercising or playing with their vocal apparatus. Instead, they may be trying out and attempting to control their lips, tongues, mouths, and jaws to produce certain sounds. A child's babbling amuses and motivates the child, acting as a stimulus that adds variety to the child's existence. Meltzoff et al. (2009) suggest the language background of the home is continually being collected, digested, sorted, and analyzed by the infant's computer-like brain. Consequently, it is forming patterns of sounds that may be practiced or reproduced during later babbling periods.

In time, the child increasingly articulates clear, distinct vowel-like, consonant-like, and syllabic sounds. *Ba* and *da* are acquired early because they are easy to produce, whereas *el* and *ar* are acquired late because they require a sophisticated ability to articulate sounds. Although babbling includes a wide range of sounds, as children grow older, they narrow the range and begin to focus on the familiar language of the family and other significant environments. Other sounds are gradually discarded.

Physical contact continues to be important during the babbling stage. Touching, holding,

babbling—an early language stage in sound production in which an infant engages in vocal play with vowel and consonant sounds, including some sounds not found in their language environment.

echolalia—a characteristic of the babbling period. The child repeats (echoes) the same sounds over and over.

Photo 1-11 Infants' vocal and playful interactions with caregivers are the precursors of conversation.

rocking, and engaging in other types of physical contact bring a sense of security and a chance to respond through sound making. The cooing and babbling sounds infants make may also draw caregivers into "conversations." Babies learn to wait for the adult's response after they have vocalized, and both infants and adults are constantly influencing one another in establishing conversation-like vocal interactions (Photo 1-11).

Bardige (2009) points out that babies need to hear everyday language during their babbling period. She suggests adults talk about what the baby and they themselves are doing and continue to make language part of their daily care as they bathe, change, feed, play, and soothe the infant.

The active receiving of perceptions is encouraged by warm, loving caregivers who share a close relationship with the child. Secure children respond more readily to the world around them. Children who lack social and physical contact or those who live in insecure home environments fall behind in both the number and range of sounds made, with differences starting to show at about six months of age. Sound imitation eventually becomes syllable imitation, and short words are spoken near the end of the child's first year.

1-5d Stages of Vocalization

There is a definite progression of vocalization and sound production ability that is noticed by early educators focusing on infant development. Progress may include a blending of steps as infants move forward. The reflective vocalizations of infants during their first few months include sound making, such as fussing, crying, burping, miscellaneous sounds, and a few vowel-like sounds. These vocalizations meld into a stage of sound production that indicates a mellowing during comfort and feeding-satisfaction situations, including cooing, giggling, and laughing. In the next few months, a wider repertoire of vocalization emerges that is full of voice changes indicating a playful nature. Loud and soft sounds happen during the day, along with squeals of delight and what seems to be vowel–making episodes. This is typical in the months before an infants' first half year of age.

The appearance of babbling takes hold next. This period produces an increase in the variety of sound making and includes sequences of both consonant-blended and vowel-blended episodes. Parents and educators may believe they recognize a few almost words in infants' sound making. Deaf infants can appear to be limited in their babbling efforts, while infants with normal hearing ability may be reinforced by the vocal enjoyment they share with others and thus increase babbling. Real words, although few at first, begin to appear.

1-5e A Shared Developmental Milestone

Almost immediately after birth, infants display a critical cognitive skill: their ability to focus their attention on the features of their environment, especially to voices and sounds. By the last half of their first year, infants begin to take part in a new type of interaction with their caregivers. They share attention given to objects with another person—following that individual's gaze or pointing, responding to the individual's emotional reactions, and imitating that person's object-directed actions (Nelson & Shaw, 2002). This gives adults who notice this behavior a chance to pair words with objects, actions, events, and people. First words or sounds are usually simple associates of objects or situations. The infant simply voices a shared reference. Nelson and Shaw note that the leap from shared reference associations to meaningful language requires the child to integrate skills with communicative patterns and conceptual knowledge. The child is then standing on a first communicative step.

1-5f Infant Signing (Signaling) and Beginning Understanding

At a few months of age, some infants realize that some of their simple actions cause caregivers to focus their attention on them. Waving arms, kicking legs, and banging objects may promote adult reactions, such as speaking to them. During the latter part of the first year, alert caregivers notice hand and body positions that suggest the child is attempting to communicate. Researchers suggest that parents pair words with easy-to-do gestures. At the age of one year, children cannot gain enough mastery over their tongues to form many words; gesturing with their fingers and hands is simpler. For example, infants as young as seven months may bang on a window to get a family cat's attention or reach out, motion, or crawl toward something or someone they want. The use of signs continues until the child's ability to talk takes off. Some educators believe **signing** may spark other critical thinking skills and lead to better intelligence quotient (IQ) scores when testing begins. This has led to overeager commercial advertisers making unproven assertions and claims concerning signing's present and future educational advantages. Most educators believe that promoting the practice isn't harmful, and in fact, it seems to give infants confidence and satisfaction. They recognize that many parents are enthusiastic proponents. Only further research can substantiate the long-term benefits of signing.

Toward the end of the child's first year, pointing becomes goal-oriented—the infant will point to a desired object. As time progresses, more and more infant body signaling takes place. Signals are used over and over, and a type of sign language communication emerges. It can be a "signal and sound system" understood by caregivers. When caregivers respond appropriately, the infant easily progresses to word use and verbal aptitude. Signing by infants and young toddlers is believed to stimulate brain development, particularly brain areas involved in language, memory, and concept development.

Some studies of communication gestures note that infants with more advanced gestures have larger vocabularies and that girls seem slightly more advanced in gesturing than do boys.

Well-meaning parents or caregivers may choose not to respond to infant gestures and signals, thinking this will accelerate or force the use of spoken words. However, the opposite is believed to be true. Alert parents who try to read and receive signals give their infant the message that communication leads to the fulfillment of wishes. Successful signaling becomes a form of language—a precursor of verbal signals (words). Some experts believe that baby signers by age two are better at both expressing themselves and understanding others' speech and, on average, have slightly larger vocabularies than their peers who do not sign. Sitting down at the child's level at times when the infant is crawling from one piece of furniture to another may facilitate the adult's ability to pick up on signaling. Watching the infant's eyes and the direction the infant's head turns gives clues. Infants about eight months old seem fascinated with the adult's sound-making ability. They often turn to look at the adult's lips or want to touch the adult's mouth.

Early childhood educators employed by infant-toddler centers need to know their center's position regarding expected educator behaviors regarding signing. Most centers expect educators to actively pair words with adult or child signs, encourage child use of signs, and learn and respond to each child's individual sign language.

Most babies get some idea of the meaning of a few words at about six to nine months of age. At about 10 months, some infants start to respond to spoken-word clues. Somewhere between 8 and 13 months, the child's communication, whether vocal or a type of gesture, becomes intentional. The child makes a connection between their own behaviors and the caregiver's or early childhood educator's response (Photo 1-12). Infants seem to recognize a prime caregiver's change of voice tone, as well as that some of their caregiver's nonverbal behaviors may communicate a message. At this stage, infants are also becoming aware of adult actions that may affect them. A game such as pat-a-cake may start the baby clapping, and "bye-bye" or peekaboo brings about other imitations of earlier play activities with the caregivers. The child's

signing—a body positioning, sound, action, gesture, or combination of these undertaken by an infant in an effort to communicate a need, desire, or message.

Photo 1-12 This infant has learned to respond to the adult's pointing gestures.

language is considered to be passive at this stage, for they primarily receive (or is receptive). Speaking attempts will soon become active (or expressive). Vocabulary provides a small portal through which adults can gauge a little of what the child knows. There is a point at which children expand nonverbal signals to true language.

Older infants still communicate with their caregivers through many nonverbal actions. One common way is by holding up their arms, which most often means, "I want to be picked up." Other actions include facial expression, voice tone, voice volume, posture, and gestures such as "locking in" by pointing fingers and toes at attention-getting people and events.

Although infants at this later stage can respond to words and changes in caregivers' facial expressions, voice tone, and voice volume, actions and gestures also carry feelings and messages important to infants' well-being. Understanding the tone of caregivers' speech comes before understanding the words used.

Gopnik et al. (1999) describe what happens when infants are about one year old:

> One-year-old babies know that they will see something by looking where other people point; they know what they should do to something by watching what other people do; they know how they should feel about something by seeing how other people feel. (p. 243)

Research suggests that infants at 20 months have what Galinsky (2010) calls *language sense*. This means they can detect statistical patterns in which speech sounds go together in their native language (or languages) to determine the beginnings and endings of words (Galinsky, 2010, p. 2). She also suggests that recent research theorizes that another infant sense—*people sense*—exists in infancy as infants focus on people's intentions, rather than seeing what people do as random movements.

1-5g First Words

Before an understandable, close approximation of a word is uttered, the child's physical organs need to function in a delicate unison, and the child must reach a certain level of mental maturity. Close to 12 months of age, the speech centers of the brain have developed the capacity to enable the infant to produce their first word—a great accomplishment and milestone. The child's respiratory system supplies the necessary energy. As the breath is exhaled, sounds and speech are formed with the upward movement of air. The larynx's vibrating folds produce voice

(called **phonation**). The larynx, mouth, and nose influence the child's voice quality (termed **resonation**). A last modification of the breath stream is **articulation**—a final formation done through molding, shaping, stopping, and releasing voiced and other-than-voiced sounds that reflect language heard in the child's environment.

Repetition of syllables such as *ma*, *da*, and *ba* in a child's babbling occurs toward the end of the first year. If *mama* or *dada* or a close copy is said, parents and caregivers show attention and joy. Language, especially in the area of speech development, is a two-way process; reaction is important feedback to action.

The term *protoword* is often used for the invented words a child may use during the transition from prespeech to speech. During this transition, a child has acquired the difficult concept that sounds have meaning and is unclear only about the fact that one is supposed to find out what words exist instead of making them up.

Generally, first words are nouns or proper names of important people, foods, animals, or toys; vocabulary may also include *gone*, *there*, *uh-oh*, *more*, and *dat* ("what's that?"). Greetings, farewells, or other social phrases, such as *peekaboo*, are also among the first recognizable words.

Monolingual (one-language) children utter their first words at approximately 11 months of age; the range is from about 9 months to about 16 months. At about a year and a half, the child learns approximately one new word every three days. Most experts believe that talking alone shows no link to mental development at age two, but a child's comprehension of words is paramount. Experts conclude that there is little scientific evidence to suggest that late talkers will become less fluent than early talkers. Some children acquire large numbers of object names in their first 50 to 100 words. The first spoken words usually contain *p*, *b*, *t*, *d*, *m*, and *n* (front of the mouth consonants), which require the least use of the tongue and air control. They are shortened versions, such as *da* for "daddy," *beh* for "bed," and *up* for "cup." When two-syllable words are attempted, they are often strung together using the same syllable sound, as in *dada* or *beebee*. If the second syllable is voiced, the child's reproduction of the sound may come out as *dodee* for "doggy" or *papee* for "potty."

At this stage, words tend to be segments of wider happenings in the child's life. A child's word *ba* may represent a favorite, often-used toy (such as a ball). As the child grows in experience, any round object seen in the grocery store, for instance, will also be recognized and called *ba*. This phenomenon has been termed *overextension*. The child has embraced "everything round," which is a much broader meaning than the adult definition for *ball*.

Following is a list of words frequently understood between 8 and 12 months of age: *mommy*, *daddy*, *bye-bye*, *baby*, *shoe*, *ball*, *cookie*, *juice*, *bottle*, *no-no*, and the child's own name and names of family members.

A child finds that words can open many doors. They help the child get things and cause caregivers to act in many ways. Vocabulary quickly grows from the names of objects to words that refer to actions. This slowly decreases the child's dependence on context (a specific location and situation) for communication and gradually increases the child's reliance on words—the tools of abstract thought. Children learn very quickly that words not only name things and elicit action on another's part but also convey comments and express individual attitudes and feelings.

an **attuned** adult would:

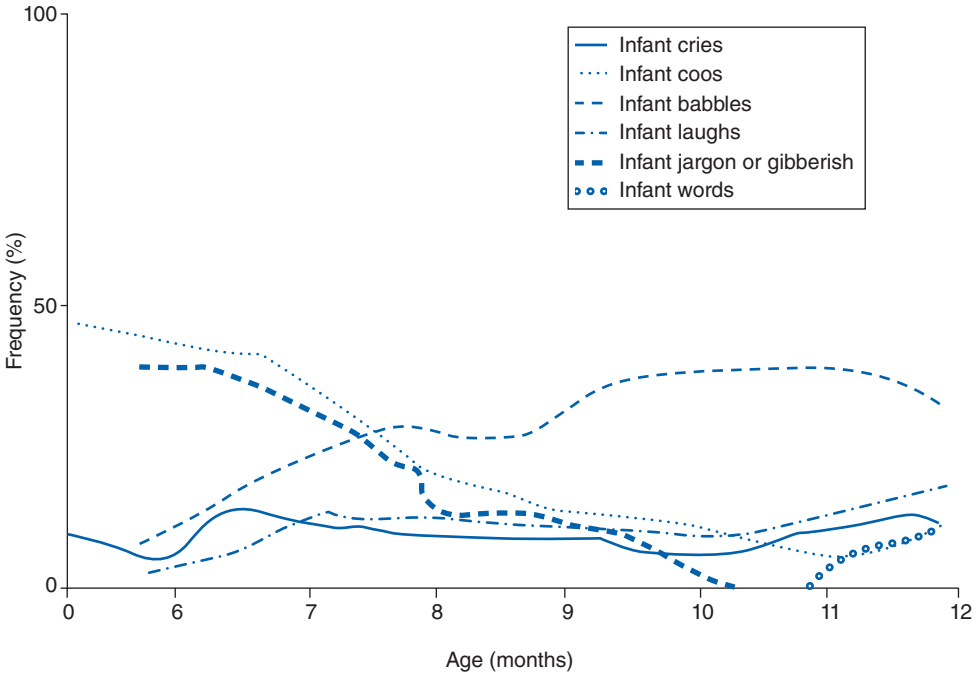
- nurture infant curiosity.
- use words and gestures in communication.
- build a sign language relationship with infants.
- try to judge the intensity of infants' emotions.
- offer the child a choice of actions and explorations within safe limits.
- respond to and promote reciprocal communication.
- pair words with actions and objects.
- observe the direction of infants' gazes for clues to infants' moment-to-moment interests.
- continue to be at eye level when possible.
- expect and recognize invented words.
- encourage first word use by repeating a word back to the child and connecting the child's words to objects or actions as appropriate.
- guess frequently about a child's meaning in communication.
- work toward a child's success at using words to fulfill the child's desires, needs, and interests. <

phonation—exhaled air passes the larynx's vibrating folds and produces "voice."

resonation—amplification of laryngeal sounds using cavities of the mouth, nose, sinuses, and pharynx.

articulation—the adjustments and movements of the muscles of the mouth and jaw involved in producing clear oral communication.

Figure 1-6 Approximate frequency of child utterances from 6 to 12 months.



Toddlerhood begins, and the child eagerly names things and seeks names for others. The child's single words accompanied by gestures, motions, and intonations are called **holophrases**. They usually represent a whole idea or sentence. Examples include "go" (to mean, "Let's go over there"), "that" (to mean, "I want that toy"), and "mine" (to mean, "those are my snacks and I don't want you to take any").

While the child is learning to walk, speech may briefly take a backseat to developing motor skills. At this time, the child may listen more intently to what others are saying. The slow-paced learning of new words (Figure 1-6) is followed by a period of rapid growth. The child pauses briefly, listening, digesting, and gathering information to help them effectively embark on the great adventure of becoming a fluent speaker.

1-6 Implications for Infant Center Staff Members

The importance of understanding the responsive, reciprocal nature of optimal caregiving in group infant centers cannot be overestimated. The soothing, calming, swaddling, rocking, sympathizing, and responding behaviors of infant care specialists help infants maintain a sense of security and a relaxed state of calmness and equilibrium.

The emotional well-being of infants has been given increased attention as research on infant development uncovers and supports its importance. Physician Chet Johnson (2005) points out:

> The research shows how powerful emotional well-being is to a child's future health. A baby who fails to meet certain key "emotional milestones" may have trouble learning to speak, read, and later, do well in school. By reading emotional responses, doctors have begun to discover ways to tell if a baby as young as three months is showing early signs of possible psychological disorders, including depression, anxiety, learning disabilities and perhaps autism. Instead of just asking if they're crawling or sitting we're asking more questions about how they share their world with their caregivers. (p. 35)

See Figure 1-7 for infants' emotional milestones.

At about four months, babies begin to gaze in the direction in which caregivers are looking. Caregivers are able to follow the line of vision of babies as well. Well-trained caregivers will naturally comment and offer language labels and a running commentary. This process is known as *joint attentional focus*. When adults know that the infant does not yet understand language, most

holophrases—the expression of a whole idea in a single word. They are often found in the speech of children at about 12 to 18 months of age.

Figure 1-7 Emotional milestones and social skill characteristics.

Age	Social-Emotional Characteristics
Birth to around 3–4 months	At birth, infant is able to feel fear and contentment and is self-absorbed. During first three to four months, infant becomes aware of the environment around them and is attentive and interested; seems able to calm self at times; develops deliberate responses; focuses on the faces of people and smiles at them; eyes may widen in anticipation; may react to strong scents or odors; has a developing sense of security; holding and touching may reduce stress, and rhythmic motion may soothe; may enjoy swaddling; pays attention and reacts to sounds (some infants are oversensitive to some types of sounds); reacts to visual cues, especially from care provider's face.
Around 5–6 or more months	Displays emotions such as surprise, joy, and frustration. Falls in love with care provider; beams with delight at times; able to see the pattern formed by features on care provider's face; smiles in recognition; may display sorrow and annoyance; builds a stronger relationship with primary care provider; begins to realize they can make things happen; is comforted by physical closeness; develops feelings of being loved, valued, and esteemed by others; easy to tell when infant is happy; sense of self is a reflection of care provider's emotional interactions with infant; may experience jealousy.
Around 10 or more months	Initiates two-way communication; notices where care provider looks and often follows by also looking; tries to catch care provider's eye and gives physical cues to others to obtain a desired action, such as being held; may use signs and signals to make things happen; may respond to rhythm with rhythmic movements; expects his action will prompt a reaction; may mimic gestures; may express fear, anger, anticipation, caution, and surprise with strangers; responds to name, words, and sounds, and attempts to imitate them; is curious and perhaps assertive and negative at times; may experience a sense of loss at something removed; may show fear if care provider looks angry, frowns, or stares (not recommended). Seeks pleasure and enjoys stimulating self (for example, touching toes and participating in adult–infant games that involve moving or touching body parts, such as "This Little Piggy.") Note: This is not intended to be a complete inventory of emotional milestones. Research in identifying infant emotional development and capacity is still in its infancy. Notice that social skill and emotional response is intertwined and dependent on environmental and human experience.

adults behave as if the child's response is a turn in the conversation. Adult caregivers need to read both nonverbal and vocalized cues and react appropriately (Photo 1-13). They need to be attentive and loving. Learning to read each other's signals is basic to the quality of the relationship. Liberal amounts of touching, holding, smiling, and looking promote language and the child's overall sense that the world around them is both safe and fascinating. Recognizing the child's individuality, reading nonverbal behaviors, and reacting with purposeful actions are all expected of professional infant specialists, as is noticing activity level, mood, distress threshold, rhythms of the body, intensity, sense of adventure, distractibility, adaptability, and attention span.

There are many skills that well-trained caregivers possess, beginning with holding the infant firmly yet gently and making soft, gentle sounds while moving smoothly and holding the infant close. Gillespie and Hunter (2011) suggest that caregivers' laughter helps children form connections and signal a safe and loving environment. Leong and Bodrova (2012) note that as infant educators interact and react to an infant's growing communication ability, emotional bonds form. Educators, consequently, prepare infants to learn from them. Adults in early childhood centers become play partners and perhaps become an infant's first play mentor other than their family members. Other caregiver skills are identified in the following list.

Photo 1-13 It is easy to tell these infants are focused and eager activity participants.

an **attuned** adult:

- talks in a pleasant, soothing voice; uses simple language; and makes frequent eye contact.
- emphasizes and expects two-way "conversation"; hesitates and pauses for an infant response.
- makes a game out of the infant's smiles, sounds, and movements when the infant is responsive.
- speaks clearly.
- explains what is happening and what will happen next.
- is consistently attentive.
- does not interrupt the infant's vocal play, jargon, or self-communication.
- engages in wordplay, rhyme, chants, and fun-to-say short expressions.
- is an animated speaker and a responsive companion.
- may, with an older infant, attempt to offer simple finger plays.
- plans real and concrete participatory activities with textures, sights, and sounds.
- encourages sound making and provides noisemaking and musical toys.
- labels objects, happenings, actions, and emotions.
- uses highly intonated speech that may be high pitched at times.
- speaks distinctly with clear enunciation to help children identify phonemes.
- emphasizes, at times, one word in a sentence.
- uses repetition but avoids overdoing it.
- gives feedback by responding with both words and actions.
- creates and pursues game-like strategies and techniques.
- serves as a co-explorer. <

Being playful and initiating singing conversations with infants can be enjoyable and may lay the foundation for later musical activities. Both recorded and live musical sounds are part of an auditory-rich environment for infants. For identified early childhood goals and additional caregiver activities, see Figure 1-8.

Williams (2008) urges caregivers to explore the world outside the classroom or home with older infants and toddlers. Children are born with a desire to understand the environment around them, and they possess an incessant curiosity that compels them to explore it (Medina, 2008). Their discoveries can bring joy and, Medina (2008) believes, exploration creates the need for even more discovery. Think about watching or feeling raindrops, experiencing mud, touching a caterpillar, smelling flowers, or hearing birds. The reality and beauty of nature surrounds us, and there are multiple ways to experience and explore it.

Remember that infants are alike yet uniquely different. Some sensitive infants may appear overwhelmed and require little stimuli to maintain equilibrium. Others will thrive in an environment that provides a multitude of people, sights, sounds, and new activities. Each infant provides a challenge one must "puzzle out" to decide the best courses of action—what works, what does not work, and what is best. Bardige (2009) notes these differences:

> Some babies are fussy and hard to soothe, some are so sensitive that they have to be approached carefully and given lots of support before they can engage, and some are challenged in one modality (e.g., hearing or sight) but hyperacute in another. Some babies are flexible by nature, but others are fearful or feisty. Babies also differ in their natural activity levels and in their rates of development. Some babies give clear signals when they need food or play or comfort or rest; others are much harder to read. (p. 23)

Figure 1-8 Adult goals and activities for language development during infancy.

Age	Adult Goals	Adult Activity
birth to 2 months	1. to create a trusting, intimate relationship 2. to take pleasure in the reciprocal infant–adult interactions 3. to help infant calm and regulate self 4. to verbally communicate and promote a two-way pattern of responses 5. to maintain eye contact and spend time face to face 6. to seek to create an appropriate environmental moderation level	1. anticipate and satisfy infant needs 2. show interest and provide positive reactions and joy in the infant's presence and communicative attempts 3. provide sights, sounds, touches, and playful companionship 4. talk, croon, whisper, sing, and mimic infant gestures 5. repeat infant sounds 6. provide a comfortable environment that satisfies the child's needs
2–6 months	1. to keep alert to infant attempts to communicate distress or needs 2. to strengthen growing bond of enjoyment in adult–infant "together time" and explorations 3. to recognize child individuality—moods, likes and dislikes, uniqueness 4. to encourage "you talk" and "I talk" behaviors 5. to see infant gestures as possibly purposeful 6. to hold child's eye contact when speaking and gain child's attention with animated speech 7. to use clear and simple speech	1. provide adult–infant play time and joint new experiences 2. provide infant opportunities to explore sights, sounds. music, and play materials and indoor and outdoor environments 3. offer "talking" opportunities with others 4. name child's actions, toys, and happenings while changing, bathing, and feeding 5. play baby games such as pat-a-cake 6. use talk and touch as a reward for the child's communication attempts 7. repeat child sounds and gestures
6–12 months	1. to pursue infant interests, tailoring your talk to child focus 2. to promote the idea that language is used for naming and describing 3. to play with rhythm and rhyme in adult–infant communications 4. to speak clearly, emphasizing new words when appropriate 5. to show delight in child's verbal and physical accomplishments 6. to pair your words with actions, happenings, and objects 7. to recognize and respond appropriately to child signaling and words 8. to make sure sound level and noise is appropriate 9. to listen for intent, not perfection 10. to provide safe environment conducive to child exploring and action	1. expand the child's world with neighborhood trips, people, playthings, and experiences 2. name and describe happenings, emotions, actions, and environments as things take place 3. introduce and read board books to the child, letting child explore them 4. sing songs, perform finger plays, and play word games with visual and touching actions 5. listen and pause for infant response 6. name body parts, colors, and objects 7. tell simple stories 8. look for physical and verbal cues from the child 9. respond positively to child's communication efforts 10. delight in the world and its joyful pursuits with the child

Because infants' first sensory experiences are part of emotional relationships with caregivers, caregivers' efforts to provide developmental care go hand in hand with providing positive emotional support in daily reciprocal exchanges between the child and adult. The terms *child-centered* and *child-focused* need to be coupled with reactive, observant, playful, and nurturing adult behaviors. This type of infant care is nearly impossible when adult–infant ratios are inadequate.

Generally, the types of adults who promote language are those who are alert to the child's achievements, notice them, and enjoy interacting. These adults offer novelty, assistance, and enthusiasm in addition to focusing on the child's interests. Mangione (2010) believes that the emotional security that infants derive from positive, caring relationships with primary and secondary care providers serves as a buffer for the negative stresses that the infant might encounter in daily experiences.

1-6a Baby Games and Explorations

Almost daily, infants seem to increase the ways they can explore and enjoy verbal-physical games. Birchmayer et al. (2008) urge caregivers to explore creative ways to communicate with infants to sustain their interest:

> For very young children, spoken language can be extended through face and body games and rhymes. Though infants still will not understand many or even most words used, they will nevertheless enjoy the sound, rhythm, and tone of the language and other creative elements of the experience. (p. 31)

Most adults know that singing or dancing while holding an infant are good ways to comfort a fussy child or to foster interest in place of boredom. Because some infants are newly experiencing game play at a childcare center, it is important to watch for stress signs and tenseness. Some infants adapt readily and enjoy immediately. Others are more cautious and need a slow introduction to any bouncing or other baby movements. Infants may also register boredom or tiredness when the game is no longer fun, signaling the need for a new activity or a rest.

Infant educators create their own games and activities that are enjoyable to both infants and caregivers. They become aware of their infants' focus and reactions. Games that deal with child anticipation often elicit smiles or giggles. Playing classics such as peekaboo or Johnny Jump Up or hiding an object under a cloth has delighted generations of children. Sensory activities include gently tying a soft tinkling bell to the wrist or leg of an infant, stringing soft lights overhead that are just out of reach, and creating a mass of bright ribbons and fabrics that are tightly secured in the center for the infant to explore.

Experts recommend that, from a baby's earliest days, caregivers begin with simple imitation games during face-to-face interaction, making sure to pause long enough for the infant to take in the information and mount a response. The best distance for these games is 8 to 12 inches away from the child's face. Imitation of the baby's movement or vocal efforts is also suggested, as is rewarding the baby's effort with attention or smiles.

The following classic language and body action play activities have brought delight to generations of infants. The most enjoyed play activities include tickling, bouncing, and lifting with accompanying words and rhymes.

This Little Piggy

(Each line is recited while holding a toe, moving toward the pinkie.)

This little pig went to market.

This little pig stayed home.

This little pig had roast beef.

This little pig had none.

This little piggy cried, "Wee, wee, wee, wee!" all the way home.

(First published in 1728.)

Pat-a-Cake

(Recited while helping the child with hand clapping.)

Pat-a-cake, pat-a-cake, baker's man.

Bake me a cake as fast as you can.

Pat it and poke it and mark it with a "B,"

And put it in the oven for baby and me.

So Big

Say, "Look at you—so big!" Slowly raise both of the infant's arms up, extending them over the child's head while

saying, "[child's name] is so-o-oh big" and then slowly bring the arms down.

Repeat.

Say the child's name slowly as you raise the infant close to your face at eye level. Then say, "So-o-oh big." Then gently say, "Wow, wow, wow—what a baby. A so-o-oh big baby!" with a big smile.

1-6b Musical Play

Music, singing, and musical expression appear to be a central part of the crucial interaction that occurs between caregivers and infants as infants develop over the first year of life. Two types of musical or singing interaction take place: (1) a soothing go-to-sleep lullaby-style interaction and (2) a playful, upbeat adult behavior that might be described as rhythmic and joyful. The first style is seen as caregivers attempt to regulate or promote a particular infant state (such as relaxation, contentment, or sleep), and the second style communicates emotional information (such as mutual enjoyment and love of music).

Experts believe that babies as young as three months can distinguish among certain melodies. Musical infant babbling has been described as tonal and rhythmic babble. *Tonal babble* is babbling in a single pitch, the babble sounding like a monotone singer. In *rhythmic babble*, the child's body or voice displays a rhythmic beat or quality. Geist et al. (2013) share that research implies that even the youngest children have the potential to inherently respond to music and to mathematical constructs. Music contains rhythm, tempo, and steady beats, which often make up a rhythmic pattern that infants and toddlers pay attention to. Oftentimes, caregivers rock infants to soothe them using accompanying music or a song. This can involve simple or more complex musical patterns. It is believed that these patterning experiences support later literacy learning.

Nursery, cultural, and folk tunes can be introduced in intimate and pleasant settings. Simple, safe musical instruments are enjoyed, and moving to music is natural to young children. Educators can start with songs they love, ones sung to them as children. They may also use children's music recorded by well-known performers. Some educators recommend Bach preludes and Vivaldi's *Spring* Symphony, along with other classical pieces. Yet others recommend popular children's bouncy selections. Two benefits of musical activities for some older preschoolers and primary children are believed to be enhanced abstract reasoning and **spatial-temporal reasoning**.

Scientists are finding that the human brain may be "prewired" for music. They suspect that some forms of intelligence are heightened by music. Although somewhat controversial, some researchers believe that learning musical skills in childhood can help children do better at mathematics. Only additional studies with more children will prove ways in which music can produce specific or lasting benefits in cognition.

See Additional Resources at the end of this chapter for favorite musical and movement activities and songbooks.

1-7 Early Reading and Writing Practices Common Core

Common Core State Standards in the English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects (2010) are affecting language and literacy instruction at all educational levels and may modify or change how caregivers interact with children in Pre-K programs, as well as the curriculum to be planned for them. Although the standards are designed for grade levels K–12, they are sure to prompt Pre-K programs to examine how they align to preschool practices. The standards have been adopted by most states and have been influential in guiding other states's individualized standards, and the recommended instructional goals are being exercised in almost all curriculum areas, including English language arts.

Giving young children the belief that they are capable communicators starts with alert infant caregivers who provide attention to and are aware of the infant's nonverbal communicative actions. What is at first an infant caregiver's guesswork concerning an infant's state of being—be that hunger, tiredness, distress, or well-being—leads to the adult's ability to spot the infant's communicating behaviors and act effectively and in a reciprocal manner. The infant soon begins to understand that they can influence how others

spatial-temporal reasoning—the mental arrangement of ideas and/or images in a graphic pattern indicating their relationships over time.

(home caregivers and teachers) interact with them. The child becomes even more successful at communicating wants or needs.

Educators' and early childhood caregivers' goals include more than teaching language and literacy. They aim to create a child's learning habits and disposition that develop from the joy and excitement of learning. This is encouraged by the exploring, engaging, and discovering that happens in activities and experiences during the early years. Hopefully, a love of learning will be retained in future schooling. Many early childhood centers are developing new ways to equip children to be successful when they enter Common Core kindergarten classrooms.

1-7a Reading to Infants

Some parents read books aloud during a mother's later stages of pregnancy, believing the practice will produce some positive results. Some infants seem to give greater attention to stories read to them before their birth, but conclusive research evidence has yet to verify this. Zambo and Hansen (2007) suggest that from birth to three months, read-alouds are purely an emotional connection between the infant and caregiver:

> Being held, feeling good, and having a familiar, comforting voice are more important than the kind of book or the content of the story. Lullabies, singsong stories, and other repetitive, rhythmic experiences bring joy and comfort to infants and establish a special time together for child and caregiver. (p. 34)

Between 6 and 12 months, some infants will sit and look at a picture book with an adult. It is the sound of the reader's voice that gets the young child's attention, even before the child's focus shifts to the pictures. The warmth and security of being held and the reader's voice make for a very pleasurable combination.

The child may want to grab pages and test the book in their mouth or try to turn pages. Their head may swivel to look at the adult's mouth. If the child has brought a book to the adult, they will usually want to sit on the adult's lap as both go through the book. Children get ever more adept at turning pages as their first birthday nears (Photo 1-14). Familiar objects in colorful illustrations or photographs set on white or plain backgrounds and large faces seem to be particularly fascinating. Search for books that include images that reflect various skin tones and hair colors. Infants and young children enjoy books with tactile elements that they can touch

Photo 1-14 These friends read board books side-by-side, beginning to communicate through babbling, facial gestures, and pointing.

and explore and activities that they can easily do or help participate in, such as press buttons, lift flaps, and look in mirrors. Infants also seem to respond well to and enjoy the rhymes or rhythms they hear.

Reading to infants younger than 12 months of age is increasingly recommended, for researchers believe the infant is learning about the sound patterns in words and how words are formed. Book-reading techniques include reading something the adult enjoys with average volume and expression, using gesturing or pointing when called for, promoting child imitation, letting the child turn sturdy pages, and making animal or sound noises. A good rule of thumb is to stop before the child's interest wanes. Adults may find that many infants enjoy repeated reading of the same book. Some parents are very adept at sharing picture books. These parents find **cues** in book features, such as familiar objects, events depicted, sounds, colors, and so on, that give the infant pleasure, as may be evidenced by the adult saying, "It's a dog like our Bowser!" Skilled early childhood educators realize it is the colorful illustrations that attract, so they name and point to features and when possible relate words to like objects found in the classroom. They also attempt to make illustrations relevant to the child's lived experiences.

Colorful books with sturdy or plastic-coated pages or board books are plentiful. Books made of cotton fabric and ones with flaps to lift and peek under; soft, furry patches to feel; rough sandpaper to touch; and holes to look through or stick a finger through are examples of books that include enjoyable sensory exploration opportunities. Homemade collections of family photographs have delighted many young children. Faces and common household objects in illustrations catch infants' attention. Picture books with simple, large illustrations or photos that are set against a contrasting background and books that are constructed to stand on their own when opened are also popular.

There are a number of literary classics (although not all experts agree to the same titles) that many children in the United States encounter. Many of these involve rhyme and rhythm. They have, over time, become polished gems passed on to succeeding generations.

1-7b Recordings

Growing numbers of CDs, tablet activities, and videos are being produced for infants. Infants watch, listen, and sometimes move their bodies rhythmically as they engage with the content. Research has yet to confirm the educational or language-developing benefits claimed by manufacturers of audios or visuals. In *The Journal of Pediatrics*, Interlandi (2007) reports on a study that included a group of 1,000 families and reviewed the use of infant DVDs; this report suggests that babies who watch recordings fared the worst with DVDs in comparison to several other types of programming in terms of educational or language-developing benefits:

> Exposure to educational shows, like "Sesame Street," and noneducational ones, like "Spongebob Squarepants," had no net effect on language, researchers said—but for every hour that infants 8 to 16 months spent watching the baby DVDs, they understood six to eight fewer words, out of a set of 90, than infants who didn't watch. (p. 14)

1-7c Early Experiences with Writing Tools

As early as 10 to 12 months, infants will watch intently as someone makes marks on a surface or paper. They will reach and attempt to do the marking themselves. Large chalk, thick crayons, or large crayon "chunks" are recommended for exploring, but caregivers are reminded to supervise their use closely because of infants' tendency to put objects into their mouths. Large-sized paper (e.g., torn, flat brown grocery bags) taped at the edges to surfaces and chalkboards work well. The child may not realize the writing tool is making marks but may imitate and gleefully move the whole arm.

1-8 Monitoring Infant Development

Researchers point out that normal paths of development within various domains serve as reference points to assess infant competence. Infant assessments undertaken by educators

cues—prompts or hints that aid recognition, such as a caregiver pointing to and/or saying "teddy bear" when sharing a picture book illustration. This is done because the infant is familiar with their own teddy bear.

try to identify strengths and developmental areas in which the infant and/or family may need supportive assistance to promote optimal infant growth. Maternal health histories sometimes provide clues, as do home visits and daily or periodic educator–family interactions. An examination of whether the school's schedules, activities, staff, and curriculum need to change or adapt takes place frequently so that each child's individual needs have every chance of being met.

Infants should be observed daily with an eye toward assessing developmental milestones and mental and physical health, and educators must be knowledgeable of ages and stages. In a busy center, making dated notes for individual files is suggested as new, questionable, or important behaviors are observed. A notepad kept in a handy pocket is recommended. Frequent staff meetings should discuss individual infant language behaviors and development, followed by planning sessions that create individual learning plans and family consultations when necessary.

Eiserman and associates (2007) note that hearing loss may be an "invisible" condition that might not be easily noticed by caregivers not trained to screen for them. There have been dramatic improvements in hearing screening technology and growth in the number of hospitals that do at-birth screenings in the past decade.

1-8a Implications for Families

Family attitudes about their infant's communicating abilities may influence the infant's progress, in part by affecting how the family responds to the infant. These attitudes are the early roots of the critical partnership between adult and child and the child's sense of feeling lovable and powerful. Consequently, they influence the child's self-assessment.

Special infant projects to promote later school success have provided information in this area. Positive home factors include the following:

- a lot of attention by socially responsive caregivers
- little or no disruption of bonding attachment between infant and primary caregiver(s) during the first year
- availability of space and objects to explore
- good nutrition
- active and interactive exchanges and ample playtime
- parent knowledge of developmental milestones and the child's emerging skills
- parent confidence in infant-handling
- maintenance of the child's physical robustness
- positive attention and touch in play exchange

Parent (or family) stress and less-than-desirable quality in child–parent interactions seem to hinder children's language development. Because most families face stress, a family's reaction to stress, rather than stress itself, is the determining factor. In today's busy families, time spent interacting and talking to infants and young children needs to remain a family priority.

Good advice for families includes not worrying about teaching or instructing as much as creating a rich and emotionally supportive home atmosphere. A rich atmosphere is one that offers opportunity and companionship rather than expensive toys and surroundings. Current research indicates that families who spontaneously speak about what the child is interested in and who zoom in and out of the child's play as they go about their daily work are responsive and effective families. Also, families should know that early and late "talkers" usually show little difference in speaking ability by age three. The variation between children with respect to the onset and accomplishment of most human characteristics covers a wide range when considering what is normal and expected.

Munir and Rose (2008) describe healthy social behavior in infancy, as well as infants who display possible early autistic behaviors:

> Healthy infants as young as six or eight months do communicate and respond nonverbally to social cues. Most look up or turn at the sound of their name. By 12 months, they typically babble and point at objects. By 16 months, they say single words; by 24 months, two-word phrases. In contrast, children with autism seldom make meaningful eye contact or respond to familiar voices. They may never speak. Their play is often repetitive and characterized by limited imagination. Others may simply flap their hands in excitement or disappointment.
>
> On their own, none of these signs means a child has autism or another development disorder. Nevertheless, if a child has any of these signs, he or she merits evaluation. (p. 64)

Regardless of the setting, experts agree that the primary need of infants and toddlers is emotional connection (Bornstein, 2012). Human

relationships are the key, and emotional development is critical for growth. Children living in poverty, considered to be at risk, may move beyond their at-risk status if they share the following commonalities: They live in large, extended families that provide supportive language stimulation and encouragement; they have no other social or biological risks present; their families safeguard their infants' and older children's health; and intervention and social service programs are accessible. It is isolated at-risk families with multiple risk factors, including abusive home environments, whose children are the most negatively affected.

Summary

1-1 Describe the reciprocal behaviors of infants, parents, and caregivers.

Caregivers and other adults observe and interpret an infant's state of well-being, and they try to understand both general and specific behaviors. They identify child signals and clues and are responsive and alert companions who interact, communicate, and provide consistent care. Caregivers should provide language and intellect-building comments during daily routines and play periods.

Infants search adult faces for facial expression and gain information through their sensory organs. Basic attitudes form through contact and interactions. Attachment bonds form with consistent, affectionate care that satisfies infant needs. This is a two-way process. The quality and quantity of caregiver attention becomes an important factor in infant communication and language growth.

1-2 Name four important influences that may affect an infant's language growth and development.

Important influences in infant language growth and development include: the care and attention that infants experience, the integration of their bodies' growth systems, the growing cognitive ability and intellectual understandings they possess, their sensory organ development, their emerging ability to recognize language-specific patterns in the speech they hear around them, and whether they make early attempts to categorize speech sounds. The social and emotional environment can influence the achievement of equilibrium and attachment in infants. Adult attitudes and expectations may affect infant language growth, along with other cultural and social factors.

1-3 Compare two theories of human language emergence.

In comparing two theories of human language growth mentioned in the text, one would have to display a knowledge of the identifying characteristics of two of the following theoretical positions: behaviorist/environmentalist theory, maturational (normative) theory, predetermined/innatist theory, cognitive–transactional (interaction) theory, and constructivist theory.

1-4 Name two areas of particular importance to infant care addressed in Developmentally Appropriate Practice (DAP) guidelines.

The six areas of particular importance addressed in developmentally appropriate practice are "(1) creating a caring community of learners; (2) engaging in reciprocal partnerships with families and fostering community connections; (3) observing, documenting, and assessing children's development and learning; (4) teaching to enhance each child's development and learning; (5) planning and implementing an engaging curriculum to achieve meaningful goals; and (6) demonstrating professionalism as an early childhood educator" (NAEYC, 2020).

1-5 Discuss the behaviors and vocalizing efforts that infants use to communicate their needs and desires.

Infant behaviors and vocalizing efforts start with crying, body movements, and body positions. They develop mutual gazing behavior, and early proto-conversations with caregivers begin. Infants respond with noisemaking and eye contact. Infant noises include sucking, sneezing, coughing, and feeding noises. Later, these early noises are accompanied with cooing and vowel-like sounds or discomfort noises and sounds. Infants usually display a pleasure in engaging with others and an eagerness to communicate. Infants find that their actions and vocalizations can result in caregiver attention and sometimes action.

1-6 Describe what caregiver actions should take place when infants develop joint attentional focus.

When infants gain the ability to focus jointly with caregivers, their caregivers are responsive and seek reciprocal interactions. Caregivers seek to offer optimal opportunities for speech and language development. This includes teacher pointing, pairing and connecting words with objects and events, and perhaps imitating an infant's object-directed actions. Emotional reactions to an event are shared and noted by teachers. Shared reference associations lead to eventual meaningful language usage. First words or sounds are usually simple associates of objects or situations.

1-7 Name and comment upon early reading and writing activities in late infancy.

Early reading activities in late infancy include reading books, singing lullabies and songs, providing storytelling experiences, and sharing other language-developing experiences. The text suggests that reading materials and activities should contain repetitive, musical, and rhythmic features to attract older infants. Reading books aloud is also designed to promote child enjoyment and social-emotional togetherness. When possible, book features are to be related to children's life experiences, and naming illustrative features and pointing to objects together are suggested. Early writing activities mentioned in the text included safe writing tools and sturdy taped-down paper for a child to scribble on.

1-8 Explain ways in which infant centers monitor each infant's language and communicating behaviors.

Infant centers monitor each child's progress in a number of ways, including conducting assessments, creating health histories, and continually observing if each infant's developmental needs have been met. Developmental milestones are recorded and individual growth files are developed. The center's program and schedules are adjusted and reviewed during planning sessions to assure that quality care is offered for each infant. Continual communication with parents and families is undertaken, and the school encourages positive home language growth-producing features, activities, and experiences for parents and caregivers to incorporate at home.

Additional Resources

Readings

Anderson, N. A. (2007). *What Should I Read Aloud? A Guide to 200 Best-Selling Picture Books.* International Reading Association.

Apel, K., & Masterson, J. (2012). *Beyond Baby Talk: From Speaking to Spelling: A Guide to Language and Literacy Development for Parents and Caregivers.* Harmony.

Bjorklund, D. F. (2011). *Children's Thinking: Cognitive Development and Individual Difference.* Cengage Learning.

Charmer, K., Murphy, M., & Clark, C. (2006). *The Encyclopedia of Infant and Toddler Activities.* Gryphon House.

Gerber, M., & Johnson, A. (2012). *Your Self-Confident Baby: How to Encourage Your Child's Natural Abilities—from the Very Start.* Wiley Publishers.

Karp, H. (2002). *The Happiest Baby on the Block.* Bantam Dell.

McGuinness, D. (2004). *Growing a Reader from Birth: Your Child's Path from Language to Literacy.* W.W. Norton & Co.

Murray, C. G. (2007). *Simple Signing with Young Children: A Guide for Infant, Toddler, and Preschool Teachers.* Gryphon House.

Infant Books

Aston, D. H. (2006). *Mama Outside, Mama Inside.* Henry Holt.

Bauer, M. D. (2003). *Toes, Ear, and Nose.* Little Simon.

Boyton, S. (2004). *Moo Baa, La La La!* Simon & Schuster.

Hindley, J. (2006). *Baby Talk: A Book of First Words and Phrases.* Candlewick Press.

Intrater, R. G. (2002). *Hugs and Kisses.* Scholastic.

Saltzberg, B. (2004). *Noisy Kisses.* Red Wagon.

Infant Play Games

Goldberg, S. (2018). *Fun Baby Learning Games: Activities to Support Development in Infants, Toddlers, and Two-Year-Olds.* Gryphon House.

Silberg, J. (2012).125 *Brain Games for Babies.* Gryphon House.

Silberg, J., & D'Argo, L. (2001). *Games to Play with Babies.* Gryphon House.

Wittmer, D. (2017). *The Encyclopedia of Infant and Toddler Activities: For Children Birth to 3.* Gryphon House.

Infant Music, Movement Activities, and Songbooks

Beaton, C. (2008). *Playtime Rhymes for Little People.* Barefoot.

Gallagher, J., & Sayre, N.E. (2014). *Movement and Music: Developing Activities for Young Children.* Pearson.

Helpful Websites

Better Brains for Babies

http://www.fcs.uga.edu

Current research in infant brain development.

National Parent Information Network

http://npin.org

Contains readings and parenting resources.

Sensory Awareness Foundation

http://www.sensoryawareness.org

Lists available infant experiences.

The Program for Infant/Toddler Care

http://www.pitc.org

Responsive care guides.

Educaring: Resources for Infant Educarers

https://www.rie.org/

Responsive caregiving guidance and professional development.

Zero to Three

http://www.zerotothree.org

Articles from the National Center for Infants, Toddlers, and Families.

2 The Tasks of the Toddler

Objectives

After reading this chapter, you should be able to:

- **2-1** Name four conventions of the English language that toddlers learn about speaking.
- **2-2** Describe how toddlers move from using first words to using sentences.
- **2-3** Identify three common characteristics of toddler language.
- **2-4** State two criteria for selecting books, and describe four recommended techniques when reading books to toddlers.
- **2-5** Identify three suggestions for toddler teachers and parents concerning toddlers' opportunities to explore and experience their environment.

NAEYC NAEYC Program Standards

- **1.B** Building Positive Relationships Between Teachers and Children (Accreditation Assessment Items 1B.1, 1B.2, 1B.3, 1B.6, 1B.7)
- **1.F** Promoting Self-Regulation (Accreditation Assessment Item 1F.2)
- **2.D** Language Development (Accreditation Assessment Item 2D.2)
- **2.E** Early Literacy (Accreditation Assessment Items 2E.1, 2E.2)
- **3.E** Responding to Children's Interests and Needs (Accreditation Assessment Item 3E.7)
- **3.F** Making Learning Meaningful for All Children (Accreditation Assessment Item 3F.1)
- **3.G** Using Instruction to Deepen Children's Understanding and Build Their Skills and Knowledge (Accreditation Assessment Item 3G.1)

DAP Developmentally Appropriate Practice (DAP) Guidelines in Action

- **1** Creating a Caring, Equitable Community of Learners (Guidelines 1.A, 1.B, 1.D, 1.E)
- **2** Engaging in Reciprocal Partnerships with Families and Fostering Community Connections (Guidelines 2.A, 2.B, 2.E, 2.F, 2.G)
- **4** Teaching to Enhance Each Child's Development and Learning (Guidelines 4.A, 4.B, 4.C, 4.D, 4.E, 4.F, 4.G, 4.H)
- **5** Planning and Implementing an Engaging Curriculum to Achieve Meaningful Goals (Guidelines 5.A, 5.D, 5.F)

Common Core Common Core State Standards for English Language Arts and Literacy

- **L.CCR 4** Determine or clarify the meaning of unknown and multiple meaning words and phrases.