



From Birth...For Life

Research Summary

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CANADIAN LANGUAGE &
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FÉDÉRATION CANADIENNE DES SERVICES
DE GARDE À L'ENFANCE

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This project is funded in part by the Government of Canada’s
Social Development Partnerships Program.
The opinions and interpretations in this publication are those
of the authors and do not necessarily reflect those of the Government of Canada.

ISBN:1-894950-28-3

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2007



Early Connections for a Lifetime of Language and Literacy Learning

Children’s language and literacy development is a complicated process influenced by their biology and environment. Most follow a typical progression through a series of developmental milestones. However, the age at which they reach these stages varies from child to child depending on gender, language experience, socioeconomic status and to a lesser degree, birth order (Baker & Wigfield, 1999; Burchinal, Peisner-Feinbreg, Pianta, & Howes, 2002; Nicoladis & Genesee, 1997). Despite this variability, an understanding of the various stages can aid ELCC practitioners in monitoring and promoting growth.

Infancy: First steps into language

In the prelinguistic stage of infancy, children acquire a number of skills that will develop into verbal communication. From birth, infants are biologically prepared to pay attention to the sounds of speech and to process language by breaking it down into phrases, words and sounds. Parents and practitioners can encourage this natural ability by speaking often to and around children. It is common in some cultures – including European/North American culture – to speak to babies and young children using a slower rate and exaggerated pitch and enunciation (e.g. “Are you mommy’s baby? Yes you are!”). This infant-directed

speech – previously called motherese – can help foster a newborn’s awareness of language. Through exposure to infant-directed speech and other models of language, five-month-olds become sensitive to the most common sounds in their native language and they can distinguish among familiar voices (Jusczyk, 2002). By seven and half months, infants can break down fluent speech into individual words, and at eight months they generally respond to a few words representing people (e.g., “mommy,” “daddy” and the infant’s name). By 11 months, infants understand 10 to 150 words (Fenson et al., 1994).¹

While infants are learning to understand language, they are also developing the skills needed to produce language. For the first two months of life, they primarily vocalize by crying. At approximately two months, infants begin to coo and a few months later begin to babble. Cooing is characterized by vowel sounds (e.g., “aaaaeeee”); babbling involves consonant vowel combinations (e.g., “dadadada”). At around three months, infants begin to engage in vocal turn taking, and by eight months their pattern of vocalization consistently resembles conversations: they are silent while the caregiver speaks and resume vocalizing when the caregiver pauses to listen (de Boysson-Bardies, 1999). Around 11 months infants may create and use protowords, which are unique

¹ Throughout the document when a range of skills is described it indicates the span between the bottom 10% and the top 10% of children in the reference group.

combinations of syllables that infants use repeatedly to refer to specific objects (e.g., “baba” to refer to a pacifier) (Robb, Bauer & Tyler, 1994). At this time some children may also be producing between 0 to 20 real words (Fenson et al., 1994).

Infants in the prelinguistic stage also develop nonverbal methods of communication, such as joint attention. During joint attention, the child follows the caregiver’s gaze toward objects and vice versa. For example, when a practitioner looks at a ball, the infant may follow his or her gaze and also focus on the ball. If the practitioner names the ball, the infant begins to form connections between language and the physical world, which rapidly increases their vocabulary (Campbell & Namy, 2003). Infants also learn to communicate non-verbally by pointing, making facial expressions and waving. As with verbal communication, infants’ use of gestures can vary widely. For example, eight-month-old infants may use between 3 and 20 gestures; 14-month-olds may use from 23 to 52.

Toddlers: Exploring the world of words

Around 12 months and older, children begin to understand and produce speech to interact with others and to express their needs and wants. Although toddlers may develop vocabulary at varying rates, their language development tends to follow a similar sequence. Between 12 and 24 months they start to use holophrastic speech, in which single words represent a number of different meanings depending on the context (Barrett, 1982). For example, a toddler may use the word “sock” to mean “the sock is over there,” “put the sock on,” or “take it off.” The next stage is often called telegraphic speech, named for its similarity to the language typically used in a telegram. Telegraphic speech contains short, two-word sentences made up of crucial content words, and the meaning of these sentences can vary widely depending on the context (Bloom, Lightbrown, Hood, Bowerman, Maratsos & Maratsos, 1975). For example, “mommy go” could mean “Mom is leaving,” “Mom, I want to leave,” “Mom, I want you to leave,” or “Is Mommy leaving?” depending on the specific context in which the phrase is used.

Between the ages of 12 to 24 months, children understand considerably more words than they produce. At 12 months toddlers may understand between 25 and 200 words, yet may produce no words or as many as 25 words (Fenson, et al., 1994). Some children rapidly increase their spoken vocabulary in a short period of time (sometimes called a “vocabulary burst”). Other children develop language slowly over longer periods (Fenson et al., 1994; Goldfield & Resnik, 1990). Over the preschool period, typically developing children learn 17 words on average per week until the age of seven. However, the number of words learned is heavily influenced by their environment. Those children who hear less speech in their home or ELCC setting are generally slower to learn new words, acquiring approximately 11 words on average per week in the early years (Biemiller, 2005). Thus, by 24 months toddlers may produce between 50 and 550 words (Fenson, et al., 1994).

TABLE 1

Summary of Language and Literacy Milestones (Infancy)

Age	Milestone
Newborn	<ul style="list-style-type: none"> • Startled by loud noise • Calmed by the sound of a familiar voice
1-2 months	<ul style="list-style-type: none"> • Smiles when spoken to • Makes cooing sounds
3-7 months	<ul style="list-style-type: none"> • Responds differently to different intonations (happy, angry) • Babbles
8-12 months	<ul style="list-style-type: none"> • Turns head toward sound • Pays attention when spoken to • Responds to name • Understands between 5 and 200 words (approximately) • Recognizes phrases from games and routines (e.g. peekaboo)

(Fenson, et al., 1994; Boyson-Bardies, 1999)

Toddlers often make errors when producing new words (de Boysson-Bardies, 1999). They may generalize the meaning of words inappropriately by over- or under-extending the meaning. Overextending the meaning of a word occurs when a toddler uses “Rover” to refer to all dogs, not just his own dog. Conversely, under-extending occurs when the toddler uses “dog” to refer only to their pet and not to other dogs. Once again, language exposure influences the number and type of words learned by an individual child. ELCC practitioners may foster language development by elaborating and using a variety of synonyms (e.g., big, large, gigantic) in everyday contexts (Hoff & Naigles, 2002).

Toddlers demonstrate their growing language awareness by comprehending and acting on words and phrases without external hints. At approximately 13 months, toddlers understand and respond to some spoken instructions, such as “Look at the sleeping dog,” without hints from body language or eye gaze (Thomas, Campos, Shucard, Ramsay & Shucard, 1981). As children grow they become more sensitive to the role of each individual word in a phrase and other aspects of grammar. By 20 months, children use cues from the sentence structure and from the context to extract the meaning of words. For example, when exposed to a new pretend word like “daxy,” children use the surrounding sentence context to determine whether the new word is a proper noun (e.g. “This is Daxy”), or a common noun (e.g., “This is a daxy”) (Bélanger & Hall, 2006).

Nonverbal communication also continues to improve steadily over the 12 to 36 month period. Toddlers become experts at joint attention and begin to understand the meaning of other non-linguistic gestures (Behne, Carpenter & Tomasello, 2005). In one study, parents looked and pointed at an uninteresting box. Fourteen-month-old children followed their parent’s non-verbal signal and guessed that there was a reason for calling attention to the box. Based on this

guess, the children generally chose to look inside the box, where they found a prize (Behne et al., 2005). This demonstrates that children understand that adults focus on people or objects for a reason, and toddlers use that information to guide their actions.

TABLE 2	
Summary of Language and Literacy Milestones (Toddlers)	
Age	Milestone
12 months	<ul style="list-style-type: none"> • Uses 0 to 30 words
12-18 months	<ul style="list-style-type: none"> • Uses learned words and phrases over and over again
18 months	<ul style="list-style-type: none"> • Uses 10 to 250 words
18-24 months	<ul style="list-style-type: none"> • Uses at least 10 words; may use as many as 550 words • Understands basic directions such as “put the book on the shelf” • Combines words into two-word sentences • Speaks intelligibly approximately two-thirds of the time • Uses at least two pronouns correctly (e.g. I, you, she, he, we, and they)
24-36 months	<ul style="list-style-type: none"> • Uses at least 50 but may use more than 700 words • Uses some plural forms of nouns • Uses some past tense forms of verbs • Knows and can point to main body parts when asked • Understands and responds to most simple questions • Takes part in brief conversations • Knows at least three prepositions (in, on, under)
<p>Note: The information presented forms a consensus in the literature as these milestones are frequently cited in overview texts and websites.²</p>	

² Boyson-Bardies, 1999; Child Development Institute, 2005; The Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA), 2006; Fenson et al., 1994

Preschool (ages 3 to 4): Playing with letters and grammar

Between the ages of three and four, children's utterances become increasingly sophisticated and they begin to produce grammatically correct speech. They use "-s" to indicate plural, and "-ed" to indicate past tense. Initially, when children are learning to use affixes they may over-generalize the use of these grammatical units. For example, a child might use the regular rule when it should not be applied, and say "tooths," instead of "teeth" or "goed," instead of "went." Overgeneralization of grammatical rules, while technically incorrect, is a positive sign that children are learning and applying the rules of grammar. It is usually not effective for adults to correct these types of errors; they usually self-correct over time (Marcus, Pinker, Ullman & Hollander, 1992).

At age three, early literacy skills begin to develop and then continue to progress in parallel with language skills. Literacy development is determined heavily by the physical and social environment provided by parents and ELCC practitioners (Jalongo, Dragich, Conrad, & Zhang, 2002). Through shared storybook reading, children learn to hold a book, turn the pages in order, look at the pages from left to right, and follow along with the illustrations. During reading, children may assign basic labels and ask questions about the visual content of the book. For example, in response to "Where is the duck?" the child points to the image, or the child may point at the duck and ask, "What's that?" Simple picture books are particularly useful for fostering these skills (Jalongo et al., 2002). The skills children develop are also influenced by direct teaching. For example, with instruction, three-year-olds can name the letters of the alphabet and segment the initial sounds of a word (e.g., /p/ of "pot" or the /m/ of mommy; Aram & Biron, 2004; Whitehurst & Lonigan, 1998). Children actively taught about letters, phonological awareness (e.g., ability to recognize

and talk about the sounds of speech) and writing skills perform better on literacy tasks than older children who were not provided with this training (Aram & Biron, 2004).

TABLE 3	
Summary of Language and Literacy Milestones (Preschoolers)	
Age	Milestone
3-4 years	<ul style="list-style-type: none">• Names common objects in picture books or magazines• Uses sentences of three or more words, often with adult like grammar• Asks questions of who, where and why• Uses past tense often• Tells a simple story• Follows simple directions easily, even when the target objects are not in visual range• Repeats words, phrases, syllables and sounds
Note: the information presented forms a consensus in the literature as these milestones are frequently cited in overview texts and websites. ²	

Preschool (ages four to six): Connecting language and literacy

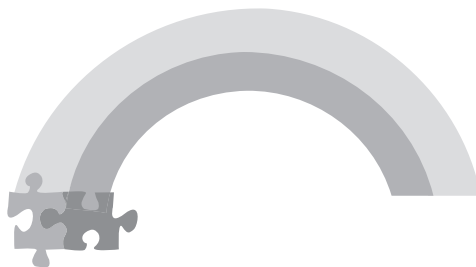
At age four many children participate in organized activities or lessons, and by age five or six many children are enrolled in kindergarten or first grade. During the later preschool years, children’s vocabulary increases at a rate of 800 to 1000 words per year (Biemiller & Slonim, 2001). By late in their fifth year, children can comprehend and produce thousands of words (Anglin, 1993; Biemiller & Slonim, 2001). Children use their expanding vocabulary to produce more complex language. Older preschoolers begin to skilfully use language and grammatical conventions to form questions (e.g., “What was I eating?”), negatives (e.g., “I was not eating carrots.”) and compound sentences (e.g., “I was eating cheese and it was yummy.”). They also understand relational contrasts (e.g., big-little, heavy-light) and use them in sentences (e.g., “My truck is bigger than yours.”). At age five, children generally understand and use passive sentence structure (e.g., “The car was hit by a truck.”) (Shaffer, Wood, & Willoughby, 2002).

At this stage, phonological awareness becomes an increasingly important skill. Around age four, children demonstrate this skill by clapping along with each syllable or sound and by recognizing words that rhyme (e.g. bat and cat) (National Institute of Child Health and Human Development [NICHD], 2000). Growth in phonological awareness leads to many new skills. For example, children become able to identify which word does not belong in a group using phonological information (e.g., rat, rag, river, bag). They also become able to break words into their parts (e.g., /b/-/ae/-/t/ in bat) (NICHD, 2000).

Older preschoolers also have a growing understanding of written language and the conventions of print. Four-year-olds begin to understand that sentences are broken into words, words are made of letters and letters are oriented in a certain way on the page (Levy, Gong, Hessel, Evans, & Jared, 2006). Many five-year-olds can handle a picture book, turn the pages correctly and form a comprehensive narrative based on the visual images displayed (Jalongo et al., 2002). Typically, they have good print awareness skills (e.g., letter orientation), but cannot distinguish real words (e.g., basket) from strings of consonants and vowels (e.g., bneaort) or from pretend words (e.g., bornt) (Levy et al., 2006).

Age	Milestone
4-6 years	<ul style="list-style-type: none"> • Speaks in a way that is intelligible to unfamiliar adults • Uses adult-like grammar consistently • Uses fairly long sentences, with some compound and complex sentences (e.g., “My sister plays soccer and wears a uniform,” or “When I get bigger, I can wear a uniform too.”) • Knows common opposites: hard-soft, big-little • Counts to 10 and understands number concepts to 4 or more • Repeats sentences as long as nine words • Describes use of common objects (e.g., shoe, hat, table) • Uses descriptive words spontaneously (e.g., “This Play-Doh is soft”) • Makes up rhymes, including nonsense rhymes and chants • Tells a complete story with a beginning, middle and end • Predicts what happens next in a story
<p>Note: the information presented forms a consensus in the literature as these milestones are frequently cited in overview texts and websites.²</p>	

² Boyson-Bardies, 1999; Child Development Institute, 2005; The Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA), 2006; Fenson et al., 1994



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