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CHAPTER 2

Emergent Literacy

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CASE STUDY

Ms. Johnson is concerned about Ileana, one of the 4-year-old students in her pre-kindergarten classroom. Ileana consistently uses what sounds to her like baby talk typical of a much younger child. For example, just the other day, Ileana was pretending that a container was a crib and was putting her baby doll into it, saying, "Baby go. Baby go right here. Baby little." During circle time, while Ms. Johnson was reading a rhyming book, Ileana showed almost no appreciation of the tortured and humorous rhymes that appeared in the book. Ileana often cannot answer the most basic questions about books that she reads to the class. She does not recognize the *I* or *l* or *a* in her own name. Ms. Johnson is considering how to address Ileana's needs.

From the moment babies start to make sense of their world, they embark on the development of skills that will be relevant to their later literacy. As noted in the Introduction, literacy has been an important window through which psychologists have gained insight into the mind (van den Broek & Gustafson, 1999). Indeed, in today's society, the development of literacy is intertwined with, and begins almost as soon as, general cognitive development.

Although we usually consider the term *literacy* to mean a person's ability to read and write, as we saw in the previous chapter, these skills begin to develop long before passing through a schoolroom door. Scholars who study *emergent literacy* recognize that young children bring a great deal of specific informal (and sometimes formal) knowledge about language, books, and print with them as they enter

school. This early knowledge forms the seed from which their formal knowledge of reading develops. Indeed, research on emergent literacy over the last 30 years has surprised us by demonstrating just how important this early knowledge is for learning to read and write.

THE FORMER READING READINESS CONSTRUCT

The importance of children's informally acquired knowledge of language and literacy has not always been recognized by psychologists or educators. Between the 1950s and 1970s, preschool and kindergarten children were generally considered too immature to begin the process of learning to read. Before the idea of emergent literacy was widely accepted, the term *reading readiness* was commonly used to refer to the likelihood of a child's being successful in learning to read when given formal instruction. As early as the 1930s (e.g., Lee, Clark, & Lee, 1934), attempts were made to develop reading readiness tests that could be given to children prior to first grade. A number of these tests were developed, marketed, and used in schools throughout the 1950s, 1960s, and 1970s (e.g., Clymer & Barrett, 1966; Harrison & Stroud, 1950; Hildreth, Griffiths, & McGauvran, 1965). Most were based on the idea (loosely derived from the work of Jean Piaget—e.g., Piaget & Inhelder, 1969; and Arnold Gesell—e.g., Gesell, 1925) that children needed to mature to a certain level of general cognitive development to be "ready" to learn to read. Children who did not pass these readiness tests were assumed simply to be not yet mature enough to benefit from reading instruction.

There were a number of problems with these tests and how schools typically used them. First, there was no uniform agreement as to which skills should be measured to determine reading readiness (Rude, 1973). Some of the skills assessed on some tests were shown by later research to actually predict later reading success (e.g., letter recognition), but many were not very relevant to reading at all (e.g., ability to draw, use scissors accurately, or copy shapes). In Table 2.1 we can see examples of the kinds of skills examined by some of these early tests of reading readiness.

There was also little recognition that virtually all young children have at least *some* of the basic knowledge needed to learn to read. Many who come to school from diverse backgrounds bring important knowledge that may not show up on standardized tests, for which cutoffs were developed using heavy proportions of children from the mainstream culture (Moll et al., 1992). There was little sense that perhaps these children's diverse literacy knowledge could be used productively to help them learn to read. Instead, the readiness concept suggested that it was simply a matter of waiting for the right time, at which point each child would be "ready" to learn to read.

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TABLE 2.1. Some Skills Examined in Early Reading Readiness Batteries

	Assessment battery		
Skill	Metropolitan Readiness Tests (Hildreth, Griffiths, & McGauvren, 1965)	Clymer–Barrett Prereading Battery (Clymer & Barrett, 1966)	Gates–MacGinitie Readiness Skills Test (Gates & MacGinitie, 1968)
Vocabulary	✓		
Listening	✓		
Letter identification	✓	✓	✓
Coordination/copying	✓	✓	✓
Rhyme		✓	
Initial phoneme discrimination		✓	
Sound discrimination			✓
Blending			✓
Word recognition			✓
Matching	✓	✓	✓

Note. Based on Rude (1973).

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If a child was deemed not ready, based on whichever test the school had purchased, two instructional strategies were commonly considered. Schools could wait to provide reading instruction until such time as the child tested as ready; this strategy often involved retaining the child in kindergarten or placing him or her in a "transition" classroom, in the hope that he or she would be ready sometime during the school year (Hymes, 1958). Alternatively, or sometimes in combination, intensive instruction would be provided in the readiness skills the test had identified as lacking to shorten the time until the child would be able to pass the test (Carducci-Bolchazy, 1978). Thus, in some classrooms, such children would find themselves spending their days copying basic figures, cutting out shapes with scissors, and so on, with the idea that these activities would somehow improve their readiness to read. Of course, this instructional time would have been much better spent actually engaging the child in literacy-related activities.

The *readiness* concept implied to many educators that general cognitive maturity was the main prerequisite to learning to read. Children who had problems learning to read when others their age did not were often viewed as simply delayed in their readiness. Important instructional time was often wasted, as it was hoped that they might simply outgrow the problem.

Eventually, it became obvious that none of these approaches really worked to help children get ready to read (Pikulski, 1988). By the end of the 1960s, it became

obvious that scores on popular readiness tests correlated little with each other and that the tests assessed fairly different skills (Johnson, 1969). The developers themselves came to realize that the best predictors of reading readiness were underlying skills involved in reading itself (e.g., MacGinitie, 1969).

The outcome of the reading readiness approach highlights the need for a good definition and understanding of emergent literacy as the salient construct. Our definition of emergent literacy drives both research and instruction. A wrong-headed construct can lead us to wrong-headed instructional solutions.

CURRENT VIEWS OF EMERGENT LITERACY

In recent years, there has been a decided shift in both our definitions of emergent literacy and how early literacy practices are conceived. Although there is still no consensus as to what knowledge might underpin emergent literacy, ongoing research forms a basis for discussion of several approaches here.

A Cognitive Science Perspective

Whitehurst and Lonigan's work (1998, 2001) captures models of emergent literacy based primarily on a cognitive science approach to reading. They have described emergent literacy skills as comprising two basic domains: (1) inside-out skills and (2) outside-in skills. *Inside-out skills* are the skills that allow a child to translate print into the set of sounds needed to identify a word (and vice versa, for writing), those bottom-up (i.e., stimulus-driven) cognitive skills that are engaged in reading. These skills include children's ability to use lower-level letter features (e.g., the curvy features of the letter S) to identify letters and then translate them into letter sounds (e.g., the /s/ sound made by the letter S). They also include children's ability to manipulate those letter sounds and blend them together to identify a word, and might include children's ability to understand sentence grammar and the use of sentence punctuation.

By contrast, *outside-in skills* are those sources of knowledge that allow the child to comprehend the text that has been translated through inside-out skills. Outside-in skills relate to top-down skills, or conceptually driven cognitive skills that rely on preexisting knowledge that is used in comprehension. These skills include the size of children's vocabulary, both in terms of the number of words they know and the depth of that knowledge (e.g., likely word contexts and possible word combinations, lexical ambiguity, general detail of meanings). They also include the knowledge of the world that children bring to reading comprehension, how language is used in print (i.e., the *written register* discussed in Chapter 1), how it often differs from oral language, and the different types of texts and how they

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are most often used (e.g., stories vs. information vs. directions or informational text). All of this outside-in knowledge provides the foundation that allows children to make an interpretation of the actual print they will eventually read. Figure 2.1 provides a general overview of this model.

Researchers working from this and similar skills-based models seek to identify those skills that best predict later literacy achievement and are thus assumed to be fundamental to emergent literacy. Research is then carried out to determine how the development of these skills unfolds in learning to read and write. In this model, the instructional goal for the teacher of young children is to work to ensure that all students have sufficient levels of these identified emergent literacy skills to prevent reading failure later. Based on research demonstrating the effectiveness of direct instruction, especially in the inside-out skills emphasized in such models, good teachers will provide sequenced, specific instruction in these skills, sometimes in isolation and sometimes in carefully designed contexts, so that specific skills can be focused on and dealt with directly.

The Sociocultural Perspective

The sociocultural perspective of emergent literacy stresses the importance of parents, the family, and the literary environment in which young children develop (Razfar & Gutierrez, 2003). From this perspective, reading and writing are defined not so much as a set of specific skills to be taught and learned, but more as a set of social practices for making meaning from text, specific to particular social contexts, into which children are gradually initiated by the people around them and through which they engage in important socially defined activities (Gee, 2003). Drawing heavily on Vygotsky's (1978) theories of development and learning (see the Introduction), the sociocultural perspective emphasizes the natural literacy contexts and activities in which young children participate prior to entering school or formal literacy instruction. Researchers in this tradition focus on

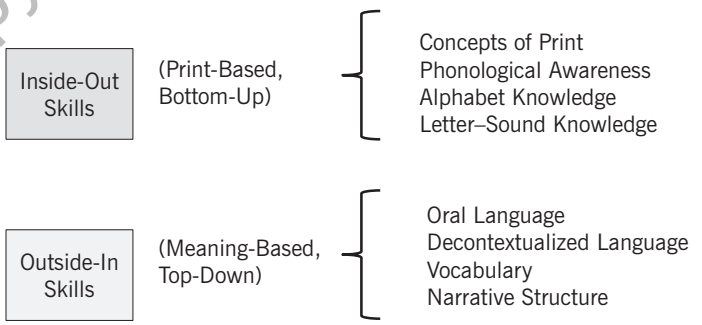

FIGURE 2.1. Model of emergent literacy. Based on Whitehurst and Lonigan (1998).

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adult–child interactions around literacy, particularly in the home and community, and the functions of literacy in those interactions (Heath, 1983). They see the nonconventional understandings that young children develop through these interactions as cues to their developing hypotheses regarding reading and writing. These hypotheses become increasingly sophisticated as children interact with others around literacy materials (Braunger & Lewis, 1998).

Sociocultural researchers such as Michaels and Collins (1984) study children's own narratives to gain insight into their growing understanding of literacy-related narrative structures. They study invented spellings (i.e., the use of alphabetic signs in spontaneous writing) to gauge children's understandings of the alphabet and sound–symbol relationships because they see reading and writing as intertwined elements of literacy practices (Clay, 1975). Rather than giving children a standardized vocabulary test, they are more likely to engage children in conversation about a picture or recent event in their lives, not to evaluate whether they know a specific, standard set of words, but rather to discover what words they have learned in their homes and communities.

Indeed, sociocultural literacy researchers are particularly interested in language and literacy practices in diverse homes, cultures, and communities. They emphasize the importance of avoiding a *deficit view* of children who come from homes where these practices may differ significantly from the "standard" literacy practices taught in schools. That is, they avoid concluding that children's skills are simply deficient. They bring an understanding that school literacy practices in the United States are largely derived from white, middle- to upper-class cultural norms. Identifying variables that predict which children are most likely to become skilled readers is not seen as useful from the sociocultural perspective, since measures based on these predictors will simply identify those children whose home language and practices do or do not correspond to those of this privileged class (Heath, 1983; Michaels, 1981).

Teachers working from this perspective are not likely to start with a list of discrete skills children should master in a preplanned sequence. Rather, they begin by identifying the *funds of knowledge* that children bring with them from their homes and communities (Moll, 1992), through home visits and interviews with parents and other important caretakers. In other words, the job of the teacher is to connect instructional practices to the knowledge that children bring with them to school, encouraging and guiding children as they explore and move into the more formal literacy practices needed in school.

In many ways, the sociocultural perspective directly emphasizes what is missing from the cognitive science perspective, and vice versa. As can be seen from our description of the models above, there is no single unified model of emergent literacy that all researchers agree on. Still, research generated from these models

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has given us a much greater understanding of the complexity and the various sources of knowledge that children bring with them to school in preparation for formal literacy. In addition to the developing understandings of print gained at home through family-based literate experiences with family members described in the previous chapter, there are specific types of knowledge and skills included in all of these models and recognized by most researchers as key components of emergent literacy. We describe these elements in the rest of this chapter.

ENVIRONMENTAL PRINT

Environmental print is the print found in everyday life—in the home, in stores, on the road, and on the labels and logos that appear on food, packaging, signage, clothing, and billboards (Neumann, Hood, & Ford, 2013a; Neumann, Hood, Ford, & Neumann, 2013b). Environmental print is available to all children, rich and poor alike, though, as discussed in the previous chapter, there is actually less legible print and less varied print available in poorer communities (Neuman & Celano, 2001).

Environmental print is not like standard print. For one, environmental print has been designed deliberately to be attractive and draw attention, as can be seen in Figure 2.2. It is typically unique, colorful, and memorable, and mostly noncontinuous; that is, it is mainly single- or multiword labels often found in signage and advertisements, rather than the continuous text found in storybooks, newspaper articles, or directions (e.g., the Walmart logo on its stores, website, and ads). Another key feature of environmental print is its functionality. A child who sees the Cheerios logo on a box of cereal each morning quickly learns that there is breakfast inside. Environmental print is usually designed to communicate its message quickly and simply, as in the case of a STOP sign.

Horner (2005) identified three types of environmental print: community signs (e.g., MacDonalds, STOP signs, Target); labels on household items (e.g., Cheerios, Coca Cola, Froot Loops); and specifically child-directed print (e.g., crayons, Lego, Barbie). The preschoolers he studied were more likely to recognize child-directed print than the other two types of print, but environmental print knowledge expands as children get older. Because of the ubiquitous nature of environmental print, preschoolers from high and low socioeconomic backgrounds often end up with similar levels of this kind of print knowledge (Korat, 2005).

Children begin to notice and interact with environmental print well before their second birthday. They begin to discriminate environmental print from other symbol systems such as numbers and pictures at around 2 or 3 years of age (Levin & Bus, 2003; Yamagata, 2007). Case studies suggest that precocious readers may begin to point out the letters and remark on the print in their interactions with adults (e.g., Lass, 1982). Other times, a caretaker might draw the child's attention

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FIGURE 2.2. Examples of environmental print that children may use to begin the process of learning to read.

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to a piece of environmental print and then pull apart the constituent pieces of the logo (e.g., pointing out the M in the MacDonald's sign), so that the child can begin to discern the relevance of the various parts. Sometimes this type of interaction around print will lead to informal letter instruction by the adult, who continues the interaction by supplying a letter name or sound to go with the print. Thus, adults will sometimes begin to support children's early acquisition of letter names and sounds directly through environmental print. How regularly this actually happens is unclear, and it probably varies from family to family. Purcell-Gates (1996) has suggested that, without this additional adult scaffolding, children may not be able to profit from this exposure to environmental print to begin specific early literacy learning.

The Relevance of Environmental Print for Later Literacy Learning

Given the above depiction of how environmental print might serve as an initial "hook" into literacy for young children (especially with the help of adults around them), it would make sense that children who have good environmental print knowledge might end up developing formal literacy skills earlier or better in

some way. Neumann, Hood, Ford, and Neumann (2011) have proposed a model of literacy skills hypothesizing the route between sociocultural experiences with environmental print and formal reading skills, which can be seen in Figure 2.3. In this model, exposure to environmental print and the interactions that the children have around such print with parents, older siblings, grandparents, or teachers lead them to acquire a very contextualized knowledge of such print called *logographic reading* (Ehri, 1991). In logographic reading, children are able to identify logos from environmental print because of their exposure to such print and the scaffolding that the adults around them provide, but they are not yet able to read conventionally by decoding words in the logos because they do not yet have the necessary alphabetic knowledge. When information in the logos is presented in conventional black and white text, without the colors and stylized writing from the originating logos, preschoolers who are logographic readers cannot read the text from these logos or identify misspellings of them, even though they can identify the logos themselves (Masonheimer, Drum, & Ehri, 1984). This same type of logographic reading has also been observed in nonliterate adults (Cardoso-Martins, Rodrigues, & Ehri, 2003).

The premise that the logographic reading in this model helps children transition to the important process of acquiring emergent literacy skills is controversial. Does simply knowing a lot about environmental print help children acquire important features about the alphabetic principle?

Some researchers claim that the type of reading involved in identifying environmental print is useless for developing the graphemic and phonological analysis that children need to use to engage in conventional text reading (Cardoso-Martins et al., 2003; Lonigan, Burgess, & Anthony, 2000; Reutzel, 2003). Children may show excellent environmental print knowledge, but demonstrate little understanding of letter–sound knowledge, emergent writing, or word recognition skills (Blair & Savage, 2006; Korat, 2005). Thus, having environmental print knowledge by itself does not ensure the development of standard literacy skills. Still, some literacy scholars believe that it is through environmental print that children come to understand the functionality of print itself as a communication device (e.g., Goodman, 1986).

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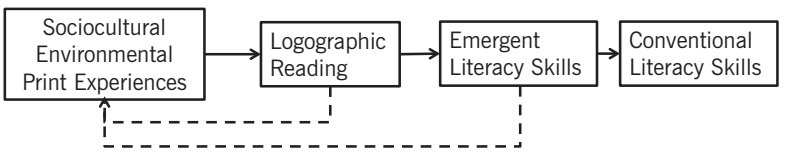

FIGURE 2.3. Model of literacy skills describing the route between sociocultural experiences with environmental print and formal reading skills. Adapted from Neumann, Hood, Ford, and Neumann (2011). Copyright 2011 by, and adapted with permission of, Sage Publications.

Classroom Practices That Use Environmental Print to Develop Emergent Literacy

Preschoolers' preexisting environmental print knowledge may, however, serve as a basis for emergent literacy learning that can be capitalized on in instruction. Cronin, Farrell, and Delaney (1999) found that having environmental print knowledge for a particular logo facilitated children's learning to read the logo words in standard print when they were subsequently given instruction. Thus, knowing the familiar red hexagonal STOP sign may help the child to learn to read the word *STOP* presented outside the context of the sign later. So, when young children have an environmental print logo in their knowledge base, even when they cannot read the print itself, they can use this knowledge to connect instruction of standard print.

Neumann et al. (2013a) turned the idea of using environmental print into a classroom strategy in which children were first introduced to familiar environmental print items. Then, the teacher would separately teach the letters that were common in the environmental print items (e.g., "Say, *m, i, o*"), and go on to point out those same letters in the environmental print words (i.e., the *m, i, o* found in Coco Puffs, Corn Flakes, Pepsi, milk). The children would then practice writing those letters. In an experimental study comparing this environmental print strategy to teaching using standard print, Neumann and her colleagues found that using environmental print as a preschool classroom strategy may produce better instructional outcomes on a variety of emergent literacy measures, such as letter–sound knowledge, letter writing, and print reading, when compared to outcomes following the strategy of introducing new letters in a standard print context. Thus, although environmental print knowledge does not automatically lead to the acquisition of conventional print knowledge, it may support the development of such knowledge when appropriately used as part of an instructional strategy.

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ALPHABETIC KNOWLEDGE

Alphabetic knowledge, an important aspect of emergent literacy, consists of knowing more than recognizing, naming, and writing the letters of the alphabet. It may include knowing the "ABC song" and the ability to discern the difference between letters and other symbol systems such as pictures and numbers. It most certainly includes an understanding of letter sounds and the ability to name the letters, both upper- and lowercase, and their corresponding sounds quickly and accurately. There is a remarkable similarity across children in terms of the pattern with which they acquire alphabetic knowledge (Drouin, Horner, & Sondergeld, 2012). According to Worden and Boettcher (1990), children generally learn to

recognize and name uppercase letters before lowercase letters, and they generally can name them before they can print them. Being able to generate letter sounds fluently is usually one of the last alphabetic skills to develop.

ABC Recitation Knowledge

The earliest knowledge that most children acquire about the alphabet is *recitation knowledge*; that is, being able to recite the alphabet or sing the ABC song from memory (Worden & Boettcher, 1990). Most children can recite the alphabet reliably by age 5 or so (Piasta, 2006; Worden & Boettcher, 1990), although there is a substantial group of children from low-income families that does not have even this level of knowledge by the end of preschool (Norwalk, DiPerna, Lei, & Wu, 2012); such children tend to have very low emergent literacy skills in many areas. Many parents believe that their children "know the alphabet" when they have acquired this recitation knowledge, but children with recitation knowledge may not necessarily be able to connect the sung or recited letters to their visual forms. That is, they may not have an understanding that the pronounced letter [bi:] refers to the written letter *B*. Recitation knowledge, therefore, is just a small part of the story.

Just how fundamental recitation knowledge is for acquiring other aspects of alphabetic knowledge is not clear. Some find it to be moderately correlated with other aspects of alphabetic knowledge (Worden & Boettcher, 1990), whereas others do not (Piasta, 2006). It is probably not predictive among older preschoolers from middle-class homes because most of them can already recite their ABCs.

Letter-Name Knowledge

Letter-name knowledge refers to a child's ability to name uppercase and lowercase letters when they are presented randomly and not within words or with other context cues. Letter-naming ability during preschool is often considered to be the best early predictor of children's literacy success in learning to read during the early elementary school years. According to the Early Childhood Longitudinal Study (ECLS; Denton & West, 2002), 92% of children who were proficient in letter recognition at kindergarten entry were able to read words by sight by the end of first grade, compared to only 62% of children who were not proficient. A more recent review of letter-name knowledge carried out by the National Early Literacy Panel (2008) found only moderate correlations between letter-name knowledge and later literacy skills, ranging from .48 to .54. Piasta, Petscher, and Justice (2012) suggested that children who know even 10 letters by the end of preschool are less likely to have reading difficulties later—but, as with many emergent literacy skills, preschoolers from high-poverty homes often have considerably less alphabetic

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knowledge compared to their middle-class counterparts (Smith & Dixon, 1995). These children may need extensive formal alphabetic instruction in preschool to catch up to their peers; not being able to recognize and name letters reliably pretty much guarantees that a child will struggle to learn to read.

Not all letter names are equally easy to learn (Phillips, Piasta, Anthony, Lonigan, & Francis, 2012). A number of cognitive factors can influence the ease with which letter names are learned. *Distinctiveness* of the letters—"the properties that make one letter easy to discriminate from its alternatives in the alphabet"—plays a role in helping children learn certain letters (Sanocki & Dyson, 2012, p. 132). Letters differ varyingly in terms of height, the presence or absence of vertically ascending or descending parts, angles, and curvature. For example, the lower case letter *j* is distinctive in that it has a descending feature that is curvy and has a dot on top. By contrast, *a, e, c,* and *o* are all curvy and short, so they might be harder for children to discriminate visually. Research (e.g., Lockhead & Crist, 1980; Nelson & Wein, 1974; Williams & Ackerman, 1971) has shown that the alphabet can be visually confusing to young children, so that the letters that are distinct from the others have an advantage. Having *uppercase knowledge* helps children learn lowercase names (Treiman & Kessler, 2004), particularly when there is visual similarity between the two forms of a letter, such as *P* and *p, S* and *s* (Turnbull, Bowles, Skibbe, Justice, & Wiggins, 2010).

Another factor that may influence the learning of the alphabet is the *frequency* with which letters appear in print (Smythe, Stennett, Hardy, & Wilson, 1970). For example, the letters *T* and *S* are much more likely to appear in print than the letters, *Z, Q,* and *X* (Jones & Mewhort, 2004), and children are more likely to learn these first. The repetition of letters that appear often in texts assists young children in learning certain letters of the alphabet more quickly than others.

Children may learn particular letters earlier for more sociocultural reasons, too. For example, *alphabetical order* may be important because of recitation knowledge and the fact that teachers and parents often teach the alphabet in that particular order (McBride-Chang, 1999; Phillips et al., 2012). This approach gives an advantage to letters appearing earlier in the alphabet. Children often learn the letters in their first names first, particularly the *first initial* of their first names (Justice, Pence, Bowles, & Wiggins, 2006; Treiman & Broderick, 1998). Children usually learn uppercase letters first, in part because these are what the adults around them emphasize and point out while reading (Turnbull et al., 2010).

Letter–Sound Knowledge

Letter–sound knowledge refers to children's ability to generate the sound(s) a letter makes, rather than just its name, when shown the letter in isolation, without

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the context of a written or spoken word. For example, letter–sound knowledge involves knowing that, whereas the name of the letter *v* is pronounced /vi/, it generally makes the /v/ sound in words. The process of learning letter–sound connections requires children to integrate the orthographic (visual) features of the written language system with the corresponding phonological (speech sound) features of the language.

Knowing letter names seems to help children with this process, especially the names of those letters that follow the *acrophonic principle;* that is, the many letters in the English alphabet that begin with the sound (called the *phoneme*) that the letter usually makes. To use the example above, in the name of the letter *v,* the first phoneme is /v/, making it easier to detect and remember. In contrast, in the name for *f,* the first phoneme is /ɛ/, not /f/, and, for *w,* the letter sound is not even within the letter name itself. Children generally find it easier to learn the sounds of letters that follow this acrophonic principle (e.g., *b, d, j, k, p, t, v,* and *z*) than of letters that don't follow this principle (e.g., *h, w,* and *y*) (Treiman, Tincoff, Rodriguez, Mouzaki, & Francis, 1998). This acrophonic principle seems to operate for the learning of letter sounds even for children having language impairments and poor phonological awareness (Treiman, Pennington, Shriberg, & Boada, 2008). The acrophonic principle shows up in children's early writing as well. For example, kindergarten children often make the mistake of spelling a word with an initial /w/ sound with a *y* because the letter is pronounced /waɪ/, with the /w/ sound first (Treiman, Weatherston, & Berch, 1994). However, British English children, who are not always taught letter names first, do not show this pattern of letter–sound learning and writing.

Practice in relating letters to their corresponding sounds also helps children establish the connection. Indeed, there is some neurological evidence that practice in learning letter–sound connections may change the brain itself, to make it later more sensitive to print in general. In a longitudinal study, Brem et al. (2010) had nonreading kindergarten children play a computer game that involved connecting letters with their sounds. Using functional magnetic resonance imaging (fMRI) and electroencephalographic (EEG) techniques, they found that after 8 weeks, these children showed greater sensitivity to print in part of the left *occipital–temporal cortex* (a part of the brain that is very active in early fluent reading) than did children who played a number-related game.

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Letter Writing

Letter writing is yet another aspect of alphabetic knowledge. Conceivably, children could learn to write, or at least copy, letters without knowing anything else about them; however, both letter–name and sound knowledge seem to contribute to children's letter-writing skills (Puranik, Lonigan, & Kim, 2011). That is,

children are more likely to be able to write a letter from memory correctly if they already know its name and sound.

Learning to write the letters in their own names is a first step in the process of learning to write letters for many children (Villaume & Wilson, 1989). Children who know how to write all the letters of their name in the correct order are more likely to know how to write other letters, and also more likely to know a greater variety of letter names and sounds, as well as have better phonological awareness skills (Puranik & Lonigan, 2012). So, knowing how to write their own names can be a good indicator of children's emergent alphabetic skills in general.

Writing practice may also help children develop the brain functions that optimally allow them to perceive letters as letter forms (rather than mere visual objects) more strongly. In adult readers, part of the left *fusiform gyrus* (a long narrow part of the brain at the very bottom of the cortex that is also involved in facial and object recognition) usually displays this functional specialization in connection with the activity of recognizing words (James, James, Jobard, Wong, & Gauthier, 2005). James (2010) found that providing preschoolers with practice in printing letters enhanced the signal in this brain region and maximized its response to letters.

To summarize, it cannot be emphasized enough that learning the alphabet is fundamental to the development of solid emergent literacy skills. Even though in English, there are only 26 letters (52 if you count upper- and lowercase forms), we now know that learning the alphabet is far more complicated than just learning a series of letter names. Children who do not have a solid command of all the knowledge associated with the alphabet are much more likely to struggle with literacy learning in their early years, and even later (National Early Literacy Panel, 2008). Although *some* children do learn *some* of this knowledge at home, ensuring that *all* children develop strong alphabetic knowledge, in all its forms, is probably the single most vital job of the preschool teacher. It is a major way that attending preschool contributes to later literacy learning.

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Classroom Practices That Improve Alphabet Learning

Explicit teaching increases the chances of learning for preschoolers, especially for those who do not have strong literacy backgrounds. Good alphabetic instruction should integrate letter name, letter sound, letter recognition in print, and letter writing (both upper- and lowercase) for all the reasons we have indicated above. Although experimental studies examining the effects of various alphabetic teaching practices are rare, a multicomponential approach does seem to produce better results than a single-pronged approach (Piasta & Wagner, 2010b; Jones, Clark, & Reutzel, 2013). For example, Piasta and Wagner showed that children who received

instruction in both letter names and sounds performed better on letter sounds later than children who were taught using letter sounds alone. Using alphabet books during shared reading is also an effective practice (Bradley & Jones, 2007).

Until recently, standard practice in most preschools has included a letter-of-the-week approach in teaching the alphabet. In this approach, teachers introduce a new letter each week, and children spend all week doing various multimodal learning activities related to that letter. The next week, a new letter is introduced and the process continues. Much has been written against the practice of using a letter-of-the-week approach; some scholars have seen it as developmentally inappropriate because it often involves teaching letters isolated from the meaningful context of words and actual texts (Bredekamp & Copple, 1997; Reutzel, 1992; Wasik, 2001; Wuori, 1999). However, if teachers incorporate activities in which they point out examples of the weekly letter(s) in multiple print materials and then have children find examples of the letter themselves in environmental and classroom print, this issue of decontextualization can be minimized. A benefit of the letter-of-the-week approach is that it ensures that all letters receive some explicit attention throughout the year. However, the letter-of-week approach has the disadvantage of focusing on each letter only once throughout a typical school year. Is this enough for children who come into school with minimal print knowledge? It is unclear.

Schwanenflugel et al. (2010) argued that perhaps a way to make a letter-of-the-week approach more developmentally appropriate is to start by teaching the easier letters first and then proceeding to the more difficult letters. They defined *easy letters* as ones following the acrophonic principle and found that children in experimental classrooms benefited from this approach compared to control children (who were generally taught in a letter-of-the-week format organized alphabetically), but only when teachers also carried out activities that emphasized a general understanding of the sound system of language (i.e., phonological awareness). Again, this finding argues for a multipronged approach to teaching alphabetic information.

Teaching letters more often, in cycles that occur throughout the year, may also yield better results. Jones and Reutzel (2012) compared a repeated cycle that introduced a new letter each day against a traditional letter-of-the-week approach. This strategy gave children more distributed practice with each letter, as it recurred numerous times throughout the year, and also enabled teachers to bring difficult letters into these cycles more often when they deemed it necessary. Compared to children receiving traditional letter-of-the week approaches, Jones and Reutzel found that this distributed practice approach reduced the number of children designated "at risk" for later reading troubles at the end of the school year because they lacked sufficient letter knowledge.

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PHONOLOGICAL AND PHONEMIC AWARENESS

Besides alphabetic knowledge, *phonological awareness,* and its subcomponent, *phonemic awareness*, are the factors most commonly measured in attempts to predict which children may have difficulty learning to read because of a lack of emergent literacy skills. Phonological awareness is not merely the ability to hear and discriminate the sounds of a language, which every competent native speaker can do, typically at a very early age (Kuhl, 2004). Rather *phonological awareness* refers to children's understanding of the sound structure of spoken words in the absence of print and their ability to use that knowledge. It is a metalinguistic skill that enables children to manipulate, and to some extent analyze, the sound system of a language. It includes the understanding that words are made up of sound units such as syllables, rhymes, stressed and unstressed syllables, and individual sounds that can be blended together to make words.

Phonological awareness is a term often used interchangeably with *phonemic awareness*, but the latter actually focuses on only one type of phonological unit: the *phoneme*. A phoneme is defined as the smallest unit of speech sound that distinguishes one word from another. English has the 44 phonemes shown in Table 2.2. Phonemic awareness refers to the idea that, say, the spoken word *sun* is made up of three distinct phonemes—/s/ /u/ /n/—and includes knowing that the /s/ sound distinguishes the word *sun* from the word *fun* auditorily. Children might have some phonological awareness knowledge (i.e., they might be able to notice that the word *sun* only has one syllable) without having the phonemic awareness to be able to divide *sun* into /s/ /u/ /n/, or to replace the /s/ with /f/ to get the word *fun*. This distinction may or may not be important (Anthony & Lonigan, 2004), and perhaps only some of this knowledge is relevant for learning to read. Here we will the term *phonological awareness* to refer to this general facility with the sound system of language and *phonemic awareness* to refer to the more specific skill of identifying and manipulating single phonemes.

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Development of Phonological Awareness

Phonological awareness is not a holistic skill developmentally; that is, children seem to acquire some skills before others, in a fairly predictable developmental progression (Adams, Foreman, Lundberg, & Beeler, 1998; Hoien, Lundberg, Stanovich, & Bjaalid, 1995; Webb, Schwanenflugel, & Kim, 2004). Indeed, some phonological awareness programs are organized according to this common sequence, so that children receive lessons on the earlier developing skills first and the more difficult skills later (Lundberg, Frost, & Peterson, 1988). However, children do not follow this typical developmental pattern in a strict, stage-like fashion. They can show rudimentary knowledge of the later phases of phonological awareness while

they are still fine-tuning their understanding of earlier skills (Phillips, Clancy-Manchetti, & Lonigan, 2008). For example, phonological awareness tasks that rely on recognition or identification are usually easier than tasks that require production of the same knowledge (Phillips et al., 2012).

Preschoolers generally show an ability to identify large units such as syllables or words first, usually as they approach the age of 4 or so (Webb et al., 2004). In typical assessments of this skill, children are asked to clap out or count the number of words or syllables in a sentence.

TABLE 2.2. The 44 English Phonemes Children Learn to Distinguish While Developing Phonological Awareness

Vowels		Consonants	
Word	IPA	Word	IPA
b**ea**t	iː	**p**ea	p
l**i**d	ɪ	**t**ea	t
g**e**t	ɛ	**k**ey	k
b**a**t	æ	**b**ut	b
p**ar**t	ɑr	**d**uck	d
d**o**t	ɒ	**g**ag	g
th**ough**t	ɔː	**m**e	m
p**u**t	ʊ	**n**o	n
b**oo**t	uː	si**ng**	ŋ
b**u**t	ʌ	**f**ee	f
g**ir**l	ər	**th**ing	θ
th**e**	ə	**s**eed	s
b**i**te	aɪ	**sh**e	ʃ
c**ow**	aʊ	**ch**eap	tʃ
b**ear**	ɛər	**v**eal	v
m**ay**	eɪ	**th**at	ð
d**ee**r	ɪr	**z**oom	z
b**oy**	ɔj	bei**g**e	ʒ
b**oa**t	oʊ	a**g**e	dʒ
d**oor**	ɔːr	**h**e	h
		low	l
		red	r
		we	w
		yes	j

Note. Based on Denes (1963). Words with target sounds in **bold** and their corresponding International Phonetic Alphabet (IPA) notation.

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Then, children progress to being able to identify intermediate-sized units such as distinguishing between onsets and rimes. *Onsets* are the first phoneme(s) or consonant cluster heard in a single-syllable word; *rimes* are the ending part of the word, typically used in identifying words that rhyme (the vowel and final consonants). For example, in the word *trip*, /tr/ is the onset, and /ip/ is the rime; in the word *mist*, /m/ is the onset, and /ist/ is the rime. In an assessment of this skill, children might be asked to identify pairs of words in a group that rhyme or, in a more advanced assessment, they might be asked to produce words that rhyme with a given word. Thus, when given the trio *bat, hat*, and *big*, children who have this skill would be able to identify *bat* and *hat* as that rhyming words, or when asked for a word that rhymes with *sing*, they might produce *bring* or *king* or *string*.

Finally, children progress to identifying smaller units such as phonemes. In assessment tasks that address this skill, children are often asked to pick out two words that start with the same sound, such as *bat* and *big* from the trio above, or they might be asked to drop the /b/ sound from *bat* and say the word that results: *at*. Children who can do this consistently are deemed to have developed phonemic awareness.

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Phonological Awareness and Emergent Literacy Skills

Phonological awareness has long been identified as foundational to the development of literacy skills, so it is perhaps the most closely researched aspect of emergent literacy. One recent meta-analysis by Melby-Lervåg, Lyser, and Hulme (2012) found 1,660 research articles on the relationship of phonological awareness to reading skill development! It has been widely observed in these studies that children who readily learn to read words usually have already developed good phonological awareness skills (Wagner, Torgesen, & Rashotte, 1994). Children who will later struggle in learning to read typically have very poor phonological awareness skills, often several standard deviations below the performance of typical children. In fact, Melby-Lervåg et al. (2012) found that children with *dyslexia* (the designation often given to readers who struggle the most) virtually never perform better than their age-mates on phonological awareness tasks. Thus, lack of phonological awareness is an important indicator of children who are likely to struggle later in learning to read.

However, the relevance of *specific* phonological awareness skills for learning to read remains controversial. Some claim that phonological awareness is a unitary skill and that it is this general skill that matters in learning to read; the specific subskills really do not matter much (Anthony & Lonigan, 2004). Other researchers claim that the operative skill in learning to read is being able to distinguish between onsets and rimes (Goswami & Bryant, 1990; Ziegler & Goswami, 2005). Still others claim that phonemic awareness—the ability to identify, blend, and

manipulate single phonemes—is the only aspect of phonological awareness that matters for learning to read. After examining the research on this topic, Melby-Lervåg et al. (2012) concluded that, though both rime awareness and phonemic awareness were moderately correlated, the relationship between measured word reading skill and phonemic awareness is generally stronger than its relationship with rime awareness (the most commonly studied large-unit skill). In fact, the mean correlation in their meta-analysis across studies between phonemic awareness and later reading ability was .57, whereas the mean correlation between rime awareness and reading was .43. So, probably, having phonemic knowledge is an important key to unlocking print for many children.

As noted in the previous section, learning letter sounds can be an important early step in learning to read, but phonemic awareness helps with that too. As Melby-Lervåg et al. found with early reading ability, Webb et al. (2004) observed that phonemic awareness is more closely related to the ability to learn letter sounds in prekindergarten children (r = .40) than large-unit skills, such as syllable segmentation, which only correlated .23 with letter–sound learning. Being able to identify phonemes in speech is very helpful to applying those phonemes to learning letter sounds and, as we will see in the next chapter, using those sounds to learn how to decode words while reading.

There is probably a reciprocal relationship between phonemic awareness and learning to read. As children are taught specific letter sounds and other phonics skills in school (or elsewhere), this learning most likely acts to refine their understanding of the sound system of language, if it is not yet fully developed (Perfetti, Beck, Bell, & Hughes, 1987). So, learning words containing consonant clusters, such as the /st/ in *stop* and *best*, may cause a child to pay more attention to the separate sounds these letters make, and learning words containing digraphs, such as the /ch/ that occurs twice in *church*, may lead a child to realize that, in English, letters and sounds are not necessarily equivalent. These new insights, in turn, can then be applied to enhance the reading of other words.

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Classroom Practices That Improve Phonological Awareness

Children enter preschool and kindergarten with highly varying phonological awareness skills, yet, with the downward compression of the curriculum, they are expected to begin learning to read in kindergarten (or even earlier). The wisdom of this approach can be debated, especially when so many children arrive at school so ill equipped with all kinds of emergent literacy knowledge. Still, there is little doubt that a phonological awareness program in preschool can help many children develop this important metalinguistic skill, which in turn will support them in the process of learning to read. Children can often make substantial progress in this skill, no matter where they start at preschool entry, when they receive high-quality,

explicit instruction in phonological awareness (Byrne & Fielding-Barnsley, 1991; Lundberg et al., 1988).

For this reason, curriculum evaluators increasingly see phonological awareness instruction as an essential part of a preschool curriculum, and most preschool teachers include rhyming activities in their literacy instruction through rhyming picture books, such as those by Dr. Seuss, that young children so enjoy. When a relevant phonological skill is featured in some book or activity (e.g., rhymes in *Hop on Pop*, syllables and emphasis in marching songs), teachers will sometimes emphasize that skill in a form of implicit instruction. This is a good thing to do, but teachers often believe this approach is enough to "cover" the necessary information. However, introducing phonological awareness knowledge this way may not be enough of an instructional focus to enable many children to identify phonemes, the phonological skill most useful in learning to read.

In a large meta-analysis, the National Early Literacy Panel (2008) found that specific instruction in phonological awareness tended to improve children's phonological awareness skills nearly a full standard deviation, on average, compared to children who did not have such instruction. This finding indicates that many preschoolers can benefit greatly from an explicit phonological awareness program. For this reason, the National Association for the Education of Young Children (2014) has included phonological awareness activities as an indicator of preschool program quality. Still, an observation study of 11 state-funded prekindergarten classrooms found that time spent on phonological awareness activities averaged just 3% of the school day (National Center for Early Development and Learning, 2005), suggesting that perhaps phonological awareness instruction during the preschool day is not as comprehensive as it ought to be.

This does not at all mean, however, that preschool children should be endlessly drilled in letter–sound combinations or phonics. At the beginning of preschool, most children cannot yet carry out activities that focus on individual phonemes. They may need a focus on rhyme and syllable awareness first. So, perhaps rhyming books, nursery rhymes, and songs are a good way to begin to instruct this early awareness, but they are only a start. Other activities, found in some explicit phonological awareness programs (e.g., Adams et al., 1998), include developing recognition of rhythm (and syllables) by having children move in time to a particular beat while saying something like *march-ing, march-ing, skat-ing, skat-ing*, etc. Children can be introduced to initial phonemes through matching games, which involve identifying the two out of three given words that start with the same sound (e.g., *fun, fish,* and *cat*). Alternatively, they can be asked to hunt for items in the classroom (sometimes among those deliberately placed there by that teacher) that start with a particular phoneme (e.g., /f/ /f/ /f/for *fish tank*). Finally, phoneme identity can be taught similarly, by asking children to pick out or find items that end with a particular phoneme. These activities can be combined with

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the introduction of the letter (or letters) that makes the sound. Thus, after children identify various items that start with the /f/ sound, they can be introduced to the upper- and lowercase letters: *Ff.* Thus, the sound for *Ff* can be linked with /f/. Finally, children can then be taught how to manipulate phonemes by first blending two-phoneme words (e.g., *be*: /b/ /iː/), which require only adding one phoneme to the next, and adding another phoneme to produce three-phoneme words (e.g., *beach*: /b/ /iː/ /tʃ/), either with or without the printed letters visible. There are also a number of computer-assisted instructional programs that have been shown to effectively support the development of phonological awareness (e.g., Macaruso & Rodman, 2011). See the Technology Toolbox below for a discussion of one such study. These are just a subset of the many engaging ways that phonological awareness can be taught in preschool, and even kindergarten, planfully, explicitly, and more effectively than programs that introduce these skills implicitly or haphazardly.

Just how much focus on explicit phonological awareness practice might be necessary to develop the skill among preschoolers is, however, uncertain. An early report by the National Reading Panel (Ehri et al., 2001) suggested that perhaps brief programs that are highly focused on just a few selected phonological awareness activities might work just as well as longer and more comprehensive approaches for most children. Gillon (2004) suggests that 2 hours per week over a 10-week period may be enough to improve the reading outcomes for many children

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TECHNOLOGY TOOLBOX: Computer-Assisted Instruction and Phonological Awareness

Computer-assisted instruction has traditionally been focused on children in early elementary school or on children struggling to learn to read. Increasingly, there is an imperative for preschool programs to enhance the instruction of emergent literacy skills to prevent the development of reading problems later. To address this need, a number of effective computer-assisted instruction programs for phonological awareness have been developed. For example, *Early Reading* (Lexia Learning Systems, 2003) is a program that contains activities that target a variety of phonological awareness skills as well as letter–sound mapping skills for preschoolers. In one such activity, the child listens to the computer present a word both aloud and on the computer screen. The child is then asked to change the item to a new word by replacing one of the letters. The child might be asked to change the word *BUG* into the word *BUS* by moving a letter tile *S* over *G* with the computer mouse. Macaruso and Rodman (2011) found that preschool children who had received at least 20 ten-minute sessions on the program demonstrated accelerated phonological awareness following the intervention compared to controls that received classroom literacy programming required by state guidelines. Such findings demonstrate the potential of technology to support the development of key emergent literacy skills.

at risk for reading struggles later. In a recent study by Carson, Gillon, and Boustead (2013), kindergarten children received phonological awareness instruction (mostly focused at the phoneme level) through games such as rhyme bingo, singing games, and odd-one-out for 30 minutes four times a week for 10 weeks as part of their classroom literacy instruction. Compared with children who received only the usual reading program, which included phonics study but not phonological awareness games, the children in the study group not only improved in phonological awareness, but by the end of their kindergarten year, only 6% of these children scored below age level on a test of reading accuracy and comprehension, compared to 26% of the children receiving only the regular reading program.

LOOKING BACK AND FORWARD: ORAL LANGUAGE AND VOCABULARY SKILLS

In this chapter we have focused on what the National Early Literacy Panel (NELP; 2008) calls *code-related skills*—that is, skills that allow children to crack the code for deciphering print. Code-related skills are relatively small sets of knowledge that can be mastered rather quickly by most children in a year or 2. After all, there are only 26 letters in the English alphabet, and, as we will see in the next chapter, some scholars estimate that the number of reliable phonics rules that children need to be taught might be as small as 18 (Clymer, 1963)!

However, as the NELP (2008) notes, emergent literacy is composed of two interrelated sets of underlying abilities: (1) code-related skills and (2) oral language skills. In the previous chapter, we described how there can be fundamental differences in the linguistic skills that young children bring to the task of learning to read. Although teaching code-related skills may help children learn how to read words, it does not fully prepare them for the main goal of reading: comprehending text. That's where oral language skills, the other set of underlying abilities for emergent literacy, enter the picture. Oral language skills include general listening abilities, comprehending and producing both simple and complex sentences, drawing inferences (i.e., determining important information not stated directly in the text), and vocabulary knowledge. Indeed, it appears that oral language skills are the major underpinnings of both reading and listening comprehension during kindergarten and preschool (Lynch et al., 2008).

In the previous chapter we discussed some of the early influences on oral language development, but, unlike the alphabetic and phonological skills discussed in this chapter, oral language skills are continually developed throughout a child's lifetime, eventually requiring both the integration of vocabulary, oral and written language skills, and an ever-expanding knowledge base. Because of this extended developmental timeframe, oral language problems can be long-lasting

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(Paris, 2005). Children with insufficient oral language ability, even if they learn to decode words fairly well in the early grades, may struggle in later grades as they start to read "heavy texts" or long books with well-developed themes and plots, complex sentence structures, and difficult vocabulary (Stahl, 2007, p. 56).

Vocabulary, a key element of oral language that we examine more closely in Chapter 6, may also impact the development of code-related skills, through the effects that it may have on the development of phonological awareness. A growing vocabulary presents a phonological challenge to children because, as their store of words grows, they need to change from storing words holistically to representing words at the onset–rime and ultimately at the phoneme level, so that they can discern and represent the difference between words such as *fin, fan, fun, tin,* and *bin*. This process, called *lexical restructuring* (Metsala, 1997), represents a fundamental change in the way children represent information in their mental *lexicon,* the "dictionary" of known words we all keep in our heads. It is thought that this lexical demand may be either partly or fully responsible for children's early development of phonological awareness. Indeed, the correlation between vocabulary skills and phonological awareness is a robust one (Stadler, Watson, & Skahan, 2007).

Another way in which vocabulary might affect code-related skills is by affecting later decoding. This observation from Whitehurst and Lonigan (1998) captures this point well: "A child just learning to read conventionally might approach [a] word . . . by sounding it out, [but] not infrequently, one can hear a beginning reader get that far and be stumped, even though all the letters have been sounded out correctly" (p. 849). In other words, in order to "sound out" a word successfully, young children need to be able to match the phonemes they have sounded out to the meaning of a word they know. It is only then that they truly know what they have managed to read.

Although books for early learners tend to try to use easy vocabulary, the problem described by Whitehurst and Lonigan may happen more often than you might think. For example, if we consider just the five words discussed above—*fin, fan, fun, tin,* and *bin*—it seems likely that a child with a smaller or divergent vocabulary might have trouble with the words *fin, tin,* or *bin*. Such words are used quite often in decodable texts, more than in regular books, because of their phonetic regularity, but they are not used very much in ordinary conversation. So a child might easily sound out the word *bin*, but be unable to identify it because he or she hasn't heard it used often enough to be stored in his or her mental lexicon. When children have this kind of difficulty retrieving the meaning of a particular word they have successfully sounded out, both word recognition (Nation & Snowling, 2004; Carlson, Jenkins, Li, & Brownell, 2013) and comprehension (Carlson et al., 2013; Stahl, 1999) may suffer.

Researchers are still trying to untangle the relationship between preschool oral language skills and other emergent literacy skills. Some researchers have

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found that, although children with good vocabularies tend to be better readers, vocabulary skills do not tell us who will end up as a good reader once code-related skills are taken into account (Muter, Hulme, Snowling, & Stevenson, 2004). Alternatively, the National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network (2005) that followed 1,100 children from age 3 to grade 3 found that having good preschool oral language skills helped children learn code-related skills as well as improved later reading comprehension. As already noted, other researchers claim that preschool oral language and vocabulary skills mainly operate by helping children discriminate words by sound through lexical restructuring, which later helps them learn to read (Bracken, 2005; Metsala, 1999). Regardless of the role of oral language skills in early word reading skills, research overwhelmingly supports the role of preschool vocabulary in later reading comprehension (NICHD Early Child Care Research Network, 2005; Storch & Whitehurst, 2002). Although the picture is less clear regarding the role of oral language skills in the early process of learning to read, it is very clear that oral language skills play a vital role in reading development ultimately. Thus, oral language skills are a significant component of emergent literacy.

CONNECTING TO THE STANDARDS

At the outset of this chapter we asserted that young children bring much important formal and informal knowledge about literacy and communication with them as they enter elementary school. Attending a high-quality preschool can help young children acquire the foundational skills they need to succeed in early reading instruction later. As you can see in Table 2.3, the Early Literacy Standards from NAEYC Early Childhood Program Standards have been highly responsive to the growing research on emergent literacy. Naturally, there are also standards directed at language development that encourage teachers to provide children with opportunities to communicate and answer questions in school in their home language, and have conversations, experiences, and book readings that promote vocabulary.

We wish to point out, however, that the sociocultural influences children bring in from the home and community described in the first chapter serve as the earliest source and perhaps most continuing support for this knowledge. Consider the analogy of a bridge structure. At the bottom of the bridge, underneath the pylons and vertical piers are abutments attached to the bedrock, into which the pylons are drilled. Above ground, there are cantilevers and trusses that distribute weight across the structure. These all work together to make a bridge strong enough to withstand traffic and environmental forces over time. The sociocultural forces that influence children are analogous to the bedrock and abutments that

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TABLE 2.3. Examples of Preschool (Ages 3–4) Early Literacy Standards

Topic	Standard
Book Reading	Children should have opportunities to: • Be read books in an engaging manner at least twice a day. • Be read to regularly individually or in small groups. • Explore various types of books. • Be read books several times. • Retell and reenact books. • Talk about books. • Link books to the rest of the curriculum. • Identify parts of books and print.
Writing	Children should have opportunities to write in various ways (scribbling, letter-like marks, developmental spelling). They should be given support as they attempt to write on their own, by being given access to the alphabet and printed words related to their interests. Teachers should model the use of writing.
Phonological Awareness	Children should be provided opportunities to develop phonological awareness, including: • Play with rhymes, poems, and songs. • Identification of letter names and sounds. • Manipulating words having same beginning and ending sounds. • Writing letters included in the sounds of words.
Alphabet	Children should be given opportunities to recognize and write letters.
Print Access	Children should have access to books and writing materials throughout the classroom.

Note. Adapted from the National Association for the Education of Young Children (2014). Copyright © 2015 by NAEYC®. Adapted by permission.

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enable the code-based emergent literacy skills (the trusses and cantilevers) discussed in this chapter to operate in the development of reading.

CONCLUSION

In this chapter we have discussed the code-based emergent literacy skills that many researchers have identified as important foundational skills for learning to read. There are various points of view regarding how these emergent skills should to be studied and considered. We have discussed how important it is to have a good understanding of the construct *emergent literacy* and the negative consequences children experience when the need for these skills is ignored. Research on the alphabet, particularly on letter-name and letter–sound knowledge, supports the view that this is an essential emergent skill for later reading. Phonological

awareness is another emergent literacy skill that has received consistent support for its foundational role in early reading. Finally, we have discussed the debates surrounding just how important oral language skills may or may not be for early reading, while emphasizing the importance these skills have for later reading comprehension.

QUESTIONS FOR DISCUSSION

1. Given what you have learned about emergent literacy, what do you think of the current trend of teaching young children to read in prekindergarten? To what evidence can you point to support your position?
2. What activities would be present instructionally in an ideal preschool program for ages 2, 3, and 4? What evidence is there to support the activities found in your ideal program?
3. Do you think that the sociocultural perspective or the cognitive science perspective provides a better account of the kinds of issues that young children face with regard to emergent literacy?
4. How well do the early learning standards listed in Table 2.3 capture what is relevant about the fundamental literacy skills needed for the formal process of learning to read? What is missing, if anything?
5. Returning to the case study presented at the beginning of this chapter, what strategies might be helpful for Ms. Johnson to use to address the emergent literacy needs of Ileana?

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