Speaking Out for Language: Why Language Is Central to Reading Development

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Although the National Early Literacy Panel report provides an important distillation of research, the manner in which the data are reported underrepresents the importance of language. Unlike other predictors with moderate associations with later reading, language exerts pervasive and indirect influences that are not described by the effect sizes used in the meta-analysis. Also, unlike code-related skills that develop rapidly during the years studied, language develops over an extended time span. Because it is relatively difficult to devise interventions that dramatically alter children’s language abilities, the authors of this response are concerned that schools will target the more malleable code-based skills. They warn against such a move.

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The authors of *Developing Early Literacy* (National Early Literacy Panel [NELP], 2008; available at http://www.nifl.gov/earlychildhood/NELP/NELPreport.html) have provided a valuable distillation of the results of roughly 500 research studies completed through 2003. The panel reported the important finding that measures of complex language are more powerful predictors of later reading than are measures of vocabulary, the most commonly measured language competence. This finding may help those who recognize the need to foster language avoid overly narrow attention to vocabulary. Despite these positive elements, however, the report fails to depict adequately the role of language for three reasons: (a) By focusing strictly on the size of direct effects, it fails to describe the pervasive impact of language, which often fosters reading through indirect mechanisms; language has impacts on a range of abilities that underpin multiple aspects of early reading; (b) the narrow developmental time frame that the panel was directed to analyze does not reflect the duration of the language effect; and (c) the report highlights rapidly developing code-based factors, potentially reducing the attention that practitioners will give to more slowly developing linguistic and background knowledge.

The first time we tried to read an English sentence, it meant about as much to most native speakers of Greek as this Greek sentence means to most native English speakers: “Πώς έμαθε να διαβάζω.” Translated as “How did I learn to read?” the sentence invites readers to consider the task they faced when first attempting to read their native language. In an alphabetic language, as opposed to a language like Chinese that uses logographs, children must identify the individual, meaningless squiggles as letters, learn the letters and their associated sounds, blend the individual sounds into words, and then access the meanings the words encode. But reading is more than this. Children must integrate the meanings of the individual words into larger units that describe actions and events in the world. Ultimately the purpose of reading is the extraction of meaning from the printed page, and decoding written letters into the sounds they represent is but the first step. To understand the vocabulary and sentence structures that result from decoding, children must have mastery over their native language as well as knowledge of the world. Otherwise, they only decode the letters in the sentence into words that yield nothing beyond a string of seemingly disconnected sounds.

**The National Early Literacy Panel Report**

The NELP report is of interest to policy makers as well as educators and researchers. With 37% of fourth graders in the United States failing to achieve basic levels of reading achievement, and proportionately more of these from disadvantaged homes, the report rightly asked, “What can be done in U.S. homes, preschools, and kindergartens to better prepare children to succeed in learning to read and write?” (NELP, 2008, p. v). Addressing this question, it underscored the power of code-related abilities in early literacy to predict early and later reading. Although we applaud the efforts of the panel, this presentation and interpretation of the results may have unintended negative consequences. Specifically, policy makers and educators might take the report as a mandate to teach narrowly prescribed skills like letter–sound correspondence at the expense of oral language skills, vocabulary, and the associated background knowledge—the very foundations for early and long-term literacy.

To identify precursors to conventional literacy, the panel used meta-analytic techniques examining studies of skills that were observed prior to conventional literacy (i.e., between birth and age 5) and that were predictive of conventional literacy. This meta-analysis identified 11 precursor abilities that can be divided into a cluster of 6 with strong associations with reading and a cluster of 5 with moderate to weak associations. These findings are prominently displayed in the full report and the accompanying practitioner-oriented *Early Beginnings: Early Literacy Knowledge and Instruction* (Goodson, Layzer, Simon, & Dwyer, 2009). Three of the top set of predictors are closely linked to...
children’s knowledge of the alphabetic code—letter knowledge, ability to attend to sounds, and early writing—and the remainder are processing abilities such as the rapidity with which an individual accesses or recalls verbal information such as color names, letters, and digits. The second group, introduced in the executive summary as “potentially important variables” (NELP, 2008, p. viii), includes oral language, three items related to knowledge of print—concepts of print, print knowledge, and reading readiness—and visual processing. Hundreds of intervention studies also were reviewed, and the panel found that the interventions designed to foster code-related abilities have moderate to large effects, whereas those that target language have modest effects at best.

We do not contest these findings. When children are learning to read, language is not as strong a direct predictor of beginning reading as are code skills. Moreover, language is far more difficult to improve than are code-related skills. However, these two findings must not be interpreted as meaning that language is less important than code skills. What concerns us is that a naïve reading of the report could lead policy makers, textbook manufacturers, and teachers to focus narrowly on code-based skills such as letter knowledge and phonemic awareness to the exclusion of a concentration on language learning. This would be a grave mistake. Such a move would be short sighted and would undermine the early and long-term reading abilities of the very children most in need of educational supports, those from low-income homes and from families who speak languages other than English at home.

**Indirect Effects of Early Language on Reading**

We are reminded of an old joke told by Urie Bronfenbrenner to illustrate how correlational data can yield erroneous inferences about causation: A man who was becoming inebriated nightly noticed with a flash of insight that he had consumed scotch and soda one night, rye and soda the next night, and finally bourbon and soda. He then vowed to stop drinking soda. So it is with the early and long-term reading abilities of the very children most in need of educational supports, those from low-income homes and from families who speak languages other than English at home.

Evidence exists that the indirect effects of language on reading may be even more substantial between infancy and later preschool. The report focused on correlations between preschool abilities and subsequent reading and overlooked the effects of language on other precursor abilities between birth and school entrance. The most noteworthy oversight resulted in failure to acknowledge the contribution of early language to the emergence of phonological awareness. When the report was being written, a seminal description of emergent literacy conceptualized oral language as providing a platform for the development of phonological awareness (Whitehurst & Lonigan, 1998), a position that was echoed and extended by a subsequent review and data (Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003). Also, in the 1990s the hypothesis was advanced that the acquisition of increasing numbers of words with similar phonological and articulatory patterns results in a reorganization in how words are stored in the brain (Metsala, 1999; Metsala & Walley, 1998). Instead of being stored as single units, words begin to be decomposed and stored as smaller units, allowing greater access to sound units smaller than words. After 2003, the closing date for consideration of research, additional research pointed to the role of early language ability in the emergence of phonological
effects on reading were the result of the improved IQ scores. In the Abecedarian study, children were provided enriched preschools from birth until school entry (Campbell & Ramey, 1996). These findings suggest that as language capacities emerge in the preschool years they may begin to play a role in this self-regulatory ability (reviewed by Dickinson, McCabe, & Essex, 2006).

Another possible indirect means by which language may affect reading is through its association with children’s emerging ability to regulate their behavior and attention. Considerable evidence points to the importance of self-regulation to academic success (Blair, 2002; Diamond, Barnett, Thomas, & Munro, 2007; Duncan et al., 2007), and some evidence suggests that as language increases as children gain facility decoding text. When children move into the later elementary grades and middle school, language and associated world knowledge come to the fore as the abilities most associated with skilled reading. Whereas early reading ability is closely linked to code-related abilities, models of reading comprehension in the elementary to middle school years place primary weight on language ability (Catts et al., 2006; Hoover & Gough, 1990; Vellutino, Tunnell, Jaccard, & Chen, 2007). Note that we are pointing to studies that relate language abilities measured among older children with concurrent reading; thus we are pointing to data that fall outside the age range addressed by the report. Therefore this is not a critique of the report per se; rather, it is a further development of our rationale for why language, in contrast to other predictors, becomes increasingly important with age. The prominence of language in later reading and the fact that early language learning abets more later language learning (reviewed by Dickinson & Freiberg, 2009; Penno, Wilkinson, & Moore, 2002) means that, for children at risk of educational failure, early and intensive language support is critical (Biemiller, 2006; Biemiller & Boote, 2006).

Thus intervention studies that target language and background knowledge can be effective in creating the backdrop for literacy even though they may be more difficult to conduct and relatively fewer in number than interventions on code-related abilities. Early childhood programs that build vocabulary and conceptual knowledge make lasting contributions to later language and comprehension abilities.

**The Time-Frame Problem: Language Has Pervasive Long-Term Effects on Reading**

Providing an accurate description of the impact of language on reading is challenging because, in addition to operating through indirect as well as direct channels, it affects language-related competencies throughout life. Moreover, the nature of its effects shifts as reading competence develops. Thus the effects of language are pervasive, occurring across decades, not simply during the relatively narrow window of time examined in detail by the panel.

Perhaps the most remarkable aspect of the relationship between language and reading is the duration of the effect that language has on reading. For example, observational studies have linked language experiences and associated language and then reading ability from age 2 to fourth grade (Walker, Greenwood, Hart, & Carta, 1994), from age 3 through third grade (NICHD Early Child Care Research Network, 2005), from kindergarten through eighth grade (Catts, Adlof, & Weismer, 2006; Dickinson & Tabors, 2001), and from first grade through high school (Cunningham & Stanovich, 1997).

Two carefully conducted studies that randomly assigned infants to control or intervention conditions demonstrated that early intervention can bolster language skills in ways that translate into improved reading success at least through the teenage years. In the Abecedarian study, children were provided enriched preschools from birth until school entry (Campbell & Ramey, 1994, 1995). Cognitive and academic test scores collected up to age 21 revealed that the intervention led to high IQ scores and reading abilities. Mediation analyses demonstrated that the effects on reading were the result of the improved IQ scores. Because IQ is strongly linked to verbal ability, it is logical to conclude that these lasting effects were mediated by language. A separate study that randomly assigned low-birth-weight children to an intervention that started in infancy or to a control condition followed these children to age 16 (McCormick et al., 2006). Children in the intervention group had better language and reading abilities than did those in the control group. The effect sizes for these studies were moderate to small, in line with the overall pattern of results found by the panel. But the duration of the effects elevates their significance.

Not only are effects of language long lasting, but the role of language increases as children gain facility decoding text. When children move into the later elementary grades and middle school, language and associated world knowledge come to the fore as the abilities most associated with skilled reading. Whereas early reading ability is closely linked to code-related abilities, models of reading comprehension in the elementary to middle school years place primary weight on language ability (Catts et al., 2006; Hoover & Gough, 1990; Vellutino, Tunnell, Jaccard, & Chen, 2007). Note that we are pointing to studies that relate language abilities measured among older children with concurrent reading; thus we are pointing to data that fall outside the age range addressed by the report. Therefore this is not a critique of the report per se; rather, it is a further development of our rationale for why language, in contrast to other predictors, becomes increasingly important with age. The prominence of language in later reading and the fact that early language learning abets more later language learning (reviewed by Dickinson & Freiberg, 2009; Penno, Wilkinson, & Moore, 2002) means that, for children at risk of educational failure, early and intensive language support is critical (Biemiller, 2006; Biemiller & Boote, 2006).

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**Code Skills Are Easier to Teach; Language and Background Knowledge Are Harder**

The report focused on the developmental epoch when code-related skills develop rapidly. The primary thrust of early school instruction is founded on the premise that skills such as letter knowledge, the ability to analyze the sounds of language into discrete units, and the ability to link sounds to symbols can develop rapidly with proper instruction. It is reassuring, but not especially surprising, that the NELP review found extensive evidence that interventions during the preschool and kindergarten years successfully promote these skills. Improvements in these code skills directly translate into enhanced reading ability.

In contrast, language is an entrenched, slowly acquired, and highly complex ability that includes multiple component skills and is related to semantic knowledge (e.g., Golinkoff & Hirsh-Pasek, 1999; Hirsh-Pasek & Golinkoff, 1996), another slowly developing competence that is associated with long-term reading comprehension. As Paris (2009) argued, code-related skills show rapid growth during the preschool to first-grade years and reach asymptote in the early primary grades. In contrast, we are
constantly acquiring new language and associated world knowledge, factors that play a pivotal role in reading comprehension (McKeown, Beck, & Blake, 2009; Neuman & Celano, 2006; Willingham, 2006–2007). Although the bulk of the research has been aimed at more easily modified, short-term interventions for code-related skills, the studies that have been done on language and cognitive interventions included distinct populations, with many language-focused studies targeting children with the diagnosis of specific language impairment. Because the effects of interventions and their nature are likely to vary according to children’s developmental levels and language abilities, conclusions drawn from a heterogeneous collection of interventions must be treated with caution. The fact that language is hard to modify, and may require earlier and longer term interventions, does not mean that we minimize its importance.

**Speaking Out for Language and Its Relation to Reading**

Taken together, our argument is that the NELP report has the unfortunate and unintended outcome of minimizing the crucial contribution of oral language to reading. The report overlooked the fact that language is unique among precursor abilities in its pervasiveness for both early and later reading competencies and for the duration of its effects on reading comprehension as code breaking turns into meaning making. The underrepresentation of the importance of language may have resulted, in part, from the developmental period that the panel was directed to examine and from the decision to tally direct effects and use them as the sole metric for determining the relative importance of predictor variables.

How do we ensure that teachers and policy makers recognize the full weight of oral language development as they prepare children for success in reading? The solution is to explicitly recognize that oral language and background knowledge should be viewed as Tier 1 skills that must not be neglected if we want to build strong readers. Their placement in Tier 2 of the NELP report feeds a narrow view of reading competence that will at best allow young children to become decoders who cannot later map the words they uncover into the rich linguistic fabric that is text. Teaching and testing code skills is relatively easy compared with breaking turns into meaning making. Early literacy development beyond the sounds to uncover meaning. Early literacy development is more than code-based instruction. Rather, it is the integral connection of code, content, and language structure.

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