

# National Early Literacy Panel: Questions and Answers

## WHAT IS THE NATIONAL EARLY LITERACY PANEL?

The National Early Literacy Panel (NELP) is a panel of nine nationally-known researchers convened by the National Center for Family Literacy (NCFL). The panelists brought a rich and diverse record of research in areas of reading, early literacy and language, cognition, English as a second language, pediatrics, special education, research methodology and early childhood education to the completion of a research synthesis on early language and literacy development. Members of the NELP and their affiliations are:

- **Anne Cunningham**, University of California Berkeley
- **Kathy C. Escamilla**, University of Colorado and the BUENO Center for Multicultural Education
- **Janet Fischel**, State University of New York at Stony Brook
- **Susan Landry**, University of Texas Health Science Center at Houston
- **Christopher J. Lonigan**, Florida State University and the Florida Center for Reading Research
- **Victoria J. Molfese**, University of Louisville and the U of L Early Childhood Research Center
- **Chris Schatschneider**, Florida State University and the Florida Center for Reading Research
- **Timothy Shanahan**, University of Illinois at Chicago and UIC Center for Literacy
- **Dorothy Strickland**, Rutgers University

## WHAT WAS THE PURPOSE OF THE NATIONAL EARLY LITERACY PANEL?

The NELP was convened in 2002 to conduct a synthesis of the scientific research on the development of early literacy skills in children ages zero to five. The National Institute for Literacy (NIFL) acted as the lead agency in this project, in consultation with cooperating agencies from the Partnership for Reading. NCFL, working closely with NIFL, coordinated the NELP's work in the completion of the

synthesis. Laura Westberg, Director of Research and Special Projects at NCFL, directed the work of the panel.

The NELP was established for the express purpose of summarizing scientific evidence on early literacy development and on home and family influences on that development. The panel's primary purpose was to synthesize research in order to contribute to decisions in educational policy and practice that affect early literacy development and to determine how teachers and families could support young children's language and literacy development. In addition, this evidence would be a key factor in the creation of literacy—specific materials for parents and teachers and staff development for early childhood educators and family literacy practitioners.

## WHAT IS A RESEARCH SYNTHESIS?

The NELP was charged with conducting a research synthesis on early literacy development. This charge was not simply to complete a literature review, but to engage in an empirical study in which data are collected, analyzed, and evaluated in an objective and systematic way to determine answers to specified research questions. In that sense, a research synthesis is an independent research study in its own right because it uses existing studies as the data for its analysis. The NELP reviewed over 2,000 research studies for potential inclusion in the synthesis. As independent research studies, research syntheses include selection criteria for identification of relevant research, standards for judging the quality of research, operational definitions, and replicability of methods.

Generally, the procedures used by the NELP in summarizing the research evidence were meta-analytic as the panel sought to identify the most comprehensive set of obtainable data in an unbiased way and to analyze those data in a straightforward manner with a minimum of manipulation or



recalculation of the original data. Simply put, meta-analysis is a procedure aimed at determining the average results of a collection of independent studies and of examining variations in those results to determine the reason for those variations. This means that researchers must identify a population of studies that address a particular question, develop rules for systematically selecting which studies can be combined or compared, code key comparative information from the original studies, and analyze the results statistically to determine the size of an effect and which variations in study procedures, subject samples, or instructional circumstances are correlated with differences in the effects.

### **WHAT WERE THE QUESTIONS THAT THE NATIONAL EARLY LITERACY PANEL ANSWERED?**

The NELP ultimately wanted to know what programs and practices improve young children's early literacy and conventional literacy skills and abilities. Conventional literacy skills are those that promote decoding, reading comprehension, spelling and writing. However, there are few programs and practices in the early childhood years that target these conventional literacy skills. Therefore, the NELP first needed to identify the skills and abilities that strongly predict later conventional literacy skills. In essence, the panel sought to determine the domain of emergent literacy skills. This determination led to its first question: *What are the skills and abilities of young children (age birth through five years or kindergarten) that predict later reading, writing, or spelling outcomes?*

Once the panel had answered the first question, it could then examine interventions that employed the identified emergent literacy skills and abilities, as well as any interventions that also promoted conventional literacy skills during the early childhood period. This was the second question of the panel: *Which programs, interventions, and other instructional approaches or procedures have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?*

The NELP also identified two more questions it was interested in answering. These questions were specifically related to the interventions and practices identified in the second question with considerations as to whether the interventions and practices were

more or less effective under various instructional circumstances (third question) and whether they work better with some types of children (fourth question). *What environments and settings have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?*

*What child characteristics have contributed to or inhibited gains in children's skills and abilities that are linked to later outcomes in reading, writing, or spelling?*

### **WHAT SKILLS CONSTITUTE THE DOMAIN OF EMERGENT LITERACY?**

The NELP found six literacy-related variables that consistently predict later conventional literacy outcomes. The six variables with moderate to strong relationships are *alphabet knowledge, phonological awareness, rapid naming of letters and digits, rapid naming of objects and colors, writing or writing name, and phonological short term memory*. Most of these findings are the result of a relatively large number of studies that included a large number of children. Consequently, the relationships between these variables and later conventional literacy outcomes not only are sizable, but also are likely to be highly reliable and stable.

A second set of important variables was moderately correlated with at least one conventional literacy skill, but did not consistently maintain this relationship when other variables were accounted for or when the variables had not yet been evaluated in this way. These five emergent skills are *concepts about print, print knowledge, reading readiness, oral language, and visual processing*.

Other variables were identified that have only a weak relationship with later conventional literacy or for which there is no current evidence of a relationship. In general, variables reflecting measures of visual skills (i.e., visual motor, visual memory) are only weakly related to later reading and writing. Additionally, variables reflecting measures of environmental print (e.g., the ability to decode or read common signs and logos) are only weakly related to later reading and writing. Some variables that have been proposed as reflecting precursor literacy skills (e.g., emergent reading) did not appear in any of the analyses. Only those variables for which at least three studies included

a reported correlation between the skill measured in kindergarten or earlier and a conventional literacy outcome could be included in the analyses. It may be that these variables have not been related to later conventional literacy outcomes or that there were fewer than three studies available in the published literature.

### **WHY DOES ORAL LANGUAGE HAVE A WEAKER RELATIONSHIP WITH LATER READING COMPREHENSION AND DECODING THAN OTHER EMERGENT LITERACY SKILLS?**

The NELP established that global oral language had a moderately weak relationship with later conventional literacy skills. A variety of skills, such as receptive and expressive vocabulary, receptive and expressive language, listening comprehension and syntax, comprise global oral language. Because it was not expected that oral language would be a weak predictor of conventional literacy, especially reading comprehension, the NELP examined the relationship of these finer-grained oral language skills in more detail.

This examination revealed that simple measures of receptive and expressive vocabulary had a relatively weak relationship with both the conventional literacy skills of decoding and reading comprehension, while more complex skills, such as definitional vocabulary, listening comprehension, and grammar, had significantly stronger relationships with conventional literacy skills. Such results are potentially instructive about the focus of early childhood education. They suggest that a focus on building vocabulary alone is unlikely to be sufficient for improving outcomes not only in literacy, but also in oral language itself. However, these results should not be taken to imply that well-developed vocabularies are unimportant for literacy. The results suggest that well-developed vocabularies are insufficient for literacy. More complex oral language skills are dependent on vocabulary. For instance, a child with strong grammatical knowledge, but limited vocabulary, would have a difficult time understanding a text or writing a meaningful narrative. Vocabulary provides the foundation for grammatical knowledge, definitional vocabulary, and listening comprehension.

### **WHAT TYPES OF INTERVENTIONS DID THE NATIONAL EARLY LITERACY PANEL EXAMINE?**

The NELP searched broadly for all interventions that measured the emergent literacy skills identified by the panel as predictors of later reading outcomes, as well as any interventions that examined outcomes of conventional literacy. Once the panel had retrieved all the studies that met these criteria, they categorized them by type of intervention. Five categories of interventions were identified by the panel, including code-focused interventions, shared reading interventions, parent and home programs, preschool and kindergarten programs, and language enhancement interventions. The code-focused interventions included studies that examined phonological awareness, alphabet knowledge, and early decoding (i.e., phonics). Language enhancement interventions focused on improving children's oral language.

### **WHAT DID THE PANEL FIND OUT ABOUT THE EFFECTIVENESS OF THE INTERVENTIONS FOR PROMOTING EMERGENT LITERACY AND LATER READING?**

The NELP found that explicit attempts to build code-related skills; to share books with young children; to enhance oral language; and to use home, preschool, and kindergarten interventions all can be valuable paths to at least some literacy and language outcomes.

The code-focused instructional efforts reported statistically significant and moderate to large effects across a broad spectrum of early literacy outcomes. Code-focused interventions consistently demonstrated positive effects directly on children's conventional literacy skills. Book sharing interventions produced statistically significant and moderate effects on children's print knowledge and oral language skills, and the home and parent programs yielded statistically significant and moderate to large effects on children's oral-language skills and general cognitive abilities. Studies of preschool and kindergarten programs produced significant and moderate to large effects on spelling and reading readiness. Finally, language-enhancement interventions were successful at increasing children's oral language skills to a large and statistically significant degree. Together, these findings suggest that there are many things that parents and preschools can do to improve the literacy development

of their young children and that different approaches influence the development of a different pattern of essential skills.

### **WERE SOME INTERVENTIONS MORE EFFECTIVE FOR YOUNGER CHILDREN THAN OLDER CHILDREN?**

There is great interest in the idea of providing age-appropriate interventions for young children. However, there were few important differences among these categories of study with regard to age. One important exception was in the area of language interventions, which showed greater effectiveness early on. Otherwise, when age-level comparisons were possible, the large and significant effects of the various interventions were obtained with groups of both younger and older children. This means that most of the types of instruction that are effective in kindergarten are very similar to those that can be used in preschool. Unfortunately, there have not been direct tests of age differentiation in early literacy instruction across kindergarten and preschool, and there are still too few studies of preschool literacy instruction to provide comparison results that can be embraced with a high degree of certainty. Future research into this issue could shed greater light on what, to some observers, may seem a surprising finding.

### **WHAT DID THE PANEL LEARN ABOUT INTERVENTIONS THAT SUPPORT THE LANGUAGE AND LITERACY DEVELOPMENT OF ENGLISH LANGUAGE LEARNERS?**

There were a handful of studies that examined interventions with populations that included English language learners. However, there were not enough of these studies with similar outcomes or of similar intervention type to allow for any determination of findings. In addition, the majority of studies did not differentiate populations by languages spoken when reporting outcomes. Currently, there is no reason to believe that the same practices and programs that improve the language and literacy skills of native speakers would not be beneficial to young children learning English. Due to the language and literacy needs of this burgeoning population, this is an area where future research is much needed.

### **WERE THERE FINDINGS THAT ADDRESS THE LITERACY NEEDS OF CHILDREN WITH DISABILITIES OR WHO ARE AT RISK?**

There were only two instances when analyses could be conducted to assess if the interventions may have moderated literacy outcomes for children with disabilities or who are considered at risk.

To examine whether shared-reading interventions had smaller or larger effects for children based on their risk status, studies were divided on the basis of whether the majority of the children in a study were at risk or not. Children attending Head Start were classified at risk because they are growing up in poverty. There appeared to be larger effects for studies that focused on children who were not at risk, but the difference in effects was not statistically reliable.

For the language enhancement interventions, it was possible to determine if the language status of the children (i.e., children with language impairment versus children with typically developing language) affected outcomes. No significant differences were found in the effectiveness of the interventions based on the language status of the children. This means that the interventions were equally beneficial in improving children's oral language whether they had language impairments or not.

### **WHAT ARE THE IMPLICATIONS OF THE FINDINGS FOR INSTRUCTION AND ASSESSMENT OF YOUNG CHILDREN?**

The findings of the NELP have implications for practices in early childhood education. Key skills have been identified that can serve as important, reliable, and stable indicators of children's development toward acquiring conventional literacy skills. Early childhood educators interested in monitoring children's progress or in identifying those children who need targeted intervention to promote early literacy skills should use assessments that provide reliable and valid measurements of these skills. The findings suggest that instruction focused on these skills may provide valuable literacy preparation, particularly for children at risk for developing reading difficulties. These findings provide guidance to early childhood educators

for selecting appropriate curricula for the children they serve, and they provide guidance to curriculum developers concerning the skills that should be targeted within instructional activities.

An instructional focus on vocabulary during the preschool and kindergarten years is likely a necessary but insufficient approach to promoting literacy development. Early childhood educators will need to include instruction that focuses on more complex oral language skills to insure that young children have a solid foundation for later reading success. In addition, starting earlier in promoting language development with children younger than three will provide a solid boost for achieving strong outcomes in oral language.

In general, the NELP found that a wide range of interventions had positive impacts on children's early literacy learning. However, these positive results were due to the nature and intensity of the instructional activities examined in the studies. There is a clear need for translational research. Researchers or their agents delivered many of the interventions and now examinations of more typical implementations of such programs within early childhood education are needed. For these interventions, especially the ones that involved high-impact instructional strategies, the activities and procedures were different from those typically seen in early childhood classrooms. These interventions were usually delivered as one-on-one or small group activities, occurred frequently, and were adult directed.

Successful code-focused instruction will likely include all or most of the components of the interventions included in this synthesis. Thus, instruction should include phonological awareness training with activities involving higher-level phonological awareness skills, such as actively engaging in analysis or synthesis of words at the syllable, onset-rime, or phoneme level with feedback on correct and incorrect responses. Additionally, although phonological awareness training can be conducted alone, the NELP results suggest that there may be an advantage to combining such training with activities designed to teach children about specific aspects of print, such as letter names and letter sounds.

Based on the NELP results, shared reading alone is

not a sufficient response to the literacy needs of young children. This is particularly true for children at risk or who show weaknesses in the specific emergent literacy skills that have not shown improvement due to reading to children, such as phonological awareness and alphabet knowledge. Overall, shared reading interventions provide early childhood educators and parents with a useful method for successfully encouraging the development of young children's oral language skills.

### **IS THERE INFORMATION FROM THE NATIONAL EARLY LITERACY PANEL THAT WOULD BE BENEFICIAL TO PARENTS IN SUPPORTING THEIR CHILDREN'S EARLY LITERACY DEVELOPMENT?**

There are many ways that parents can positively influence their children's early literacy skills. The NELP found that shared reading between parent and child provides positive outcomes for children's oral language skills. Additionally, in general, parents can deliver targeted language interventions that have positive impacts on children's oral language. When parents are involved in more structured types of parent and home programs, then children again benefit with better oral language and cognitive skills.

### **WHAT SHOULD POLICY MAKERS KNOW ABOUT THE FINDINGS OF THE NATIONAL EARLY LITERACY PANEL?**

The key message for policy makers is to know that there are many things that both parents and early childhood educators can do to improve the language and literacy development of young children. Some of these techniques and practices are being implemented or can be implemented easily, but many will require professional development for teachers and support for parents in order to realize improved outcomes for children. In addition, there is a need for more and better research to answer many questions that are left unanswered as a result of this research synthesis. Policy makers play a critical role in advocating for a research agenda that will lead to young children's early literacy development and future reading achievement.

### **WHAT GAPS EXIST IN THE RESEARCH EXAMINED BY THE PANEL?**

The NELP report provides a rich set of findings about the relationship between early developing child skills and later literacy attainment and about

the effectiveness of interventions for helping young children to progress toward successful literacy learning. The analyses carried out by the panel also reveal important gaps in the empirical research record that future research should address.

The panel identified which early measures of children's skills were predictive of later decoding, reading comprehension, and spelling achievement. Some of these variables have been shown in previous research to be causally connected to literacy achievement, but this is not true for all of these variables. Future research must determine whether enhanced early instruction aimed at improving skills, such as alphabet knowledge, concepts of print, or oral language development, would consistently lead to higher later attainments in literacy.

The panel identified a wide variety of interventions that improved children's early literacy skills, and one pattern that emerged was that the various categories of interventions had qualitatively different outcomes. For example, the code-oriented interventions improved children's knowledge of phonology and print conventions, while shared-book interventions enhanced children's language development. It is possible that some of these interventions would actually have a wider impact than what was determined here, but that will require that future studies of such interventions employ a wider range of outcome measures. In fact, this would be a useful research convention for early literacy-intervention

research. If such studies would use a wider range of outcome measures, it would be possible to determine the breadth of impact that these interventions may have. Also, given the complementary findings for the various types of interventions, it would be helpful if researchers would undertake longitudinal studies of more complex interventions (such as combinations of the types of efforts that have worked in the past), making it possible to evaluate the long-term value of more ambitious and complete efforts to develop early literacy skills.

Finally, the NELP found few demographic differences in children's learning patterns. Future studies of early literacy skills should consider the possibly varied impact of early interventions, particularly on large and growing groups of children who struggle with literacy (such as second-language learners and children being raised in poverty). However, even if research studies are not designed to specifically answer such questions, it would be helpful if they would report their data separately for children from different demographic categories, as this would make it possible for future meta-analyses to make sense of any patterns that may exist.

Despite the gaps in the empirical research record on children's early literacy development and the need for future research, the NELP and its report provide valuable knowledge about children's early literacy skills and the interventions that impact those skills, as well as conventional literacy skills.

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