International Reading Association–National Institute for Child Health and Human Development Conference on Early Childhood Literacy Research

A Summary of Presentations and Discussions

Prepared Summer 2005 by

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Introduction

On February 14 to 16, 2005, an early childhood literacy conference in Washington, D.C., brought together researchers with multiple viewpoints from a number of disciplines. The meeting was part of an ongoing collaboration on literacy research between the U.S. National Institute for Child Health and Human Development (NICHD) and the International Reading Association (IRA). Discussion at the conference centered on

- The state of the science and knowledge on preschool literacy
- What researchers need to learn and the directions research should take

Individual researchers presented recent investigations in their areas of expertise. In groups, they identified research priorities. The central issues raised and discussed throughout the conference coalesced into research priority recommendations.

This report summarizes presentations and discussions from the conference. It is organized according to central issues raised and discussed, rather than by a strictly chronological account of the meeting. The research priorities outlined here follow the order of the conference agenda rather than an order of importance. Thus, we present new topics generated by the participants after those established in the program. Our goal was to describe the presentations and panel discussions around each issue, including descriptions of need as well as potential impact on children's emergent literacy.

It was generally agreed among conference participants that *emergent literacy* involves the skills, knowledge, and attitudes that are developmental precursors to conventional forms of reading and writing. These skills are the basic building blocks for learning to read and write. Further, the researchers generally agreed that interventions in preschool should focus on emergent literacy skills since most very young children do not yet engage in conventional literacy. However, it was observed that there is lack of agreement in the field over what count as "emergent literacy skills." Thus, a clear need is to refine our understanding of the skills involved within emergent literacy.

The research priorities discussed and identified at the conference included

- Issues related to special populations: bilingual education, multicultural issues and poverty, children with disabilities
- Parenting for literacy, including intervention
- Literacy development and needs of children from birth to three years of age and from three to five, with particular emphasis on writing and storybook instruction
- Early childhood intervention and curriculum (including random field trials) and what, specifically, constitutes effective, high-quality preschool experiences
- Measurement and assessment: capacity building, including research tools, methods, and design
- Basic research; theory-driven research
- Teacher training and professional development; implementing change in the classroom

- Complex relations among preschool, home, teacher, child, parent, and other sources of influence on children's early literacy development

Following summaries of opening presentations on current large-scale studies and the work of the National Early Literacy Panel, we present synopses of discussions around these research priorities. Names and affiliations of the presenters and discussants who spoke to particular topics are provided after each subheading.

This summary was prepared in summer 2005 and posted to the International Reading Association website in September 2005. For more information about the summary, the conference, or the IRA–NICHD collaboration, contact IRA's Washington Office, 444 North Capitol Street, N.W., Suite 630, Washington DC 20001, USA; tel. +202-624-8800; e-mail irawash@reading.org

I. Presentation Summaries

Understanding Early Literacy Through Current Large-Scale Studies

Summary of presentation by
Kyle Snow
National Institute of Child Health and Human Development, National Institutes of Health
Bethesda, Maryland

The U.S. federal government currently funds a number of large-scale studies that can provide important information relevant to early literacy. No one agency has sole responsibility for literacy and early education. These studies are funded across agencies and disciplines and can be a source of fresh insights and new perspectives, despite limitations: For some of these studies, the data are not publicly available; they may include samples that are not representative, and their specific focus on literacy varies.

However, these studies represent an important investment and provide more data than can be analyzed. These data, which are already collected and cleaned, have the potential to address important questions and offer fresh perspectives that may lead to substantive research projects, including the refining and testing of hypotheses.

There are both advantages and drawbacks to secondary data analysis. Such analysis allows researchers to capitalize on prior investments, makes efficient use of resources, and enables researchers to identify the studies that are currently under way in order to uncover research gaps in the field. One drawback to secondary data analysis is that it relies upon extant databases that have limitations and are in many cases inaccessible. Secondary analysis also relies on data that may not match current research foci and goals, since they were originally collected for a different purpose. There may also be issues with rigor and research design.

How do researchers find studies with appropriate data and determine their usefulness? Finding studies may be difficult because no one agency has sole responsibility for early literacy or even early education, which necessitates looking across agencies. Currently, agencies are interacting, which facilitates the process. In terms of usefulness, it is important to look for studies that offer samples of children, teachers, etc., who are representative and relevant to the research question; otherwise the findings may fail to generalize when scaled up. Additionally, the level of scientific rigor should be considered. Many studies include data on early literacy constructs, which may or may not have already been published, although the extent of the data varies.

There are three studies that provide good possibilities for extensive additional study in early literacy:

- *Early Childhood Longitudinal Study* (nces.ed.gov/ecls/)
  The ECLS birth cohort includes children from birth up to 9 months; the

kindergarten cohort includes children from kindergarten through grade 3. Both are prospective, longitudinal studies with well-documented data. Secondary analysis of these data could be valuable.

- *Family and Child Experiences Survey* (www.acf.hhs.gov/programs/opre/hs/faces/) The survey includes a representative sample of 3,200 children in Head Start. FACES funding extends from 1997 through 2008. A new cohort is identified every three years. Data collection uses multiple informants, direct assessment, and a well-developed battery based on primary standard instruments in the field (e.g., Woodcock-Johnson and other measures). The study utilizes very broad data collection. The relevant outcomes of FACES are findings on the development of early literacy skills and other skills and abilities in early childhood years. Although there are prolific technical publications available through the Office of Planning, Research and Evaluation website (see URL above), access to data may be limited due to the need to protect the participants' confidentiality. Currently, there are few peer-reviewed publications.

- *Study of Early Child Care and Youth Development* (secc.rti.org/) Begun in 1991 at 10 research sites across the U.S., SECCY uses a nonexperimental study design to examine early childhood care and development. Although not set up to be nationally representative, this large sample of over 1,300 children and their families does offer some diversity. Omissions of teen mothers, non-English-speaking households, children with obvious disabilities, and transient families were due to practical considerations and the research standards at the time the research was initiated.

  SECCY uses multiple methods and informants. Data collection relies primarily on standard instruments in the field (e.g. Bayley MDI, Bracken School Readiness, MacArthur CDI), but also includes health and socioeconomic outcomes as well as observation of preschool and elementary classrooms. SECCY has a prolific peer-reviewed publication record under corporate and individual research team authorship. Thus, the data are both available and well documented. There is also a small body of secondary analyses that continues to increase.

Comparison of the preceding studies:

- All have more data worth analyzing.
- ECLS and SECCY offer the most accessible data sets.
- SECCY provides the most peer-reviewed literature.
- ECLS provides the most peer-reviewed secondary analysis.
- FACES established a core battery for use on a large scale.
- SECCY has a limited sample but provides the greatest depth of data.

Ongoing grant-funded research was identified from which data are not currently available. It is possible that these data may become available in the future. It is worthwhile for researchers to be aware of these studies, which are listed below under the

granting agencies, so that the resulting research agenda does not duplicate what is already being done. None of these studies investigate literacy only.

Administration for Children and Families (ACF), Child Care Bureau:

- Early Learning Opportunities Act Discretionary Grants (short-term demonstration, trial purposes, potential partnerships)

ACF Office of Planning, Research and Evaluation:

- Head Start Impact Study
- Head Start Quality Research Centers
- Head Start University Partnerships
- Early Head Start Research and Evaluation Project
-

ACF Office of the Assistant Secretary for Planning and Evaluation/National Institute of Child Health and Human Development/Office of Special Education and Rehabilitative Services:

- Interagency School Readiness Consortium (not available to the public; examines language, literacy, and early math)

United States Department of Education (ED), Institute of Education Sciences:

- 4th National Even Start Evaluation
- Preschool Curriculum Evaluation Research Grants (for testing existing curricula)

ED Office of Special Education and Rehabilitative Services:

- National early intervention studies targeting children with disabilities
- Pre-elementary education studies looking at educational interventions for children with disabilities

Planned future work:

- Early Reading First National Evaluation (ED Institute of Education Sciences)
- 2007 National Household Education Surveys Program (ED; aims to understand children's educational experiences from a family perspective, with data generated broad but not deep)

The federal government supports a range of projects that bear on early literacy and there is the potential for further study. Unfortunately, most of the research that has great depth in data is of limited accessibility. The data that are available reflect various measures. Researchers need to ensure that data used in secondary analyses were generated using instruments appropriate to the current interest.

Federal agencies sponsoring research should continue to encourage further secondary data analysis and peer-reviewed publication of results. They should continue collaboration and coordination to maximize returns on funding investment and avoid duplication, in order to further the goal of helping children learn to read. Such activities, however, should consider the unique mission, goals, and culture of each agency in order to develop collaborations that reflect the collective strengths of multiple agencies.

Comments from discussion

The FACES data archive is now available on the Child Care & Early Education Research Connections website (http://www.childcareresearch.org/discover/index.jsp), and there are ongoing workshops to discuss the best ways to use the data. There is a commitment to making FACES data available for secondary analysis, and archive availability is increasing and improving.

There is a difference between the styles of scientific writing and the reading practices of teachers. The books that currently influence practice—those that do get published and read—are not research based. This creates a need for relevant results to be published in a language and writing style that is less technical and more accessible to practitioners. It is important for credibility that research findings be published in peer-reviewed journals, but the research must then be quickly presented in a form that is relevant and practical for the teacher to use in the classroom.

We also need to teach teachers how to collect and use the data, how to read the literature, and, how to use what they learn to make the classroom a better learning environment. The lack of standard preparation requirements for preschool teachers and the diversity of the early childhood workforce makes it very important that pre- and in-service education programs teach teachers how to understand research and how to put research into practice.

What the National Early Literacy Panel Tells Us About Early Literacy

Summary of presentation by
Timothy Shanahan
University of Illinois–Chicago

After introducing himself and others involved in the work of the National Early Literacy Panel (NELP), Tim Shanahan provided background on the panel and the Family Partnership in Reading. The intention of these activities is to design and disseminate educational materials based on scientific research and to increase the use of research on preschool literacy as the basis for educational decision-making. The mission was summarized as “Equipping parents to help their children.”

There is a need for further work on preschool-aged children. Multiple studies using different methods increase the robustness of the data. There is some potential for synthesis of findings, but there are variations in the quality of studies available for synthesis.

Four questions were addressed by the NELP:

1. What are the child skills and abilities that predict students' outcomes?
2. What are the environments that predict outcomes?
3. What are child characteristics that predict gains in early literacy?
4. What programs and interventions contribute to or inhibit gains?

Emergent literacy involves the skills, knowledge, and attitudes that are developmental precursors to conventional forms of reading and writing. It constitutes the basic building blocks for how students learn to read and write. Interventions in preschool should focus on emergent literacy skills since very young children are not yet engaged in conventional literacy. There is lack of agreement in the field over what counts as "emergent literacy skills." We need to further refine our understanding of the emergent literacy skills that constitute the domain of emergent literacy.

In defining emergent literacy, two conditions must be satisfied: First, emergent literacy skills must *precede* conventional literacy skills; second, the skills must be *related to or predictive of* conventional skills. There needs to be a demonstrable connection. The question is which skills actually correlate with later literacy development.

Answering question 1: What are the child skills and abilities that predict students' outcomes?

Participants outlined the process for identifying studies to include in the NELP meta-analysis. The databank search used 351 search terms and returned 6,700 citations. Those 6,700 studies were screened according to four criteria: written in English, published in a refereed journal, reporting empirical research, and including children from birth to age five years.

The initial screening reduced the pool to 1,825, whose abstracts were reviewed again; 275 survived to a full-text review. Forty-one were later rejected, leaving 234 studies that were included in the meta-analysis. These studies contain predictive data correlating early literacy skills with later conventional skills.

Three categories of literacy skills emerged: predictors of decoding, predictors of comprehension, and predictors of spelling. Participants listed the variables that were accepted as predictors of literacy skills. The panel set in place a minimum of three empirical papers on a given skill for it to be acceptable under the minimum requirements of meta-analysis necessary to estimate an effect size. Therefore, some variables that researchers might expect to see are not included in the results because they were not

sufficiently present in the body of literature that passed the screenings. Participants discussed differences between studies using univariate versus multivariate analysis.

The presentation then moved on to "finer-grained questions" asked in the review:

- Does age of assessment matter?
- Does age of outcome matter?
- Does the type of phonological awareness skill matter?
- Does the type of oral language matter?

Answering question 4: What programs and interventions contribute to or inhibit gains?

Research studies were evaluated according to their use of research design and methods as well as statistical analysis that allowed for the determination of cause and effect. It was noted that research studies vary hierarchically in their design for demonstrating cause-effect: experimental, quasi-experimental, and correlational.

Following an initial search, additional studies were identified from the citations in papers in the original pool, from suggestions by experts in the field, and by hand searches of key journals. Next the NELP categorized studies by intervention type (in contrast to the National Reading Panel approach). The categories of interventions were derived after coding, rather than matching papers to pre-existing categories. There were 168 studies and five categories in the final pool.

- Category 1: Predictors of decoding (51 studies)
- Category 2: Reading to and sharing books with children (24 studies)
- Category 3: Parent and home programs (27 studies)
- Category 4: Preschool and kindergarten programs (39 studies)
- Category 5: Oral language enhancement studies (27 studies)

There were several factors that needed to be considered involving the subjects in the studies: research group design, possible confounds, and the initial group make-up in quasi-experimental studies.

Participants discussed three interventions—oral language, phonological awareness, and alphabet knowledge—in some detail. The *oral language* interventions of shared reading and those that require children to respond were the ones that showed positive results. Teachers, parents, aides, and volunteers were effective agents of change. Oral language intervention in the one study that followed children into kindergarten did not show improvement in decoding but did predict comprehension success. *Phonological awareness* interventions were conducted primarily with school-age children. The research is not clear regarding what happens with three- and four-year-olds. Finally, there was little evidence that *alphabet knowledge* had an effect on later reading success, but phonological awareness, alphabet knowledge, and print knowledge together did have a positive effect.

Participants concluded with a discussion of lessons learned through the analyses. First, the NELP review points out the difficulty of doing meta-analysis. Second, the NELP has attempted to establish the state of the science in preschool literacy and what findings are available.

After pursuing whether interventions are effective in improving children's reading development, questions 2 and 3 will be pursued. Finally, many questions that the research community would like to see answered will not be answered because the data do not exist. However, the panel will highlight the areas in which further research is needed.

Comments from discussion

Because the NELP relies upon published studies, it is restricted in the types of analyses it can conduct by the quality and availability of the published data. For example, due to statistical constraints, it is not possible for the NELP to "create" multivariate correlation coefficients from studies that reported only bivariate correlations. Thus, while it may be useful to explore hypotheses about complex multivariate relationships between, for example, environmental factors and early literacy outcomes, the available data greatly restrict the ability of NELP, as a meta-analysis, actually to report on such analyses if they were not initially conducted, or to generate these relations through secondary analysis if the necessary correlations are not reported.

In general, the panel's results are limited by the quality of available research. Past concepts about what should be researched now limit what is available. For example, longitudinal studies beginning prior to school were not conceptualized in the past because little literacy development was believed to happen prior to school.

A second limitation is seen in the "narrative" or "story orientation" of early childhood intervention. We are now interested in looking beyond stories to consideration of a variety of informational text formats presented in a variety of media, such as animated books and Web-based presentations.

A third limitation is the small number of studies that look at monolingual versus bilingual children. While second-language–learning studies are a valid interest, there is a dearth of data on minority language and second language. Eighteen studies in these areas were found, and only one included preschool.

A fourth area of limitation discussed is using the review to increase an understanding of early literacy development. It is doubtful that data are available to test developmental hypotheses, so solid research driven by developmental theory is needed. However, the current state of theory limits both the research questions and studies that could lead to such hypotheses. The current state of the theory is limited by the development of the research base, which has been largely built upon isolated studies that more readily lend themselves to inductive theory development (that is, efforts to generalize from specific studies). What is lacking is a theory capable of driving the research program in a

deductive way (that is, deriving specific hypotheses from the theory that lead to specific studies).

Issue: Bilingual Education, Multicultural Issues and Poverty, Children With Disabilities—What We Know, Research Considerations, and Future Directions

Several presentations were given under this topic. The summary of comments from discussion follows summaries of the individual presentations.

English Language Learners

Summary of presentation by
Patton Tabors
Harvard University
Cambridge, Massachusetts
David B. Yaden, Jr.
University of Southern California
Los Angeles, California

Research has historically excluded English-language–learning (ELL) children, but we're discovering that, with the changing demographics of the U.S., studies are not truly representative without this information; there are many children for whom English is a not the native language who attend public school across the nation, including children in preschool. Currently we have crosslinguistic studies that examine the transition from home language to school language and others that examine literacy development. There is currently research underway on children who speak Spanish, both at Penn State University and Utah State University. In addition, Patton Tabors is conducting a longitudinal study, starting in preschool, that focuses on both English and Spanish speakers. Among existing large-scale studies, FACES and Even Start evaluations demonstrate how poorly children of color and English-language learners achieve in school.

Despite the small amount of research on ELL students, it does appear that current delivery systems are not working. Moreover, it is not clear that we understand what literacy development in young children looks like if English is not their native language. Also, children may speak multiple languages. This group of children should be included in research if we are to get a clear picture of how to teach them.

Research examining language and ELL children is complex because it requires tracking multiple languages at the same time. We need longitudinal designs in multiple languages and research on bilingual children, focusing on how they acquire language—regardless of the language that is being spoken. We need studies of children's home language, how English is introduced, and how this influences language development.

Moreover, it is not clear that we really know how best to assess children's language development in either language when children are acquiring two languages at the same time, even for children who are not at risk for underachievement. It is important to study the language development trajectories of bilingual children. We need research to help tease apart the influences of socioeconomic status, the child's first language, amount of language exposure (and the contexts in which that exposure is provided), and other variables. For example, some parents are highly literate; how does this influence their children's literacy development? We must keep in mind that bilingual and ELL children are a very heterogeneous group. In addition, research needs to focus on language and literacy development of children in immigrant families.

Measurement development is crucially needed for both research and practice with ELL children. While some instruments do exist, and some new measures have been developed or adapted for use with ELL students, more are needed.

Disabilities

Summary of presentation by
Laura M. Justice
University of Virginia
Charlottesville, Virginia

The new Individuals With Disabilities Education Improvement Act (IDEA) permits the use of Response to Instruction/Intervention (RTI) for identification of disabilities. This may help at the preschool level. RTI will redefine service delivery, and this will affect preschoolers. However, this raises the issue of understanding the difference between risk and disability. Combining the two may be one reason there is an overrepresentation of minority children in special education.

The panel posed the following questions:

- What theoretical perspectives should be used to guide clinical outcomes research in developmental disabilities and emergent literacy?
- From a biopsychosocial perspective, what factors in the scientific literature are most influential for explaining literacy risk and resilience for children with developmental disabilities? What biological, psychological, and social factors have yet to be adequately studied?
- What type and quality of evidence is required to consider an emergent literacy intervention approach effective, and what intervention approaches are considered effective for enhancing emergent literacy skills and knowledge for children with developmental disabilities?
- How do we identify and conceptualize high-priority targets for emergent literacy development and intervention for young children with developmental disabilities?
- How do we integrate high-priority targets into existing therapeutic and educational interventions?

Poverty

Summary of presentation by
Victoria Purcell-Gates
University of British Columbia
Vancouver, British Columbia

What is it about poverty that impedes literacy development? In current research, school environment, individual cognitive ability, and children's language and literacy status at school entry are shown to be influenced by children's family and community socioeconomic status. What is not clear is how lack of basic needs, such as shelter and health care, influence children's literacy development. Also, we have not explained the role of socioculturally based literacy practices in learning and in early literacy development.

We must consider how families from different cultural heritages and social backgrounds construct and participate in literacy practices. What are the behaviors within social and cultural groups that are used by those groups as part of the early learning and literacy experiences of children? This may be particularly important among families in poverty, who tend to come from outside of the mainstream. Is it possible that there are ways other than those seen in white middle-class families to support early literacy?

Research must take these issues into consideration in any comprehensive account of preschool literacy development.

Race and Ethnicity

Summary of presentation by
Julie Washington
Wayne State University
Detroit, Michigan

In research with African American children, contextual factors such as poverty are often overlooked. While poverty does have an influence, many affluent African American children are not doing very well in school, lagging behind their majority peers just as do African American children from poor homes. Part of the challenge of research in this area will be teasing apart the influence of poverty from the group's literacy status overall. Are there culturally driven practices that inadvertently lead to school failure, and others that lead to success for these children? These would be separate from poverty-driven issues. For example, African Americans have a strong oral storytelling tradition. Does this tradition support literacy development, or does it drive children away from text?

Traditional research in this area has tended to use a subtractive approach. This is also the case for research with English language learners. Researchers start with mainstream constructs and then identify differences between the two groups. Thus, there is no way for minority groups not to come up short. Instead, an emic approach may be more

fruitful. Using an emic approach, researchers start with African American children and move forward.

Researchers need to understand how African American children approach reading. Phonological differences may also be important, including perception of speech sounds and differences between African American English and Standard American English. Intervention research should include questions about whether children should be explicitly taught Standard American English. Is this a good idea? How early in children's lives would we need to apply these kinds of approaches if they are to be effective in promoting literacy?

Comments from discussion

As we consider future research directions for English language learners and children of ethnic minority groups, it will be important to remember that being poor doesn't drive an outcome *per se*. Rather, poverty operates through interactions between children and families, schools, etc. There may be differences in parental as well as community expectations, and there may be cultural differences among groups that differ ethnically and socioeconomically. Socioeconomic status may be a mediator, rather than a moderator.

The cultural practices of teachers and families are a further consideration. If researchers are trying to sort out ethnicity and poverty, they need to recruit samples differently. For example, researchers may want to select samples that include children from one ethnic group and all income levels across this group. There is no good existing theory as to what it is about being poor that makes it harder to learn to read. Explicating such a theory would be an important step forward. In addition, when we think about models and the role of socioeconomic status (SES), research may need to go beyond the literacy environment; for example, children's self-regulatory behavior is a strong predictor of literacy development. Teachers' ability to control the classroom, and warm and responsive interactions with students coupled with the learning environment, may be important variables to consider.

With regard to research methods, multimethod designs and fidelity of treatment will be important to consider. Qualitative research may help us understand the whys and hows.

Issue: Parenting for Literacy, Including Intervention

Family Literacy

Summary of presentation by
Monique Sénéchal
Carleton University
Ottawa, Ontario

There is a false sense of shared understanding about the term "emergent literacy." There is a need to find a consensus about this concept as we investigate children's progress through various phases of literacy learning and the role of parents in this development. How do parents change their practices as children develop?

Parents and researchers need to examine optimal ways for parents to act (or intervene) to support literacy development. For example, intervention studies suggest that shared book reading may support children's oral language development but that it does little for their decoding development. Rather, reading development is supported by explicit instruction in letters, letter sounds, etc. This begs the question of whether the parent as tutor for young children is a viable model.

Comments from discussion

Considerable discussion revolved around the significance of the home literacy environment. Home environments are multivariate and include factors such as the level of parent education, SES, race, ethnicity, and culture. It was stressed that no particular model should be conceptualized as "normal" with others being "deficient." This requires that we broaden our understanding of various cultural beliefs and practices that actually do relate to literacy development.

It is important to consider that research informed by sociocultural theories might ask a separate set of questions that focuses on other theories, such as developmental or cognitive. The sociocultural theoretical framework looks at emergent literacy as resulting from localized social practices. Research in this field could benefit from the integration of the sociocognitive ideas that were discussed within developmental and cognitive frameworks.

There was discussion of the tendency for research and early education programs to send messages to parents telling them what they should do, rather than to study the parents' current activities and behaviors to see how these may inform studies of culturally relevant practices. While home experiences are very important to emergent literacy, the evidence is that intervening in a home setting is not promising, and may not be very viable. We might think of schools changing in response to parents rather than how families serve the school, though this was an area around which there was disagreement. There is still a key question involving what kind of behaviors should be changed in homes, how much they

might need to be changed for children to show growth in literacy, and what would be required to sustain any changes within the family.

The existing research on adult-child interaction styles and their effect on early reading and writing is insufficient to make specific recommendations to parents. We still need to define the key features of adult-child interactions and how those interactions vary according to cultural and linguistic background and the age of the child. Research is needed on the changing role of the parent over the developmental trajectory. We are still learning about the relationship between different styles of literacy interaction and literacy learning outcomes. Additional research is needed to assess the outcomes of both interaction styles and varieties of learning activities that parents use with their children in the very early years.

Issue: The Literacy Development and Needs of Children From Birth to Three Years, and From Three to Five Years—Instructional Factors

Two presentations were given under this topic. A summary of comments from the ensuing discussion follows the presentation summaries.

Writing as an Instructional Factor in Early Literacy Development

Summary of presentation by
Deborah Rowe
Vanderbilt University
Nashville, Tennessee

Dr. Rowe divided her discussion into three subtopics: the very beginnings of writing; patterns of adult-child interaction around writing and their effects; and learning-to-write activities for preschoolers and their effects.

In regard to the beginnings of writing, research shows that around three years of age some children begin to form the idea that their unconventional marks can express a message. We know that at this point children begin to construct hypotheses about the social purposes of writing, the ways speech is recorded in print, and differences in genre. Dr. Rowe emphasized that there is very little research on the ways that children's experiences with writing between infancy and two years serve as a foundation for these important developments and affect learning in the later preschool years.

There are a number of key areas of interest that remain underinformed by the research on writing from birth to age three. These include the attitudes and beliefs that caregivers have about writing and learning-to-write activities and how these change with the age of the child; children's opportunities to observe, independently explore, and participate with others in writing; and the relationship between different kinds of early writing

experiences and the reading and writing behaviors of older preschoolers and school entrants.

Extant research on adult-child interaction styles provides evidence that young children's interactions with adults and peers around writing can influence children's motivation to write, definitions of writing, the conventionality of their texts, and other salient factors. This research, however, is insufficient for providing specific recommendations to caregivers and preschool teachers. Further understanding is needed about the key features of adult-child interactions around writing; variations in interaction across settings, age, and sociocultural background; and the relationship between styles of interaction and learning outcomes.

Current preschool teaching practices are based on widely varying views of how young children learn to write and on the nature of "developmentally appropriate" learning environments for young children. While some preschools, parents, and teachers opt for direct teaching of handwriting and individual reading and writing skills, early childhood educators and emergent literacy researchers have recommended activities characterized by open-ended exploration of literacy materials and opportunities for children to try to write for functional purposes. Additional research is needed on the outcomes of various theory- and research-based learning-to-write activities.

How Storybook Instruction Impacts Early Reading Development

Summary of presentation by
Kathleen A. Roskos
John Carroll University
Cleveland, Ohio

Dr. Roskos led a discussion on the role of the adult, the role of the book, and the role of professional development in early reading development. In general, we have considerable information on storybook reading, but research is still needed on what counts as high-quality, effective reading instruction.

While experimental research supports adult use of dialogic and describer styles of book reading, the effects of the styles that children generally encounter in preschool programs and the influence of the styles in published early literacy programs used in these preschools remain unclear. Research is therefore needed on the differential effects of teacher-led book-reading styles, as well as on the effects of commercial early literacy programs on preschool book-reading practice.

Though much of the research to date has focused on the frequency with which children are read to and on adult book-reading style, recent work indicates that book quality may be more decisive in literacy learning outcomes of storybook reading than we previously thought. This suggests that we need to focus on the book itself as a scaffold to support children's literacy development. Research is needed on the effects of book qualities on children's attention to print and story comprehension skills. Research is also needed on

the effects that alternative ways of encountering text can boost literacy development, especially for children at risk.

Effective reading instruction involves both effective professional development and quality planning and practice. Research indicates that expert teachers demonstrate greater flexibility and sensitivity in planning, base their plans on research-supported methods, and implement individualized instruction more often. We need further understanding of the level of professional development that provides teachers with the knowledge and skills they need to plan and implement effectively research-based book-reading styles in their everyday practice. Further, given the emerging understanding of the importance of book quality, research is needed on the kinds of training that will improve teachers' abilities to match effectively children's existing skill levels, book qualities, and early literacy instructional objectives.

Comments from discussion

It is important that we provide arguments that support writing and good use of oral language along with reading, rather than prioritizing reading at their expense. Research-based writing instruction approaches need to be presented in professional development. To do this, we need more descriptive studies of children in context, especially very young children. We have emphasized children's individual development, but inclusion of sociocultural perspectives is needed to broaden our understanding of how writing works socially and relationally for the child.

One problem here is the perception that "if it is not tested, it's not important." Therefore, we should consider measuring writing abilities. One aspect of this is looking at writing as a physical act. We need to study the role of tools and multimedia in the process of physical motor development for literacy. A second difficulty is that composition is a difficult concept in teaching, and teachers typically emphasize conventionality and penmanship rather than the actual authoring process. Writing styles are called different things in different studies. Writing theories and style names have not been correlated and cross-compared.

Motivation is seen as an important issue as well. Intervention studies for at-risk students are moving quickly toward diagnostic models without consideration of the ability of the approach to create a lifelong love of learning. Interventions need to be thought of in the long term and take into account the multiple effects of the approach, not just test success. An aspect of this is that when we recast the role of the book as the role of the text, there are other dynamics that come into view, particularly the developmental trajectory of the child.

Finally, it is unclear from research data whether reading to children creates a lifelong love of reading.

Issue: Early Childhood Intervention (Including Random Field Trials) and Effective, High-Quality Preschool Experiences—What We Know, Research Considerations, and Future Directions

Several presentations were given under this topic. A summary of comments from the ensuing discussion follows the presentation summaries.

Preschool Curriculum Throughout the Years

Summary of presentation by
Lesley Mandel Morrow
Rutgers University
New Brunswick, New Jersey

There are several models of early childhood instruction that inform current practice with, perhaps, the predominant theory being that of constructivism, which suggests that children require very little intentional instruction. The history of early childhood education begins in the 1700s with Rousseau, who stated that children learn through their own curiosity and without teacher intervention. Pestalozzi suggested that children needed guidance but little instruction. Froebel coined the concept of kindergarten, in which teachers created informal learning experiences for children through play. The Dewey philosophy provided the roots of how preschool looks today, including whole-class and small-group theme-driven activities, with artwork and center activities in line with the theme. Play was important.

From these principles, the National Association for the Education of Young Children (NAEYC) identified developmentally appropriate practices that included play, following curiosity, natural growth, and informal teaching, and a child-centered model focusing on children's physical, social, and emotional development. Head Start's original mission focused on improving children's health as well as their physical, social, and emotional development. Other curricula included High Scope, which is based on Piagetian theory, and Montessori, which promotes explicit instruction using manipulative materials to teach specific skills, with the teacher as a guide. The methods of instruction were highly specific. Reading Readiness approaches held that educators should not teach children how to read until they were about six years of age. Rather, this approach focused on visual and auditory discrimination.

Emergent literacy, based on constructivist theories, promoted rich literacy environments, pretend reading and writing, and real literacy activities across modalities. Play (e.g., post offices) was important to promote literacy. There was little focus on assessment.

About seven years ago we "got serious" about preschool. The importance of parent involvement was documented. New partnerships between NICHD and IRA were forged with new books and new position statements. The Institute of Education Sciences convened the National Early Literacy Panel, and multiple federal agencies funded

additional research. Legislation such as the Reading Excellence Act and Early Reading First has been based on research findings. State standards now reflect heightened awareness of preschool efficacy. All of this has changed the look of early childhood literacy. Teachers and teaching practices are changing. There are literacy artifacts on the walls, more small-group and guided instruction, and children are practicing what they have learned.

Nevertheless, earlier research documented important elements of effective early childhood literacy instruction that should not be thrown away: exploration and parent involvement. We also know that professional development is important. It will be important to investigate the effectiveness of the programs in place, and to explore how much explicit instruction and how much play are effective in improving child outcomes.

Curriculum Models Being Used and What We Know About Them: Context, Current Status, and Suggested Directions

Summary of presentation by
David K. Dickinson
Boston College
Boston, Massachusetts

Historically there has been a limited didactic role for the teacher, coupled with "alphaphobia." The prevailing views of child development were constructivist, with hostility toward teaching reading and the belief that focusing on preacademic skills was inappropriate. Preschool educators were unwilling to use the word "teach" with regard to preschool experiences. This may have been, in part, a reaction to early heavy-handed behavioral approaches to teaching reading.

Where are we now? Descriptive data have been collected through FACES. Neither High Scope nor Creative Curriculum has a systematic focus on literacy goals. Indeed, the notion of curriculum has not been associated with high-quality programs. To date, there has been no systematic and explicit examination of curricula. For example, the Early Childhood Environment Rating Scale (ECERS), one of the most frequently used preschool classroom observation measures, has no items pertaining to print. The ambivalence of teaching reading is played out at the level of teachers. Preschool teachers could not answer the question, "What is curriculum?" This is strikingly different for K–12 teachers.

There is little research on the effect of curricula. What there is indicates that literacy skills show limited growth and other sources of variance are more powerful. These findings suggest that having a curriculum in place can make a difference in children's achievement, but how it is implemented is important.

A curriculum that focuses specifically on preschool literacy, that is comprehensive, covers all domains, all day, with six four-week units, that is instructionally focused with learning goals for each activity, provides teacher-managed activities for full- and small-

group time, and offers considerable guidance (especially related to book reading) has been shown—in current pilot studies—to make a difference. However, implementation, training teachers, and strong use of books are important.

Building the Evidence Base: Current Research at the Institute of Education Sciences

Summary of presentation by
Liz Albro
U.S. Department of Education, Institute of Education Sciences
Washington, D.C.

The Institute of Education Sciences (IES) has a statutory mission to

- Monitor the condition and progress of education in the United States, which includes the National Assessment of Educational Progress and the Early Childhood Longitudinal Study
- Identify education practices that improve students' academic achievement
- Evaluate the effectiveness of education programs.

IES has four centers: the National Center for Education Statistics, the Center for Education Research, the Center for Education Evaluation, and the Center for Research in Special Education.

Evaluations currently ongoing include the Early Reading First (ERF) National Evaluation, which monitors the impact of ERF grants on students' language and literacy outcomes; Even Start; and the Classroom Literacy Interventions and Outcomes Study (CLIO). There are several research grant program goals: identifying promising practices; developing and testing new approaches (some are good formative studies, not just random field trials); conducting efficacy and replication trials and testing new interventions; conducting large-scale evaluations; and developing and validating assessments.

Much of the research supported through IES includes early literacy. The focus of this work includes Preschool Curriculum Evaluation Research (PCER); reading comprehension and scale-up of interventions asking what we can do to enhance student comprehension prior to third grade; cognition and student learning, including basic research in preschools; and teacher quality, exploring how best to provide effective professional development.

The immediate goal of PCER is to provide practitioners with scientific evidence of what works to improve preschoolers' literacy outcomes. These include three-year longitudinal studies that monitor student achievement on a battery of measures across sites, with a focus on school readiness in disadvantaged students. A wide range of curricula is being evaluated from comprehensive to those targeted specifically on literacy or mathematics. Emerging findings suggest interesting results comparing comprehensive and targeted curricula.

Reading comprehension scale-up projects include such published programs as "Breakthrough to Literacy" (published by McGraw Hill), with 35 treatment and control groups of children followed through second grade; and Peer-Assisted Learning (PALS), which is implemented in kindergarten and fourth grade with systematically varying teacher support.

Projects funded through the Cognition and Student Learning initiative include work on the use of manipulatives to enhance student learning, asking whether concrete objects help children learn symbolic relationships. Early results indicate that manipulatives can help but must be used in specific ways. For example, if they are to enhance literacy, manipulatives must be used to write names, not build towers.

The professional development and teacher quality project includes a study examining the Powell Professional Development in Early Reading, a coaching model delivered on site (rather than via the Web). Another early literacy project is examining teacher quality for classrooms including Latino children. Interagency Education Research Initiative (IERI) projects include scale-up of a language and literacy development program (Susan Landry and colleagues), which is an online early literacy professional development model for prekindergarten teachers.

Comments from discussion

Discussion centered on the observation that there are varying activities included in our definitions of curriculum, what *curriculum* or *program* mean, and whether they are the same when operationalized for research. Working definitions might include educational models, comprehensive curriculum, or narrowly construed programs. Generally, the early childhood field does not talk about "curriculum," thus it will be important to use a breadth of terminology to capture what researchers and educators are doing. For example, the definition of curriculum may depend on what the publisher says, it may represent ideas such as High Scope or Montessori, or it may be a directive curriculum.

Generally, a preschool curriculum should provide clear guidelines of expected child outcomes, a notion of what the teachers should be doing, and the materials to be used. A curriculum is written and has goals. However, it might occur that a written curriculum is developed within a school or district and then a published program is selected and adapted for use within that curriculum. Alternatively, a formal, published curriculum, based on scientifically based reading research and with a scope and sequence, may be adopted. Unfortunately, in early childhood, much of what practitioners accomplish in the classrooms and the strategies, scope, and sequence that are used are never written down or rigorously tested.

A new NAEYC position paper (see www.naeyc.org/about/positions.asp) establishes the importance of curriculum in early childhood, identifies the definitional issues, and attempts to move the field toward understanding of and improving confidence in the role of curriculum. New NAEYC accreditation standards include curriculum and assessment.

Issue: Capacity Building—Researcher Training, Tools, Methods, and Designs

Two presentations were given under this topic. The summary of comments from discussion follows summaries of the individual presentations.

What Capacity Building Is Required? Administration for Children and Families Programs and Intervention Studies

Summary of presentation by
Naomi Goldstein
Department of Health and Human Services, Administration for Children and Families
Washington, D.C.

The question of capacity relies on understanding where the field needs to go if we are to serve children and their families effectively. There is a broad range of views on this topic at a number of levels, including children, children within families (more than just parents), children within classrooms with teachers, teachers in the classroom and their practice within a program, and schools and programs within systems. Considerations include both the funding stream and school and neighborhood location. This is quite striking and it may be that our field can benefit from lessons learned in other fields, such as school reform, organizational psychology, and teacher education and training.

However, research will depend on the measures used. Can we develop measures that, for example, take the child's view and follow the child's perspective across contexts (home, school, community)? There is a need for better instruments to be used more effectively.

Developing understanding of how to improve parent capacity has been largely unsuccessful. The field seems unsure what to do and how to do it. There are important insights from welfare reform, which include dramatic changes in parents' employment behavior, that inject a note of hope that parent behavior can change. This is an important area of study and intervention.

It is also important to understand how federal decisions influence the home and classroom. How can research inform this? There are currently ongoing small-scale Head Start studies at the classroom and program level. The question now is whether we can use experimental techniques to investigate how decisions at the federal level are manifest at the child level. More systematic research is needed, including random assignment to wait-list control conditions.

What Does It Mean to Build Capacity?

Summary of presentation by
Christopher Lonigan
Florida State University and Florida Center for Reading Research
Tallahassee, Florida

Much of the conversation at this conference centered on capacity building. For research in this area to be credible and to provide sound evidence, there are practices that need to be changed. As a field, we need to stop doing the following:

- Conducting univariate measurement studies, because it is likely that many of the relations between predictors and later reading reflect general cognitive abilities and nothing specific to literacy
- Using confounded and weak designs in evaluation research
- Committing the fundamental attribution error: The roots of literacy skills may or may not look like reading. How many more studies do we need that show that shared book reading does not impact early code-associated literacy skills in any substantial way?
- Pretending that when the phrase "scientifically based" is used, people know what that means
- Using the wrong research methods for the research questions being asked.

As a field, we need to do several specific things:

- Conduct multivariate analyses
- Use randomized, controlled trials
- Think "outside the box"
- Carefully define when and under what conditions a finding or practice is "scientifically based"
- Match methods to questions
- Develop and refine measures of child skills, environments, and interactions, which attend to construct validity and the theoretical conceptualizations of the construct being measured
- Develop more cross-disciplinary collaboration, including content expertise (children, schools, teachers, and parents) and methodological expertise

Large existing databases may be valuable, but caution is in order. First, agencies should attend to quality issues in these studies so that they produce something more valuable than a description of what is happening. For example, the funds invested in FACES, following thousands of children, have provided findings already established in smaller scale studies. Is it really necessary to fund another cohort?

In studies of this size, research questions get lost; the measures are well established and offer no new insights and produce a conservative set of studies. Nonetheless, these large-scale studies offer the opportunity to find information on what has been accomplished

and how effectively. The FACES data arise from studies designed to address specific questions and for specific purposes. However, these same studies may also provide some data beyond their initial scope that can be used to address a different set of questions, at least partially. Another good example of this kind of study is the NICHD Study of Early Child Care and Youth Development, which includes rich data that can be brought to bear on a range of issues not central to the study, but for which reasonable data are nevertheless available.

Comments from discussion

The important issue of capacity building in the field of early childhood literacy is just emerging—for both practice and research. Do we have competent educators at the community college level, where many preschool teachers receive their training? Are the courses offered valuable? What about future early childhood researchers?

Practical steps can be taken to enhance the capacity of the current and next generation of researchers to conduct the highest caliber research in early literacy through the provision of funding and support of high-quality research. Such support must be made available not only through federal funding sources, but also through state and local sources, private foundations, and other philanthropic organizations. While such support will be necessary to maintain the work of current researchers, we must also invest in the next generation by providing competitive dissertation fellowships to support high-quality research, even before completing training, or a requirement to pursue or obtain competitive funding can be built into doctoral training.

II. Identified Research Priorities

The research priorities that follow emerged from the group discussions. The descriptions are culled from discussions throughout the two days of the conference, with much of the information and ideas generated during small-group breakout sessions.

Basic Theory-Driven Research

In addition to the recommendations that were included in the presentations, there was general discussion of the basic research needed to inform the formulation of a number of important literacy constructs. The results can be used to develop theory, measures, and models of practice, and to continue the ongoing work of identifying gaps in current knowledge. There was also discussion of the importance of agreed-upon standards of evidence that are socially and culturally sensitive.

Participants agreed on a priority for funding empirical research that relates directly to theories for constructing the definition of emergent literacy. This includes consideration of the emergence of literacy as a function of sociocultural variables. Multimodal and multimedia models of literacy are important to consider as well. Studies can also be used to identify or develop appropriate measures. In short, we need to clarify what we are observing and improve its measurement. Research on the continuity between emergent and early literacy would be based on this foundational work.

There is still a considerable need for theory building and studies on the effects of bilingualism on emergent and early literacy. More research needs to be done on multilingualism and early literacy.

There was consensus that it is possible to develop a research-based, detailed definition of quality preschool early literacy education. It was also agreed that there can be empirical, objective measurement of the construct.

Teacher Training and Professional Development: Implementing Change in the Classroom

There was agreement across the board that research findings need to be available and useful for teachers. The process begins in preservice teacher education and continues in professional development. This necessitates forging strong connections and continuity between pre- and in-service teacher education.

We need to teach teachers how to collect and use data, how to read the literature and make the classroom a better and more effective learning environment. This is a fundamental teacher education issue. Both pre- and in-service education needs to provide teachers with the basic tools they need to read, understand, and, when appropriate, implement in the classroom findings from the research literature.

Conversation also covered questions on the content and goals of teacher preparation programs. Teachers must understand content to carry out the sorts of dialogic and hybrid reading instruction being supported. Preservice teachers need to see models of good reading instruction in action. One way to address this need is to continue to build a body of video clips for viewing by teachers. Such modeling needs to present multiple approaches for different contexts. The question arose as to how much of this is advisable in preservice programs versus in professional development. The point was raised that teachers may not be receptive to learning new ways to read to (and with) students. It was suggested that research-based practices might be achieved through prescribing research-supported practices.

Current preparation of preschool teachers is problematic. Most preschool teachers have associate degrees, and once they get a bachelor's degree they move on to the K–12 public schools. Participants suggested teachers move from preschool to public school for the money and social prestige.

The situation is further complicated by the institutional dynamics of graduate schools of education. University researchers emphasize kindergarten and beyond. There is little interest or involvement in preschool because historically those students attend community colleges. A participant suggested that universities need to prepare graduate students and postdoctoral researchers to do the multimethod research needed, and that part of the work to be done is supporting new professional identities for preschool teachers. There is a qualitative difference between stating "I work in a preschool" and "I teach infants to four-year-olds."

Investigating Complex Relations Among Preschool, Home, Teacher, Child, Parent, and Other Sources of Influence on Children's Early Literacy Development

Too often, researchers focus only on one part of a very large system that incorporates major sources of influence on children's literacy development, including the child, the parents, and the home environment, preschool and child care experiences, and larger sociocultural issues.

With regard to child characteristics, emerging evidence suggests complex relations among vocabulary, self-regulation, alphabet and letter naming, phonological awareness, phonological decoding, and more. What are the trajectories of these skills over time? What is the interplay of these components of literacy? Could there be a causal effect over time? Currently, there is a disconnect between research on children from birth to age three and research on children aged three to five years. There is also a disconnect between preschool and kindergarten through third grade. Integration and continuity of research across these ages are warranted.

The question of how parenting for literacy and the home literacy environment affect children's developing literacy indicates a fair degree of specificity of influence on

language versus early reading. Perhaps the notion of parenting for literacy should be conceived more broadly across a number of dimensions: control/discipline, warmth/responsiveness, and learning/instruction, as well as a focus on how parenting affects children's development in skills that support literacy development more indirectly, such as self-regulation. Even though we have some knowledge, we need more detail and more rigorous studies. For example, how do parents influence different child skills at different times in the child's life?

Accumulating research has revealed that some aspects of children's high-quality preschool experiences do predict literacy and reading outcomes. However, the notion of "high quality" needs to be defined more specifically and in more detail, including better definition of the constructs and what contributes to them. Teacher variables that affect student outcomes should be considered, as should a focus on child characteristic-by-instruction interactions. In this area of study, there is an overwhelming need for building two-way relationships between researchers and practitioners. Intervention studies that include random assignment as part of a sound and rigorous research design are critical to generating a better understanding of interventions and practices that affect children's development.

We must examine factors such as cultural and social background and poverty not as "risk factors" (as has often been the case in education), but make an effort to understand them as contexts within which more immediate causes, such as access to text, instructional or interactional style, and so on, influence early literacy.

Issues That Should Have Been Discussed at the Conference But Were Not

The group identified the following areas of study as deserving attention, though they were not discussed in detail at the conference:

- *Cross-cultural research*
  (including comparisons across very different cultures—e.g., China and the United States)

- *Brain research*

- *Technology for professional development and for use with children*
  There is currently a shallow research base, yet there are a few studies that suggest potential for effective intervention using technology. Technology offers tools for fine-grained analysis of classroom practice. Also, distance learning may present an important opportunity for building practitioner capacity. For example, there are innovative approaches to teacher training in Australia. Multimedia options include video for viewing other classrooms and practices and to guide teacher decision-making. Distance learning currently implements several models, such as interacting with a moderator, interacting with other students, interacting with the computer, and cyber-presences. Empirical questions include how to establish a

community, how to identify effective practices, and how preschool teachers can use distance learning. There are also questions of effects once these programs are brought to scale, and what implications these effects have for the role of literacy coaches.

- *Successful teaching practices*
  The search for successful models of practice underlies all the research. For example, why are some teachers effective in promoting their students' learning? The research on elementary schools that "beat the odds" (e.g., Pressley and colleagues, Pearson and Taylor) has been highly instructive in identifying effective practices, which can then be studied more rigorously.

- *Literacy coaches impact on student learning*
  Literacy coaches are often used to improve teachers' practices in the classroom, but very little is known about how effective this model is in affecting student outcomes.

This summary was prepared in summer 2005 and posted to the International Reading Association website in September 2005. For more information about the summary, the conference, or the IRA–NICHD collaboration, contact IRA's Washington Office, 444 North Capitol Street, N.W., Suite 630, Washington DC 20001, USA; tel. +202-624-8800; e-mail irawash@reading.org