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The Theoretical Basis For Relationships Between Language and Literacy in Development

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Abstract. Considerable research now suggests that, in addition to the phonemic awareness skills which support early decoding, skilled reading also requires more general oral language competencies, particularly those involving the use of decontextualized language. The basic hypothesis of the Home-School Study of Language and Literacy development is that early development of skill with decontextualized language will be related to reading comprehension abilities when children are in the middle grades of school. A model is presented which illustrates this theory and an overview of the sample, the data collection techniques, and the types of analyses are described.

The literacy development of low-income and minority children living in urban centers is currently a matter of considerable concern because of continuing evidence that these children lag far behind more economically and socially advantaged children (National Assessment of Educational Progress, 1985). Not only do some children get off to a slow start, but differences in achievement linked to socio-economic status become greater as children move into the middle elementary grades (Chall, 1983). Furthermore, many young adults emerge from high school with literacy skills too poor to enable them to acquire new information from print or to be critical about what information they do gain through print. Surveys of the status of literacy in the United States indicate that, while there are not large numbers of people unable to decode simple texts—perhaps only about 5% are illiterate using this definition—many citizens do have literacy skills so limited that they cannot read newspapers easily, understand manuals for the operation of mechanical equipment, write letters, fill in any but the simplest form, or in other ways function as informed citizens capable of maintaining the types of jobs which will increasingly be available in the 21st century (Kirsch & Jungeblut, 1987). Among those with limited skills we find a disproportionate number who come from low-income families and who may also raise their own children in poverty. The failure of large numbers of young adults to acquire reading skills commensurate with the demands of our increasingly technological job market is now recognized by corporate leaders as posing a serious threat to the economic future of the United States (Fiske, 1989).

Although the children of low-income families are more likely to experience difficulties with literacy development despite the best efforts of governmental agencies and school districts, some of these children will be successful in developing appropriate literacy skills by the third or fourth grade. The Home-School Study of Language and Literacy Development is a project which is currently engaged in a longitudinal study designed to identify possible success factors for these children. More than 80 low-income families with preschool-aged children have been recruited from the Boston area to participate in the project which involves observation and testing of the children at home and at school. Supported first by the Ford Foundation and now by the Spencer Foundation, the Home-School Study is in its fourth round of yearly data collection. Future plans for the project include following the same children through

third or fourth grade in order to have a more complete picture of literacy outcomes.

In this paper the following topics will be discussed: (a) current research on reading development to provide a context within which to understand our preliminary findings and our plans for continued data collection; (b) how our work differs from previous research on the determinants of literacy development; (c) the theoretical basis for our larger research plan; and (d) information about the families and children in our sample and an overview of data collection and analysis procedures. The following papers will discuss findings from the home and school data analyses, and the relationships between the home and school measures and a series of outcome measures at age five.

Current Reading Research

Educational research on the cognitive abilities which support literacy development typically begins when children start to receive formal reading instruction, and then focuses on cognitive achievements that correlate with later reading, as well as seeking effects of the reading instruction provided by schools. These emphases can be seen in the large number of studies showing that children with high levels of phonemic awareness read better (e.g., Bertelson, 1986; Read, Zhang, Nie, & Ding, 1986; Warren-Leubecker & Carter, 1988) and in work showing that orthographic sensitivity relates to early reading achievement (e.g., Barron, 1986; Ehri, 1984; Stanovich & West, in press). Recently, research attention has turned to the phenomenon of *emergent literacy*, or development of literacy-related skills prior to the commencement of formal reading instruction (e.g., Bissex, 1980; Clark, 1975, 1984; Dickinson & Snow, 1987; Ferreiro & Teberosky, 1982; Heath, 1983; Snow & Ninio, 1986; Sulzby, 1986; Teale, 1986). However, like other reading research, this work has generally focused on skills that support early decoding (Dickinson, 1991). It fails to make any connection between skills acquired during the preschool years and the literacy achievements of children in the middle grades of elementary school, when they move beyond decoding to become fluent readers capable of extracting new information from text. Furthermore, although a considerable amount of work has been devoted to trying to identify the factors that predict literacy achievement, a problem with this work has been its almost exclusive focus on either school or home influences on literacy development (with only a few exceptions, such as Heath, 1983; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; and Wells, 1985). We know very little about whether home experiences or school experiences are more crucial to literacy development, how home and school experiences differ or complement one another, or how skills children acquire in one setting get utilized in the other. We know even less about relationships between children's experiences at either home or school and their developing literacy skills.

There are a number of ways in which our project is distinct from traditional reading research:

1. We are attempting to describe the environmental supports for literacy development provided *both* in the home and at school; collecting data both at home and at school will enable us to see how home and school experiences complement or undermine one another.

2. We do not subscribe to the notion that facilitative family or school experiences will be identical for all successful children. In an attempt to identify the various paths to literacy that work particularly for children in low-income families, we have chosen not to seek social class differences. Instead we have limited our sample to low-income families in which the parents have limited education.

3. We are basing our work on extensive previous analysis of oral language skills and their relation to literacy skills; our model, which proposes prediction from aspects of social interaction to oral language achievements, and in turn from oral language skills to literacy achievements, provides the basis for interpreting data on how the preschool child's linguistic environment

impacts on his/her later school achievement.

4. We are focusing on development of skills that we believe support reading comprehension and other later developing literacy outcomes in addition to considering skills associated with decoding.

5. We began to study children when they were three, and we plan to follow their development through the middle grades of elementary school; thus we will provide a description of how preschool literacy experiences relate to later school literacy achievements.

6. We are collecting spontaneous language production data in the home and school as well as data on children's performance on structured language and literacy tasks, including standardized norm-referenced tests.

Theoretical Underpinnings

Considerable research now suggests that, in addition to the phonemic awareness skills which support early decoding, skilled reading also requires more general oral language competencies (Snow, 1991, in press; Snow & Dickinson, in press; Velasco, 1987, 1989). In brief, the argument is that oral language should not be seen as a monolithic capacity; rather, children develop an array of language skills each related to a different set of purposes. These various oral skills are differentially related to literacy. One major function language serves is to enable negotiation of interpersonal relationships; the skills relevant to interpersonal negotiation are honed through face-to-face conversations in which speakers and hearers may draw upon such resources as shared knowledge, gesture, interactive negotiation of meaning, and listener feedback. These physically, socially, and historically *contextualized* uses of language contrast with uses of language to convey novel information to audiences who are at a distance from the speaker and who may share only limited amounts of background knowledge with the speaker. Skill at using language for these different purposes is not evenly distributed across speakers. For example, Snow's work with two samples of bilingual school-aged children has revealed low correlations between skill at contextualized and at decontextualized uses of language within a single language (e.g., English) but high cross-language correlations for either contextualized or decontextualized tasks (e.g., English to French) (Lanauze & Snow, 1989; Ricard & Snow, 1990; Schley & Snow, 1991; Snow, 1990, 1991; Snow & Dolbear, 1988). The finding that oral language abilities fall out into different clusters is particularly significant because *only* the more decontextualized language skills have been found to relate to literacy (Cummins, 1983; Snow, 1983, 1987; Snow, Cancino, Gonzalez, & Shriberg, 1989). Thus, we hypothesize that early development of skill with decontextualized language will be related to reading comprehension abilities when children are in the middle grades of school. For preschool-aged children, decontextualized language skills are reflected by and may be developed during engagement in extended discourse forms such as explanations or personal narratives and in the use of language to create fantasy worlds and convey information to relative strangers.

Following the lead of much recent reading research (Snow & Dickinson, 1991), we also assume that reading is a multicomponential skill. As such, we assume that different components are fostered by different experiences. For example, while early exposure to rhyming materials may foster phonemic awareness, opportunities to use language to convey novel information may support development of decontextualized language skills which, in turn, bolster reading comprehension. Other recent research on early literacy shares our assumption that certain types of language skill associated with written language are critical for later reading. However, with few exceptions, this work implicitly assumes that these language skills result from direct contacts with print, e.g., during book-reading. In contrast to this model of literacy development, we believe that the language skills that support reading emerge

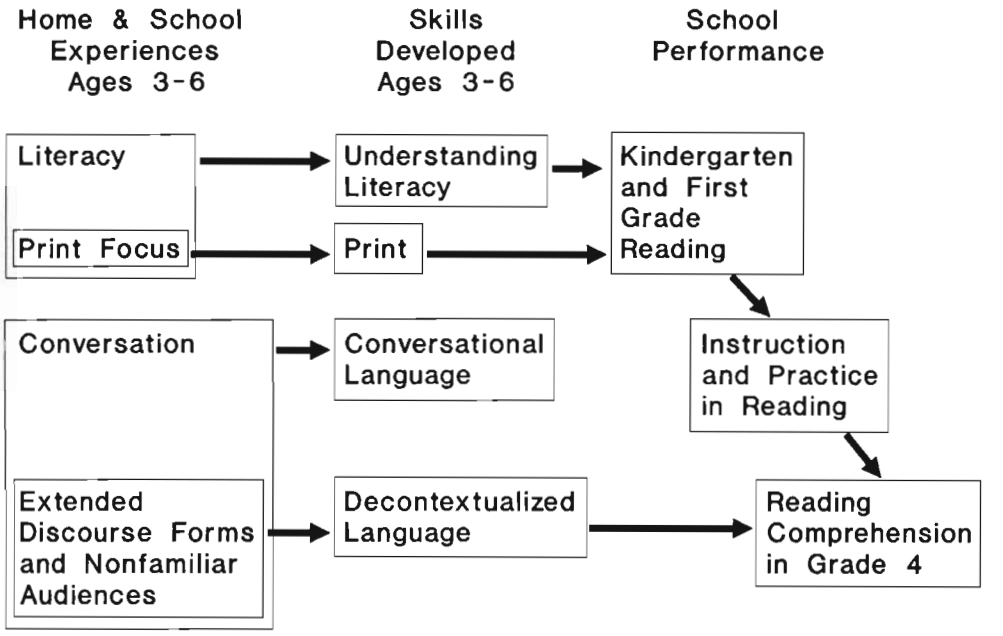

FIGURE 1
Model of Relationships Between Language and Literacy Development

as a result of a variety of interactive experiences during which children learn to use and understand decontextualized language.

The model we are working with identifies four domains of skill developed during children's preschool years: conversational language skills, decontextualized oral language skills, print skills, and emergent literacy skills. We expect that different kinds of experiences during the preschool years facilitate the development of skills in each of these domains. Of course, some experiences, like reading books with a parent or preschool teachers, may develop aspects of skills in more than one domain, e.g., print, emergent literacy, and decontextualized oral language skills. Furthermore, we argue that school literacy outcomes in grades one and two may be quite strongly related to preschool print skills, whereas school literacy outcomes in grades four and higher, when reading comprehension becomes an important factor, may be more strongly related to oral decontextualized language skills (see Figure 1).

Specific hypotheses that emerge from this model include the following:

1. Preschool children will show patterns of oral language skill that replicate those we have found for older children: there will be high correlations across measures that reflect ability to use language in decontextualized ways, and low correlations between contextualized and decontextualized tasks.

2. Certain social experiences at home and at school will relate to children's contextualized oral skills, whereas quite different aspects of home and school experiences will predict their decontextualized skills.

3. Emergent literacy skills that relate closely to print knowledge will be predicted by experience with print, exposure to print, and direct teaching of print skills, but will not relate to decontextualized oral language skills.

4. Preschool print skills will predict reading achievement in first grade, and to some extent in second grade, but not so strongly in third or fourth grade as decoding ability becomes a much less important

source of individual differences in reading.

5. Decontextualized oral language skills at ages 5, 6 and 7 will show moderate correlations to reading scores in first or second grade, and will show increasingly strong emergent correlations with reading achievement as the children enter the higher grades and reading comprehension skills become a more important determinant of performance on reading tests.

While there is considerable support for our view of literacy and its development, no multi-dimensional longitudinal research has directly addressed the questions of interest to us. Thus, our work is the first to deal adequately with a whole array of hypotheses about the relationships between preschool experiences and later literacy outcomes.

Overview of Sample, Data Collection and Analysis

We have devoted considerable effort to locating and soliciting cooperation from our sample of low-income families, and from the preschool and kindergarten programs their children attend. We now have a sample of 80+ children, distributed over two cohorts of approximately 40 children each, who represent the kinds of children we are interested in. The modal parent has 12 years of education, and the few parents with more have typically returned to community college or vocational training programs after a period out of school. Thirty percent of the sample is African American, 45% are single-parent families, one-half of the families are on welfare, and all qualify for Head Start or other subsidized day care programs. Nonetheless, we have found in these families the very large degree of variability anticipated in parental literacy, parental support for child literacy, and quality of verbal interaction in the homes.

Home data. Data collection being carried out in the home includes the following specific procedures (see Snow & Dickinson, 1990, 1991):

1. An interview with the mother to gather demographic information, information about daily routines, uses of literacy in the home, home-school relationships, and maternal views about the child's literacy and overall development.

2. Toy Play: Mothers are asked to engage their children in play using toys we provide.

3. Book Reading: Mothers and children read two books which we provide.

4. Elicited Report: Mothers encourage their children to tell the experimenter about some past experience.

5. Mealtime Recording: Mothers are asked to record a typical meal time with all family members present. With the exception of the interview, all home data is being transcribed and entered onto computer disks for analysis using software developed by the Child Language Data Exchange System (MacWhinney & Snow, 1985; upon completion of our analyses, the transcript data will be donated to the CHILDES system and made available for further analyses by others). Interview data is being entered into a data base system. Correlational analyses on the first cohort's first and second home visits constitute the data which will be presented in the following paper on the social supports for literacy development in the home.

School data. Data being collected in the school come from a number of sources including:

1. Spontaneous Talk: The lead teacher and the target child are recorded using small tape recorders carried on their backs while observers make field notes regarding the ongoing activities.

2. Videotaping: Group times (book reading, group meetings) are being videotaped.

3. Elicited Report: At some convenient time during the morning teachers are asked to have the target child tell them about some event that happened at home.

4. Time Use: At half-hour intervals the activities of all the children in the classroom are noted.

5. Environmental Print: Displays of print around the room are noted to determine function, nature of production (e.g., teacher alone, child dictation) and location.

6. Curriculum Rating: The general

nature of the curriculum is rated using two tools: a language and literacy-focused series of questions we devised and portions of the Early Child Inventory Rating Scale (Harms & Clifford, 1980).

7. Teacher Interview: Teachers' views regarding the role of preschool are elicited in addition to information about typical classroom routines.

8. Child Language Rating: Teachers are asked to rate children's oral language along ten dimensions.

School recordings are being coded directly from the tape in a manner which enables computer analysis of code frequency and amount of time spent engaged in different types of language activities. Videotapes of book reading sessions are being coded for the content of talk and the style of book reading. Other school data are being coded and entered into our data base. Analyses on these sources of information for the preschool classrooms of the first cohort constitute the data for the third paper on the social support for literacy development in the school.

Language and literacy testing. In the spring of their kindergarten year, the first cohort children were tested using a test battery we have designed to tap the language and emergent literacy skills of kindergarten-aged children. The test battery, called the School-Home Early Language and Literacy Battery—Kindergarten (SHELL-K) includes tests of several aspects of emergent literacy: phonemic awareness, letter recognition ability, print concepts, and writing skill; tests of oral language abilities such as the ability to define words (a task found in previous research to be a sensitive indicator of the skill of distancing oneself from language), the ability to describe a scene, and skill constructing a well-formed narrative; and test of verbal and nonverbal functioning. The connection between the home and school data and the outcome measures on the SHELL-K will be the topic of the final paper.

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