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ABSTRACT

A study examined the effects of specific literacy-related activities in preschool on subsequent language and literacy-related knowledge. All of the subjects were eligible for Head Start or comparable programs, with half of the classrooms being Head Start classrooms. When the subjects were 3 years old, a total of 63 children were visited in 48 different rooms; when the children were 4 years old, 78 children were visited in 55 rooms. Spontaneous conversations were recorded, context notes were taken, tape recordings were coded, and each teacher was interviewed. Results indicated that: (1) there were significant relationships between preschool experiences and a range of emergent literacy skills at the end of kindergarten; (2) similar clusters of positive predictors emerged for each aspect of children's emerging literacy and language abilities across ability areas; (3) child-child interactions were related to subsequent literacy; (4) teacher-child interactions throughout the day were important; and (5) the structure of the day as well as teachers' attitudes had important indirect effects on children's emergent literacy. Findings suggest that cognitively challenging discourse helps children gain facility in understanding and constructing extended discourse, exposes children to a richer variety of vocabulary, and helps children directly reflect on and analyze language. (RS)

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Preschool Contributions to Early Language and Literacy Development

Running Head: Preschool contributions to early literacy.

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Preschool Contributions to Early Language and Literacy Development

Children acquire considerable literacy-related knowledge during the preschool years (Sulzby & Teale, 1991) and enrollment in preschool programs contributes to more favorable academic and life history outcomes for children from low-income homes (e.g., Royce, Darlington & Murray, 1983). These two lines of work may be related; early preschool experiences may, in part, have beneficial effects because they provide children experiences that support growth of emerging literacy-related knowledge and skills. However, such a conclusion cannot be drawn from prior research because we lack information about the effects of specific literacy-related activities in preschool on subsequent language and literacy-related knowledge.

The current research is part of The Home-School Study of Language and Literacy Development, a longitudinal study of approximately 80 low-income families which is tracing sources of language and literacy growth for these children. We assume that literacy includes both print-based and oral language skills associated with producing and understanding extended texts (Dickinson, 1991; Snow & Dickinson, 1991). Determination of preschool classrooms' impact on emergent literacy should include examination of factors which affect development of both sets of abilities.

Four factors must be taken into account when considering preschool classroom effects on emergent literacy skills: 1)

children's pre-existing discourse skills, 2) routine teacher-child discourse, 3) the curriculum, and 4) teachers' pedagogical beliefs (Charlesworth et al., 1990). We anticipate that preschool teachers who run intellectually engaging programs, engage in extended discourse with children, provide time for pretending play, and provide developmentally appropriate print experiences will support development of emergent literacy (Dickinson, in press).

Methodology

All of the children were eligible for Head Start or comparable programs, with half of the classrooms being Head Start classrooms. When our children were 3 we visited 63 children in 48 different rooms; when they were 4 we visited 78 children in 55 rooms. Using tape recorders carried in backpacks worn by the target child, we recorded spontaneous conversation (about 90 minutes each), attempting to record each major classroom activity type (e.g., free play, large group). Context notes were taken and used when tapes were coded exhaustively and reliably (88% inter-rated agreement), providing a record of activity type, addressee (teacher, child, alone), and talk content (e.g., nonpresent, control) (See Dickinson & Smith, 1991 for details).

Each teacher was interviewed to learn her attitudes about preschool education, beliefs about language and literacy development, and her overall classroom curriculum and approach to structuring the day. Observers also noted the presence of activity areas and curricular materials (e.g., dramatic play areas and props, writing areas and materials), and recorded information about

the print environment.

Data from classroom visits yielded several constructs. **Child discourse skill** was based on the percentage of time children engaged in verbalized pretending. Typical **kinds of classroom discourse** were determined by the amount of time children engaged in different kinds of talk (e.g. "cognitively challenging talk" is the total of non-present, cognitively engaging, early literacy, and didactic talk). Amount of time spent in different **activity settings** was determined from interview responses regarding the daily classroom schedule as well as the amount of time our children were recorded in different activity settings. Teachers' **pedagogical orientations** were judged from interview responses to questions regarding routine practices and beliefs. These responses were aggregated, with each teacher receiving a score in each of four attitude dimensions: Skills, Socialization, Language & Books, and Specific Curriculum & Content (see Smith, 1992, for details).

Measures of early literacy development came from a battery of tests administered in the second semester of kindergarten. We tapped **narrative production** skills by having children view three slides depicting a series of scenes involving a group of teddy bears who were flying a kite that got caught in a tree, which is extricated by a bear, who is shown lying on the ground in the final picture. Children were shown the slides and asked to tell a story about them. Using principal components analysis, responses were combined into a single variable that included story length, inclusion of a problem, and communicative adequacy. **Early literacy**

skills were assessed using portions of the Comprehensive Assessment Profile (Mason & Stewart, 1989) tapping phonemic awareness, letter recognition, book knowledge, and early writing. These highly correlated (r> .85) scores were composited into one score (see Dickinson & Tabors, 1991 for details regarding coding). **Vocabulary** was assessed by using children's raw scores from the Peabody Picture Vocabulary Test.

Results

We developed regression models to determine the contribution of varying preschool factors to prediction of end-of-kindergarten language and literacy skills. Variables from 3-year-old and 4-year-old school visits were kept separate to allow detection of age-related patterns of relationship. The following order of entry into regression models was used: 1) child discourse skill (% of time in pretend talk), 2) teacher-child discourse (either the total amount of cognitively challenging talk or a subset thereof), 3) curriculum variables (reported and observed amounts of time spent in different activities), and 4) pedagogical beliefs (the teacher's score on one of the four pedagogical dimensions). Child variables were included first to control for child-specific language skill; the ordering of subsequent variables reflected the directness of relationship posited between the variable and the outcomes. Distributions were checked and outliers removed. All variables that we report produced an increment to R^2 significant at the .05 level. These steps resulted in an "n" that varied by slightly from task to task, with the "n" included in regression models ranging from 47 to

50 for the three year olds and from 57 to 61 for the four year olds.

Narrative Production

The Bear Story proved to be a task similar to activities that some teachers reported using: "Children at this age can't read and are not expected to read. But they can look through the pictures. They can read back to us what they see in the pictures. You know, a visual thing, repeat back what you see, make up your own story as you go along." (This and other quotations come from Smith's on-going study of several of these classrooms.) We found a strong relationship between the school predictors from the 3-year-old's classrooms and the kindergarten measure of narrative production. Cognitively challenging discourse (the total amount of non-present, cognitive extending, didactic and early literacy talk) resulted in an R^2 = of 0.084, (p=0.046). Adding a pedagogical orientation variable reflecting a socialization orientation, a negative predictor, increased the overall R^2 to .2134 (p=0.005). A second negative correlate, time spent in worksheets, resulted in the final model R^2 = .303 (p=0.0011).

The pattern of relationships shifted for the 4-year old predictors. Child discourse skill (% pretending) was predictive of later narrative skill R^2 = .07 (p=0.043) and one aspect of teacher-child discourse, the proportion of non-present talk, raised the overall R^2 to 0.33 (p=0.0001). The negative predictor, time spent doing worksheets, resulted in an overall R^2 = 0.40 (p = .0001).

Early Literacy

Many of our teachers downplayed the role of direct literacy instruction, but most felt that some introduction to books and print is essential; therefore we expected that preschool experiences would be predictive of kindergarten literacy.

For the 3-year old year, child discourse skill was an important predictor (R^2 =.136, p = 0.008). The positive correlate, amount of time in small group activities resulted in R^2 = .313, p = .0001), and the negative correlate, time spent in free play, resulted in the final model R^2 = .40 (p = .0001). Our success in predicting early literacy scores from the 4-year old data was limited. Only the variable reflecting cognitively challenging interactions (total non-present, cognitively extending, didactic, and early literacy talk) was a significant predictor (R^2 = 0.082, p=0.024).

Vocabulary

Our previous analyses of book reading (a context not included in these analyses) indicate that some preschool activities can have a major impact on vocabulary development (Dickinson, in press), but specific features of teacher-child interactions did not emerge as predictive variables from the 3-year old data. Teacher report variables were predictive, with time spent in small group interaction (R^2 = .164, (p = .003), and time spent in free play (a negative predictor) resulting in R^2 = 0.2256, (p=0.002).

The importance of interaction becomes significant when we look at the variables from visits to our 4-year olds. Teachers'

extended input (proportion of non-present and early literacy talk) to children was significant R^2 = .102, (p =0.013). Adding the total amount of reported and observed small group interaction resulted in an R^2 = .205, (p = 0.004).

Discussion

Using multiple sources of data collected during single observations when our target children were three- and four- years old we found significant relationships between preschool experiences and a range of emergent literacy skills at the end of kindergarten. Skills predicted included both oral language and print-related skills.

Similar clusters of positive predictors emerged for each aspect of children's emerging literacy and language abilities across ability areas for both years: children who spent considerable time engaging in verbalized pretending, time engaged in cognitively challenging conversations (most often with teachers), and time spent in teacher-led small groups. Negative predictors also were consistent: time scheduled for free play and for completion of worksheets, and high priority given to the socialization function of preschool.

These results suggest that cognitively challenging discourse helps children gain facility understanding and constructing extended discourse, exposes children to a richer variety of vocabulary, and helps children directly reflect on and analyze language. Time spent in teacher-led small group activities is time during which such verbally-rich interactions are more likely to

occur (Dickinson, 1991), and is a time when direct instruction related to literacy may occur while a child's attention is focused on print (e.g., discussing letters while putting a child's name on a picture). The negative relationships between our outcome measures and highly didactic practices (i.e., worksheets) and more laissez-faire approaches (i.e., considerable amounts of free time, a strong socialization emphasis) suggest that neither extreme is optimal.

An intriguing finding is the strong relationship between early literacy scores and three year olds' classroom measures (R^2 = .40) and the weak relationship between measures from the four year old's classrooms (R^2 = .08). We have two opposing possible explanations for this set of findings. First, they may reflect a measurement problem resulting from the fact that our analyses do not take into account kindergarten experiences, which likely account for significant variance. Further, kindergarten experiences may be similar to those seen in our four year olds' classrooms; thus kindergarten experiences may overwhelm the four year old classroom effects. Alternatively, it may be that the experiences during the first year do account for much of the variance attributable to preschool experiences. Teachers of three year olds who provided literacy-facilitating experiences may have "tuned children into print", enabling them to continue learn from print encounters throughout the preschool period. In contrast, children in classrooms that were supportive of literacy only when they were four, had only one year during which to build knowledge using any

heightened print awareness resulting from their experiences.

Our results also indicate that it is important to look across the many factors which influence children's preschool experience. We have found that child-child interactions are related to subsequent literacy (i.e., pretending), that teacher-child interactions throughout the day are important, and that the structure of the day as well as teachers' attitudes have important indirect effects on children's emergent literacy.

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