Access to Print for Children of Poverty:  
Differential Effects of Adult 
Mediation and Literacy-Enriched 
Play Settings on Environmental 
and Functional Print Tasks 

Susan B. Neuman 
Temple University 
Kathy Roskos 
John Carroll University 

This study examined the effects of adult mediation and literacy-enriched play settings on environmental and functional print tasks for 177 minority preschoolers reared in poverty. Eight Head Start classrooms were assigned to one of three conditions: (a) a literacy-enriched generic "office" play setting with an adult (referred to as "parent-teacher") encouraged to actively assist children in learning about literacy; (b) a literacy-enriched office play setting with a parent-teacher asked to monitor the children in their literacy play, without direct intervention; and (c) a nonintervention group. Prior to, during, and following the 5-month intervention, the frequency of each child's handling, reading, and writing of environmental and functional print was assessed through direct observation. Videotaped samples of the office play setting, collected weekly throughout the study, examined children’s uses of print and functional items and their interactions with peers and parent-teachers. Following the intervention, each child was administered environmental and functional print tasks. Results indicated that although no differences were found for children's understanding of the functions of print items, parent-teachers' active engagement with children in the office setting significantly influenced their ability to read environmental print and label functional items. Qualitative analyses further detailed activities and strategies used in representative play frames. These findings suggest that adult interaction in literacy-enriched play settings may represent an important opportunity for assisting minority children who live in poverty to think, speak, and behave in literate ways.

Susan B. Neuman is an Associate Professor in the College of Education at Temple University, Ritter Hall 003-00, Philadelphia, PA 19122. Her specialization is early literacy.

Kathy Roskos is an Associate Professor of Education in the Department of Education at John Carroll University, University Heights, OH 44118. Her specialization is early literacy.
Neuman and Roskos

Children's awareness of the meaning-potential in print is thought to begin very early in life. As a result of repeated exposure to print in familiar contexts, young learners use various cuing mechanisms to assign meaning to common labels, signs, and items (Goodman, 1986; Harste, Burke, & Woodward, 1982; Hiebert, 1978; McGee, Lomax, & Head, 1988). Over time, they become able to identify words from favorite cereal boxes, products, and restaurant signs. Some children even begin to extrapolate critical features of written language in these situational contexts (Mason, 1980). Although generally not regarded as "reading" in any formal sense (Dewitz & Stammer, 1980; Masonheimer, Drum, & Ehri, 1984), acquisition of these print-meaning associations is viewed, by many, as an important precursor to more skilled reading (Goodman, 1986; Mason, 1980).

Evidence that a great many children make use of environmental print has been substantiated in many naturalistic studies (Clark, 1976; Durkin, 1966). In her longitudinal case study, for example, Baghban (1984) found that her 26-month-old daughter could read such signs as "Sambo's," "Osco's," and "Arby's." Similarly, Lass (1982) reported that, by age two, her son was able to read common words like "McDonald's," "French fries," and "Sesame Street." These studies, as well as other naturalistic accounts (Heath, 1983; Schickedanz & Sullivan, 1984), highlight two essential factors that have often been overlooked in more formal evaluations of responses to environmental print: (a) environmental print knowledge is relatively idiosyncratic, dependent upon the context in which the child interacts; and (b) as a literacy event, environmental print knowledge is mediated through social interaction and does not necessarily come about through exposure alone. In short, young children's "reading" of environmental print is highly situated, reliant on a network of cues, including place, participants, and purpose. Analyses that ignore these factors may be seriously underestimating children's environmental print knowledge as well as the social and collaborative influences that foster it.

Further, considerable evidence suggests that not all families offer equal opportunities for young children to engage in these literate events (Feagans & Farren, 1982; Heath, 1983; Ogba, 1987; Schachter, 1979). Indeed, portraits of families in poverty emerging from ethnographic descriptions (Stack, 1970; Whiting & Whiting, 1975) detail how unemployment and dependence on public assistance often inhibit children's rule models from being full participants in the larger, literate society. Thus, although individual families may engage in some literacy-promoting activities (Taylor & Dorsey-Gaines, 1988), children from poverty environments are less likely to have as many occasions to use their emerging skills in a socially and economically meaningful manner (Ogba, 1987).

In addition, compelling evidence from studies of low-income mothers suggests that there may be less responsivity in these homes to children's talk and early literacy behaviors (Schachter, 1979; Tough, 1977). For example, Goldenberg's study of Hispanic at-risk children (1989) found that mothers were not sensitive to certain kinds of early literacy behaviors displayed by their children. Pretend reading of environmental print was considered either amusing or something not to be encouraged. Consequently, what may distinguish poverty
children from their middle-class peers could be the frequency and responsiveness to everyday literacy-related activity settings, arising from the larger social system.

Although broad-based policies to eradicate poverty are crucial to ensure increased equality of opportunity, a number of specific intervention programs, including Head Start (Oyemade, 1987), Chapter I preschool programs (Hymes, 1991), and the Kamehameha Early Education Project (KEEP) (Au & Mason, 1981), have demonstrated success in working with educably at-risk young children. Although different in nature and scope, these programs share the common belief that schools must be viewed from an ecological perspective, influenced by a number of overlapping environmental contexts from the immediate family to the larger society (Brofenbrenner, 1977), and that the activities in schools must acknowledge these contexts. For Head Start, this has translated to a strong commitment in the social, emotional and intellectual well-being of the child, family, and community (Zigler & Valentine, 1979). In the KEEP program, however, this ecological perspective has become more integrated in the development of culturally congruent activity settings (Tharp & Gallimore, 1988). For example, the "talk-story" lesson (Au, 1980) was designed to enhance children's responses in reading by incorporating the verbal participation structures typical of the Hawaiian culture.

The success of these programs underscores the importance of linking in-school literacy instructional activity with that of out-of-school influences including the family and its culture. Further, it suggests that by creating activity settings compatible with those of the home community, one may enhance children's exposure to written language and extend their opportunities to engage in literacy behaviors. Indeed, ecological studies (Gump, 1989; Kounin & Sherman, 1979) have demonstrated that settings have a behavior-influencing power in their own right. This provocative power of an activity rests upon the behavioral limitations and possibilities in the physical setting with its accompanying objects and in the typical patterns of behaviors generally associated with the activity. Studies of early childhood classrooms, for example, confirm the "coercive power" that these external environmental influences exert over their inhabitants; children tend to write in a writing workshop environment (Atwell, 1987), read in classroom-constructed library settings (Morrow & Weinstein, 1986) and color, cut, and paint in art areas (Weinstein, 1979). Ecologists suggest that, more than any other single factor, "what people do is markedly influenced by where they are" (Kounin & Sherman, 1979, p. 145).

Thus, by constructing a segment of the classroom environment to represent a real-life literacy context in the form of a generic "office play setting," our goal was to enhance children's opportunity to interact with environmental and functional print in developing print-meaning associations. This activity play setting was designed to exert a strong "pull" on encouraging children to assume behaviors associated with literacy and, at the same time, create a "push" on their adapting and adopting the intellectual tools and skills of the print environment, assisted by other adults. To do so, we explicitly involved adults from the children's cultural community, enhancing the possibility of shared
knowledge and opportunities for joint meaning-making. Ferdman (1990) has argued forcefully that cultural identity mediates the process of becoming literate: When children perceive tasks as coming from their cultural community, they become more engaged, and greater meaning is derived.

A number of studies, however, have raised important caveats regarding the adult's role, particularly in the play context (Christie & Enz, 1991; Vukelich, 1991). Johnson, Christie, and Yawkey (1987), for example, have cautioned that excessive intervention may have disruptive effects and actually limit the amount of children's play. Therefore, we examined how two differing mediational styles, one more interactive than the other, might apply specifically to a play setting. In contrast to many other instructional settings, ours was designed as a locus for self-directed, child-initiated activity, allowing children to come and go as they wished.

In considering this instructional context, it was important to examine how adults from the children's cultural community might influence their literacy engagement. Delpit (1988) has argued that appropriate education for poor and minority children can only be devised in consultation with adults who share their culture. Certain communicative practices, she suggests, such as the degree of explicitness or directness in teaching, may vary in their effectiveness for some minority populations. Considering that the sample in this investigation was 98% African American, it was particularly important to identify the types of adult interactive patterns that appeared to facilitate children's learning of environmental and functional print. Specifically, then, this study was designed to answer the following questions:

- Does an office play setting influence the frequency of children's literacy interactions (i.e., handling, reading, and writing) with environmental and functional print?
- Do the two different styles of adult mediation in an office play setting effect differences in children's environmental and functional print knowledge?
- What types of mediational strategies are used by adults who interact with children in literacy-related play?

Method

Subjects and Setting

One hundred seventy-seven children (93 boys; 84 girls) from eight classrooms in a Head Start Center participated in the study. The mean age of the children was 50.61 months (Range: 40-62; SD, 38.00). The sample, representing the largest concentration of poor families in the metropolitan area that was the setting for this study was 98% African American and 2% Hispanic. Ninety-five % of the families were on public assistance; the median annual income for those who worked was $12,000, within $1,000 of the poverty line (Howe, 1991). Eighty-five % of the children were from single-parent households.

Classrooms were located in three sites: a renovated home (4 classrooms), a homeless shelter (2 classrooms), and a church (2 classrooms). Though vary-
ing somewhat in physical space, all classrooms were similar in their physical organization of play areas. Book corners, housekeeping, blocks, small manipulatives, and art areas were placed around the perimeter of the room, with English and Spanish labels designating each area. Each classroom had an open space for large manipulative toys, like blocks and indoor slides. The center of each room included large tables used for breakfast and other projects. Aside from approximately 10 books in the book corner and paper in the art area, literacy-related materials such as pencils and writing paper were not available to children.

Ms. W., the Head Start Director, was responsible for overall administration of the center, which included a total of 7 sites. Educational activities, organized by Ms. O., the Educational Coordinator, were designed to enhance children's social competence and their everyday effectiveness in dealing with the responsibilities of school and beyond. Based on the Cognitively-Oriented Curriculum (Weikart, Rogers, Adcock, & McClelland, 1971), children were encouraged to play, to ask questions, and to construct their own knowledge through direct experiences with real objects. Each classroom included a teacher-to-child ratio of 1:10 and followed a similar schedule: The morning began with breakfast, followed by circle time (in which children participated in movement activities, songs, and daily announcements), which was in turn followed by 120 minutes of indoor and outdoor play.

As part of the Head Start program, parents were required to "volunteer" 6 days per month in the classroom. On the average, two parents participated in classrooms each day. Participation generally included "servicing the group" (e.g., helping with outings) or "doing the chores" (e.g., cleaning up dishes) with little direct involvement in the educational activities of the classroom. Both Ms. W. and Ms. O., however, aspired to change this prevalent "hands-off" parental role (Smith, 1980) to active parental involvement in the children's educational program. In collaboration with this goal, then, we selected parents from the Head Start community to participate as "parent-teachers" in the intervention classrooms. Our goal in selecting parents as teachers was to enhance children's confidence in play through interaction with familiar adults in their community. At the same time, we hoped to sensitize the parents to children's early literacy behaviors, such as pretend reading or scribble-like writing.

With help from the Head Start staff, two criteria were used to select participating parents: (a) interest in working with children in a play environment, and (b) the time to work at the center 3 days a week for 5 months. We did not assess the parents' reading level or require a high school diploma. Nineteen parents expressed interest; six were selected, with an additional two parents placed on a substitute list. There were 5 women and 1 man; 3 had received high school diplomas, 1 was working toward his GED, and the other 2 had not completed school. To determine their ability to read and write, we asked parent-teachers for a brief written statement describing their interest in working with children. All were able to write a short paragraph. Each parent-teacher had at least one child enrolled in the program.

Following their selection, a general orientation meeting was held to provide an overview of the project. First, we described the nature of children's
Neuman and Roskos

literacy accomplishments prior to formal schooling, including their early forms of reading and writing, and the importance of play in children’s social and intellectual development. Then, we asked them to discuss some of their favorite activities with children. Some parents indicated a more playful or interactive role with children than others. For example, one parent created a game for her children based on one that she had seen in school. In contrast, another parent mentioned that she mostly enjoyed “watching how children play with different toys.” Based on parents’ comments, and informal discussions with teachers and Head Start staff, we assigned each parent-teacher to one of the two interventions. To discourage personal distractions, parents were not assigned to their own child’s classroom. In the office play setting with an interactive adult (Group 1), the parent-teacher was encouraged to actively assist children in playing with print and other literacy objects in the play space; in the office play setting with a monitoring adult (Group 2), the parent-teacher was asked to serve a monitoring role, observing children at play, but not directly provoking any response or activity from them.

Design

Eight classrooms were randomly assigned to intervention and nonintervention groups. The intervention for three classrooms in Group 1 (N = 65) consisted of an office play setting with a parent-teacher assigned to assist children in their play, three classrooms in Group 2 (N = 65) included the office play setting with a parent-teacher assigned to observe and monitor the play space, and two classrooms in Group 3 (N = 47) received no intervention. In these nonintervention classrooms, children engaged in their usual activities during free play time.

To obtain some measure of prior knowledge in literacy and to assess comparability across groups, the Test of Early Reading Ability (TERA; Reid, Hresko, & Hammill, 1981) was individually administered to each child in the sample. Designed to assess reading behaviors that emerge during the preschool years, the 10-minute test measures children’s ability to attribute meaning to printed symbols and their functions, their knowledge of the alphabet, and their understanding of the conventions of print. The mean percentile score was 37.30% (SD = 25.13). Analysis of variance (ANOVA) indicated no statistically significant differences between groups [F (2, 175) = 1.57, p = n.s.].

Procedures

Baseline period. Prior to the intervention phase of the study, children’s play behaviors during their 1-hour indoor free play time were observed in each classroom over a 2-day period. Following an observational procedure developed by Smith and Connolly (1980), a research assistant first identified a particular child, then recorded (using a small portable tape recorder) the general activity and the specific behavior exhibited by the child for a period of 40 seconds. Ten seconds were used to rest and then to identify the next child for observation. In this manner, children’s play behavior in each classroom was observed by two trained research assistants over a 17-minute period, followed by two additional rounds. Because activity spans for this age group generally occur every
10 minutes, this procedure allowed us to observe each child engaged in a variety of play behaviors. Three rounds were recorded each day, for a total of six samples per child over the 2 days. Research assistants were asked not to interpret behavior, but to record only the children’s actual behaviors in play. These behaviors were then categorized into demonstrations of handling (focusing on the physical exploration of a literacy object), reading (attributing meaning to environmental and functional print), and writing (attempting to use printed marks as a form of communication) to provide a detailed analysis of children’s literacy-based play activities.

**Intervention.** Guided by principles established in our previous research (Neuman & Roskos, 1990b; 1992), we redesigned a play area into a literacy-enriched office setting in the six intervention classrooms. Specifically, these changes were defined by: (a) the principle of definition (clearly demarcating play settings from one another); (b) the principle of adaptation (reworking typical play settings to resemble real-life literacy contexts); and (c) the principle of familiarity (inserting a network of prototypical literacy objects into known settings). Thus, through the strategic placement of semifixed structures, like shelves and classroom furniture, we adapted an existing play area (an art table) into an office play setting and included such signs, labels, and common objects as a telephone, a calendar, in/out trays, and paper and pencils to encourage literacy interactions through play. In this respect, we interpreted the concept of “office” broadly as any location where daily human affairs may be handled using literacy.

In each setting, we inserted seven alphabetic labels or signs (e.g., OFFICE EXIT). As shown in Figure 1, a large “office” sign designated the play setting in each room. Signs in their typical logos were displayed prominently throughout the play space. For example, the word “EXIT” was located above the doorway in each “office”; the “COME IN, we’re OPEN” sign was placed in front of the play setting when it was available for play and replaced by “Sorry, We’re CLOSED,” at the end of each play session. A “time in/time out” sign was displayed on the bulletin board at all times. Each setting also included “Hello, my name is . . .” labels for children as they entered the play area and play money for all “cash” transactions. Our goal, in strategically locating these signs and labels in functional settings, was to simulate a context that might encourage children to read print as if it were in their real-life environment.

In addition, each setting included 10 common functional print items (e.g., telephone book, calendar) that one might see in any typical office, like a gas station or a clinic. Designed to be used by the children, these items were easily available and clustered together in the office setting to enhance sustained literacy interactions. For example, a telephone, telephone book, and message pad were organized together in one area, whereas materials for mailing letters—stationery, envelopes, stamps, and mail box—were placed in an adjacent area. Clustering these items allowed for at least four to six children to play in the office setting at one time.

Following these design changes, parent-teachers and teachers met with researchers and two research assistants to discuss the general procedures of
Environmental Print

the project. Although we asked that the structural features of the setting and signs and labels remain consistent throughout the study, parent-teachers were encouraged to take responsibility for the office play setting in their respective classrooms, to keep it well-stocked with materials from our storeroom, and to "invent" new projects or scenarios over the course of the project to encourage children to make use of the play setting. Further, because it was important to monitor children's play, parent-teachers were asked to remain around the office area during free play time and not to be drawn into other classroom tasks or activities. Classroom teachers and aides were encouraged to observe and interact with children in areas other than the office play setting.

Parent-teachers from the two intervention groups met separately with the research team. Those assigned to intervene in the office play setting (Group 1) were asked to actively assist young children in their literacy-related play. Didactic teaching of letters or numbers was discouraged; rather, we suggested that what young children seemed to need most were conversations with adults in ways that might serve to integrate their knowledge of the world. For example, adults might contribute to extending a play scene by "taking an order" or helping the child to "write a prescription" or modeling a relevant literacy behavior, like "making a list"—behaviors that were contingent on children's efforts and interests. These examples were designed to give parent-teachers general guidelines for interactions, rather than specific strategies, with the understanding that they themselves might be our most knowledgeable informers.

Those assigned to monitor the office play setting (Group 2) were encouraged to observe children's play, to take notes on the quality of the play behavior, to describe children's favorite activities, to step in when necessary to end a dispute, but not to directly "play" with the children. Basically, they were asked to establish "rapport" behaviors (Wood, McMahon, & Cranston, 1980), giving gentle reminders to children that an adult was available if necessary, but with subtle encouragement to interact among themselves.

The office play setting was "open" to children for 3 days a week over a 5-month period. This schedule allowed teachers flexibility in arranging field trips and other special projects on the other 2 days. During the 3 days, the parent-teacher would announce that the office was "open" by displaying the sign, "COME IN, We're OPEN," and encouraging the children to play there during their free time. However, no children were ever assigned to the office play setting; instead, they were allowed to move freely about all areas in the classroom.

During the free play time, the "interactive" parent-teachers, Wanda, Michelle, and Lolita (Group 1), were active participants in children's spontaneous free play in the office. In this group, they were likely to sit at one of the desks with the children by their side and assist in their play activities by using the literacy objects for functional purposes, like "ordering a pizza" or "taking a telephone message." On the other hand, the "monitoring" parent-teacher (Group 2) would first focus on setting the stage in play and then would observe children's ongoing activities. James, for example, would situate himself in a rocking chair outside of the play space and record interesting vignettes to share with us, while the other parent-teachers, Tracy and Nancy, would monitor from in-
side the office, often cleaning and straightening children's papers. Although children might ask them occasional questions, they would rarely become involved in the play other than to find some materials or to settle a dispute. In neither case, however, were parent-teachers aware of our interest in children's learning of environmental or functional print. Rather, the goal of the project was to encourage children to simply enjoy playing with print.

A research assistant was assigned to each intervention group and visited classrooms twice weekly. The purpose of these visits was to ensure fidelity to the specific intervention treatment, to informally chat with parent-teachers regarding the children's play activities, and to give them positive feedback for their efforts.

Children in the nonintervention classroom continued to engage in their typical free play activities over the 5-month period. In these classrooms, parent volunteers generally provided support for teacher activities, like chaperoning on field-trips or custodial duties, but provided no direct intervention in children's classroom activities.

During the intervention. To examine the nature of children's literacy interactions, with and without adult assistance, videotaped samples of children's spontaneous free play in classrooms were collected weekly, after the play setting was in place for 1 month. Using a camcorder and a microphone system, a graduate student in language acquisition recorded 15 minutes of play activity in the office play setting in four classrooms per week, for a total of 10 observations per class. These samples yielded a total of 450 minutes, or 7.5 hours of videotaped observation for each intervention group. Rather than focus on individual children, the goal of the videotaping was to obtain samples of children's play themes and literacy interactions with others in the setting throughout the study period.

To examine the influence of the play setting on individual children's play activity, research assistants observed each child's spontaneous play after 8 weeks had elapsed, using the same procedures as in the baseline period.

Following the intervention. During the final 2 weeks of the study, each child's spontaneous play activity was systematically observed once again by research assistants. After observations were completed, two environmental print measures were administered individually to children in the intervention and nonintervention groups: (a) an environmental word reading task and (b) a functional print task.

The environmental word reading task assessed children's ability to read words from the seven labels and signs placed in the office play setting. Each sign was taken from its context in the setting, and was shown to the child in its customary logo form. In cases where there were several words on the sign, we drew the child's attention to a target word by underlining it from left to right and saying, "What does this say?" Target words were: office, exit, out, closed, open, hello, and dollars.

The functional print task, adapted from Lomax and McGee (1987), measured children's knowledge of the functions and uses of written language associated with the specific types of functional print in the office setting. The child was
shown, one at a time, 10 functional items: a page of a telephone book, a calendar, a typed business letter, a message pad, a stamp, a catalogue, a brochure, a calculator, and a "speed-letter" (interoffice memo). He or she was asked to identify the item (e.g., What is this?) first and then asked to identify its function (e.g., What do you use it for?). Answers to the environmental word reading and the functional print tasks were recorded verbatim.

One hundred thirty-eight children comprised the final sample size of the study, representing a loss of 22% of the sample due to long-term absences and family relocations.

Data Analysis

Data were analyzed in three steps. In the first analysis, we examined the influence of the office play setting on children's literacy interactions with environmental and functional print during their spontaneous free play in the two intervention and nonintervention groups. Frequencies of children's handling, reading, and writing behaviors were tallied prior to, during, and following the intervention. Percentages of each literacy behavior across the three time periods were recorded and graphically displayed for each of the three groups.

The second analysis was designed to measure the influence of the office play setting on children's ability to identify environmental print, to label the print item, and to describe its function among the three groups. To conduct this analysis, we adapted a numerical scoring system from Lomax and McGee (1987) for the environmental word reading and the functional print tasks. Table 1 illustrates the scoring system and provides a sample response for each category. To measure the reliability of our coding system, we independently judged 10 protocols. Interrater reliability was 100% for the environmental word reading task, 98% for labeling the print item, and 94% for describing its function.

Differences between groups on the environmental word reading task were analyzed using an ANCOVA, with the TERA pretest and age serving as covariates, followed by planned comparison contrasts (Keppel, 1982). A multivariate analysis of covariance (MANCOVA) was used to measure differences on the two dependent variables associated with the functional print task: labeling the print item and describing its function. Planned comparison contrasts were conducted to test differences between groups.

In the third analysis, videotaped play activity was qualitatively analyzed from the two intervention groups to examine how the different types of adult involvement might influence children's environmental print and functional print knowledge. The "play frame"—defined by Sutton-Smith (1971) as play that is bound by a location and a particular focus or interaction—was used as a basic unit of analysis. A frame begins with one or more participants in the ecological area involved in an activity and ends with either the physical movement of the participants from the area or termination of the originally-initiated activity. Through repeated viewings and discussions of all videotapes, we identified a total of 94 play frames: 47 were recorded from Group 1, with the interactive adult, and 47 from Group 2, with the monitoring adult.

A subset of 15 play frames (5 from each parent-teacher) for each interven-
### Table 1
Scoring Systems for the Environmental and Functional Reading Tasks

<table>
<thead>
<tr>
<th>Score</th>
<th>Criterion</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Correct word</td>
<td>Reads &quot;exit&quot;</td>
</tr>
<tr>
<td>2</td>
<td>Attempts to read a word</td>
<td>Reads &quot;out&quot; for &quot;exit&quot;</td>
</tr>
<tr>
<td>1</td>
<td>Attempts to read using letters or numbers</td>
<td>Reads &quot;B-R-T&quot; for &quot;exit&quot;</td>
</tr>
<tr>
<td>0</td>
<td>No response or attempt</td>
<td></td>
</tr>
</tbody>
</table>

#### Functional print task

**Naming print item**

<table>
<thead>
<tr>
<th>Score</th>
<th>Criterion</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Correct name of object</td>
<td>&quot;Letter&quot;</td>
</tr>
<tr>
<td>2</td>
<td>Name associated with the functions of the object</td>
<td>&quot;A mail&quot; for &quot;Letter&quot;</td>
</tr>
<tr>
<td>1</td>
<td>Generic name of the object</td>
<td>&quot;A paper&quot; for &quot;Letter&quot;</td>
</tr>
<tr>
<td>0</td>
<td>No response</td>
<td></td>
</tr>
</tbody>
</table>

**Understanding the functions of the item**

<table>
<thead>
<tr>
<th>Score</th>
<th>Criterion</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Description of what the object is designed for</td>
<td>&quot;To tell the days of the week&quot; for &quot;Calendar&quot;</td>
</tr>
<tr>
<td>2</td>
<td>Description of what can be done with the object</td>
<td>&quot;To look for a birthday&quot; for &quot;Calendar&quot;</td>
</tr>
<tr>
<td>1</td>
<td>Generic activity</td>
<td>&quot;You read it&quot; for &quot;Calendar&quot;</td>
</tr>
<tr>
<td>0</td>
<td>No response</td>
<td></td>
</tr>
</tbody>
</table>

The group was randomly selected for subsequent analysis and transcribed verbatim. Each play frame was examined for the following characteristics: duration of play frame, number of children involved in the play, number of child exchanges, and the essence of the play topic.

Then, using the analytic procedure of typological analysis (Goetz & LeCompte, 1984), we conducted a macroanalysis of the data to obtain a holistic sense of how children were using the environmental and functional print in play and to examine if differences occurred between groups. Here, the play frame was the unit of analysis as we focused on patterns of interaction, action, and play theme among the children to construct a continuum of literacy-related play types. From this continuum, we defined each play frame according to type. Each type then was examined through discussion for specific properties—defined by Alvermann, O'Brien, and Dillon (1990) as smaller, definable aspects of categories. For example, one of the properties noted within the larger type
of "theme-focused play" was that functional print items were highly contextualized in the play, used within some larger play purpose like "playing cops." Categories and their properties are displayed in Table 2.

Next, we conducted a microanalysis of the data. In this analysis, we focused exclusively on the 15 "interactive" parent-teacher transcripts, examining the data for specific patterns of adult interactions that related to children's engagement with environmental and functional print. From repeated readings and viewings of the frames, we induced a set of categories representing parent-teacher's interactional patterns. Each frame was classified according to play type and segmented patterns of discourse. To validate our categories, each transcript was then reviewed by a research assistant, who acted as an external coder. Codings were compared and disagreements resolved by further review of taped sequences and discussion.

Thus, rather than adopt a set of categories from an existing theoretical scheme, we attempted to create a working typology of adult interactive behaviors that best reflected the ecological characteristics of our activity.

Table 2

Definitions of Categories and Properties in Literacy Play Frame

A. Object/routine. Play that focuses on the particular uses of print and functional print objects in the activity setting.

1. Literacy activities tend to be adult-mediated; strategies are designed to "teach" children how to use environmental and functional print.
2. Literacy activities are setting-specific; talk, actions, and play themes relate to the participants' views of the types of behaviors that typically occur in this setting.
3. Print and literacy objects referred to by name.

B. Theme. Play that focuses on story sequences, with children assuming functional roles.

1. Literacy activities tend to be child-mediated; uses of objects are governed by the children's needs and wishes.
2. Literacy activities are setting-associated; children take on certain character roles that are either stereotypic (i.e., "cops"), or fictional (i.e., ghostbusters) that relate in some general way to the context.
3. Print and literacy objects are used in the play, but not necessarily identified by name.
4. Children use objects and print for transformational purposes to serve a particular play interest (i.e., uses a picture postcard to pretend to be in the scene).

C. Reading/Writing. Play that focuses on exploring letters, words, and objects.

1. Literacy activities tend to be child-mediated; exploration is "stimulus-dominated" (concerned with acquiring information about the object).
2. Literacy activities are not influenced by the setting.
3. Children engage in object play, ranging from repetitive activity (i.e., scribbling on many pieces of paper) to attempts at more conventional activity (i.e., writing letter names).
setting—its physical and social context and its participants. Our goal was to consciously establish a categorical system that might account for all behaviors, rather than one that merely provided a probabilistic explanation or some distribution of cases.

Results

Frequency of Literacy-Related Activity

Table 3 describes frequencies for each type of literacy-related activity by group across the three time periods.¹ These frequencies reveal striking changes in the amount of engagement in literacy-related activities over the course of the study. As expected, literacy-related activity was minimal prior to the intervention in any of the three groups. For children in Groups 1 and 3, 3% of their activities were literacy-related, whereas children in Group 2 engaged in literacy-related activities only 2% of the time. However, choices in free-time activity clearly changed with the inclusion of the office setting in the play environment. After an 8-week period, children in Group 1 spent a total of 22% of their time in literacy activities; children in Group 2, 24% of their time; and children in Group 3, only 3% of their time. Further, as indicated in later observations, children’s involvement in literacy-related activities for the two intervention groups was sustained throughout the study, and, in the case of Group 1, even extended over the 5-month period to 32%, suggesting that these changes were not a result of a novelty effect. These results indicated that the office play setting enhanced

<table>
<thead>
<tr>
<th>Time period</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handling</td>
<td>1%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Reading</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Writing</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>3%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Mid-intervention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handling</td>
<td>7%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>Reading</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Writing</td>
<td>10%</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>22%</td>
<td>24%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Following intervention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handling</td>
<td>17%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Reading</td>
<td>5%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Writing</td>
<td>10%</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>32%</td>
<td>24%</td>
<td>2%</td>
</tr>
</tbody>
</table>
Environmental Print

children’s opportunity to engage in literacy-related behaviors with environmental and functional print during their free play time in the preschool.

Effects on Environmental Word Reading and Functional Print

Table 4 reports the adjusted means and standard deviations for the three groups on the environmental word reading and the functional print tasks. Analysis of covariance indicated statistically significant differences between groups on the environmental word reading task \( F(2, 135) = 17.16, p < .001 \), eta .46. Planned comparison analysis revealed differences between Group 1 and Group 3 \( F(1, 136) = 35.82, p < .001 \); Group 2 and Group 3 \( F(1, 136) = 10.03, p < .01 \), as well as between Group 1 and 2 \( F(1, 136) = 6.17, p < .01 \). This analysis indicated that the office play setting significantly influenced children’s environmental word reading and that the role of the “interactive” adult significantly contributed to the children’s learning of print in these contexts.

The MANCOVA analysis revealed statistically significant differences between groups on the functional print task: multivariate Wilks’s criterion, \( F(2, 134) = 4.46, p < .002 \), eta .35. Subsequent univariate \( F \) tests, performed on each dependent measure, indicated significant differences for the labeling of the object \( F(2, 135) = 4.10, p < .05 \) but not for the use of the object \( F(2, 135) = 1.89, p = \text{n.s.} \). Further analyses using planned comparison contrasts revealed significant differences between Group 1 and Group 3, \( F(1, 135) = 6.94, p < .001 \), and Group 2 and 3 \( F(1, 135) = 4.47, p < .002 \) but not between Groups 1 and 2 \( F(1, 135) = 2.19, p = \text{n.s.} \). Results of these analyses demonstrate the impact of the office play setting on children’s ability to label the functional print items in these environments. These effects, however, were not influenced by the particular role played by the adults in these settings. Further, there were no significant differences between groups on children’s understanding of the functions of these items.

Table 4
Means and Standard Deviations for the Environmental Print and Functional Print Tasks

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Environmental Print***</th>
<th>Functional Print</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Label*</td>
</tr>
<tr>
<td>1</td>
<td>49</td>
<td>12.02</td>
<td>8.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.54)</td>
<td>(3.68)</td>
</tr>
<tr>
<td>2</td>
<td>49</td>
<td>9.70</td>
<td>7.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.70)</td>
<td>(3.78)</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>7.21</td>
<td>6.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.95)</td>
<td>(3.70)</td>
</tr>
</tbody>
</table>

Note. Means adjusted for age and TERA score. Possible total scores: Environmental print, 21; Label: 30; Use: 30.

*p < .05, **p < .01, and ***p < .001.
In summary, these quantitative findings provide strong evidence that the office play setting enhanced these children's opportunities to engage in literacy-related play during their free time. Through their play activities and interactions with peers and playful adults, these children derived greater knowledge of environmental print and were able to label more functional print items than were the children in the nonintervention group. Their involvement in these play contexts, however, did not appear to lead to a richer understanding of the uses of these items, as measured by the functional print task.

Macroanalysis of Play Frames

This analysis was designed to examine the kinds of literacy-related play that occurred in the office setting. Specifically, our focus was to determine how children were using the environmental print and the functional items in their play and whether there were differences between groups. Results of this analysis and the characteristics of these play frames by group are displayed in Table 5.

An examination of play frames revealed differences among groups in several characteristics of the literacy-related play. Evidence from these frames suggested that more children participated in the office play settings with an interactive adult. Further, they engaged in more sustained interactions with their peers than in those settings with a monitoring adult.

As shown in Table 5, the analysis indicated three categories of literacy-related activity: object/routine-, theme-, and reading/writing-focused play. As indicated, 10 of the 30 frames were defined as object/routine focused. This type of literacy play focused on how to use the print and functional items in the office setting. In our second category, reported in 10 frames, literacy play was classified as theme-focused. In this case, play had a narrative purpose, with the print and items used to serve specific story functions. And finally, in 10 frames, play was defined as reading/writing-focused; here, the emphasis was on manipulating print and objects, apart from any particular setting or purpose.

Further analysis of Table 4 indicated that the presence of an "interactive"

<table>
<thead>
<tr>
<th>Table 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics of Representative Play Frames for Intervention Groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category of literacy play</th>
<th>No. of play frames</th>
<th>Duration</th>
<th># Children</th>
<th># Child exchanges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective-routine</td>
<td>10</td>
<td>84.5</td>
<td>2.7</td>
<td>7.6</td>
</tr>
<tr>
<td>Theme</td>
<td>2</td>
<td>151.0</td>
<td>4.5</td>
<td>16.5</td>
</tr>
<tr>
<td>Reading/writing</td>
<td>3</td>
<td>252.3</td>
<td>4.0</td>
<td>56.0</td>
</tr>
<tr>
<td>Average</td>
<td>126.7</td>
<td>3.2</td>
<td>18.47</td>
<td></td>
</tr>
<tr>
<td><strong>Group 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theme</td>
<td>8</td>
<td>82.00</td>
<td>2.50</td>
<td>11.00</td>
</tr>
<tr>
<td>Reading/writing</td>
<td>7</td>
<td>136.14</td>
<td>1.85</td>
<td>6.14</td>
</tr>
<tr>
<td>Average</td>
<td>107.27</td>
<td>2.20</td>
<td>8.73</td>
<td></td>
</tr>
</tbody>
</table>

110
adult strongly influenced children's literacy-related play. In 10 of 15 frames, play was object/routine-focused, with the parent-teacher demonstrating how to use reading and writing within the particular setting. In these frames, the adult mediation appeared to center on communicating the specific routines and terms directly associated with an "office," as if to bring the print or item into sharper relief. A typical example is shown in this excerpt:

Ms. Wanda and two children are in the office.
Ms. Wanda: Johanna, they/stamps. You put them on envelopes. You have an envelope?
Johanna: I got it down there (Slaps stamp on envelope). (To Akeem) Leave the envelope alone.
Ms. Wanda: Good. You did it nice. But next time put it in the front of the envelope, OK? (Shows her the front). Not on the back, OK?
Johanna: This is the back?
Ms. Wanda: That's the front. (Flips envelope to locate stamp). Goes on the front.
Johanna: Oh.
Ms. Wanda: Here, I'm gonna show you (She licks the stamp as Johanna watches). You lick it a little bit, and put it on the front.
Johanna: (Imitates and slaps the stamp on envelope)
Ms. Wanda: There (Shows hers to Johanna)
Johanna: (Finishes her envelope).

No object/routine play frames were observed for children in Group 2, where the parent-teacher served a "monitoring" role. Rather, in these settings, children were more likely to engage in theme-focused play (8 frames) than were children in Group 1 (2 frames). In this case, play tended to be more child-mediated, in which the importance of the office signs and items was subsumed in favor of the larger play purpose, like "getting arrested" or "doin' homework." Here, environmental and functional print items were used to support the play flow and to strengthen the fabric of the play, as in the following example:

Leslie, Daryl, and Delores are in the Office. Leslie is cleaning the desk, Daryl is stamping papers, and Delores is writing in a 3-ring binder. Leslie picks up the phone:

Leslie: Cops? Come and get Daryl and Delores...Bye. (Looks at others) Cops comin' to get you and Delores.
Daryl: Uh-uh.
Leslie: Is.
Daryl: Uh-uh. (Still stamping)
Leslie: Yes. Yes they IS! (Picks up telephone receiver).
Delores: (Still writing) They gonna come get me? They gonna come get you 'cuz youse bein' BAD!
Leslie: I'm callin' the cops on you again.
Daryl: No, you aint!
Leslie: Yes I is. 1-2-3-4-5-5-6-6-9-9. (Dials some numbers).
Neuman and Roskos

Thus, in these frames, print and functional items tended to be used as “props,” serving to bind the play into a more coherent theme. Through their interactions with others, children might identify items by name, but not expand upon their meaning in a manner that could interrupt the ongoing play scenario.

In reading/writing-focused play frames, environmental and functional print were a topic of interest in their own right: Children, on their own or with others, would engage in playing with letters, words, and objects. Literacy-related activities in these frames, of longest duration in each group, were not setting-specific, but more generic in nature. We found three reading/writing focused frames in Group 1 and eight in Group 2, indicating that without direct adult intervention, children were more likely to invent words and letters and discover their own uses of print, apart from any particular play context. A typical example from Tracey’s setting:

Two boys are playing with a stamp pad and stampers and counting money.

Kyle: I did all of it (Refers to marks he has made on paper with a stamper).
Deron: You did good and now you’re gonna get a lot of money from me.
Kyle: Hold it (the calculator).
Deron: Lookie here (Stamps with stamper on paper).
Kyle: I told you...
Deron: Oh! You stucked it right on me (Points to stamped image he had made earlier)
Kyle: B-B-C-L-D-L-X-C-L-S-D-2-Z (Reading letters on stamper bottom) Wow, I just counted them all. I told you... I told you. A-L-A-E. Told you... I told you I could do it.
Deron: Hey, you did good work.

In these reading/writing play frames, children not only appeared to explore the environmental print and functional items, but in many cases, they attempted to demonstrate to others their own emerging understandings of the forms and functions of written language.

In sum, we found that children’s uses of print and functional items varied with the types of literacy-related play observed in the videotaped frames and that these types of play were, to a large extent, a function of the adult’s role. In contexts where the parent-teacher was actively assisting children in the setting, literacy-related play tended to focus on the explicit characteristics of words, objects, and routines directly associated with the office setting. In contexts where the parent-teacher played a monitoring role, children engaged in more pretense with items and print, demonstrating but rarely articulating their functions, and explored print as an object of interest. These results argue for the importance of exposure and adult mediation in children’s learning of environmental print. It was the setting itself that lured children into demonstrating their already existing knowledge of written language in the context of their on-
Environmental Print

going play. However, it was the interactive parent-teacher's ability to "bring to conscious awareness" specific features of the environmental and functional print that seemed to engage young children's attention and enhance their learning of labels and print in the play setting.

Microanalysis of "Interactive" Parent-Teacher Play Frames

In our final analysis, we examined more closely the interactions between parent-teachers and children. Our purpose in this microanalysis was to create a typology of strategies used by African-American parent-teachers that seemed to enhance children's environmental word and functional print knowledge. In the following section, we will briefly define each interactive strategy and give examples from our transcripts.

Demonstrating. Physical action often accompanied talk as an interactive strategy for parent-teachers. They would describe a particular process and, at the same time, actually model for children the specific ways to carry out the behavior. This particular strategy seemed designed for children new to the "office" setting as they learned a literacy routine that might be used continually throughout the play time, as in the following example:

Ms. Lolita: Now I want you to mail me a couple of things (Gets an envelope). OK, c'mon (Returns to seat with pile of envelopes). This is for Mrs. . . . (She writes on the envelope). All right, this is where I want you to put this (She points). Put his name in the "F" mail slot. This is the "F" OK? (She writes). Now, put that in the mailbox for me (Hands him the envelope). Find the alphabet and slip it in.

Brandon: (Nods and follows the routine)

In this strategy, the parent-teacher showed the child what to do in a very concrete way; then the child was expected to "do as I do," replicating the actions of the parent-teacher soon after the demonstration.

Labeling. This strategy focused on the adult naming signs in the office setting and designating specific functional objects. It ranged from a direct, clear definition of the item or sign to a description of the item in the context of the ongoing play. For example, Michelle made a direct use of labeling in reading a sign to a child:

Ms. Michelle: These pencils need sharpened.
Kadisha: What's this say? (Pointing to sign).
Ms. Michelle: "Sorry, we're closed."
Kadisha: "Sorry we're closed."
Ms. Michelle: But we're not closed are we? We're open, right? (Points to sign).
Kadisha: Right!

The intent in the labeling strategy was to provide the correct name for an object or bit of print, including a letter, word or phrase. Often the parent-teacher encouraged the child to repeat the label, stressing accuracy in intona-
Neuman and Roskos

tion and word pronunciation.

Direction-Giving. A common instructive strategy was asking children to follow directions and, in the process, exposing them to a special literacy routine or behavior. In many cases, such directions were embedded in a series of questions, apparently employed to keep the children's attention on a particular routine or activity. The following exchange between Wanda and Shakida provides an example:

Ms. Wanda: Shakida, you have a telephone right here. Leave it right there. Talk on the telephone right here.
Shakida: (Silence)
Ms. Wanda: Talk about the office. Tell what you all do in the office.
Shakida: Hi-hi.
Ms. Wanda: What else we do in the office?
Shakida: Homework.
Ms. Wanda: Work. What kind of work?
Shakida: Colorin' with my grandpa.
Ms. Wanda: Colorin' on the paper? Like writin' on paper?
Shakida: Ah-m-m-m.

In the direction-giving strategy, the parent-teacher encouraged children to become actively involved, while providing verbal prompts and cues in the form of commands and questions, thereby leading the child through the routine. Thus, in contrast to the demonstrating strategy where the parent-teacher offered guided practice through modeling, here the child was encouraged to learn by verbal assistance alone.

Extending. In this strategy, the parent-teacher described and further elaborated on the purpose or function of a literacy item or routine. These statements or comments were designed to enhance children's knowledge of common literacy routines in the office by expanding on what they already seemed to know. For example, Ms. Wanda employs this strategy as she interacts with the children in one of the many "post office" play scenarios.

David and four other children are in the office with Ms. Wanda. David is holding the phone.

Ms. Wanda: David, what you doin' on the phone?
David: M-m-m-m I dialed off.
Ms. Wanda: You talkin' on the phone?
David: Yeah.
Ms. Wanda: A lot of people do that in the office... see... keep liftin' up the phone...
David: Yeah.
Ms. Wanda: Makin' business arrangements.
David: Yeah.
Jasmine: My mommy do.
David: My mommy do too.
Ms. Wanda: Your mommy do?

Here Ms. Wanda quite explicitly states the purpose of the object and its
function in the office setting. In most cases, however, additional information on the routines or functions of the office tended to be implied by the parent-teacher in the course of play, as illustrated in the example below.

Desiree: I'm the nurse. I'm gonna call someone.
Ms. Lolita: OK. (To another child). Can we please have the phone over here? We need the phone because this is the office area. We need it in the office area. Desiree needs the calendar, too. We need papers and those pencils need sharpened for our office work.

In the extending strategy, the parent-teacher described the purpose or function of the item either explicitly or implicitly, using verbal cues, the play context, and the theme to convey the message.

Feeding-Back. This strategy seemed intended to acknowledge and affirm children's literacy attempts. It was frequently expressed by parent-teachers in at least three different ways: (a) praise as in "good job," (b) a reiteration of the child's words, or (c) a rhetorical question. In the following example, Michelle demonstrates this strategy, using reiteration as a way to say, "That's good."

Clifford: This one's my mom's name (He is writing on paper).
Ms. Michelle: All right.
Clifford: Do you know this one's mom's?
Ms. Michelle: Yeah.
Clifford: I'm writin' my momma's phone number.
Ms. Michelle: Writin' your momma's phone number?
Clifford: Yeah it (Begins to write).

More than a simple reaffirmation, the feeding-back strategy was a means of giving children the "go ahead," fostering their exploration of reading and writing as a valued mode of expression.

In summary, the microanalysis revealed five interactive strategies that seemed to be used quite naturally by African-American parent-teachers to assist and extend children's literacy activity. Supported by specific physical features (the office and its accompanying print and objects) and the goal-directed actions of its adult participants, this activity setting provided a context for highly informative collaborative interactions between adults and children as they learned about literacy through their play activities.

Discussion

Important discoveries about literacy are thought to occur through young children's observations of and interactions with print in environmental contexts. In conjunction with many other oral and written language experiences, seeing environmental print used in the context of everyday activities is considered an intrinsic part of becoming a literate language user (Goodman, 1984; Hiebert, 1978; Hall, 1987; Mason, 1980). For young children reared in poverty, however, conditions may limit opportunities for exposure and meaningful engagement with print (Feagans & Farran, 1982; Heath, 1983; Ogbu, 1987; Schachtier, 1979).
Neuman and Roskos

In designing a literacy-enriched activity setting, therefore, we intended to provide occasions for children to use environmental and functional print on their own terms, through the use of signs, labels, and literacy objects.

Results of our study reflected the behavior-influencing power of the activity setting on children’s spontaneous play activities in the classroom; on their own and with others, children in both intervention groups engaged in greater handling, reading, and writing interactions with environmental and functional print than in the control classrooms. Further, observations after a 5-month period demonstrated the setting’s “holding power” or capacity to sustain participation. In fact, involvement in literacy play became even more frequent over time in office play settings with an interactive adult. These data support Rosenthal’s (1973) findings pertaining to the holding power of different activity settings. Activities that encourage a wide variety of behaviors and contain materials that can be acted upon or changed are more likely to enhance children’s participation than those that have a more restricted range of behaviors typically executed in a repetitive fashion (like displays or toy vehicles) (Kounin & Sherman, 1979). Thus, inviting exploration, curiosity, and stimulating transformational behaviors, the office play setting and its resources engaged and sustained children’s attention, urging them toward greater interaction with environmental and functional print.

In doing so, the activity setting provided minority children from financially disadvantaged families with direct experiences for exploring the tools of literacy and for practicing the behaviors associated with them. Snow and her colleagues (1991) found that materials of this nature that contributed to an understanding of the varied uses of literacy were particularly important for children from poor homes who might otherwise have little chance to learn these skills. At its most concrete level, then, this finding suggests that child care programs serving poor families may provide for greater opportunity by enhancing play environments with literacy objects and print. From these direct experiences, children may begin to construct their knowledge of how literacy relates to accomplishing their own goals.

Experiences like these may have broader consequences for children’s literacy learning. Vygotsky (1962) theorized that the vehicle of playing with objects is essential in enabling children to use words to build up stores of represented meaning that might ultimately stimulate the development of concepts. In particular, Pellegrini and his associates (Pellegrini, Galda, Dresden, & Cox, 1991), examining children’s symbolic play behavior for 2 years, found that their use of terms such as “write,” “read,” and “spell,” described as metalinguistic verbs, was predictive of their later emergent writing and reading status. Therefore, opportunities to handle literacy objects and repeat literacy routines accompanied by naming and labeling may facilitate children’s uses of the language of literacy. Tough (1982) has argued that, far from lacking language ability, children born into a culture of poverty need opportunities to use their language abilities in seeking further understanding and acquiring new skills.

The availability of literacy tools and time to use them, however, may not be sufficient alone for acquiring environmental and functional print knowledge.
Children in both intervention settings derived greater knowledge of environmental print than the control group; however, those with the interactive parent learned more environmental print than others. This suggests the importance not only of exposure, but also of collaborative interactions from more capable adults in learning environmental print. While partners in play may provide similar kinds of assistance or "scaffolding" as adults (Neuman & Roskos, 1991), higher-level skills such as word learning may be easier for the child through the zone of proximal development, typical of the adult-child relationship. Forman and Cazden (1985), for example, suggest that peer relations can function as intermediate transforming contexts, but that skill development must be grounded in adult-child interaction. This implies that the "zone" could be used to identify behaviors in need of instruction. For early literacy learners in particular, it suggests that by making reference to and use of the labels and signs in the immediate environment, parents and teachers can enhance children's print-meaning associations through this written language source.

Many childhood experts have decried didactic or "teaching" approaches for poor minority children in early education programs, favoring approaches that emphasize child-initiated learning activities (Stipek, Daniels, Galluzzo, & Milburn, 1992). In examining play frames, however, it was evident that in the presence of an interactive adult, children's play focused on the objects and routines of an office setting and/or reading/writing, learning more about environmental print than the two other groups. While adult interventions must not prevail over occasions for children to engage in their own meaning-making constructions, it suggests an important implication for child-centered programs that serve these children. Rather than characterizing early childhood programs dichotomously as didactic or child-centered, poor minority children might best be served by an approach that includes both direct teaching and child-initiated independent explorations. Cardenas and Zamora (1980) have argued that programs failing to take into account the unique early developmental patterns of poor children by assuming that their skills are the same as middle-class children actually "retard" their educational progress. In regard to literacy play, adult intervention that includes both initiating/teaching and responding to literacy play is likely to be most beneficial to children.

Perspectives on the nature of this teaching, however, may vary by cultural group. Previous research, for example, has characterized the teaching styles of low-status groups as didactic, directive, and controlling, casting these behaviors in a negative light compared with the less directive style of the middle class (Feshbach, 1973; Hess & Shipman, 1965). In contrast, Moreno (1991) describes how the nature of teaching behaviors itself may vary according to the culture and its needs. This suggests that within particular cultures or groups, varying patterns of teaching interactions may serve as scaffolding techniques. For example, in this study five explicit strategies were used by African-American parent-teachers to assist children's performance: demonstrating, labeling, direction-giving, extending, and feeding-back. Although strikingly similar to scaffolding behaviors typically recorded in middle-class homes (Tizard & Hughes, 1984), they differ in the type of verbal instruction, emphasis on physical instruction,
and kind of reinforcement. Thus, in contrast to viewing one particular style as more effective than others (i.e., explicit vs. inquiry style) it suggests that successful teaching lies in the perspective of the cultural community in which such interactions take place. As Delpit mentions, it implies that teachers must engage minority parents and members of the poor community in the discussion of what kinds of instruction are in their child’s best interest.

There are, of course, several important limitations in this research. First, though generic in form, the “office” setting may not have represented the most suitable context for these adults and children to share their knowledge about literacy and to practice familiar routines. “Offices” tend to reflect the existing “culture of power” (Delpit, 1988), often representing for these families insurmountable barriers to obtain decent health care, food, and justice. A more culturally conducive context, like a grocery store, may have facilitated greater knowledge-sharing, offering the adults opportunities to develop and expand upon the children’s personal images of themselves as literacy learners.

Second, the lack of variation in functional print knowledge may have been due to an instrumentation effect. In creating the activity settings, we attempted to include functional print that was in some ways familiar to children, like a telephone book or a catalogue. Our assumption was that most of these children knew, to a degree, what the items were used for. However, our settings were designed to focus on how these items could be used. Thus, in phrasing the question to ask “What do you use it [the item] for?” we may have inadvertently limited the range of children’s responses. Observations of their uses in the contextualized setting may have been a more reliable and valid technique for assessing these functional tasks. And third, these insights and results are restricted to urban, African-American children of poor families, and adults from the same cultural community. Whether these same patterns of literacy interactions and engagement will take place in other cultural contexts or with other groups remains for further research to resolve.

Given these considerations, the efficacy of a well-composed literacy-enriched activity setting has important implications for early childhood programs that serve poverty families. As a literacy setting, it appeared to provoke children and adults to share their literacy knowledge in fairly explicit ways and on their own terms. In doing so, children engaged in more literacy-related play, and, in the process, enhanced their environmental print and ability to designate functional print items. But there was also a reciprocal response from parent-teachers. By giving them ownership and responsibility for the literacy-related play space, the setting provided an opportunity for them to become more instrumental in their children’s educational activities. In a sense, it blurred the distinction between the “professional teacher” and “the parent as teacher.” Smith (1980) has argued that having parents see themselves as teachers of their own children is a critical factor in successful early interventions programs. Thus, in combining the resources of the social and physical environment, this activity setting provided a meaningful occasion for parents to assert their responsibility and right as their child’s first literacy teacher. Indeed, it raises new possi-
Environmental Print

abilities for bridging home, school, and cultural identity to enhance the early literacy behaviors for preschoolers reared in poverty.

Notes

We sincerely appreciated the efforts of the parent-teachers and administrators at the Head Start Center, as well as the help of research assistants Robyn Fischer, Marna Elliott, and Kim Earley. We also thank Larry Ludlow for his thoughtful editorial comments. This research was supported by a National Council of Teachers of English Research Foundation Grant.

1Tests of homogeneity of the variance-covariance matrices using Box's M were significant for handling, reading, and writing behaviors. This occurred because of zero variance at different time periods in these behaviors. As a result, multivariate and univariate tests of significance could not be conducted.

References


Neuman and Roskos


Environmental Print


Neuman and Roskos


Received April 1, 1992
Revision received August 15, 1992
Accepted August 25, 1992