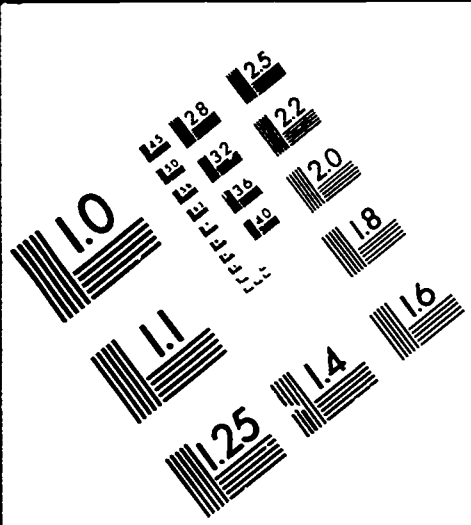
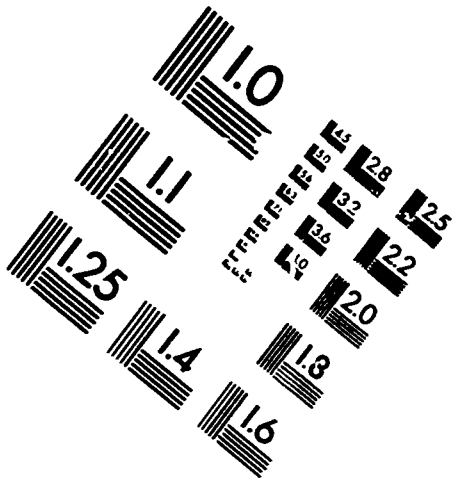
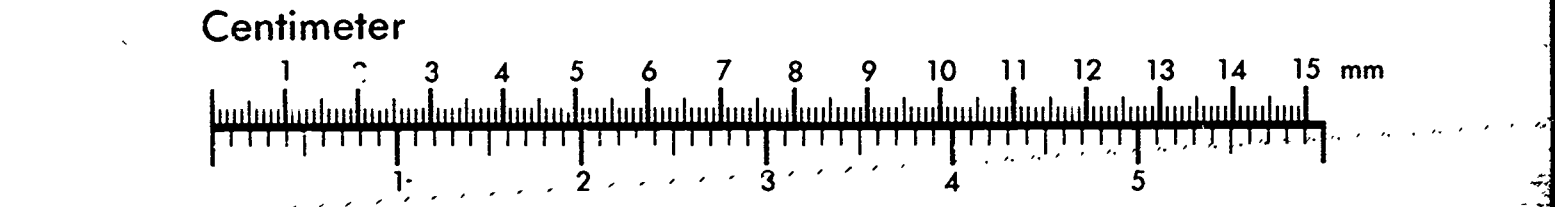
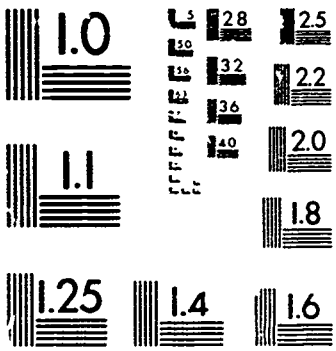
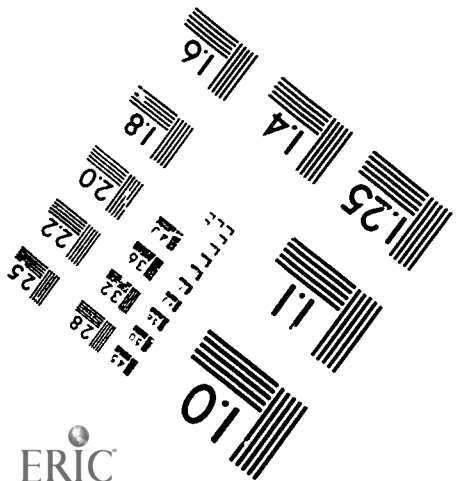


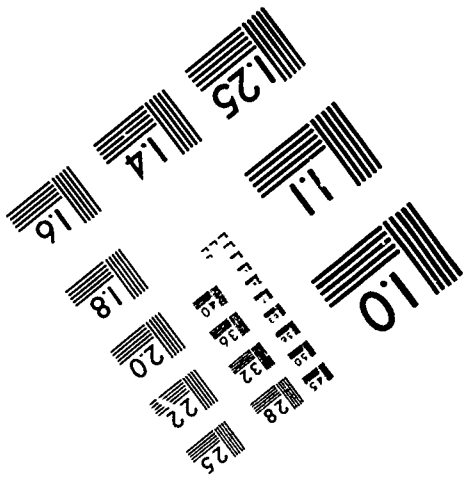
Association for Information and Image Management
1100 Wayne Avenue Suite 1100
Silver Spring, Maryland 20910
301/587-8202











MANUFACTURED TO AIIM STANDARDS
BY APPLIED IMAGE, INC.

DOCUMENT RESUME

ED 325 202 PS 018 992

AUTHOR Mason, Jana M.; And Others
TITLE Shared Book Reading in an Early Start Program for At-Risk Children. Technical Report No. 504.
INSTITUTION Illinois Univ., Urbana. Center for the Study of Reading.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Jul 90
CONTRACT G0087-C1001-90
NOTE 17p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Failure; Comparative Analysis; *High Risk Students; *Language Acquisition; *Literacy Education; *Preschool Children; Preschool Education; *Reading Instruction; Reading Skills; *Student Improvement; Urban Schools; Writing Skills
IDENTIFIERS Early Start Preschool Program; *Letter Naming; Prereading Skills; Shared Book Reading

ABSTRACT

Schools typically place a high value on the dominant middle-class approach to becoming literate: they expect all children to arrive at school familiar with books and able to discuss stories. However, community use of printed materials varies, resulting in a large number of nonmainstream children deemed at risk for school failure at an early age. In an effort to address this situation, a study examined the effects of including shared book reading activities in an urban preschool program that identified at-risk children through assessment of child and family characteristics. A year-long intervention supplemented the regular program with weekly classroom reading and sharing of simple books; use of book topics for writing and dramatic play; and shared book reading by parents and children at home. The study employed a quasi-experimental control design with multiple converging measures of children's knowledge of language and literacy constructs and parent questionnaire responses. Multivariate and univariate analyses revealed that literacy development can be fostered through the incorporation of shared book reading. Pre- and posttest comparisons also revealed that at-risk children can make substantial growth in language development, print concept awareness, letter knowledge, writing, and reading abilities. (Author/RH)

CENTER FOR THE STUDY OF READING

Technical Report No. 504

SHARED BOOK READING IN AN EARLY START PROGRAM FOR AT-RISK CHILDREN

Jana M. Mason, Bonnie M. Kerr, & Shobha Sinha
University of Illinois at Urbana-Champaign

and

Christine McCormick
Eastern Illinois University

July 1990

University of Illinois at Urbana-Champaign
51 Gerty Drive
Champaign, Illinois 61820

The work upon which this publication was based was supported in part by the Office of Educational Research and Improvement under Cooperative Agreement No. G0087-C1001-90 with the Reading Research and Education Center. The publication does not necessarily reflect the views of the agency supporting the research.

Abstract

In our society, schools place a high value on the dominant middle-class approach to becoming literate in that they expect all children arriving at school to be familiar with books and to be able to discuss stories as children from mainstream families do. However, community use of printed materials varies, resulting in a large number of non-mainstream children deemed at risk for school failure at an early age.

A study was conducted to examine the effects of including shared book reading activities in an urban preschool program that identifies at-risk children through assessment of child and family factors. The year-long intervention supplemented the regular program with weekly classroom reading and sharing of simple books, use of book topics for writing and dramatic play, and shared book reading by parents and their children in the home

The study used a quasi-experimental, control design with multiple converging measures of children's knowledge of language and literacy constructs and parent questionnaire responses. Multivariate and univariate analyses revealed that literacy development can be fostered through the incorporation of shared book reading. Pre and posttest comparisons also revealed that at-risk children can make substantial growth in language development, print concept awareness, letter knowledge, writing, and reading abilities.

SHARED BOOK READING IN AN EARLY START PROGRAM FOR AT-RISK CHILDREN

There is increasing evidence that children from socioculturally diverse homes in the United States are at risk for school failure (Anderson & Stokes, 1984; Heath, 1983; Teale, 1986), in part because our schools place a high value on the dominant middle-class approach to becoming literate. Teachers often expect all school children to be able to participate in book reading discussions in a similar manner and to have experienced similar literacy events and practices with their parents. Yet, because families do not engage in identical literacy practices or interact with their children in the same ways, children come to school with varying knowledge about literacy and varying interest in its acquisition.

How might our public schools best meet the needs of children with diverse backgrounds and dispositions? One hypothesis is that early and intensive exposure to literacy will lead children to a greater awareness of and interest in reading and writing. However, little is known about how to identify children who might benefit from early literacy experiences in a school setting, how such a program ought to be organized, or what the possible long-term benefits might be. This study was undertaken to determine the effectiveness of early and intensive exposure of children to materials designed to promote emergent reading, in a language- and literacy-focused program for at-risk preschoolers.

The study evolved from a series of studies (Mason, McCormick, & Bhavnagri, 1986; McCormick & Mason, 1986; 1989a) in which the use of easy-to-recite Little Books has been shown to match young children's interest in print and to have a positive impact on the early reading skills of children who typically do not prosper under the systematic basal reading instruction in school. In these studies, simple, short stories were constructed to provide obvious connections between spoken and printed words so that 4- and 5-year-old children could readily learn to recite the books. These materials were developed in the context of Mason's (1980) developmental model of early reading. In this model Mason proposes a first level of reading development in which children recognize print by using the intent of a message within the context of signs and labels. At this time children begin to recognize and name letters but do not use letter information to learn or remember words. According to Venezky (1975), knowledge of letter names facilitates the process of reading by making the letters immediately familiar. Ehri (1984) argues letter names give identifiable referents with which to associate phonemes. This initial level of understanding is followed by a second level of reading development in which children become aware that letters signal particular sounds and that these phonetic sounds, usually beginning with initial consonants, can be heard in words and used as cues for word recognition.

Children who have not experienced informal literacy activities that are compatible with the first level of reading may be at risk for failure if they receive the typical reading instruction in kindergarten and first grade emphasizing activities that match the second level of development. Walsh, Price and Gillingham (1988) found letter naming knowledge (Level I knowledge in Mason's hierarchy) varied widely in the middle of kindergarten and letter naming speed was strongly related to later progress in reading. The Little Books are materials to be used in activities appropriate for children at the first level of early reading in that they offer a meaningful, context-supported introduction to print which allows all children successful opportunities to view and appreciate print and to behave like a reader (Mason & McCormick, 1981).

In the McCormick and Mason (1989a) study, a Head Start program in a small midwestern city was supplemented with a Little Book Program. Half of the groups read and discussed six Little Books in school. These books were then mailed to the children at home, and another set of six little books were mailed during the kindergarten year. The remaining groups received a similar amount of small group discussion time and an equivalent number of pieces through the mail. Results at the end of the Head Start year showed that the children receiving Little Books readily learned to recite the text and that these children often "read" the Little Books at home, frequently involving their families in their use.

These children also showed greater interest at home in telling and hearing stories, trying to print, and trying to read than did children who did not receive the books. Follow-up on the children's progress in kindergarten showed that the children receiving the Little Books were better at approximating the text with a written-language-like story for both familiar and new Little Books and that they were able to identify significantly more letter sounds than the control group. Parents whose children received Little Books also gave a higher assessment of their child's interest in literacy activities at the end of kindergarten.

While the positive impact of the Little Books was fairly dramatic, especially the finding that these materials used in shared reading at school appeared to generalize the acquisition of letter-sound knowledge, a serious limitation of the study was that the number of children in the kindergarten follow-up was quite small. Thus, a large-scale demonstration was needed to substantiate these findings.

While much research has appeared regarding the kinds of early reading skills many children bring to kindergarten and first grade (e.g., Mason, 1989; Teale & Sulzby, 1986), little systematic research has examined ways to break cycles of school failure. Encouraging suggestions, however, appear in a book edited by Allen and Mason (1989). Common themes throughout the book include helping preschool teachers to become familiar with the tenets of emergent literacy, to use a wide array of reading and writing activities, and to become aware of the mappings of spoken language to written language. Building on those themes, then, our question is whether a Little Books Program, which allows children to attend to print, discuss story themes, and recite the printed texts, provides a unique opportunity for emergent literacy progress.

Method

Research Setting: The Early Start Program

The Early Start program is a developmental program aimed at individualizing instruction and socialization for 4-year-old children deemed at risk for school failure in the state of Illinois. The program uses several screening measures for entry. One measure, the Chicago EARLY Assessment (Early Assessment and Remediation Laboratory, 1984) is a test of visual and auditory discrimination, fine and gross motor development, and overall language abilities. This formal screening measure is used in combination with family and social factors acquired from home visits and interviews. Should a child score below a prespecified score on any of the subtests or come from a family setting in which it is felt directed school activities would be beneficial to the child, the child can be enrolled in the program free of charge.

The research was carried out in two Early Start schools that were located in a mid-sized urban setting. A teacher, full-time aide, and half-time helper worked together in each classroom. The half-day program of instruction included whole class time, free time, small group time, snack, and recess. The teachers were committed to enhancing overall language and concept development during whole class time when they read trade books to the children, did calendar work, shared current events, and engaged the children in music and body movement. During free choice time, which the teachers called "Discovery Time," children chose from centers around the room, principally, blocks, writing, fine motor (which included puzzles and game manipulatives), science, dramatic play, library corner, art area, a sand table (which was often converted to other textures such as water, corn, and colored rice), and quiet or private space. The children participated in a number of these areas during each day, and informally interacted with each other and adults while doing so. During small group work, the children were grouped according to similar needs or strengths and participated in teacher-directed activities. Throughout the day, the children received individualized attention in whatever activity they were participating.

In addition, the program was set up to involve parents in their children's education. The school held conferences three times a year during which progress evaluations were discussed with parents. The teachers conducted home visits and had "Parent/Child Days" in school when only children accompanied by a parent could come to school. They also provided parent workshops on parenting and school issues.

Participants

There were seven teachers and aides and three teacher helpers involved in the study. Each teacher taught two classes of children, except for the head teacher who taught one class in the afternoon and whose aide served as the teacher in that classroom during the morning. Each class had no more than 21 students and in all, 240 children from 12 classes participated in the study. Complete data were available for 232 children, and all analyses are based on that smaller number. All of the children were identified as at risk for school failure. The majority were from low socioeconomic status families, and an approximately equal number represented white and black cultural groups. Boys slightly outnumbered girls. There were 52 girls and 63 boys in the treatment group and 57 girls and 60 boys in the control group. Fewer than 10 children spoke a language other than English at home.

Materials

The Little Books (McCormick & Mason, 1989b) are books designed for promoting beginning literacy development. The books consist of six to nine pages with one simple line drawing per page and words or phrases that closely match each illustration. The books are stories, as defined by Prince (1973), in which an event culminates or changes or the initial theme finishes with an enjoyable twist. For example, the Little Book story *Snowman* depicts the building of a snowman. Each page adds a feature to the illustration until the snowman is completed. The pages read, "One big snowball. Two big snowballs. Eyes and nose. Great big smile. Hello Frosty!" The books are written about familiar topics for young children and feature high-frequency content words. These characteristics combine to make the books simple, predictable means for engaging young children in discussions that emphasize meaning and print awareness and acquisition of new knowledge about written language features. It is important to emphasize that the Little Books were developed to complement, rather than to replace language and literacy activities or trade book reading. The Little Books highlight print and meaning at a level where young children can begin to make connections between the spoken and written word by developing independence in print awareness and the act of reading.

Procedures

In May of the preceding school year, the Little Books were introduced to school personnel and procedures for their use discussed. In September, another workshop for teachers was held and follow-up visits were made with each teacher when she began using the Little Books to insure fidelity to the treatment. Background data on families were collected through a September home visit by the teacher.

The 12 classes were randomly assigned to either the treatment or control conditions, and to control for teacher effects, each teacher taught one class including the Little Books as a small group activity and one class without using them. Teachers maintained an otherwise identical program by adding Little Book activities to small group sessions and by shortening the time for each activity.

The intervention began in mid September, and continued throughout the year for all weeks longer than 3 days, with a book per week shared, resulting in 28 books being read and discussed. On Mondays, the teacher introduced the book with her enlarged copy to small groups of students. She showed the cover, requested predictions or discussed the illustration and title, and then read it aloud to the group. The children were encouraged to join in the reading when they felt comfortable. After one or two readings to the group, the teacher encouraged the children to read it with her, first as a group, and then individually. Sometimes children took turns reading each page; other times, they were encouraged to

read the whole book "by themselves" or in subgroups (e.g., the boys read to the girls or vice versa). Mistakes were gradually corrected through rereadings and by teacher directing children to the words, such as pointing while reading. Harsh, immediate corrections were avoided, especially when the meaning used by a child was the same as that conveyed by the text.

On Wednesday, the books were reintroduced and reread with small groups. During these sessions, discussion of the book topic and individual reading attempts were made by the children. On Fridays, books were read as a group and the teachers designed book-related followup activities. Some of these activities were print-related, such as writing a class story similar to that of the Little Book, while others were text- but not print-related, such as making a class snowman mural to hang in the hallway when the book was about building a snowman. At the end of the week, each child in the Little Book classes received an individual copy of the book to take home and share with family members. This extensive practice with each book was a critical feature of the program.

All children were individually assessed on two measures. The Test of Early Language Development (TELD) (Hresko, Reid, & Hammill, 1981) and an emergent literacy criterion measure, drawing on the Beginning Educational Assessment (BEA) (Mason & Stewart, 1990), which assessed print concept development, letter knowledge development, and reading and writing development. The TELD was chosen to measure overall language development and consists of measuring form and content of language in both expressive and receptive modes. The emergent literacy measure was developed to pinpoint changes in letter, word, and book concepts. Reading and writing development subtests were added to the emergent literacy measure for the spring testing. Tests were given in September or October, and readministered in April.

After the Little Books program was initiated monthly observations of all classes were held to account for literacy activities other than those surrounding the Little Books as well as to account for how the Little Books were being used. A second parent questionnaire was collected in the spring to acquire information on home literacy including children's interest in reading and writing. The Little Books program ended in the middle of May at the end of the preschool program for that year.

Results

The first question we asked was how children progressed in literacy development over the course of the year. Table 1 presents the descriptive statistics over the year for the three dependent measures that were given at the beginning and end of the school year for the treatment and control groups combined. At the beginning of the year, all groups were comparable and over the year substantial growth occurred for overall language development (TELD), print concepts, and letter knowledge. Writing and reading abilities, measured in the spring, showed that the children were also emerging as readers and writers.

[Insert Table 1 about here.]

The principal question was, however, whether the treatment influenced emergent literacy development. End of year means for language ability, print concept knowledge, and letter knowledge indicated that children in the treatment classrooms had significantly higher posttest scores over control classrooms on letter naming, $F(1,224) = 13.70, p < .01$. There were insignificant group differences in print concepts and no differences in language abilities as measured by the TELD.

To test for treatment effects it is also important to consider the variables as a group of factors because literacy concepts cannot be completely isolated from each other. They interact and influence each other in as yet unknown ways. Before calculating a multivariate analysis of variance, the variables were first correlated to uncover and remove overlapping constructs. The correlations presented in Table 2 show that the strongest correlations existed for pretest and posttest versions of the same test. Across measure

correlations were within the low to moderate range, indicating that the constructs being measured were fairly distinct and could be included in a multivariate model.

[Insert Table 2 about here.]

A multivariate analysis of variance (MANOVA) was used to compare students on a set of dependent variables: language ability, print concepts, letter knowledge, writing, and reading. After several iterations, the best fitting model used the following set of independent variables: children's pretest language and literacy knowledge, interest in literacy (based on beginning-of-year home interviews), problems during test-taking (such as children refusing to answer orally), gender and intervention condition (Little Book treatment or no). This model was significant with Wilkes' Lambda Multivariate $F(40,961) = 38.08$, $p < .001$. Moreover, the independent variables as a set contributed to significant effects for each of the language and literacy concepts measured. Multivariate F (8,224) tests were significant beyond the .001 level for letter knowledge = 71.87, language ability = 481.49, print concepts = 457.02, writing = 352.30, and reading = 137.17.

For each of the significant dependent variables, contributions of specific independent variables were determined through univariate analyses of variance (Table 3). A complex pattern emerged. There were strong pretest influences on each of the posttests. Treatment affected letter knowledge. Letter knowledge influenced print concepts, posttest letter knowledge, and writing. Thus, extensive and intense exposure to Little Books affected beginning print awareness, which over the course of the year influenced literacy development. These results supported the hypothesis that the Little Books are effective in promoting early literacy development.

Furthermore, testing problems at the beginning of the school year had a deleterious effect for those concepts measured using oral responses. That is, those children who refused on the pretest to answer orally performed poorly on posttest language and reading measures. Also, there were gender effects for letter knowledge and writing, with girls doing better in those areas than boys.

Not surprisingly, a child's interest in reading and writing at home influenced literacy concepts but not overall language concepts. A child who engaged in reading and writing play at home did better on recognizing and naming letters, handling books, and writing. Of course, it is impossible to determine if interest promoted ability or ability promoted interest, but a relationship between the two was found.

[Insert Table 3 about here.]

Conclusions

These results demonstrate that an informal shared book reading with Little Books will enhance certain aspects of early literacy development for at-risk preschool children. The Little Books intervention contributed to letter naming knowledge, which for young children has a significant relationship with subsequent reading progress (Ehri, 1984; Mason, 1980; Walsh, Price, & Gillingham, 1988). The fact that the Little Books intervention contributed to the critical early reading skill of letter naming indicated that the majority of these preschool children were at the initial level of reading. The children were context-bound and using the messages within the context of the books to gain access to the individual letters (Mason, 1980). Thus, the Little Books were helping children to build foundations for more conventional literacy abilities. The fact that letter knowledge can be enhanced through sharing the Little Books, especially when few, if any, direct attempts were made to teach letter knowledge, supports the hypothesis of levels of development and the role of context-supported reading as one of the earliest forms of print awareness (Mason, 1980). The Little Books program helps to develop beginning print awareness in a meaningful, supportive context. The simplicity of the books makes it possible for the children to connect informally the graphic symbols and letter names.

The Little Books provide an important, perhaps essential, balance in a preschool literacy program. They balance the importance of the print and the story. Few trade books offer this balance because their rich story lines and long texts, while fostering language and listening comprehension, are not intended to make print concepts accessible. Smolkin, Conlon, and Yaden (1988) have begun to look at the learning that occurs from print-salient books, and found that when print is separated from the text, such as in dialogue bubbles, it is more readily noticed by young children.

In summary, simple books can foster invaluable connections between print and story with a brief and familiar story line to supply a meaningful context, the presence of only a few words on each page, and strong picture support on each page. Children can easily learn to read the text and to use the repeated phrases and illustrations to remember the text on subsequent readings. The materials guide young children through that brief but essential period when letter name and basic print concepts are acquired. This research indicates that context-supported reading, which draws on supportive and informal use of simple-to-read books, can provide an effective supplement for Head Start or other good language-focused preschool programs for at-risk children.

References

Allen, J., & Mason, J. (Eds.) (1989). *Risk makers, risk takers, risk breakers: Reducing the risks for young literacy learners*. Portsmouth, NH: Heinemann.

Anderson, A., & Stokes, S. (1984). Social and institutional influences on the development and practice of literacy. In H. Goelman, A. Oberg, & F. Smith (Eds.), *Awakening to literacy* (pp. 24-37). Portsmouth, NH: Heinemann.

Early Assessment and Remediation Laboratory (1984). *Chicago EARLY Assessment*. Chicago: Board of Education of the City of Chicago.

Ehri, L. C. (1984). How orthography alters spoken language competencies in children learning to read and spell. In J. Downing and R. Valtin (Eds.), *Language awareness and learning to read* (pp. 119-147). New York: Springer-Verlag.

Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. New York: Cambridge University Press.

Hresko, W. P., Reid, D. K., & Hammill, D. D. (1981). *The test of early language development*. Austin, TX: Pro-Ed.

Mason, J. (1980). When do children begin to read? *Reading Research Quarterly, 15*, 203-227.

Mason, J. (Ed.) (1989). *Reading and writing connections*. Boston: Allyn & Bacon.

Mason, J., & McCormick, C. (1981). *An investigation of prereading instruction from a developmental perspective: Foundations for literacy* (Tech. Rep. No. 224). Urbana-Champaign: University of Illinois, Center for the Study of Reading.

Mason, J., McCormick, C., & Bhavnagri, N. (1986). Lesson negotiation between a teacher and preschool children. In D. Yaden, & W. S. Templeton (Eds.), *Metalinguistic awareness and beginning literacy: Conceptualizing what it means to read and write* (pp. 159-172). Portsmouth, NH: Heinemann.

Mason, J. M., & Stewart, J. P. (1990). *Beginning educational assessment*. Iowa City, IA: American Testronics.

McCormick, C., & Mason, J. M. (1986). Intervention procedures for increasing preschool children's interest in and knowledge about reading. In W. Teale & E. Sulzby (Eds.), *Emergent literacy: Writing and reading* (pp. 90-115). Norwood, NJ: Ablex.

McCormick, C., & Mason, J. M. (1989a). Fostering reading for Head Start children with Little Books. In J. Allen & J. Mason (Eds.), *Risk makers, risk takers, risk breakers: Reducing the risks for young literacy learners* (pp. 154-177). Portsmouth, NH: Heinemann.

McCormick, C., & Mason, J. M. (1989b). *Little Books*. Glenview, IL: Goodyear Press.

Prince, G. (1973). *A grammar of stories: An introduction*. Paris: Mouton.

Smolkin, L. B., Conlon, A., & Yaden, D. B. (1988). Print-salient illustrations in children's picture books: The emergence of written language awareness. In J. E. Readence & R. S. Baldwin (Eds.), *Dialogues in literacy research* (pp. 59-68). Chicago, IL: National Reading Conference.

Teale, W. H. (1986). Home background and young children's literacy development. In W. H. T
E. Sulzby (Eds.), *Emergent literacy: Writing and reading* (pp. 173-206). Norwood, NJ: Ablex

Teale, W. H., & Sulzby, E. (Eds.) (1986). *Emergent literacy: Writing and reading*. Norwood, NJ

Venezky, R. L. (1975). The curious role of letter names in reading instruction. *Visible Langua*
23.

Walsh, D. J., Price, G. G., & Gillingham, M. G. (1988). The critical but transitory importance
naming. *Reading Research Quarterly, 23*, 108-122.

Authors' Notes

We thank the following people in the Springfield, Illinois, Public School System for their cooperation and support in conducting this research. Kathryn Ransom, Coordinator of Reading, Inservice, and English invited us to the Springfield Public Schools where we have been warmly received. Dr. Harriet Arkley, Early Childhood Teacher Instructional Leader, supported our efforts through the second year of the project when the children were attending kindergarten. Elizabeth Gruendel, Early Start Project Leader, helped in innumerable ways, including coordinating school visits, collecting demographic information, and classroom videotaping. The Early Start teachers, Nancy Moore, Head Teacher; Linda Langheim; Ellen Lindley; Mary Ann Robinson; Christie Weber; Kay Dickston; and Diana Skelton graciously allowed us to visit their classrooms each month, collected data, and helped with endless recordkeeping. Each of these people, as well as the classroom aides and helpers, have done far more than listed here, and we are truly grateful.

Table 1

Beginning- and End-of-Year Descriptive Statistics for Treatment and Control Groups Combined on Language and Literacy Concepts

	Mean	S.D.	Maximum Possible	Mean Proportion Scores
Language Ability				
Pretest	10.70	5.66	38	.28
Posttest	18.17	5.59	38	.48
Print Concepts				
Pretest	7.84	3.41	20	.39
Posttest	11.59	3.35	20	.58
Letter Knowledge				
Pretest	5.07	12.16	66	.08
Posttest	25.45	21.37	66	.39
Writing posttest	2.54	.83	7	.36
Reading posttest	1.84	.87	4	.46

Note. $N = 232$

Table 2

Pearson Correlation Matrix of Language and Literacy Concepts

Measures	Language Ability Pretest	Language Ability Posttest	Print Concepts Pretest	Print Concepts Posttest	Letter Knowledge Pretest	Letter Knowledge Posttest	Writing
Language Ability Posttest	.53	1.00					
Print Concepts							
Pretest	.47	.42	1.00				
Posttest	.34	.47	.36	1.00			
Letter Knowledge							
Pretest	.19	07	.15	.28	1.00		
Posttest	.24	.17	.14	.37	.45	1.00	
Writing	.33	.22	.26	.30	.29	.36	1.00
Reading	.11	.20	.09	.13	.14	.10	.18

Table 3

Univariate F Tests with F(1,224) for Language and Literacy Concepts following MANOVA

Measure	Language Ability Posttest	Print Concepts Posttest	Letter Knowledge Posttest	Writing	Reading
Treatment	.27	1.03	13.70**	.29	.01
Letter Knowledge Pretest	1.27	8.94**	48.14**	13.42**	2.39
Language Ability Pretest	33.57**	4.80*	4.28*	7.12**	.01
Child Interest	3.05	8.397**	4.29*	4.33*	3.24
Gender	1.70	2.11	9.31**	9.37**	.65
Print Concepts Pretest	8.52**	8.73**	.30	.70	.03
Testing Problem	9.83**	.33	1.07	1.72	5.29*
Constant	20.37**	29.66**	.91	48.80**	20.00**

*$p < .05$

**$p < .01$

END

U.S. Dept. of Education

Office of Education
Research and
Improvement (OERI)

ERIC

Date Filmed

March 29, 1991