

2-1-2001

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Recommended Citation

Cobb, J. B. (2001). The Effects of an Early Intervention Program with Preservice Teachers as Tutors on the Reading Achievement of Primary Grade At Risk Children. *Reading Horizons: A Journal of Literacy and Language Arts*, 41 (3). Retrieved from https://scholarworks.wmich.edu/reading_horizons/vol41/iss3/3

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The Effects of an Early Intervention Program with Preservice Teachers as Tutors on the Reading Achievement of Primary Grade At Risk Children

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ABSTRACT

This article presents quantitative data from an experimental research study investigating the effects of an early intervention tutorial program on at risk children's reading achievement. Preservice teachers in an emergent literacy course served as tutors for at risk first, second, and third graders. The *t*-tests for independent samples revealed that the experimental group outperformed the control group on the vowels subtest and on total reading score at the first grade level. No statistically significant differences were found in grades two and three.

In recent years there has been a number of research studies focusing on the emergent reader and the importance of quality literacy instruction in the early school years to assure success for all children (Clay, 1979, 1985; Johnson & Allington, 1990; Lundberg, 1984). It has been well-documented that children who continue to struggle with reading after grade three will often develop negative attitudes toward reading, may suffer from low self-esteem, and will be likely to internalize faulty literacy habits. Chapter One research (Carter, 1984; Kennedy, Birman, & Demaline, 1986) has affirmed that remediation of reading problems after the early years is generally ineffective and costly.

Volunteer tutoring has often been touted as one of the most effective strategies to provide assistance for struggling readers to enable them to acquire the necessary literate behaviors while in the primary grades (Juel, 1996; Shanahan, 1998). Cohen, Kulik, & Kulik (1982) in a meta-analysis of 52 studies involving tutoring found that tutored students surpassed their non-tutored classmates. In a study comparing one-on-one Reading Recovery tutoring to small group Reading Recovery tutoring, Pinnell et al. (1994) reported more powerful effects with the one-on-one instruction. Wasik & Slavin (1993) did an extensive analysis of one-on-one adult-delivered instruction for at risk children, discussing precise models of delivery, which have been successful. Morris, Shaw, and Perney (1990) outlined an effective volunteer tutorial program that targeted children in grades two and three.

Cassidy and Wenrich (1999) and Cassidy and Cassidy (2000) have listed volunteer tutoring as a key topic in literacy research and practice for the past two years. One-on-one instruction has received renewed attention and has been the focus of national and state political agendas. A majority of the studies published to date investigating volunteer tutorial programs has followed a tutorial agenda similar to the one advocated by Morrow and Walker (1997) in The Reading Team: A Handbook for Volunteer Tutors, K-3 published by IRA. This agenda has been used in many America Reads Programs and involves reading familiar books with the child, reading aloud instructional level texts, writing in journals in response to books read, tutor and tutee reading and discussing books, and involving the child in word study. Other studies involving early intervention programs have incorporated phonological awareness activities as a part of the tutorial agenda (Juel, 1996). Wasik (1998) discussed the importance of consistency and intensity in tutoring programs for young children. Vendell, Humow, and Posner (1997) similarly have identified the positive, caring relationship between child and tutor/caregiver as the most critical factor in success of supplementary programs. Although there is much discussion in the research literature with respect to the components of a successful tutoring program, there is no consensus with respect to the optimum tutorial session agenda that indicates a need for continued research into models of tutorial programs.

This article will describe one early intervention tutorial program implemented in the primary grades of a culturally diverse elementary school and will report the effects of the program on children's reading achievement. The pilot program followed a research-based agenda incorporating phonological awareness activities and instruction in comprehension strategies using manipulatives (small toys) and puppets with at risk children in grades one through three.

Method

Two research questions guided the investigation: (1) Can an early intervention literacy program, research-based with respect to the essential elements of successful tutorial projects and incorporating hands-on, multisensory activities, be effective with children when tutors are preservice teachers who are encountering diverse cultures, ethnic backgrounds, and languages for the first time? (2) What will be the effect of a research-based early intervention tutorial program on the reading achievement of at-risk first, second, and third graders?

Setting

Two elementary schools with diverse student populations served as the sites for the early intervention tutorial project. Both schools were professional development school partners of the researcher's university, with the professor serving as site coordinator for the schools. At the time of the study, School A had a student population of 600 students in grades PK-5, with 75% of the children classified as economically disadvantaged and 26% classified as limited English proficient. School B had a student population of 620 students in grades K-5 with 33% of the children in School B classified as economically disadvantaged. Both schools were located within five miles of two universities in primarily low socioeconomic (SES) residential areas in a mid-sized college city (See Table 1 for demographic information with respect to schools).

Participants

The children. Sixty children, thirty from each elementary school, were identified by their teachers and respective principals as the

lowest performing students in each grade, one through three. Thirty students, fifteen per school, were randomly assigned to an experimental

Table 1

Demographic information for participating elementary schools

School A	African American 25%	Caucasian 47%	Hispanic 27%	Other 1%	
School B	African American 9.5%	Caucasian 76.3%	Hispanic 10.1%	Kuwaiti .1%	Other 4.0%

group that would receive tutoring while the other thirty, designated as the control group, remained in their regular classrooms receiving literacy instruction in that setting only. (One female student from the control group moved in late November, leaving 29 total at the time of post testing; thirty experimental group children were post tested for a total N of 59). Twenty students in the research project were female; forty were male. Of the children 16% were Hispanic, 15% were African American, 25% were Caucasian, and 3% were Kuwaiti. All were economically disadvantaged and qualified for free lunch. All of the first graders had limited opportunities for literacy experiences in their homes, and many of the Hispanic parents spoke no English. The Kuwaiti and Hispanic children spoke limited English.

The tutors. Thirty preservice teachers, enrolled in the researcher's early literacy course, were required to travel out to the elementary schools to tutor the at risk children as part of the class requirements in lieu of a final exam. The tutors were all majoring in education and planned to teach in elementary or middle school settings. Twenty-nine tutors were Caucasian; one was Hispanic. Twenty-eight tutors were female, and two were male. Most of the tutors were encountering children of different ethnic and cultural backgrounds for the first time. Few of the tutors spoke any Spanish, and none spoke Arabic. For the majority of preservice teachers who were in their junior year, this was also their first opportunity to encounter a high-risk

teaching environment and to interact with children growing up in poverty.

Procedure

Each preservice teacher tutored one child for 45 minutes, twice weekly for ten weeks. The average number of sessions was twenty. Tutoring occurred outside the classroom door at carrels in the hallways or in an empty classroom. Times for tutoring were determined by classroom teachers in accordance with the school policy of avoiding children being pulled from reading, math, recess, music, art or physical education classes. Tutoring took place between the hours of 8:00 a.m. and 2:00 p.m. Tutoring began in mid-September and ended in early December.

Children were pretested and post tested with the Gates MacGinitie Reading Test, Level R, (grade one), Level 1 (grade two), and Level 2 (grade three) using Form K in September and Form L in December. Informal assessment was also used throughout the semester including running records, informal reading inventories, and informal writing assessment for instructional planning.

The Gates-MacGinitie Reading Test was selected because of its standardized test type format yielding national norms, which the principals of the respective school valued. In a state climate which strongly emphasized accountability as measured by state standardized tests, the principals were interested in seeing if the tutorial intervention program would significantly impact the children's reading achievement scores on a group assessment measure rather than on informal, individual measures.

The classroom reading instructional program at the respective schools included guided reading groups, leveled readers, home reading folders that were sent to parents each afternoon, writing in journals, and explicit phonics instruction.

In addition to the tutoring, university students were required to attend class for three hours per week and to write a one-page reflective journal entry after each tutorial session. The tutors were also required to

submit lesson plans for review, which included their instructional objectives, procedures, materials to be used, and evaluation of each session's activities. The instructor reviewed journal entries weekly and conducted conferences with those students who had concerns or who needed guidance in lesson planning. Tutors were also encouraged to talk frequently with the child's classroom teacher for guidance in instructional planning and were advised that the coordination of supplementary instruction with regular classroom instruction had proved to be an essential feature of a successful tutorial program (Wasik, 1998).

Classroom Instruction: Theory and Practice Combined

The reading professor implemented a constructivist approach to encourage creativity and individualistic thinking in the planning of tutorial sessions. The emergent literacy course followed an instructional plan that focused on theory in conjunction with the use of hands-on activities and cooperative learning strategies to illustrate the application of theory into practice. The preservice teachers were introduced to the nature of language and language acquisition, emergent reading and writing behaviors, developmentally appropriate practice, guided reading and shared reading. The group participated in literacy routines using big books and predictable books, nursery rhymes, poems, songs, and jingles. They taught mini-lessons to their peers using experience charts and pocket charts to demonstrate masking, framing, and cloze procedures. The students constructed pizza box storytelling kits and used them in their tutoring sessions to explore the value of this activity for oral language enhancement. The tutors investigated various media for writing including dialogue journaling, shape books, pop-up books, and alphabet books in classroom activities. They learned the importance of children's literature, particularly culturally relevant books, as the foundation of a quality early childhood literacy program for children at risk. The tutors were frequently reminded that these class activities and strategies would be very appropriate for the emergent readers they were tutoring.

A research-based framework was provided and effective assessment strategies were included in the class syllabus. The suggested framework was based on an agenda suggested by Mitchell (1994) and included essential elements from several well-established, effective tutoring

programs: reading familiar texts, word analysis, writing, and reading new texts at instructional level (Bear, Invernizzi, & Templeton, 1996; Morris, 1982; Wasik & Madden, 1996). Rationale for the tutorial session framework was discussed, and tutors were asked to follow it, adding their own ideas:

Opening activity	4 min. (Building rapport/ice-breaker)
Instructional goal 1	15 min. (Reading)
Instructional goal 2	15 min. (Writing)
Oral reading activity or shared reading	8 min.
Closing activity	3 min.

Although tutors had been exposed to a variety of instructional strategies in their university class and were doing outside readings in several textbooks, they were required to apply their own understandings of the reading process to their particular child's unique strengths and needs. They learned to develop lessons to enhance their student's literacy achievement. They were given support and direction from the instructor but were encouraged to be independent thinkers in the application of knowledge gained.

Tutoring Components

The research project was funded by a faculty research grant, which provided funds for materials. Each tutor was provided with a canvas tutoring bag containing a dry erase board, marker and eraser, small animal finger puppet, writing tablet, pencils, and a small comprehension kit which contained the manipulatives for the strategies lessons. For example, a pair of small doll eyeglasses was used to demonstrate the LOOK strategy before reading. A small toy car was used to illustrate the READ ON and REREAD strategy while reading for meaning. Children were encouraged to explore the manipulatives, to play with them, and to guess what reading strategy each might represent. While reading orally, if a student appeared to be unsure of a word she encountered, the tutor might pull out the car and ask the child to remember that a good strategy is to read on and see if the rest of the sentence provides a clue to the meaning of that particular word. Many of the tutors reported that the

comprehension strategy lessons using the small toys, as manipulatives were the children's favorite part of the tutoring sessions.

In addition, puppets and small plastic tubs containing manipulatives for phonological awareness games were available for checkout as well as foam letters, small tiles and trays for word games, and leveled emergent readers, which included multicultural titles, narrative and expository texts. A wealth of children's books was also available for checkout through the university Reading Center resource library.

A typical tutoring session would include a phonological awareness game using manipulatives and focusing on rimes and onsets, a comprehension strategy lesson, echo reading from an instructional level text, independent reading from a familiar book of the student's choice followed by a retelling, and writing on tablets in response to books read or creating a published book to share with the child's teacher and classmates. The tutors also created sight vocabulary, comprehension, and phonics activities by adapting popular board games such as Hi-Ho Cherry-O and Candyland as they were expected to incorporate play at every opportunity. Tutors were also encouraged to develop themes for their sessions, selecting books based on the child's interests and at an appropriate instructional level.

Findings

Means and standard deviations were calculated on children's performance on the pretest and posttest measures. The Gates-MacGinitie Reading Test for the second and third grade children yielded two subtest scores, vocabulary (GVOC) and reading comprehension (GCOMP) and a full-scale reading total score (GRAT). The form of the test used for the first grade children yielded four subtest scores: initial consonants and consonant clusters (GRER 1), final consonants and consonant clusters (GRER 2), vowels (GRER 3), use of sentence context (GRER 4), and a total reading score (GRAT). Because the tests at each grade level were constructed in different ways with varying learning tasks totaling unequal numbers of items, it was necessary for statistical comparisons between experimental and control group at each grade level to be analyzed separately.

Gains in the reading achievement scores of the children in the research project from September to December were analyzed quantitatively for experimental and control group children using the *t*-test for independent samples (2-tailed). In the present study the two groups, experimental and control group, for first grade, second grade, and third grade children, respectively, were drawn independently from the population of lowest performing children in each grade (below grade level performance according to teacher judgment) without any pairing or relationship between the two groups. SPSS was used for data analysis revealing that the December scores were significantly higher for the first grade experimental group on the vowels subtest score $t(1,17) = .049, p < .05$ and on the total full-scale reading score $t(1,17) = .027, p < .05$ (See Table 2 for findings from first grade testing).

Data analysis revealed no statistically significant differences in the reading achievement gains scores between the experimental group, receiving tutoring, and control group receiving only regular classroom instruction for grade two (See Table 3 for findings from second grade testing). Likewise, no statistically significant differences were found between the comparison groups in reading achievement gains scores for the third grade (See Table 4 for findings from third grade testing).

Discussion of Results

The tutorial model implemented in this study incorporating play and phonological awareness activities using puppets and comprehension strategy instruction using manipulatives appeared to have merit with respect to improved reading achievement for children at the first grade level. It was based on the latest and most sound research base and was well communicated to the preservice teachers. Yet, the tutorial program did not prove to be as effective for the children in second and third grades since participation in the program did not result in significant reading achievement differences between the experimental and control group children at those grade levels. Although children in all grades appeared to enjoy the session formats and made frequent positive comments such as, "this is fun," "did you bring that puppet back this time?" or "I like it when we play with the toys in the box," the older

primary grade children did not appear to benefit as much from the unique tutorial model as did the younger children.

There are many possible explanations; however, from the data, it would be difficult to ascertain specifically the reasons for these results. Cloer (1997) stated from personal experiences with pilot programs using undergraduate students to tutor high-risk primary grade children and from close analysis of research studies with such intervention projects that several general problems may emerge. He stated that undergraduate students' schedules often prevent them from being able to honor their appointed times each week, and children in the early grades often miss their sessions due to illness, unexcused absences, or other competing pullout programs.

Of note in the present research study, several of the second and third grade students who were in the experimental group were children who were repeating a grade. This fact appeared to place them at greater risk for achieving full benefit from the tutorial intervention program because of significant behavior problems, negative attitudes toward school, and inconsistent attendance. Some of the third grade students spent several days in in-school suspension and missed their scheduled tutoring sessions. The first grade children had the best attendance record of the three grade level groups and appeared to be the most excited about the tutorial sessions with their tutors; consequently, they also had the most improved reading scores.

Low SES populations, as with Schools A and B in the present research project, have often been cited as a factor which may impact the success of a tutorial intervention program. Schools with a majority of students growing up in poverty can pose significant barriers to literacy success when tutorial intervention programs are implemented, and particularly when tutors are untrained volunteers or when tutors are encountering these situations for the first time. Barriers to tutoring success that may occur in low SES school populations include again the problematic issue of children being frequently absent from school or suspended from school for behavior problems. In one particular child's case in the present study, he (an experimental tutoring child) was living with his grandparents while his mother was in Mexico with other

younger siblings. He frequently warned his tutor that he would not be back next time because he would be going to see his mother. He did make two trips back and forth to Mexico during the course of the ten-week project.

The brief length of time for the intervention could also have been a factor influencing the effect of the tutorial program. Goldenberg (1994) and Hiebert (1994) have suggested that one year of intervention may be insufficient for some children, particularly when the tutoring does not occur every day or when it occurs for a relatively brief period of time at each session. Certainly, it appeared from exit interviews with the preservice teacher-tutors that they believed the factor of brief length of each session's instructional time and the short ten-week semester were factors that impacted the children's progress.

The tutors also mentioned their lack of prior experience, and their limited knowledge of the diverse cultures, languages, as well as the impact of poverty as critical factors that influenced the success of the tutorial program. The preservice teachers felt the tutoring experience was highly beneficial, but this recurring theme of overwhelming feelings of inadequacy also frequently appeared in their reflective journal entries. They often reiterated how their lack of prior knowledge and background experiences seriously affected the degree to which they were able to relate to at risk children and to plan culturally relevant lessons for effective intervention.

The preservice teachers/tutors received extensive training in literacy strategies and emergent literacy concepts. The tutors did not, however, receive in-depth information about teaching to children of diverse cultures and languages. Their university teacher-training program included a course in teaching in multicultural settings, but that course is normally taught during the senior year student teaching semester. The tutors recognized this as a weakness in their course sequence and pointed to the need for tutors to have information of this nature before tutoring/teaching in high-risk elementary school settings.

Table 2

Independent samples t test results for reading achievement test

First grade experimental group tutored children and control group non-tutored children

	t	df	sig.(2 tailed)	mean difference
GRER1 Equal variances Assumed	.705	17	.490	1.0222
GRER2 Equal variances Assumed	1.576	17	.134	2.0333
GRER3 Equal variances Assumed	2.123	17	.049 *	3.0222
GRER4 Equal variances Assumed	.550	17	.590	.6778
GRAT Equal variances Assumed	2.416	17	.027 *	6.7556

* $p < .05$

One tutor related the following incident, which illustrates the impact that lack of experience may have had on tutor perceptions of success in meeting the challenges of a diverse teaching setting. In her reflective journal writing the tutor discussed a session early in the fall, which was her tutee's birthday:

A. was really happy that we were able to celebrate her birthday together. She didn't have any plans for a birthday party outside of school... I planned a lesson centering on birthday parties. She enjoyed the gifts, card, and

candy I brought. It seemed she almost didn't know how to react ... I got the feeling that A. wasn't going to get a birthday party. She said that they were too much trouble. I didn't know a little kid that would say that!! It made me sad to hear a seven year old talk in that way. It was a reality check for me. I was so mad at myself. I couldn't believe I was so insensitive. All my life I've lived in this sheltered world where poverty isn't a reality. Yet when I look in the sweet innocent eyes of A. I can tell that, for her, poverty is reality. I feel ashamed that I did not realize that this angel-of-a-child might not be able to have a birthday party. Lesson for me: Don't be naïve, be sensitive, be alert, be aware. I was trying to create a lesson that I thought would be motivating, but for many kids like A., my lesson would be just an unwanted reminder...

Table 3

Independent samples t test results for reading achievement test

Second grade experimental group tutored children and control group

non-tutored children

	<u>t</u>	<u>df</u>	<u>sig.(2 tailed)</u>	<u>mean difference</u>
GVOC Equal variances Assumed	-.245	19	.809	-.4167
GCOMP Equal variances Assumed	-.510	19	.616	-1.1944
GRAT Equal variances Assumed	-.507	19	.618	-1.16111

Table 4

Independent samples t test results for reading achievement test

Third grade experimental group tutored children and control group non-tutored children

	t	df	sig. (2 tailed)	mean difference
GVOC Equal variances assumed	.756	17	.460	1.3111
GCOMP Equal variances assumed	-1.169	17	.258	-5.2778
GRAT Equal variances assumed	-.407	17	.689	-1.7444

The findings in this study raise questions about the impact of the tutors' lack of experience on the tutored children's success, particularly in grades two and three. While most reading educators would agree that there is a need for more exposure to diverse student populations early in the university course sequence and for preservice teacher training that includes multicultural awareness, there is no assurance that increased opportunities for interacting with children from diverse cultures and more courses addressing multicultural issues would have resulted in higher reading achievement gains for the children in the program. It is a well-documented fact in the research literature that there are other significant problems in an intervention program such as the one in the present study and that improving the reading achievement of high-risk primary grade children is a complex and multidimensional problem.

While this study points to a continued need for tutors and classroom teachers to have direct knowledge of and opportunities to interact with children whose cultures are different from that of the teacher and to understand the unique needs of children growing up in poverty, if tutors are to be successful in literacy instruction in high risk settings, there may be other formidable challenges for university reading

instructors also. Perhaps even more critical, the findings in the present study underscore the need for reading educators to continue the quest for effective instructional strategies to help children in diverse school settings to succeed and to demonstrate these strategies effectively to prospective preservice teachers. It is the direct responsibility of university reading educators to adequately prepare the new classroom teachers of reading for the unique challenges they will soon face in an increasingly diverse society. There is a continued need for preservice teachers to receive the highest quality of instruction at the university level, delving into the complexities of the reading process and understanding the many different paths that children take on their road to literacy. This quality instruction at the university level is essential to assure that teachers are prepared to be accountable for all children's success. Good instruction for all children should be the ultimate goal for every reading educator and every classroom teacher.

Limitations

The small sample size was a major limitation that diminished the power of the statistical test and may have accounted for the fact that there were no statistically significant differences in the reading achievement gains between experimental and control groups in the second and third grades. Although thirty students in the experimental group did provide an acceptably large sample, the differing test constructions at each grade level necessitated that data be analyzed in three smaller subgroups forcing the study to consist of three small samples (first grade experimental group $n = 9$; second grade experimental group $n = 12$, third grade experimental group $n = 9$; total experimental group $N = thirty$). Ferguson & Takane (1989) state that in these instances of small sample size, a substantial, perhaps important difference will often not be recognized due to the size of sample factor. Subsequent studies should include larger numbers of children at each grade level. In the present pilot study, teachers felt that equal numbers of first, second, and third graders should be included in the study. It would have been more desirable to have thirty children from one grade level tutored, thereby eliminating the small sample size as a limiting factor since all children could then have been assessed with the same form of the test, increasing the sample size to thirty. The different forms of the

test prevented comparisons across grade levels due to the differing subtest tasks.

Given the needs of the children in these low SES schools, an intervention program of two full years would have been more beneficial. Ten weeks was a comparatively brief period in which to impact reading achievement scores, and this may have also affected significance.

Future Directions/Conclusions

More research is needed into alternative intervention tutorial programs that are successful with at risk children. Most reading educators continue to support strongly the premise that the trained classroom teacher is the key to success for children in diverse classroom settings. It would seem feasible, then, that one possible tutorial model might be to use tutors/preservice teachers as instructional aides, working under the direction of the trained classroom teacher, to assist small groups or individuals. Using this model, the classroom teacher maintains the control over the primary literacy instruction and is able to utilize the talents and time of the less experienced tutors in ways that will benefit the children since the tutorial instruction will be closely aligned with the classroom instruction. A tutorial model, structured in this way, may also have a more positive affect on children's attitudes toward reading and self-esteem since there would be no pullout of the lower achieving children from the classroom setting. Some teachers strongly oppose tutorial intervention programs for this reason and have pointed to the value of having at risk children remain in the regular classroom setting for the full instructional program. Teachers often feel that untrained and/or inexperienced tutors are not as effective as the trained professional who is the child's primary instructor. A parallel model using the tutors within the classroom setting as contrasted with a typical pullout-tutoring model would address these concerns. Future tutorial research projects might compare the effects of this type of structure on children's literacy achievement as contrasted with the more traditional pullout program.

Good intentions and sincere desires to help often are not sufficient to make a significant impact on the reading achievement of children at

risk. The first graders in this study benefited from the research-based tutorial program. However, data analysis of the second and third graders' reading achievement gains revealed no statistically significant differences in the tutored children and the non-tutored children. Tutoring programs may be beneficial for some at risk children, but more than a few hours a week of supplementary instruction will be needed to break the cycle of discouragement, low self esteem, and failure which often begins as early as grade two. The regular classroom teacher needs to be knowledgeable and sensitive to the barriers to success, understand the diverse cultures of the students, and work collaboratively with any volunteer tutors who may be assigned to the school to develop the most efficient tutorial program models. Equally important, university reading educators must seek to offer the highest quality instruction and guidance for preservice teachers entering the profession so that they will be confident and well equipped to provide appropriate literacy instruction for every child, enabling each child to claim his/her inalienable right to read.

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