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The Effects of Cross-age Tutoring Upon the Decoding Skills, Attitude Toward Reading, Teacher Perceptions of Reading Improvement, and the Self-concept of Inner-city At-Risk Students

by

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A dissertation submitted to the Graduate Faculty in Educational Psychology in partial fulfillment of the requirement of the degree of Doctorate of Philosophy, The City University of New York.

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Abstract

The Effects of Cross-age Tutoring Upon the Decoding Skills, Attitude Toward Reading, Teacher Perceptions of Reading Improvement, and the Self-concept of Inner-city At-risk Students

by

Laura Menikoff

Advisors: Professor Marian Fish, Shirley Feldmann, and Alan Gross

Research during the past two decades suggests that some instructional components are more effective than others for educating "at risk" children. The strongest academic gains are demonstrated in programs that emphasize prevention, provide individualized instruction in reading and math skills, and maximize time on task as well as student participation (Cochran et al., 1993; Gersten et al., 1987;Slavin et al., 1989). Although numerous anecdotal reports and a number of research investigations have suggested that student mediated peer tutoring programs integrate these beneficial instructional components and contribute to academic gains by both tutors and tutees, few methodologically sound empirical studies have been conducted in this area.

This study was designed to systematically examine the effects of a cross-age tutoring program upon both the tutors and the tutees on the following dependent variables: decoding skills, attitude toward reading, teacher perceptions of reading improvement, and the global and academic self-concept of participating students.

The study was conducted in an urban public elementary school in Queens, New York with a predominantly African-American student body. The tutors were recruited from the sixth grade, and the tutees were recruited from the second grade. Both groups were chosen from those students considered by their teachers to be among the bottom half of their class in terms of reading ability. The tutors were systematically trained in explicit and indirect strategies to address decoding skills. The tutoring intervention was implemented over a 15 week period. Measures of all dependent variables were assessed in a variation of a quasi-experimental pre and posttest control group design.

As hypothesized, both the tutor and tutee groups demonstrated significant gains in terms of decoding skills. There was no measured effect for group in terms of either improved attitudes toward reading or global self-concept. Although it was noted that the involved classroom teachers indicated a greater number of the participating students as having made observable improvement in reading than among the control group participants, the group differences were not statistically significant. However, the classroom teachers made qualitative comments indicting that the project participants had demonstrated observable improvement in many aspects of reading performance. A post-intervention feedback survey of the tutor and tutee members suggested very positive perceptions of their involvement as helpers and learners.

It is hoped that the involved teachers and school administrators will look favorably upon the use of cross-age peer mediated instruction as a viable supplement to large group classroom teaching techniques.

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Chapter 1: Introduction

"At risk" children have been characterized as those students who are in danger of failing to complete a program of education with an adequate level of skills. Risk factors include low achievement, grade retention, behavior problems, poor attendance, low socioeconomic status, and attendance in schools where the majority of students are at or below the poverty level (Slavin & Madden, 1989). Howard and Anderson (1978) stated that by the time a student has reached the third grade, an analysis of risk factors can be used to make fairly accurate predictions about the likelihood of whether a child will drop out or complete his or her education.

Research during the past two decades suggests that some instructional components are more effective than others for counteracting "risk factors" and for addressing skill deficits. The strongest academic gains result from programs that emphasize early intervention rather than remediation (Slavin & Madden, 1989), provide individualized direct instruction in reading and math skills (Gersten & Keating, 1987), and maximize time on task as well as student participation (Greenwood, et al. 1980).

In response to these findings, there has been an increased interest in the use of peer-mediated learning interventions as a supplement to teacher instruction. "Peer" is used in the literature to refer to a child of either the same or different age and/or ability as the student (Kalfus, 1984). Despite the evidence that peer tutoring lends itself as a viable instructional technique for the incorporation of both academic, social, and behavioral purposes (Cohen, Kulik, & Kulik. 1982;

Kalfus,1984; Scruggs & Richter, 1985), it is not widely applied within the school setting. Greenwood (1988) offered as possible explanations for this lack of implementation the scarcity of validation for the effectiveness of peer tutoring programs as well as the increased demands placed upon the classroom teacher. Giesecke, et al. (1993) suggested further obstacles to program implementation such as teachers' lack of knowledge about tutor training and set-up procedures, a belief that the quality of student mediated instruction is inferior, and a perception that there will be an increased number of behavior disruptions due to the interactions of tutoring dyads.

Although there is a substantial body of literature on the academic effects (generally positive) of tutoring upon the tutees, and a smaller but growing, body of literature on the effects of tutoring upon the tutors, most of the work has been of inconsistent quality (Cohen, Kulik, & Kulik, 1982; Devin-Sheehan, et al. 1976, Kalfus, 1984; Scruggs, & Richter, 1985). Within the concluding paragraphs of literature reviews investigators consistently comment upon the limited number of studies with control groups and the inadequate evidence of systematic tutor training procedures. Additionally, most of the studies have provided sketchy descriptions of interventions, an oversight which limits the opportunity for direct replication. Furthermore, the generalization of tutoring benefits to the larger classroom is an issue which has almost been ignored.

A review of the current status of peer tutoring research indicates the generally anecdotal nature of observations about the social and emotional effects of program participation upon both the tutor and the tutee. The qualitative nature

of the data may reflect the fact that the research peaked during the 1970s and mid 1980s. In recent years there have been many new standardized measures of behavioral and social-emotional status which may supplement the existing literature. A number of research studies have included rating scales of social and affective change, assessing self-concept, self-esteem, attitude toward subject matter, and attitude toward school. To date, the conclusions are ambiguous. Whereas some investigators have found positive outcomes, many have found nonsignificant differences between participants. Several researchers explain minimal or no change as due to the inadequacy of the instruments. Still others state that social-emotional change should not be expected from peer-mediated instruction.

The present study was undertaken to contribute to the status of current cross-age tutoring literature. Cross-age tutoring is the aspect of student- mediated instruction in which a younger child is tutored by an older child. The researcher selected basic phonic decoding skills as the content area of instruction within the cross-age tutoring context. Although this project could have addressed the instruction of lower level skills in math, writing, or other content areas, decoding skills were selected as the focus of instruction due to the investigator's observation that a majority of the students attending the project site have graduated with a measured reading level two to three years below their grade level. The consistently poor standardized reading and math test results have brought state-level attention to this school, thus giving it the dubious distinction of "school under review".

There are a number of noteworthy and unique features of this investigation. First, although reading instruction, specifically spelling and sight word vocabulary, has been targeted, few investigators have addressed early decoding skills. This is a skill area which can be taught through a combination of explicit and contextual techniques (Tierney et al., 1995). It is a common deficit area noted in nearly every child that is assessed by clinicians on school-based evaluation teams . Unfortunately, these are basic skills which get passed over after the second grade in most schools. It becomes hard to instruct older children in decoding, as they perceive decoding as a "babyish" subject. They have often given up on reading and view it as an area in which they cannot succeed. Cross-age peer tutoring appears to be a suitable venue for the older student to practice and model beginning reading skills while he/she strengthens his or her own deficit areas. Second, a component of this study addressed the generalization of decoding skills to the classroom setting. The classroom teacher indicated his or her perception of reading improvement among all enrolled students. Although this teacher measure is not a definitive indication that the tutoring has contributed to the reading improvement, it suggests a relationship between supplemental instruction and reading change. Third, there is a paucity of research examining the relationship between the duration of the cross-age tutoring intervention and outcome measures. By incorporating a midtest assessment component, thus permitting comparisons between midpoint and posttest outcomes, it was expected that this study would contribute to the literature about the effectiveness and maintenance of recorded tutoring program gains.

Finally, on a broader perspective, this project provided a systematic and comprehensive behaviorally oriented model of tutor training and intervention. Expanding upon the behavioral framework, elements of social learning were integrated in order to fully utilize the social context of cross-age tutoring. During the tutor training phase, there was a good deal of emphasis placed upon the modeling and role playing of the appropriate presentation of instructional materials, behavior management, reinforcement and corrective feedback technique. Within the intervention the behavioral orientation was evident in the individually paced instruction, and the sequential and patterned lesson structure. Throughout the project, there was also an explicit and implicit guiding social contract whereby the participants were made aware of their personal responsibility for attendance, the care of materials, and their commitment as important members of the dyad. Prosocial behaviors were rewarded throughout the programs with short term and long term incentives which will be discussed later in this paper.

Chapter 2: Literature Review

The studies included in this chapter represent the major literature reviews of the 1970s to mid-1980s, more recent empirical work which incorporated students with disabilities as tutors and/or tutees, and several intergenerational projects. All of the investigations involved elementary age students as participants either receiving or providing instruction. Some of the reviewers performed meta-analyses and best-evidence syntheses incorporating same-age and cross-age tutoring projects. Investigations employing professional teachers as tutors were not included.

Tutoring studies with regular education populations

The critical review by Devin-Sheehan, Feldman, and Allen (1976) addressed both the early trends and limitations of empirical research on tutoring. The authors noted that there was broad anecdotal support for these programs, yet little empirical evidence existed to support program effectiveness in enhancing student academic and nonacademic performance. The data base was primarily a body of dissertation field studies focusing on academic instruction for low achievers. The authors examined "long term studies" which were defined as those of at least 8 weeks in duration. By current standards these are short-term studies, but we note that these projects were the forefront of peer tutoring research. The authors noted that as of the late 70s there were no investigations of the effect that intervention duration had upon instructional outcomes. There was an implicit view that the longer the program the more positive would be the

results (Topping, 1997). In conclusion Devin-Sheehan et al. observed that there were numerous methodological flaws which confounded the interpretations that could be drawn from most of these research projects. First, due to the consistent lack of control group design, little could be concluded as to the effectiveness of tutoring. Second, there was a paucity of theory -based hypotheses. Without sound theory, the investigators suggested that researchers may be making questionable decisions as to the variables under exploration. This consideration was particularly relevant during the early years of investigation due to the scarcity of previous exploratory or replicable projects. Third, there had been a dearth of evidence addressing the generalization of tutoring effects to the classroom setting. It is noteworthy that the methodological weaknesses described by Devin-Sheehan et al. remain deficit areas in much of recent research.

In a review of 82 studies on peer and cross-age tutoring, Sharpley and Sharpley et al.(1981) indicated that only 12 investigations included both academic and emotional/social benefits to participants. Of these 12 studies, most assessed such global themes as self -concept, self-esteem, and social values. The results along these variables were ambiguous and equivocal. Sharpley et al. observed that the reasons for the ambivalence of findings were unclear. Among the problems were serious methodological weakness. Of the initial body of analysis 24 studies contained no information related to controls, 78 did not identify the activities of the control groups during the sessions, 32 ignored mention of the frequency or duration of tutoring sessions, 10 studies employed

less than 10 intervention meetings, and 29 studies only briefly addressed tutor training.

Among the most cited research reviews is a meta-analysis authored by Cohen, Kulik, & Kulik (1982). This meta-analysis included the work of four earlier reviews completed between 1969 and 1982 (Devin-Sheehan, Feldman,& Allen, 1976; Ellson, 1976; Fitz-Gibbon, 1977; and Rosenshine & Furst, 1979). Coven noted that prior to his meta-analysis other reviewers had presented nonsystematic surveys of generally informally structured and evaluated tutoring programs. Cohen et al. employed stringent criteria to narrow their field of study to 66 reports. The purpose of the exploration was to answer previously unresolved issues- a) How effective does the typical study say that tutoring is? b) Are certain types of tutoring programs unusually effective? c) Is tutoring particularly effective for certain types of educational outcomes? d) What sorts of studies demonstrate the effects of tutoring most clearly? e) What affective outcomes occur in addition to cognitive outcomes for both tutors and tutees? The results are reported in terms of 15 independent variables (types of tutoring programs, aspects of the experimental design, features of the course setting, and publication status). Unfortunately, Cohen et al. did not cite the studies as separate entities, rather group mean statistics are charted. The authors provide informative descriptive statistics. Roughly half of the studies involved cross-age tutoring. In 45 of the 52 achievement studies the tutored group outperformed the control group on examination scores. The results were statistically significant in 20 of the studies. The average effect size for tutee performance among the

studies was .40. Cross-age tutoring programs presented a mean effects size of .49, whereas same-age peer tutoring presented a mean effect size of .29. Effect sizes were greatest in more structured programs and in programs of shorter duration. The effects were larger for programs in mathematics than for those involving reading. Additionally, the effects were stronger when program assessment involved curriculum -based tests rather than standardized testing. The effects were larger when lower level skills were being taught. Furthermore, the effect sizes were largest for those students who had the lowest skill levels in the initial assessment. Finally, dissertation research reported smaller effect sizes than did investigations published in scholarly journals.

In all eight studies addressing the tutee's attitude toward the subject matter, all reported more positive attitudes toward subject matter in classrooms that had tutoring programs. Only one study reported an effect size that was statistically significant. Self-concept was reported as more favorable in seven of the nine programs that involved tutoring components, but in all cases the effect size was small.

Among the 38 studies exploring tutor academic achievement, 33 indicate that the student tutors outperformed the controls on subject area examinations. Ten studies demonstrated statistically significant results, all in favor of the tutors. In four of the five studies addressing tutor attitude toward content area tutoring students were more positive toward the subject area than were the non-tutoring students, but only one study indicated a significant outcome. Cohen (1982) reported that in 12 of the 16 studies addressing tutors' self-concept, there was a

higher measure of self-concept among those students who were tutors than among the controls. Of these studies, four indicated statistically significant differences between the two groups.

Kalfus (1984) compiled a major review of same-age and cross-age experimental studies which hypothesized effects upon tutee behavior in at least one of the following areas: academic change, nonacademic change, and generalization. Kalfus further divided his studies into those that were unstructured, minimally structured, and structured. Unstructured programs were those in which there were no formal training procedures nor was there a clear divisions between the roles of tutor and the tutee. Kalfus concluded that although unstructured programs had been found to modify academic areas more than did independent student work there was difficulty in the interpretation of outcomes due to the ambiguity of tutor-tutee relations. Additionally, the training procedures were not specified, nor was evidence documented about the long-term maintenance of subject -area gains. Minimally structured programs presented some boundaries between tutor and tutee and the tutors received some training. Again, Kalfus criticized all of the studies within this category as lacking data on training procedures, reliability, follow-up, and generalization. Structured tutoring programs were those in which the tutor received systematic training in the tutoring process. Within the most effectively designed studies, training consisted of teacher modeling and tutor role playing of prompting, corrective feedback, and reinforcing behavior. In only a few cases was data provided by the researcher as to the training procedures. Kalfus recommended

that future investigators should operationalize the training processes, and seek data on generalization and maintenance of effects. Unfortunately, Kalfus did not discuss the nonacademic areas of tutor research in terms of a similar continuum of unstructured to structured studies. This type of analysis helps clarify a framework for designing future studies. It is possible that the authors of these studies did not provide adequate information within these areas to derive these classifications.

Among the studies relating to nonacademic aspects of cross-age tutoring, Sharpley, Irvine, & Sharpley (1983) investigated the effects of a teacher-supervised cross-age tutoring program upon the mathematics achievement and self-esteem of elementary grade students. In this program, grade five and grade six students tutored grades two and grade three students for 30 minutes per day for four days per week. This was a relatively large study with approximately 150 students in each of the experimental and control conditions. Additional variables that were measured included the self-esteem of tutors as well as the post-intervention reactions of involved teachers, parents and the student participants. The authors concluded that the mathematics achievement of the experimental groups were significantly improved over that of the nontreatment group. Self-esteem of the tutors did not improve as a consequence of program involvement. The results of a post-tutoring survey indicate that all related parties viewed the experience positively. The authors did not discuss the nonsignificance of the self-esteem findings, nor were details provided as to tutor training

procedures or follow-up. yet the researchers stressed that planning and supervision details are critical to a successful peer tutoring program.

Among the more contemporary investigations of the affective aspects of peer tutoring is a study by Raschke, Dedrick, Strathe, Yoder, and Kirkland (1988) in which it was hypothesized that a cross-age tutoring program could have the potential to foster a positive attitude on the part of kindergarten tutees toward older children in the school environment. For 6 months, sixth grade students worked on one-to-one projects with the kindergarten children who had demonstrated the lowest positive attitude scores toward older students. This attitude was indicated at pre and post intervention points via a forced choice scale developed by the researchers. Untutored kindergartners served as controls. Although the interactions took place for only one hour per week, the authors reported that the tutored young students attained significantly higher positive attitudes toward older helpers than did the comparison group. Unlike many of the other studies, these researchers focused upon fostering a cooperative atmosphere within the dyad. Academic achievement was not assessed.

Labbo's (1990) eight week study gathered its premise from intergenerational literacy studies which posit that parent-child story book reading enhances parent attitude toward literacy. Labbo hypothesized that reading stories with younger children would help the reading attitudes of fifth grade students. The subjects of this study comprised 20 fifth grade suburban students who were classified as low- average readers based upon teacher evaluations and the previous year's standardized reading test scores. The students were assigned to either of three

groups- a cross- age reading group, the art partner group, or the basal group. The cross age reading group read books with kindergartners four times per week for about 20 minutes per session. The art partner group interacted socially with the kindergartners in the early childhood classroom, but did not have a structured literacy related lesson. The basal group acted as controls. Of specific interest to the authors was whether knowledge about reader strategy use would be acquired as a result of the tutoring interaction. The training and instruction emphasized the selection of early childhood books, the preparation for oral reading, fluent oral reading, and questioning about the elements of story books. In a pretest - posttest research design all of the students were given measures of reading achievement, a self-concept inventory, and an index of attitude toward reading . Qualitative data about the program integrity was provided by teacher observations of the tutor's strategic applications during the sessions and comments from the subjects themselves following the sessions. Posttesting indicated significantly greater improvement in reading achievement and metacognitive awareness of reading strategies for the Reader group in comparison with the other two groups. Group comparisons of self-concept and reading attitude failed to suggest significant differences . However, within -group comparisons of self-concept for the Reader participants suggest a significant improvement in this variable.

Leland and Fitzpatrick (1994) implemented a project with the goal of increasing the enthusiasm of sixth graders in the areas of reading and writing. They employed the sixth graders as tutors for kindergarten children for one 45

minute session per week in a holistic language based program. Before the intervention a teacher -developed reading attitude inventory was administered. The average pretest score was a 21 out of a possible 40 points. When responding to "I like to read at home", on a Lkert scale ranging from "always" to "never" only 5 students responded "sometimes" whereas the remainder answered "never" A question probing how many books a student read each month, received an average response indicating that these pupils read less than 1 book per month. In response to an item probing whether students enjoyed writing at home, there were only three responses of "sometimes" The item that generated the most favorable responses was "I like (or think I would like)" reading stories to young children". On this item only three students answered negatively. The sixth graders were trained on three important aspects of the tutoring process-understanding goals, leaning a out behavior management (maintaining and renewing the attention of the younger children, and implementation of literacy activities. The major activities of the sessions included story reading, story discussion, and book authorship. The investigators provide anecdotal evidence from the participating students, teachers, and the parents of the students as to the positive outcome of enhanced enthusiasm for literacy activity. The attitude inventory that was given in October was re-administered in June. At that point the mean score was 31.8 , a significant increase from the 21.4 at the beginning of the program. Sixteen of the 24 (66%) of the sixth graders reported that they "sometimes" liked to read at home, whereas 4 responded "always". When asked whether they enjoyed reading stories t young children 22 responded 'always" and

2 said "sometimes". Although the sixth graders had originally reported reading less than one book peer month, at the conclusion of the study they reported reading 2.6 age appropriate books per month. Data from parents confirmed that about 70% of the sixth graders were engaging in the target behavior of independently choosing to read at home. Teachers made observations that students were better able to identify the elements of story structure, and showed more confidence in thinking aloud as they read. Data from a survey of the 27 kindergarteners indicated that all of the children had positive feelings about the shared reading experiences. Although none of these young children were "readers" 11 reported that they enjoyed reading alone.

The Reading Buddy Program developed in a Reno, Nevada elementary school, was described by Caserta-Henry (a996) as a cross-age tutoring program employing high school student volunteers who served as tutors for first grade students in need of academic assistance. In addition to providing one-to-one assistance for the younger children, the program was envisioned as beneficial to the high school students by giving them an opportunity to assess whether they enjoyed teaching younger students and allowing them to gather insights as to the developmental connection between reading, writing, and spelling. The first grade students were selected on the basis of a spelling assessment, a concept of word assessment, and teacher referrals. Following training sessions, the tutoring began with daily 15 minute sessions. The activities of the sessions included reading and rereading stories, journal writing, developmental spelling assessment, and word attack projects. The post- intervention evaluation indicated that all 16

tutees had improved in their skills based upon data from the spelling assessment, writing samples, and teacher observations. The authors provided anecdotal material from the first graders to support evidence of improved self-confidence and increased willingness to participate in reading/writing activities. The feedback from the tutors implied that almost all of them felt that they would like to pursue college study as teachers and that this type of program should be integrated into many elementary school settings.

Tutoring programs with students classified as having disabilities

Noting that previous literature reviews omitted studies that evaluated learning disabled students as participants, Scruggs and Richter (1985) conducted a literature review of 28 investigations in which learning disabled students served as instructional tutors or tutees. The authors organized the studies in terms of the type of research design, content area of instruction, numbers and ages of participants, procedures, and effect sizes. Although there was evidence in support of positive academic gains (22 studies), only five studies explored the positive social or affective effects for the tutors and/or the tutees. Nearly all of the evidence on these variables was collected in the form of anecdotal data, and the conclusions were equivocal. Among the areas under investigation were attitude toward school, self-perception, on-task behavior, and peer interaction. Scruggs and Richter commented upon the difficulty of comparing these studies due to the poor quality of methodology and differing research designs. The conclusions reached within the investigation were not distinguished on the basis of same-age or cross-age tutoring interventions.

In the same year Scruggs, Mastropiari, and Richter (1985) surveyed 17 studies which involved behaviorally disturbed students as tutors. Of the 17 studies, 10 addressed some aspect of behavioral or social impact upon the tutor. Five studies employed a pre and post test design with a comparison group, and only four investigations included a pre and post test design with a no-treatment control group. There was no distinction made between cross-age and same-age tutoring investigations. The length of the programs ranged from seven sessions to a full academic year, with only 2 studies extending beyond three months. The authors concluded that tutoring involving behaviorally disturbed students generally exerted a positive academic effect upon the tutees. In certain circumstances, there was a positive academic effect upon the tutors, and the program could have a positive impact on the attitude toward the subject being taught. The investigators found that anecdotal evidence of improved global self-concept was not supported by standardized tests in that area. It is important to note that only three of the studies that examined behavioral or attitudinal changes incorporated a control group. An investigator from one of those studies, Lazerson (1980), observed that participation in tutoring appeared to increase the positive peer interaction of socially withdrawn students, but that this improved interaction did not generalize to increased contact with teachers. Lazerson did not note significant differences between the participants and control group in terms of self-concept. In the discussion section, Scruggs et al. noted that the programs need to be monitored more systematically so that conclusions could be substantiated.

In an exploration of the relative benefits of peer and cross-age tutoring for special education, Scruggs et al.(1986) conducted two experiments that employed similar subjects, procedures and dependent measures. The programs were of eight and ten weeks respectively, and included a brief tutor training period. The 2 studies differed primarily in the type of tutoring offered. In each experiment both the tutors and the tutee groups consisted of elementary- age students who were classified as either learning disabled or behaviorally disturbed. The results of both experiments indicated that the experimental groups made substantially greater gains in word attack skills than did the controls. Improved attitude toward school were noted only among the tutees in the cross-age tutoring program. Scruggs posits the explanation that tutees may have felt more positively towards themselves as a result of the attention received from the older tutors. He did not make a suggestion as to why the tutors did not make similar gains from the attentions of the younger students.

In the area of research deemed "reverse role tutoring" investigators examined the effects of tutoring when handicapped youngsters serve as tutors for non-handicapped youngsters. This is an interesting, but little investigated topic. Top and Ogelthourpe (1987) explored the effects of having learning disabled and behaviorally disturbed students tutoring non-handicapped children in the area of reading. The tutors included 78 fourth through sixth-grade learning disabled and/or behaviorally disturbed students as tutors, and 82 non-classified low functioning first- grade students as tutees. Measures of reading achievement and

self-concept were administered prior to and following the 12 week project. The results indicated that both the tutor and the tutee groups scored significantly higher than the control group in terms of reading achievement. Although general self-concept scores was similar for tutors and controls, tutors scored significantly higher on the sub-areas of "academic ability" and "reading/spelling ability". The authors commented that there is a great deal of anecdotal evidence to support the positive effect of tutoring participation upon the overall self-concept of handicapped tutors, but it is a more complex and difficult task to quantify this characteristic.

Vacc and Cannon (1991) implemented a six week, single subject design study that addressed a literature gap in the area of empirical research dealing with moderately mentally retarded students as tutees. The tutees were selected for the project based upon their ability to communicate either via sign language or verbally. Prior to the intervention, tutors completed a 30 hour tutor training program which included learning sign language in order to communicate with their partners. The sixth grade non-handicapped tutors were trained to instruct the four tutees in a variety of basic math concepts and skills (rote counting, counting objects, knowledge of number words, naming the days of the week, etc.). There were four half- hour session per week. The researchers analyzed the academic progress of the participants immediately following the six week study again two years later. Also examined were the exceptional students' attitudes about the tutors, the tutors' attitudes about the tutees, and teachers' attitudes regarding the tutoring program. At the end of the third week and at the

conclusion of the project the tutees were asked a series of questions about how they felt about their tutors, whether they wanted to change tutors, and whether their tutors were helping them. In order to assess the effects of participation on the sixth graders' attitudes toward exceptional students, the tutors completed a questionnaire about their attitudes toward exceptional students at the commencement and at the termination of the program. Following the program, each of the teachers involved in the instruction of the students filled out a questionnaire about their perceptions of academic or social-emotional growth made by both the tutors and the tutees.

Finally, the tutors were observed and rated by their classroom teacher once per week during the tutoring sessions. They were rated on responsibility, maintenance of records, support of the learner, preparedness, and replacement of materials. The results of the project indicated that there was an increase in and maintenance of all mathematics area skills for the moderately handicapped tutees. The tutees responded in their attitude survey that they liked working with the tutors, did not want to change tutors, and thought that they were friendly and helpful. The tutors maintained their initial positive attitudes about exceptional children and all of the involved teachers reported very favorable impressions about the program as well as observing social and /or academic progress by all involved students. To assess the maintenance of skills, the subjects' mean performance in a skill area during the last five sessions of the original project was compared to their mean performance during five sessions two years later. No consistent long-term gains could be determined, although three of the four

participants showed improvements in many areas of mathematics. The results of this study supported the previous work of Ferrick and Peterson (1984), and Lancioni (1982) to extend the effects of tutoring to include cross-age tutoring with moderately mentally handicapped tutees.

Cochran, Hua-Feng, Cartledge, and Hamilton (1993) presented a small-scale study addressing the effects of cross-age tutoring upon the academic achievement, social behaviors, and self-perception of low achieving African-American boys with behavioral disorders. All participants were enrolled in self-contained classes for students classified as behaviorally disturbed. Four fifth grade boys with behavior problems taught sight word recognition to four second grade boys with behavior problems. In this pre and posttest control group design indices of sight word knowledge and teacher ratings of student behavior were analyzed as dependent variables. All tutors and tutees outperformed the control group in terms of increased sight word acquisition. Additionally, teachers gave higher post-test ratings to tutees than to the control group on all categories of social behaviors

A best-evidence synthesis performed by Mathes and Fuchs (1994) analyzed 11 studies that addressed the effectiveness of peer tutoring in reading for students with mild disabilities. The authors found an average effect size of .36 for peer tutoring instruction over that of traditional teacher led classroom instruction . However, peer tutoring was not more effective than teacher-led one to one or small group instruction that followed research-based sound teaching techniques. The students attained greater gains when serving as tutors rather than as tutees, but made gains in both roles. Mathese and Fuchs presented an

additional interesting but inadequately discussed finding regarding the effect of tutoring upon the academic achievement of disabled readers who had been either enrolled in special education self-contained classrooms or mainstreamed into regular education classes. The researchers concluded that mainstreamed disabled students outperformed the non-mainstreamed group. The mainstreamed students attained an average effect size of .42 whereas the non-mainstreamed students attained a mean effect size of .27. As Shanahan (1998) pointed out, the investigators did not hypothesize as to whether the differences could be accounted for by characteristics of the class structure or due to students characteristics. He further hypothesized that there may indeed be cognitive, linguistic or experiential variations underlying the differences in effect size.

Intergenerational tutoring programs

Although retirees volunteers have been involved in classrooms and after-school centers for decades, attention to intergenerational tutoring has only recently come to the attention of empirical researchers. Numerous programs have been established with varying degrees structure and training for those involved. As has been the case with other cross-age tutoring programs, most studies report only the qualitative data collected from teacher observations, participant anecdotal reports, and surveys of satisfaction. In response to the research gap, Coolidge and Wurster (1985) analyzed the achievement gains of the elementary grade students involved over a three year period in the Volunteer Partners Program at Arizona State University. Over this period over 250 retirees tutored students in either small groups or on a one to one basis in the areas of reading,

grammar, and mathematics. The researchers employed a pretest-posttest design which incorporated a matched control group. The tutors were Caucasian, aged 50 to 84, and had a relatively high level of education. Both the tutors and participating teachers were trained for several hours in aspects of their collaborative roles, methods of providing feedback, issues in contemporary education, and instructional techniques. The results indicated that the tutored students had significantly greater gain scores on a standardized reading test than did the controls. There were no significant differences found in the areas of math or grammar.

Powell et al. (1987) continued this quantitative line of intergenerational research in a three year exploration of the benefits to student achievement of a multiage tutoring program known as the Athens Tutoring Project. The 256 children in grades three through eight received two 1 hour sessions of tutoring per week. Reading and mathematics were the principal areas of skill remediation . Nearly all of the tutees were black children living within the poverty range. The volunteer tutors included retired individuals, graduate and undergraduate college students, and housewives. Among the dependent variables were the reading and math scores on the Iowa Test of Basic Skills, absentee rate, and the number of tutoring sessions. The research design was described as a technique similar to an institutional cycle design. The actual description of this design remains unclear to the present researcher. The authors noted that although the participating students made greater gains in reading and math than did the control subjects, the findings

were not significant. They also discussed numerous limitations due to the difficulty of obtaining complete school records on every participant.

The Collaboration for Literacy model developed by Nickse, Speicher, and Buchek (1988) at Boston University with the support of the U.S. Department of Education, also spoke to the common issues of intergenerational cross-age tutoring programs. The researchers were interested in whether an intergenerational literacy approach would positively affect the reading progress and program completion rate of adult beginning readers. The tutors were paid college students who worked with two adults individually each week for a three hour sessions. The tutees were parents of children enrolled in Chapter I programs in the local elementary schools. The model provided a great deal of training for the tutors (a total of 150 hours throughout the school year), extensive exercise in the modeling and practice of learning activities for the parents, and family literacy "events." Reading gains in vocabulary and comprehension were indicated by pre and post test assessment using the Adult Basic Literacy Exam. It was noted that there was a positive correlation between the number of sessions attended and student progress. It appears that most of the 30 parent tutees made gains of up to one full level in the ABLE scoring system. Neckse et al. reported that although nationwide only 30-50% of adults enrolled in adult basic education programs stay for a complete year, the retention rate in this study reached 73.3%. The highly successful attendance and retention rate was attributed to an observation that the tutees were highly motivated to attain the skills needed for them to offer more academic assistance to their children. The investigators noted

that although parents did not unanimously fulfill the goal of reading to their children each night, a parent -generated list of alternative literacy activities brought about increased engagement and enthusiasm for shared literacy activities. Among the recommendations made by the researchers were the following: a) at both the national and local level political and social policy should support intergenerational learning programs as effective intervention measures b) intergenerational curriculum should be mixed with tasks that meet career and personal goals c) intergenerational tutoring is more than the instruction of individual technical skills, it should also enhance the social context of tutor-tutee, and parent-other family member relationships d) there must be many more hours of direct instruction on a regular basis for - reader adults than is customarily provided in one to one tutoring with children.

Juel (1991), associated with the University of Texas at Austin, described a study that employed college student athletes as tutors for elementary school children. In this project almost all of the children were of a low socioeconomic status. Most of the tutors described themselves as having been in special education or as having learning problems. .The tutors each worked twice a week with a first or second grade child who had been selected by the classroom teacher as in need of academic help. The student athletes attended training for 1 hour per week in which they learned about fostering reading and writing strategies and interest. Based upon a developmental literacy model, Juel taught the tutors to diagnose which of seven important tutoring activities were most appropriate for their client. These activities included the following: journal writing, creating

buildup books, creating alphabet books, teaching children to hear word sounds, reviewing letter-sound relationship activities, book reading, and writing. The researcher evaluated progress on an informal level by noting that 18 of the original group of twenty first graders who had been enrolled due to the possibility of retention had been promoted to the second grade after the semester-long project. A qualitative analysis was performed during the second year of the project. In this second year with similar participants, the first grade scores on the September administration of the Metropolitan Readiness Test (mean score of 26th percentile) were deemed substantially lower that the Spring administration of the Iowa Test of Basic Skills (mean score at the 41st percentile). Although there was not a true control group (all children received some level of mentoring from the athletes), the authors noted that a group of children who were used for comparison attained lower scores on these measures. Teacher anecdotes suggested an observed increase in the confidence of the elementary aged children which was attributed to their participation in the cross-age program. Tutors gave personal statements about greatly enhanced enjoyment of reading and writing . One athlete had found his participation to be a means of release from the extreme pressure of athletic competition. In the discussion section, Juel noted that student athletes make particularly effective tutors as they often shared an ethnic and cultural similarity with low- achieving tutees. Additionally they empathized with the frustration of a student who is having difficulty attaining learning skills , yet they generally believed that all children can learn. Juel (1996) continued to work with college athletes as tutors. The researcher found

that first graders who were tutored during a year-long period made positive yet insubstantial gains in reading skills. The program was extended to included the same participants for a second year. At the end of the second grade the students had made significantly stronger gains in reading scores. This was described as a project in which the tutors received a high level of training and ongoing supervision and support.

Program development and tutor training

The amount and nature of tutor training has been an area of some discussion within the research literature. In terms of the training of tutors, Devin-Sheehan et al. (1976) noted two research strands. One approach compared tutors trained in a specific method to those completely untrained. A second similar collection of research examined the relative effectiveness of certain types of training. Devin-Sheehan et al. commented that the conclusions gleaned from both research angles were unconvincing and were open to serious questions about validity. As mentioned earlier, Coven stated that diverse methodological approaches and design weaknesses made it difficult to make comparisons in this field. Coven presented ambiguous conclusions regarding the relationship between tutor training and the academic achievement of tutees. He concluded only moderate benefits from programs incorporating some amount of training. Shanahan (1998) observed that Coven made only a dichotomous distinction between training and lack of training, thus failing to distinguish between those programs providing only one hour of training and those providing multiple or ongoing training sessions. Furthermore, Coven did not discuss the content or structure of the tutor training

within the studies. It is possible that the early investigators did not provide this information in the body of their work. Kalfus (1984), in contrast, concluded that programs involving the most systematic and structured tutor training appeared to be the most effective.

More recently published data disputes the evidence put forth by Coven. Reckrut (1994) noted that highly successful tutoring programs address all of the following areas: interpersonal skills; management skills; and content skills. The more successful programs offer a structured training process incorporating modeling and rehearsal. For example Registered and McAndrew (1984) implemented workshops during which tutoring pairs rehearsed the critiquing process prior to being corrective within the real sessions. Hoffman and Heath (1986) paired fifth grade trainees with adults who read stories and modeled appropriate tutor behavior.

Proponents of structured peer tutoring programs offer similar guidelines for the planning, implementation, and maintenance of peer tutoring interventions. There are four levels to the recommendations: planning; training; monitoring /evaluation; and problem solving (Bohning ,1993; Mather ,1986; Miller, Kohler, Ezel, Hoel, & Stain, 1993).

Miller et al. (1993) provide particularly detailed suggestions for a very structured and operationally clear program set-up . The following steps summarize the proposed recommendations of Miller and his colleagues.

Planning guidelines

a) Identifying the skill to be taught- The skill taught should be specific and easily judged as correct or incorrect.

b) Selecting the material with which to teach skills - The most effective intervention materials are those that provide frequent feedback and practice. Recommended materials include worksheets, readers, and paper and pencil tasks. Maheady et al. (1988) also recommend using available curriculum-based materials to reduce preparation time.

c) Selecting the time for tutoring- Miller et al. (1993) recommend that at least three sessions per week of 10 minutes in duration be established. Jenkins and Jenkins (1985) recommend at least three weekly sessions of thirty minutes in length.

d) Structuring the students' interactions necessary to teach the skills- Miller et al. (1993) addresses the use of prompts, the importance of providing immediate corrective feedback, and the recommendation of the repetition of a corrected response. Finally, the authors stress the importance of offering positive reinforcement in the form of praise.

Training guidelines

a) Modeling the instructional behaviors- The teacher is told to demonstrate the statements and behaviors that the tutors will use. Students are participants in the modeling process.

b) Rehearsing the behaviors- As the students rehearse the tutoring behaviors there is a decreasing level of adult involvement and feedback. The goal is for the students

to enact their roles with independence and accuracy. Kohler and Strain (1990) have found that elementary grade tutors can attain mastery of systematic and clear behavioral procedures within four 15 minute training sessions. Other researchers have recommended up to five tutor training sessions of one-half hour in length.

Monitoring and evaluation guidelines

The program administrator should observe each tutor's performance for a few minutes once or twice per week. The program administrator should either provide positive or corrective feedback depending upon the noted adherence to tutoring behaviors. Conclusions about the relationship between outcomes and tutoring procedures are only possible if tutoring interactions are observable and are monitored in a structured fashion. Evaluation criteria also involve examination of the products of tutoring to determine what the student is learning. Some form of either formal or informal evaluation of target goals should be conducted at least every 8 tutoring sessions Curriculum-based materials are particularly useful for academic subject area product evaluation (Kohler et al., 1990).

Problem solving

When there is a discrepancy between program planning and application it is essential that the monitoring and evaluation phase is followed by a structured problem - solving component.

a) Problem identification- Problem solutions are more likely to be effective if there is an accurate assessment of the problem at hand. Different solutions are needed for the diversity of component areas incorporated within a tutoring program.

b) Generation of problem solutions- Miller et al. (1993) offers some suggestions for common problems that arise in tutoring scenarios. It is stressed that some solutions are very simple, whereas others are complex. At times, a trial and error solution experience is necessary.

c) Monitor solution effectiveness and employ a new strategy if needed - Miller offers a checklist for monitoring the tutoring revisions. He cautions the program developer to allow sufficient time for the assessment of any alternatives or modifications in the program.

Summary of the literature review

Although researchers have employed a great diversity of methodologies, strategies, and measures to assess the effectiveness of same-age and cross-age peer tutoring, a number of generalizations can be culled. First, for both children with and without disabilities, within a well structured and supervised program, there are almost invariably gains in knowledge of the content area by both tutors and tutees. Second, those students with the lowest initial skill level appear to make the greatest gains. Third, both tutors and tutees seem to gain socially in areas directly involved in the tutoring instruction. Such areas include positive interactions between tutor and tutee and improved attitudes toward the specific content area . Whether these improved attitudes are related to maintained increases in actual academic achievement has not yet been adequately substantiated. Fourth, the evidence is unclear as to whether students benefit from tutoring in terms of such global social measures as self-concept and self- esteem.

It is recommended that future investigators combine both behavioral and attitudinal indices to draw less ambiguous findings.

There is little research addressing aspects of program development or tutor training. Many researchers have stressed a need for more structured and operationally defined program procedures. Previous studies are difficult to replicate and interpret due to the lack of information and/or clarity regarding operations within program components. The small body of scholarly research supporting systematic tutor training programs consistently incorporate four phases within the program: planning; training; monitoring/evaluation; and problem-solving.

Statement of the problem and purpose for the study

Although there is a substantial body of literature addressing the academic effects of peer tutoring upon the tutees, and a growing body of work addressing these outcomes for the tutors, the majority of the work has been of methodologically poor quality. Additionally, evidence of social and emotional benefits to the participants has been collected from primarily anecdotal sources. Efforts to empirically validate these anecdotal observations have yielded ambiguous conclusions.

The purpose of this study was to assess the academic and social-emotional effects of a systematic and comprehensive cross-age tutoring program upon academically at-risk students. Although a variety of content areas were considered for instruction, the targeted instructional area selected was that of beginning decoding skills due to the fact that a majority of the students in the

project site have graduated without attaining a level of functional literacy. As stated previously in this paper, the project school has been identified by state education officials as a "school under review", thus confirming a need for program reform and innovation. Other dependent variables included student attitudes toward reading, student academic-related self-concept, global self-concept, the relationship between intervention duration and decoding skill acquisition, and teacher perceptions of student reading improvement.

Hypotheses and rationale

Rationale: The literature on cross-age peer tutoring suggests that it is an effective way to supplement classroom instruction and improve skills of both the tutors and the tutees in many subject areas. Although phonetic decoding skills have not often been directly addressed the following hypotheses are predicted.

HO1: The posttest scores on Subtest II of the Decoding Skills Test will be significantly higher for the tutors than for the sixth grade control participants.

HO2: The posttest scores on Subtest II of the Decoding Skills Test will be significantly higher for the tutees than for the second grade control participants.

Rationale: There is little research done as to the length of the tutoring intervention as either a dependent or an independent variable. Cohen et al. (1982) have noted that shorter programs appeared to have greater effect sizes, but they simultaneously criticized the methodology of most programs, and noted a neglect of follow-up examination. Additionally Coven et al. noted that very structured

training programs contribute to the positive instructional outcomes. Thus, the following hypotheses are presented.

HO3: The main effect of group (for the sixth grade students) on the posttest score of the Decoding Skills Test will be stronger than that indicated on the midtest scores of the Decoding Skills Test.

HO4: The main effect of group (for the second grade students) on the posttest scores of the Decoding Skills Test will be stronger than that indicated on the midtest scores of the Decoding Skills Test.

Rationale: The literature has often indicated that tutees and tutors improve their attitude toward the subject being taught. Thus the following hypotheses are predicted.

HO5: The posttest scores on The Elementary Reading Attitude Survey will show greater gains for the tutors than for the sixth grade control participants.

HO6: The posttest scores on the Elementary Reading Attitude Survey will show greater gains for the tutees than for the second grade control participants.

Rationale: Most of the previous literature has noted that global self-concept , as measured on self-report inventories, is not changed by the experience of the tutoring program. It has also been most often noted that specific subscales related to scholastic or academic self-concept do indicate gains related to the involvement as a tutor or a tutee. Thus the following hypotheses are given.

HO7: There will not be a significant difference between the mean posttest global self-concept score of the tutors and that of the sixth grade control participants on the Total Self-concept Scale of the Piers-Harris Children's Self-concept Scale .

HO8: The posttest scores on the Intellectual Status subscale of the Piers-Harris Children's Self-concept Scale will indicate greater gains in intellectual self-concept for the tutors than for the sixth grade control participants.

Rationale: There is little research on the generalization of academic gains made in tutoring to the classroom setting. However, due to the evidence that cross-age tutoring can positively affect skill acquisition the following hypotheses are predicted.

HO9 : The classroom teachers will indicate a greater number of students with improved reading performance from the tutor group than from the sixth grade control group.

HO10 : The classroom teachers will indicate a greater number of students with improved reading performance from the tutee group than from the second grade control group.

Chapter 3: Methodology

This chapter presents the description of the participant selection, diagnostic measures, procedures, research design, and data analysis

Research assistants

In order to limit the possibility of bias, the investigator enlisted the assistance of two research assistants. One research assistant was a social work intern at the project site, and the other intern was a paraprofessional who worked in the kindergarten classroom. The research assistants were hired to distribute and collect the consent and assent forms. Additionally, they received training and subsequently scored the coded protocols of the designated pre, mid, and post

test measures that were administered by the investigator. The research assistants were not informed of the hypotheses of the study. One or both of the research assistants were present with the investigator in the school library during the tutoring sessions.

Participant selection

The 80 student participants in the study are all African -American children enrolled in an inner-city New York City public elementary school. The project site is a school with a population of about 1,000 students enrolled in grades pre k through six. Approximately 98% of the student body is African-American . All of the participants come from homes in which the annual income is within the U.S. government definitions of the poverty range. This is supported by documentation that 100% of the students in the school are eligible to receive

state review due to its consistently poor performance on standardized tests. In the most recently published test results (Spring 1999) it was recorded that only 15% of the students who took the reading exam had scored at or above grade level. The state observers have made numerous recommendations regarding modifications of the curriculum, additional remedial programs, staff development, and the initiation of a school-wide behavior management policy. The review will continue for up to two additional years in order to assess the impact upon student academic achievement.

Tutors

The tutors were recruited from the sixth grade. During the Spring semester of 1998 there were four sixth grade classes in the school with a total of 127 students. The 20 experimental and 20 control participants were selected from among the two lower track sixth grade classes which contained 65 students. All of the 65 participants received consent forms informing them and their parents/guardians of the study. From among the 65 students, 55 students returned signed letters of parental consent . The two sixth grade teachers indicated that there were four students who would not be suitable participants due to their disruptive and/or aggressive behavior patterns. Thus, there were 51 sixth graders in the available pool from which 20 students were randomly assigned to the tutor group and 20 students were randomly assigned to the control group. Their chronological ages ranged between 10.6 and 13 years old. They comprised those students who were identified by their teachers, on the basis of classroom performance and standardized scores, as performing in the bottom half of their

grade in terms of reading ability. When the project was initiated (January 1998) these students had already been identified and were attending the 2 lower level reading classes for two periods each morning. None of these students received any form of individualized reading instruction within the school setting. Nor were these students included among those being pulled out for small group remediation services. Additionally, although these students are considered "at risk," they had not been evaluated for special education services, nor had they been classified as having a handicapping condition. None had been retained in grade.

All of the sixth graders in the lower level reading classes received consent forms to bring home to their parent(s) or guardian. When these forms were returned to the research assistants, each student with parental/guardian consent was individually interviewed by a research assistant in order to acquire his or her assent to participate. Although the teachers were not informed as to which students were involved in the study, they were asked to prescreen potential tutors in terms of classroom behavior (Appendix B). Additionally, children who had poor attendance records were eliminated as potential tutoring participants. Poor attendance was defined as 1 or more absences per week

The assent process consisted of an oral presentation, given by a research assistant to the tutor, based upon a written statement composed by the investigator. The assent presentation emphasized the rights of confidentiality, anonymity, and withdrawal or participation without personal risk to the participant. The student signed the written assent form indicating that he or she

understood all rights and procedures. Following the matching of groups for gender, participating sixth graders were assigned randomly to either the tutoring or control group. There were 20 sixth grade tutors and 20 sixth grade control participants.

Tutees

At the point at which the study began there were four second grade classes containing a total enrollment of 122 students. The 20 tutees and 20 control participants were selected from among the two lower track second grade classes which had a roster of 61 students. These classes were composed of those second grade students who were identified as functioning in the bottom half of their grade in terms of reading ability. All of the 61 students were given consent forms to bring home to their parents or guardians. Among the 61 students 49 returned the signed forms. The two second grade teachers indicated that there were five students who were not suitable participants due to their excessive absenteeism, disruptive and/or aggressive behavior. Hence there were 44 students in the selection pool from which 20 were randomly assigned as tutees and 20 were randomly assigned as control participants. The chronological ages of the tutees ranged from 7.4 - 9.1 years old. At the point of the project initiation these students had already been identified and were attending the two lower level reading classes for two periods each morning. None of these students were receiving any form of individualized reading instruction within the school setting. Several of these students were enrolled in a small-group pull-out program for reading help (not a phonics-based program). These students had neither been

evaluated for special education services, nor classified as having a handicapping condition. Although some of the students had repeated the second grade, this did not negate their need for remediation. The screening by teachers of students on the basis of disruptive behavior, emotional immaturity or instability, or excessive absenteeism that was discussed for the tutors, applied to the tutees.

Participating students must have willingly provided their assent, and their parents/guardians must have provided written consent in order for them to participate in this study. The same procedures for attaining consent and assent referred to for tutors was applicable to the tutees. There were 20 second grade tutees and 20 second grade control participants.

Control participants

The sixth grade control participants (n=20) were not involved in the training, nor did they serve as tutors. They did receive the pretest, midtest, and posttest measures of the dependent variables. Their chronological ages ranged from 10.8 - 12.9 years old. Similarly, there was a group of second grade control subjects (n=20) who were not involved as tutees but who were administered the pretest, midtest, and posttest measures of the dependent variables. Their chronological ages ranged from 7.4- 8.11 years old. The teacher screening considerations applied equally to the control group subjects. The students must have given their informed assent and their parent/guardian must have provided written consent in order for the child to participate in this study. The procedures for obtained consent and assent that were referred to for the tutors and the tutees were applicable to the control participants.

Prior to the selection of participants, each of the sixth and second grade teachers were asked to respond to a quick screening survey intended to rule out the participation of students who exhibit frequent and extreme disruptive or aggressive behaviors. As mentioned earlier, four students were eliminated from the sixth grade tutor/control pool and five students were eliminated from the second grade tutee/control selection pool.

There was an attempt to match the control and experimental groups on the basis of gender. After matching the groups for gender, subjects were randomly assigned to either the experimental or control condition. Both the experimental and control groups contained more boys than girls. Same sex dyadic groups were arranged. After session three there was a switching of tutors for 2 dyads due to poor interpersonal relationships between two tutors and their tutees.

Age, gender, and the mean number of tutoring sessions attended by the four groups are given in Table 1. The sixth grade tutor and control groups each included 13 males and 7 females. The second grade tutees and control group each included 9 females and 11 males. The sixth graders ranged in age from 10.6 to 13.0. The second graders ranged in age from 7.4-9.1. The mean number of tutoring sessions attended by the sixth graders was 41. The mean number of tutoring sessions attended by the second graders was 43.

Table 1

Demographic Characteristics of the Experimental and Control Group Participants

	Sixth Grade		Second Grade	
Characteristics	Tutors	Controls	Tutees	Controls
Age-Mean	11.8	11.7	8.1	8.2
Age-range	10.6-13.0	10.8-12.9	7.4- 9.1	7.4-8.11
Gender	7F/13M	7F/13M	9F/11M	9F/11M
*Mean # sessions	40		41	
Range	37-45		37-45	
SD	2.50		2.99	

Note. The full program consisted of 45 sessions.
There were a total of 20 participants in each group.
* These figures were rounded to the nearest whole number.

Diagnostic Measures

Subtest II: Phonic Decoding from the Decoding Skills Test (DST)-

(Richardson & DiBenedetto, 1985): The DST is an individually administered criterion -referenced test designed to measure diverse components of the decoding process in reading (pattern and type of errors, phonic transfer, and the use of context clues). Since most academic programs conclude the instruction of phonics by the end of the fifth grade, the test content and scores reflect both the developmental progression of phonic skills and grade representative curricula . The authors of the DST provide criterion referenced scores from grades one to grade five. Although this project incorporated sixth graders as tutors, it was hypothesized and evidenced that poor readers at this grade level have not yet mastered the decoding skills that would place them beyond the test's upper limit. The DST is composed of 3 subtests- Subtest I: Basal Word Recognition, Subtest II: Phonic Decoding, and Subtest III: Oral Reading. Subtest I measures the child's ability to recognize representative vocabulary words from standard basal readers. Subtest II is designed to measure a child's ability to associate spelling patterns and corresponding sounds. Subtest III is designed to indicate the child's ability to read aloud short graded passages with fluency and accuracy. The second subtest (Subtest II)) is featured in the analysis of the present project. Oral reading was not an area of skill that was emphasized during this intervention. The authors of the DST provide good documentation of content validity for all Subtests.. In Subtest II the real words (versus the corresponding nonsense words) that were chosen had to meet 3 criteria- a) they must be able to be

correctly decoded by the application of letter-sound principles, b) they must be likely to be within the child's speaking vocabulary, and c) they must not be commonly found as vocabulary words from basal readers. The authors provide several examples of studies illustrating that the DST discriminates between good and poor readers. Evidence of construct and convergent validity was shown by the high correlation with other academic measures (.60s to .80s depending on the nature of the subtest comparisons). Split-half reliability was indicated as ranging from .95- -.99. All of the participants in the study received pretest, midtest, and posttest administrations of Subtest II.

Elementary Reading Attitude Survey (McKenna & Keating, 1990): This is a self-report measure designed to provide a quick indication of a student's attitude toward reading. There are 20 items, ten of which refer to attitudes about recreational reading. The remaining ten items refer to attitudes toward academic aspects of reading. Examiners are urged to emphasize to students that this is not a "test" and that there are no right or wrong answers. The items are read aloud to the students and the students are asked to circle the picture of Garfield that best reflects their own feelings. This scale was normed for grades 1 through 6. Percentile ranks for each grade for each subscale are given. Although there are no data on reliability or validity, this is a device which is often used in reading programs in order to assess a subject's willingness or resistance to engage in reading as a purposeful activity. The investigator has found it to be a useful data source for the design of motivational strategies when working with young

disabled readers. All of the study participants received a pretest and a posttest administration of this measure. A sample of the test items is in Appendix B.

The Piers-Harris Children's' Self-concept Scale (Piers & Harris, 1969): The Piers-Harris Children's Self-concept Scale is an 80 item self-report inventory. Respondents reply yes or no to declarative statements. It is designed for use with children in grades three through twelve, and can be administered individually or to a group. The test can be read to the subjects. It is estimated that a third grade reading level is required for those taking the inventory independently. A total self-concept score is provided as well as 5 cluster scores in the aspects of anxiety, popularity, happiness, satisfaction, physical appearance and attributes, behavior, and intellectual status. Reliability is reported from .78 to .93 on the Kuder-Richardson formula, from.90 to .97 on the Spearman split-half formula, and .70-.72 for test-retest reliability. Validity was indicated by corroboration with other self-concept measures.

It is noted that the Piers-Harris Children's Self-concept Scale is a well established measure that is often used in research. The nature of the declarative statements posed are not judged to be damaging to the subjects responding. In this study, the items were read orally to all of the involved sixth graders (tutors and controls) during the pretest and posttesting periods.

The Project Feedback Survey: This is a brief interview consisting of a few questions which are presented to the tutors and tutees at the completion of the project. The versions for the tutor and the tutee groups are slightly different. The purpose of the questions is to gather qualitative data about whether the subjects

felt that they had benefited from participation, what they liked and did not like about the project, and whether they would be interested in being involved in such a project in the future.

The Perception of Reading Improvement Survey: This is a brief form to be completed by the classroom teacher and the teacher of the low reading groups. The teachers are asked to indicate any students who have made significant gains in reading during the semester. For each student identified, the teacher is to comment upon the nature of the reading improvement. The teachers are not informed as to which students are involved in the tutoring intervention. This questionnaire was pilot tested with teachers in a school setting similar to the one used for this study. A copy of the questionnaire is in Appendix B.

Procedures

Table 2

Approximate Time Frame for Procedures

Week #	Procedure
1 & 2	Informed consent and group assignment
3 & 4	Pretest
5	Tutor training
6 - 20	Tutoring intervention - 3 sessions per week
	(There were booster tutor training sessions on a weekly basis)
13	Midtest
20 & 21	Posttest

Note. The investigation involved six phases which encompassed a 21 week period. It was conducted between January and June of 1998.

Phase 1- Informed consent and group assignment (approximately two weeks)

The investigator introduced this project at an after-school staff meeting. Following this meeting, consent forms for students were placed in the mailboxes of the lower track second and sixth grade teachers. The students returned the consent forms to the mailbox of the two research assistants. As was stated before, the consent forms apprised participants of the project procedures, as well as their right to withdraw without penalty, and the rights of confidentiality, and anonymity. Copies of the consent and assent forms are included in Appendix A

For each of the students who obtained parent/guardian consent, the research assistants individually presented the rights and procedures involved in participation. The children who signed the assent form were assigned randomly to either the intervention or control groups. There were four groups in total: sixth grade tutors, sixth grade control participants, second grade tutees, and second grade control participants.

Phase 2- Pre-intervention assessment (approximately two weeks)

Measures administered to the tutors and the sixth grade control participants

1) Subtest II from the Decoding Skills Test

2) The Elementary Reading Attitude Survey

3) The Piers-Harris Children's Self-concept Scale

Measures administered to the tutees and the second grade control participants

1) Subtest II from the Decoding Skills Test

2) The Elementary Reading Attitude Survey

Phase 3- Tutor training (approximately one week plus weekly booster sessions)

All tutors initially received five days of training for 45 minutes per day. The training took place either immediately before or after school. The tutors were trained in groups of ten members. The training sessions were situated in the school library. The investigator and research assistants were present at all training sessions. A description of the tutor training agenda and a summary of the session are presented in Appendix C.

In addition to the initial five training sessions there were weekly booster session on Monday mornings immediately before school. During these meetings the investigator briefly went over the next three lessons to be introduced during the tutoring sessions. Other aspects of training that were addressed reflected the supervisors' and students' observations of the previous week. It is important to mention that the investigator and the research assistants made daily notes in a log book regarding attendance, behaviors, and content of each session. Although "booster sessions" have not been incorporated into previous studies, the investigator felt that they were a valued addition to the training.

Phase 4- The tutoring intervention (15 weeks)

Tutoring sessions: Tutors worked with the younger children for three sessions per week for 30 minutes per session. The intervention took place in the school library before or after school. Consistency of scheduling was a goal. Each session included at least three of the following components: review, explicit

phonics instruction, a short story with selected phonics and sight word elements, and a decoding/word recognition game.

b) Observations- The investigator and at least one research assistant were in the library with the tutoring dyads during the tutoring sessions. This presence facilitates the taking of attendance, the distribution of materials, encouragement of feedback and consultation, and enhanced fidelity to tutoring procedures.

c) Tutoring support conferences- The investigator was available for consultation with the tutors forl lunch period each week. During this period, tutors were encouraged to seek advice or support about management, skill areas, and/or tutor-tutee relations. This time was also set aside for the investigator to speak privately with individual tutors or tutees in order to address session-related needs.

d) Tutoring/tutee incentive- At the beginning of the first tutoring session the tutors and tutees were informed that there would be a party for all of the participants at the end of the project. In addition, all of the tutors would receive recognition in the form of a certificate at the end of term honors breakfast. The tutees also would receive a certificate of achievement at the end of the project. In terms of more immediate incentives, the participants were aware that each session included a snack provided by the investigator.

Phase 5- Midpoint assessment (during week 13 of the tutoring phase)

Subtest II from the Decoding Skills Test (administered to tutors, tutees, and control groups)

Phase 6 - Post-intervention assessment (approximately two weeks)

Measures administered to the tutors and the sixth grade control participants

1) Subtest II of the Decoding Skills Test

2) Elementary Reading Attitude Survey

3) The Piers Harris Children's Self-concept Scale

4) Project Feedback Survey (Tutor version)- In order to address social validity, the tutors and tutees responded to several orally posed questions regarding their perceptions of participating in the project. A copy of the survey is in Appendix B.

Measures administered to the tutees and the second grade control participants

1) Subtest II from the Decoding Skills Test

2) Elementary Reading Attitude Survey

5) Project Feedback Survey (tutee version)- This is in Appendix B.

Measure completed by involved sixth and second grade teachers

1) 1The Perception of Reading Improvement Survey- This is a brief form to be completed by the teachers in order to assess the generalization of skills to the classroom setting. The types of behaviors that a teacher might comment upon include a student's willingness to read aloud, improved decoding, improved fluency, greater participation during reading lessons, etc. A copy is in Appendix B.

Research Design

Table 3

Schematic Representation of the Research Design

Treatment	Pretest	Intervention	Midtest	Intervention	Posttest
Tutors & tutees	x	x	x	x	x
Control Groups	x		x		x

This is a variation of a quasi-experimental pretest-posttest control group design. Twenty participants per each of four groups were selected in order to obtain sufficient power to evidence statistical significance at the $p<.05$ level (Coven, 1992). In sum, there were 40 experimental participants (20 sixth grade tutors and 20 second grade tutees) and 40 control participants (20 sixth grade control participants and 20 second grade control participants).

Data Analysis

This study involves the following between-group comparisons on the dependent measures: sixth grade tutors vs. sixth grade control subjects, and second grade tutees vs. second grade control subjects. These were separate ANCOVAs comparing group posttest scores and/or midtest scores (when applicable) on each of the following dependent measures: decoding skills, attitude toward reading, global self-concept, and academic/intellectual status self-concept. Pretest scores and/or midtest scores (when applicable) on these measures were held constant as the covariates.

A chi square analysis was performed in order to analyze the significance of the proportion of students selected by the classroom teachers as having made observable reading improvement from each of the groups.

There was a qualitative analysis of the comments that teachers made about students whom they identified as demonstrating significant reading improvement. Similarly there was a qualitative analysis of post-intervention remarks made by the tutors and the tutees regarding their personal experiences and perceptions of program participation.

Chapter 4: Results

1. Decoding skills

Hypothesis #1: The posttest scores on Subtest II of the Decoding Skills Test will be significantly higher for the tutors than for the sixth grade control subjects.

Results: Table 4 presents the analyses of covariance for all four groups on the posttest scores of the dependent variables. This hypothesis was not supported on the two sections of the Decoding Skills Test assessing monosyllabic word decoding - Real Monosyllabic (RM; $F = .03$, $p > .05$) and Nonsense Monosyllabic (NM; $F = .05$, $p > .05$)). The hypothesis was supported (there was an effect for group) on both of the sections addressing polysyllabic word decoding skill- Real Polysyllabic (RP; $F = 5.49$, $p < .05$) and Nonsense Polysyllabic (NP; $F = 7.06$, $p < .05$).

Table 5 presents the means and standard deviations attained by the sixth graders, tutors (6T) and control group (6C), at each testing point for each of the dependent measures. As evidenced by the posttest data in Table 5, both the tutors and the sixth grade control participants succeeded on approximately 25 of the possible 30 Real Monosyllabic (RM) words, a level close to ceiling (6T, $M = 25.11$; 6C, $M = 24.89$). It is suggested that both of these groups were equally skilled and made similar small gains in their knowledge and application of characteristic grapho-phoneme patterns within simple and familiar words.

Table 4
ANCOVAs of the Midtest and Posttest Scores of Dependent Variables

	6T/6C		2T/2C	
Variable	Midtest F value	Posttest F value	Midtest F value	Posttest F value
ERAS		1.94 ns		2.25 ns
PHCSC		2.82 ns		
IS		.25 ns		
RM	.12 ns	.03 ns	12.87***	16.44***
NM	.83 ns	.05 ns	12.72***	22.71***
RP	3.76 ns	5.49 *	4.81*	6.02 *
NP	.45 ns	7.06 *	6.79*	4.35 *

Note. ERAS= Elementary Reading Attitude Survey
PHCSC = Piers Harris Children's Self-concept Scale
IS= Intellectual subscale from the PHCSC S
RM= Real monosyllabic word subscale from the Decoding Skills Test
NM= Nonsense monosyllabic word subscale from the Decoding Skills Test
RP= Real polysyllabic word subscale from the Decoding Skills Test
NP= Nonsense polysyllabic word subscale from the Decoding Skills Test

Pretest scores were used as the covariate.

6T= tutors
6C= sixth grade control participants
2T= tutees
2C= second grade control participants

* $p < .05$
*** $p < .001$

Table 5

Means and Standard Deviations for the Sixth Grade Pretest, Midtest and Posttest Dependent Variables

Variables	Pretest				Midtest				Posttest			
	6T		6C		6T		6C		6T		6C	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
ERAS	62.21	9.72	62.42	6.84					61.74	7.74	63.47	5.02
PHCSC	62.00	8.05	64.84	6.45					65.53	7.95	65.79	6.41
IS	12.95	2.44	13.47	2.22					14.53	2.55	15.42	6.30
RM	21.89	9.48	21.79	5.89	22.42	4.35	22.84	5.06	25.11	3.51	24.89	4.45
NM	14.37	7.05	13.00	4.41	17.00	6.81	15.21	3.75	19.84	6.18	19.19	5.38
RP	21.74	5.06	19.47	5.36	24.00	4.20	20.84	5.30	26.21	3.88	22.74	4.49
NP	10.84	7.14	9.79	5.96	14.47	7.74	12.68	6.52	18.74	8.25	14.47	5.65

Note. Each of the 4 groups consists of 20 participants.

6T tutors
6C= sixth grade control group

ERAS= Elementary Reading Attitude Survey; PHCSC= Piers Harris Children's Self-concept Scale; IS= Intellectual subscale from the PHCSCS; RM =Real monosyllabic words subscale from the Decoding Skills Test (DST); NM= Nonsense monosyllabic words subscale from the DST; RP= Real polysyllabic words subscale from the DST; NP= Nonsense polysyllabic words subscale from the DST

Maximum scores attainable on the above tests-
ERAS (80) PHCSC (80) RM (30) IS (17) NM (30) RP (30) NP (30)

The posttest scores of both the tutors and the control group for the measures of mean performances Nonsense Monosyllabic (NM) word decoding reflect that the sixth graders succeeded in approximately 19 of the 30 words (6T, M= 19.84; 6C, M= 19.19). Thus, it is suggested that both of these groups had similar, but inconsistent transfer of the letter- sound sequencing that they had applied more successfully with simpler and more familiar words.

The tutor group demonstrated significantly more accurate Real Polysyllabic (RP) word decoding ability than did the control group (6T, M= 26.21; 6C, M= 22.74). The difference between the means represents approximately 1 standard deviation . Similarly , a substantial mean difference was noted in terms of Nonsense Polysyllabic (NP) word decoding (6T, M= 18.74; 6C, M= 14.47). Polysyllabic word analysis is a more difficult task for readers than is monosyllabic word decoding. It is one of the abilities that separates beginning readers from more advanced readers. Furthermore, nonsense word analysis is particularly indicative of the ability of readers to generalize and implement strategies for decoding known spelling-sound correspondences to unknown words..

Hypothesis # 2: The posttest scores on Subtest II of the Decoding Skills Test will be significantly higher for the tutees than for the second grade control group.

Results: This hypothesis was supported. As indicated by the posttest data on Table 4 there were significant between-group differences at the posttest point for all of the decoding skills addressed by Subtest II of the Decoding Skills Test.

Table 6

Means and Standard Deviations for the Second Grade Pretest, Midtest and Posttest Dependent Variables

Variables	Pretest				Midtest				Posttest			
	2T		2C		2T		2C		2T		2C	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
ERAS	58.70	9.33	63.35	8.52					62.60	6.79	62.58	9.43
RM	4.45	3.73	4.10	4.82	8.80	3.90	6.24	4.79	12.75	4.62	8.15	5.72
NM	2.40	3.35	3.10	3.89	5.95	4.11	3.45	2.96	9.20	4.62	4.55	3.90
RP	3.05	3.49	1.80	2.90	6.50	4.50	2.80	4.10	9.50	6.06	4.00	5.16
NP	.85	1.95	.50	1.24	2.75	3.34	.95	1.79	4.55	4.65	1.80	3.29

Note. Each of the 4 groups consists of 20 participants.

2T= tutees
2C= second grade control group

ERAS= Elementary Reading Attitude Survey
RM =Real monosyllabic words subscale from the Decoding Skills Test (DST)
NM= Nonsense monosyllabic words subscale from the DST
RP= Real polysyllabic words subscale from the DST
NP= Nonsense polysyllabicwords subscale from the DST

Maximum scores attainable on the above tests-
ERAS (80) RM (30) NM (30) RP (30) NP (30)

In terms of Real Monosyllabic (RM) and Nonsense Monosyllabic (NM) word decoding, the effect for group was very strong (RM, $F= 16.44$, $p< .001$; NM, $F= 22.71$, $p< .001$). Table 6 presents the means and standard deviations attained by the second graders, tutees (2T) and control group (2C), at all of the testing points on all of the dependent measures. As indicated by the posttest mean performances in Table 6, the tutees read more Real Monosyllabic words with accuracy than did the second grade control participants (2T, $M= 12.75$; 2C, $M= 8.15$). The mean difference represents approximately 1 standard deviation. Similarly, the tutees read about twice as many Nonsense Monosyllabic words accurately than did the control participants (2T, $M= 9.20$; 2C, $M= 4.55$).

The posttest data in Table 4 also indicates a group effect in favor of the tutees in terms of Real Polysyllabic (RP) and Nonsense Polysyllabic (NP) word attack skills (RP, $F= 6.02$, $p< .05$; NP, $F= 4.35$, $p< .05$). The posttest mean performances presented in Table 6 suggest that the tutee group succeeded in decoding more than twice as many Real Polysyllabic words than did the control group (2T, $M= 9.50$; 2C, $M= 4.00$). A similar pattern is suggested by the posttest Nonsense Polysyllabic (NP) results (2T, $M= 4.55$, 2C, $M= 1.80$).

To summarize findings across the decoding skill area, it is evident that all of the participants involved in the tutoring intervention, that is, the tutors and the tutees, developed polysyllabic real and nonsense word decoding skills that were superior to those of the control subjects. Additionally, the tutees attained significantly higher posttest mean performances on the measures of monosyllabic real and nonsense word decoding than did the control participants. There were no

significant differences between the posttest mean performances of the tutors and the sixth grade control participants in terms of monosyllabic real or nonsense word decoding. It is suggested that both groups made similar small gains and both groups had near-ceiling scores at the termination of the study .

2. Length of cross-age tutoring program

Hypothesis #3: The mean effect of group (for the sixth grade students) on the posttest scores of the Decoding Skills Test will be stronger than those indicated on the midtest scores of the Decoding Skills Test.

Results: This hypothesis was supported on the polysyllabic word decoding indices only. As noted in the midtest data on Table 4 there were no significant group effects for any of the decoding skills assessed at that point (RM, $F = .12$, $p > .05$; NM, $F = .83$, $p > .05$; RP, $F = 3.76$, $p > .05$; NP, $F = .45$, $p > .05$). However, on the posttest data, there were group effects for both the Real Polysyllabic (RP) and Nonsense Polysyllabic (NP) subscales (RP, $F = 5.49$, $p < .05$; NP, $F = 7.06$, $p < .05$).

Table 7 presents the results of post hoc analyses of the separate group effects for each half of the program (pretest -midtest and midtest -posttest). It is interesting to note that the data in Table 7 indicate that during each sector of the program the tutors made small yet nonsignificant gains over the control participants in the area of Real Polysyllabic (RP) word decoding (midtest, $F = 3.76$, $p > .05$; posttest, $F = 2.09$, $p > .05$). Table 4 suggests that these gains appear to have had a cumulative effect in terms of overall intervention group effect (posttest RP, $F = 5.49$, $p < .05$). Again, referring to Table 7, it is suggested

Table 7

Post Hoc ANCOVAs of the Separate Group Effect for the Pretest - Midtest and Midtest-Posttest Sectors

	6T/6C		2T/2C	
	Midtest	Posttest	Midtest	Posttest
Variable	F value	F value	F value	F value
RM	.12 ns	.48 ns	12.87***	8.24**
NM	.83 ns	.58 ns	12.72***	12.67***
RP	3.76 ns	2.09 ns	4.81*	1.57 ns
NP	.45 ns	5.83 *	6.79*	.46 ns

Note. RM= Real monosyllabic word subscale from the Decoding Skills Test
NM= Nonsense monosyllabic word subscale from the Decoding Skills Test
RP= Real polysyllabic word subscale from the Decoding Skills Test
NP= Nonsense polysyllabic word subscale from the Decoding Skills Test

For midtest results pretest scores were used as the covariate.
For t posttest results midtest scores were used as the covariate

6T= tutors
6C sixth grade control subjects
2T= tutees
2C= second grade control subjects

* $p < .05$
** $p < .01$
*** $p < .001$

that the tutors made a leap in terms of Nonsense Polysyllabic (NP) word decoding during the second half of the intervention (posttest, $F= 5.83$, $p< .05$).As mentioned earlier, there was no effect for group among the sixth graders in terms of monosyllabic word decoding skills. This may be accounted for by the fact that this is a relatively basic skill that was generally familiar to the sixth graders prior to entering the tutoring program.

Hypothesis #4: The main effect of group (for the second grade students) on the posttest scores of the Decoding Skills Test will be stronger than that indicated on the midtest scores of the Decoding Skills Test.

Results: The results regarding the contribution of program length to skill outcomes are positive yet less clear in terms of the second grade students due to the fact that group effect is measured by a limited and discrete number of significance levels. In other words, there was no discrimination of significant group effects beyond or between the points of $p< .05$, $p< .01$, or $p< .001$. Regarding the assessment of Real Monosyllabic (RM) word decoding, as presented in Table 4, the tutees demonstrated strong group effects at the midtest and posttest points (midtest, $F= 12.87$, $p< .001$; posttest, $F= 16.44$, $p< .001$). The tutees also evidenced strong advancement in the aspect of Nonsense Monosyllabic (NM) word decoding (midtest, $F= 12.72$, $p< .001$; posttest. $F= 22.71$, $p< .001$). In Table 4, it is noteworthy that the tutees demonstrated stronger gains than the second grade control group in decoding skill acquisition at every assessment point for each dependent variable. If one considers the increasingly large F values (higher F values at the posttest point than at the midtest point) as

markers of group differences, this hypothesis is fully supported on 3 of the 4 subscales . The exception is indicated within the Nonsense Polysyllabic (NP) word subscale in which the posttest F value ($F= 4.35$, $p< .05$) is smaller than that at the midtest ($F= 6.79$, $p< .05$).

The post hoc analyses in Table 7 provide separate indices of the strong tutee group gains in monosyllabic word decoding achieved during both parts of the intervention (RM midtest $F= 12.87$, $p< .001$; posttest $F= 8.24$, $p< .01$: NM midtest $F= 12.72$, $p< .001$; posttest $F= 12.67$, $p< .001$). These analyses also infer that most of the overall group differences in terms of polysyllabic word decoding were evidenced during the first half of the program. Significance at the $p< .05$ level was resultant for both the Real Polysyllabic (RP) and Nonsense Polysyllabic (NP) word decoding subscales during the first program segment (RP midtest $F= 4.81$, $p< .05$; NP midtest $F= 6.79$. $p< .05$), but neither subscale registered a group effect at the posttest (RP posttest $F= 1.57$, $p> .05$; NP posttest $F= .46$, $p> .05$). It is not clear whether this is due to the fact that the curriculum did not specifically target polysyllabic words. Rather, the curriculum built upon specific target elements which contribute to accurate polysyllabic word analysis. An alternate hypothesis is that polysyllabic word decoding is an area of weakness for the tutors as well. They may have been less effective in teaching skills as the curriculum became more advanced.

To summarize the findings in terms of program duration, it was observed that in the area of decoding skill acquisition there was evidence that full-term program participation enhanced the effect for group in favor of the program

participants. Each group gained substantially in those areas in which they had had some exposure , but had inconsistent or erroneous application. Hence the tutors made the greatest gains in the areas of polysyllabic word decoding and the tutees made the greatest gains in terms of monosyllabic word decoding. It appeared that there was a cumulative effect of gains made during both parts of the program that contributed to larger overall group effects in some of the aspects of decoding skills.

3. Attitude toward reading

Hypothesis #5: The posttest scores on the Elementary Reading Attitude Survey will show greater gains for the tutors than for the sixth grade control participants.

Results: This hypothesis was not supported. From the posttest evidence in Table 4 it is apparent that the effect for group was not significant ($F= 1.94$, $p > .05$). As indicated in Table 5, the posttest mean scores for both the tutors and the sixth grade control participants did not differ significantly from the pretest levels of the Elementary Reading Attitude Survey (6T, pretest $M= 62.21$, posttest $M= 61.74$; 6C, pretest $M= 62.42$, posttest $M= 63.47$). It is further observed that both groups obtained relatively high pretest total scores for their attitude toward reading (McKenna et al., 1995). This tendency to state their self-perception toward reading in a highly positive direction does not necessarily correlate with actual reading behaviors, which were not being assessed. It is possible that a more meaningful measure for a future study would be self-report as well as parent and teacher ratings of the students' reading-related behaviors.

Hypothesis #6 : The posttest scores on the Elementary Reading Attitude Survey will show greater gains for the tutees than for the second grade control participants.

Results: This hypothesis was not supported. As evidenced in the posttest data in Table 4, there was a nonsignificant effect for group ($F= 2.25$, $p> .05$). As noted in Table 6 the posttest scores for both groups differed only slightly from the pretest scores, implying that within-group changes were small (2T, pretest $M= 58.70$, posttest $M= 62.60$; 2C, pretest $M= 63.35$, posttest $M= 62.58$).

To summarize the findings in the area of attitude toward reading, there is no evidence to support higher posttest means for reading attitude for the groups involved in the tutoring project. It is observed that pretest and posttest scores were very similar for within-group and between-group analyses.

4. Global and intellectual self-concept.

Hypothesis #7: There will not be a significant difference between the mean posttest global self-concept score of the tutors and that of the sixth grade control participants on the Total Self-concept Scale of the Piers-Harris Children's Self-concept Scale.

Results: This hypothesis was supported. As indicated by the posttest data in Table 4, there was no significant effect for group in terms of the Total Self-concept score ($F= 2.82$, $p. >.05$). This result is consistent with previous literature that offers little evidence that there is a positive relationship between broad measures of self-concept and participation as a tutor or tutee in a cross-age tutoring program.

Hypothesis #8: The posttest scores on the Intellectual Status subscale of the Piers-Harris Children's Self-concept Scale will indicate greater gains in intellectual self-concept for the tutors than for the sixth grade control subjects.

Results: This hypothesis was not supported. As indicated by the posttest data in Table 4 there is no significant effect for group in terms of the Intellectual Status subscale ($F= .25$, $p> .05$). The data in Table 5 indicate that both the tutors and the sixth grade control participants made similar small gains between the pretest and the posttest of this measure (6T, pretest $M= 12.96$, posttest $M= 14.53$; 6C, pretest $M= 13.47$, posttest $M= 15.42$). The conclusions to be drawn are unclear. There is room for alternative hypotheses. The first alternative hypothesis is that participation as a tutor does not have a greater impact upon self-concept than does nonparticipation. A second alternative is that the program may have to be of even longer duration for this effect to be firmly established. Thirdly, it is possible that the particular scale used did not focus specifically enough on those aspects of intellectual status that are targeted in this cross-age tutoring project.

To summarize the findings in the area of self concept, as hypothesized there was no significant difference between the tutors and sixth grade control group in terms of their global self-concept. Contrary to expectations there were no significant group differences found between the groups in terms of their intellectual self-concept. Several alternative hypotheses were offered that will be discussed further in the discussion section of this paper.

5. Teacher perception of reading improvement.

Hypothesis #9: The classroom teachers will indicate a greater number of students with improved reading performance from the tutor group than from the sixth grade control group.

Results: Although the classroom teachers did indeed report a greater number of tutors than sixth grade control students as having made significant observable reading improvement, as noted in Table 8, this hypothesis was not supported statistically ($p > .05$). As in many of the previous investigations, the classroom teachers made many qualitatively supportive remarks to indicate that a group of students from the tutor groups had made observable improvements in reading-related behaviors. There were two sixth grade teachers responding to this Teacher Perception of Reading Improvement Survey. In total 14 students were cited as having demonstrated significant reading improvement. Of those14 students,7 were among the tutor group (50%) and 3 were among the control group (21%). Four nonparticipating sixth grade students (neither from the tutor nor the control groups) were also selected.

The teachers' comments reflected both qualitative impressions as well as quantitative evidence from curriculum-based materials and the recently revealed citywide standardized test scores. The areas of improvement remarked upon included a student's willingness to read aloud, decoding skills, listening comprehension and reading comprehension. There was noted improvement in at least one of these areas for each student. One of the classroom teachers also

Table 8

Chi Square Analysis of Teacher Responses to the Teacher Perception of Reading Improvement Survey (Sixth Grade)

	6T	6C	Others	Totals
Selected	7	3	4	14
Not selected	13	17	21	51
Totals	20	20	25	65

Significance = .705 * p> .05

Table 9

Chi Square Analysis of Teacher Responses to the Teacher Perception of Reading Improvement Survey (Second Grade)

	2T	2C	Others	Totals
Selected	9	5	5	19
Not selected	11	15	16	42
Totals	20	20	21	61

Significance = .896 *p> .05

included a remark that four of her students had shown better self-control and respect for peers and authority during the semester. Three of those noted four students were among the tutor group.

Hypothesis #10: The classroom teachers will indicate a greater number of students with improved reading performance from the tutee group than from the second grade control group

Results: As was stated of the tutors, Table 9 indicates that a chi square analysis did not support this hypothesis ($p > .05$), but there was a good deal of qualitative feedback from the teachers that a group of tutees had made observable improvements in reading-related behaviors. There were two classroom teachers responding to the Teacher Perception of Reading Improvement Survey. In total 19 students were cited as having demonstrated significant reading improvement. Of those 19 students 9 were among the tutee group (48%) and 5 were among the control group (26%). Five nonparticipating second grade students (neither tutees nor control participants) were also selected.

The areas of noted improvement included letter recognition, sight words, fluency during oral reading, decoding skills, reading comprehension, and a greater willingness to read aloud. There were additional comments regarding 4 students who had demonstrated greatly improved attention to task and more positive peer interactions.

To summarize the data in the area of teacher perception of reading improvement it was noted that a greater number of project participants (tutors and tutees) were selected by teachers as having made observable gains in terms of

classroom reading behaviors, and in some instances students were reported as having improved in non-academic socially behaviors. Despite the qualitatively supportive data analyses, chi square analyses failed to find statistically significant group differences.

6. Social validity

A brief interview measure entitled The Tutoring Project Feedback Survey was created in order to get an indication of the perceptions of the tutor and tutee participants about their levels of satisfaction in their roles. It was meant to be interpreted qualitatively, although the number of participants providing categories of responses was noted.

As indicated in Table 10, in response to the questions "What did you like about being a tutor?, the most commonly stated answers indicated that the older children enjoyed sharing their knowledge and helping the younger students . Other remarks concerned the benefits of being listened to by younger children and receiving the snacks provided by the adults. In response to the question " What did you not like about being a tutor?". most of the respondents stated that they did not have any negative impressions of the experience. There were a few comments suggested that some of the students had conflicts with other activities, felt that there were too many rules, and occasionally objected to the behaviors of the younger students. In response to the question "How do you think you benefited from being a tutor?", the most frequently shared responses indicated that the students felt important and gained insight into teacher role. Several of the students remarked that they had strengthened some academically weak skills.

Two sixth graders mentioned that school was a safer place to be physically present rather than the alternative of hanging around the neighborhood. In response to the question "How do you think your second grade tutee benefited from your help?" most of the tutors remarked that they helped the younger children with their schoolwork and reading. Finally, when asked "Would you like to be a tutor again?" All but two of the tutors answered in the affirmative. One declined and 1 was uncertain.

In Table 11 which presents the tutee version of the survey, the tutees responded to similar questions. In reply to the question "What did you like about the tutoring program?". The majority of students indicated that they enjoyed learning things with the help of the older student. Other responses suggested the enjoyment of being with their friends, learning through the game activities, and receiving the snack. In response to the question "What did you not like about the program?", most students said that they had no negative perceptions or experiences about the involvement. The few that provided answers indicated that they did not have enough opportunity to play, and that at times the work was hard. In response to the question "What do you think you learned?" the replies all related to the acquisition of reading related material (new words, spelling, and letter sounds). Finally, in response to the question "Would you want to be in the program again?"19 of the 20 tutees indicated that they would indeed wish to repeat their program participation.

Table 10

The Tutoring Project Feedback Survey- Tutor Version

---

1. What did you like about being a tutor?

Responses	# of respondents
It made teaching fun.	13
I liked helping little kids.	16
I got rewarded for doing it.	4
The little kids listened to me.	4
I liked sharing things that I learned .	8
I liked having the snack.	6

2. What did you not like about being a tutor?

Responses	# of respondents
I didn't like the little kids' behavior.	4
There were too many rules.	2
Sometimes I had something else I wanted to do.	3
No comment	11

3. How do you think you benefited from being a tutor?

Response	# of respondents
I felt important .	7
Better to hang here than in street, getting in trouble.	2

Table 10(cont.)

It was good experience for being a teacher.	8
I learned some things that I wasn't sure about	3

4. How do you think your second grade tutee benefited from your help?

Responses	# of respondents
I helped them with their schoolwork.	16
I helped them with their reading and spelling.	14
They learned and practiced something they didn't get. Before.	2
We were their teachers' helpers.	2

5. **Would you like to be a tutor again?**

Response	# of respondents
Yes	18
No	1
Maybe	1

Table 11

The Tutoring Project Feedback Survey- Tutee Version

1. **What did you like about the tutoring program?**

Response	# of respondents
I liked learning things.	18
I liked working with my helper.	11
It helped me with my school work	7
It was fun playing the games.	11
I liked seeing my friends.	4
I liked the snacks.	8

2. **What did you not like about the program?**

Responses	# of respondents
Sometimes the work was hard.	4
We couldn't play with our friends.	2
No comment	14

3. **What do you think you learned?**

Responses	# of respondents
I learned new words.	14
I learned how to do my spelling better.	10
My reading got better.	13

Table 11 (cont.)

I learned about letter sounds.	7

4. **Would you want to be in the program again?**

Responses	# of respondents
Yes	19
Maybe	1

Chapter 5: Discussion

Summary of the results

In the area of decoding, the posttest analyses indicate that all of the intervention participants acquired polysyllabic real and nonsense word decoding skills at a level that was superior to that of the control groups. Furthermore, when compared with the control subjects, the tutees made significantly stronger gains in the areas of real and nonsense monosyllabic word decoding. Unlike the second grade participants, the tutors compared to the sixth grade control participants, did not demonstrate significantly stronger acquisition of real or nonsense monosyllabic word decoding skills.

The length of the intervention appeared to have a positive impact upon some of the decoding skills assessed. In terms of monosyllabic word decoding (real and nonsense), the tutees seemed to demonstrate and maintain significantly stronger gains during both halves of the program (pretest to midtest and midtest to posttest). The length of the program did not impact upon group differences in terms of the sixth graders monosyllabic word decoding knowledge. In terms of polysyllabic word decoding (real and nonsense), the tutees made significantly stronger gains than did the second grade control group solely during the first part of the project. The modest yet non-significant group effects in favor of the tutors, noted on separate ANCOVAs of each program sector, appeared to have a cumulative effect resulting in overall significant group differences in the area of polysyllabic word decoding.

In the assessment of the participants' attitude toward reading, there was no evidence to support the hypothesized positive effect associated with involvement in the tutoring project. It is noted from visual analyses of within-group performances that posttest scores for all of the 4 groups did not differ significantly from the pretest scores on the Elementary Reading Attitude Survey.

As hypothesized, there was no indication that participation as a tutor in a cross-age tutoring program would enhance general self-concept. There was no effect for group in terms of a total self-concept score. Both the tutor and the control groups made similar small gains in this area.

In contrast to the hypothesized outcome that participation in this project would improve participants' self-ratings on an intellectual status scale, there was no demonstrated effect for group. Both the tutor and control participants made small gains between the pretest and posttest administrations of this measure.

An important aspect of the study involved teacher perception of reading improvement. Although chi square analyses did not indicate statistically significant group differences regarding the proportion of students selected as having made observable reading improvement from each group, there was a good deal of qualitative feedback from the teachers' comments on the Perception of Reading Improvement Survey which indicated that a group of tutors and tutees had made observable improvement in terms of observable reading-related behaviors. A greater number of project participants (tutors and tutees) were chosen by the regular classroom teachers as having made substantial and noteworthy improvement in daily classroom reading behaviors than were chosen

from among the control subjects. Furthermore teachers made unsolicited comments about associated gains in appropriate school behaviors in the areas of peer relations, respect for authority, and compliance to school and classroom rules.

The tutors and the tutees provided qualitative information about their experiences and perceptions of being program participants. Nearly all of the participants (90 to 95%) within each group stated that they would like to be enrolled in this program again. In response to the query about when the participants liked about being in the program, the tutors generally stated that they enjoyed being helpful and sharing their knowledge with the younger children . The younger students stated that they enjoyed learning things with the help of the older students. Both groups had several individuals who reported that snack was an important contribution to their satisfaction. As regards elements of the program that the participants did not like, there were few offerings. Most of the students stated that had a positive experience and could not think of negative aspects. The few suggestions from the tutors included that there were times when the younger children's behavior was objectionable, two sixth graders felt the program had too many rules, and three students expressed an occasional conflict of activities in their schedule. The younger children noted that there was not enough playtime and the work was sometimes too hard. In terms of personal benefits, the tutors remarked that they felt important and had gained insight into the teacher role. The tutees commented that they had made gains in the acquisition of reading related material.

Discussion of the results

Decoding skills

As in the majority of the published studies, both the tutors and the tutees made gains in the targeted instructional skill. Although the positive impact of the intervention were not surprising, the gains were substantial and in many areas strongly significant. It appears probable that a multiplicity of factors contributed to the strong performance of the participating students.

The participants' gain in decoding skills can be in part attributed to the increased study time and rehearsal offered by the supplemental instruction. The tutors particularly benefited from the explicit instruction and review in the subject area that they received both within the training, booster meetings, and during the tutoring sessions. Hence they actually had double the exposure that the tutees had. This distributed practice was necessary as they were moving further away from the fundamentals of reading and perhaps deeper into resistance toward reading.

The tutoring also afforded an opportunity to revisit material to which the students had been previously exposed, but had not initially grasped or retained. To illustrate this point, the participating groups made the most significant growth, in contrast to the control groups, in aspects of decoding for which they had some instruction, but for which they had inconsistent application. Hence the tutors, who had already nearly mastered monosyllabic words, made the bigger leap in terms of polysyllabic word knowledge. The tutees, who were just leaving yet still floundering in the curriculum of monosyllabic words, reaped the greatest

benefits in that area. It might be concluded that the tutoring was most effective as an instructional review, rather than as a teaching technique for brand new material.

A critical factor in the success of an academic tutoring program is the appropriateness of the curricular materials (Nevi, 1983). The materials used in this program were simple to use, with concise and easily understood directions. There was a similar pattern within each lesson and the sequence of lessons built cumulatively upon attained sub-skills. The claim here is not that the materials did the teaching, but that materials suitable for one's skill level, rather than grade level, can enhance learning.

Of additional importance was the fact that the instruction followed the principles of synthetic phonics programs (Clark and Uhry, 1995). These programs incorporate mutisensory activities (visual, auditory, tactile, kinesthetic) delivered in an individualized instructional setting. This approach reinforces the different modalities of learning and learner receptivity. Frequent positively stated corrective feedback is an important component in this practice. This teaching method, when provided intensively (several times per week), and used in conjunction with contextual applications, is deemed to be particularly useful in working with students having delays and/or disabilities in reading.

Length of the intervention

The exploration of program length as an independent variable is a relatively unique feature of this project. It is related to the yet unanswered question of how much tutoring is optimal for success. According to some of the early research

there was a negative correlation between program length and effect size for academic outcome (Coven, 1982). Shanahan (1998) postulated that certain characteristics of these tutoring programs might result in diminishing returns. Among these considerations is the ceiling effect posed by the tutors' knowledge of a content and the supervisory demands that managing such a program place upon a classroom teacher. Despite these speculations Shanahan finds ample support in recent research for long-term program efficacy. One such study is that of Juel (1996) who observed that 1 year of cross-age tutoring did not provide sufficient gains in reading for the first grade tutees, but substantial gains were demonstrated during the second year of the intervention. It is noteworthy that the programs recommended for dyslexic and delayed readers (Clark and Uhry, 1995) often last for an entire school year with some students requiring intensive and ongoing remediation in order to retain and reach automaticity of skills.

The hypotheses of a positive relationship between the length of the intervention and decoding skill gains were confirmed on some variables for both participating groups. Following the aforementioned statements that the participants made progress due to enhanced time on task and review of partially or poorly learned material, it is a logical assumption that more of these supportive aspects will do more good.

It is important to note that the program sectors may not have been equivalent in the number of lessons completed nor complexity of material tutored. The first half of the program covered more familiar territory and initially simpler lessons. Several of the early lessons may have been review material for most of the tutees.

The second half of the program involved a slower pace with more complex material. As Shanahan noted, some of the material may have been more challenging for the tutors themselves.. During the latter part of the intervention there were more lessons that required two or three days to master and more questions asked by the tutors of the supervising adults regarding the lessons.

Attitude toward reading

Contrary to expectation, the hypotheses that participation in the program would enhance students' attitude toward reading were not confirmed. Many of the previous studies noted positive, yet non-significant quantitative findings. Nearly all of the previous investigators employed the quantitative analyses to support and validate anecdotal data from students, parents, and teachers. The quantitative results in the present study are disappointing, yet the anecdotal findings are consistent with that found in previous cross-age literature. In retrospect the present author is unsure whether the improvement in the specific subject under analysis, that of decoding skills, should be expected to generate an improved attitude toward reading. A number of studies that noted reading attitudes improvement were more directly targeted at improving student enthusiasm and strategy usage for literacy-related activities (Labbo, 1990 ; Schrader, 1990). It is possible that a more broadly focused intervention might have impacted more strongly upon reading attitude.

Global self-concept

As hypothesized, there was no effect for group in terms of global self-concept. This was not unexpected due to the fact that very few investigations have found

that participation in a cross-age tutoring project has positive impact upon this characteristic. Similarly to most research, this study concluded that program involvement resulted in small and positive yet non-significant group effects. Interestingly, few researchers have attempted to explain this lack of significance. Perhaps it is unrealistic to expect that a student's perceptions of general self-concept would be enhanced over a relatively short period of time considering that the person's self-concept has developed over a lifetime of experiences and influences. Another possible explanation, not unrelated to the aforementioned, is that researchers have minimal control over environmental variables or physical states that may affect one's sense of happiness, attractiveness anxiety, etc. Whereas academic sub-skills such as decoding skills are a narrow and easily isolated and observed product, self-perceptions are more ambiguous and subject to many unknown and unforeseeable factors.

Early investigations had hypothesized that their instruments of self-concept lacked the necessary sensitivity to assess subtle changes in global self-concept. Perhaps that is true, but there has been neither updating of instruments nor counter evidence from research findings since the studies of the1970s and 1980s. It has been previously suggested in this thesis, that a more suitable index of self-concept might be a behavioral scale to be completed by multiple informants (students, teachers, and parents) reflecting the occurrence or non-occurrence of daily behaviors that can be inferred to reflect the internal state of global self-concept

Intellectual self-concept

The hypothesis that program participation would positively affect tutors' intellectual self-concept more than that of control participants was not confirmed. Although the literature in this area is inconsistent, a number of researchers had found a small to moderate positive relationship. Within this study the relationship between participation and intellectual self-concept was very weak. It must be recalled that the involved students had a long history of academic failure. In my experience as a school psychologist I have observed that low-achieving students are well aware of their status as poor students, and they are very sensitive and reactive to comments about their intelligence. In private they frequently remark that they feel stupid and that schoolwork is hard for them. Often their future expectations and aspirations reflect paths that do not require strong literacy skills or high levels of education.

Due to the apparent depth of the students' sense that the amount of effort needed to succeed is beyond their capacity, a good deal of external feedback of subject area improvement may be needed before many low-achieving students attain the perception that they are more able students. This conceptual shift may require multiple levels of feedback from significant others and numerous positive class test scores, report card grades and standardized test scores over a period of semesters. Ultimately, there must be a conceptual shift among teachers as well. In order for these students to perform better on assessment measures, it will be necessary for teachers to use materials appropriate for the students' skill level, not merely that material matching the students' grade level. Similarly the

assessment indices must be an appropriate match for the content area of instruction.

Teacher perception of reading improvement

A measure of teacher perception of reading improvement was included in this study to reflect the degree of generalization, or transfer of skills, from the limited arena of the project to the more complex environment of the classroom. Although as hypothesized the classroom teachers selected a greater number of participating students than control participants as having made substantial improvements in reading behaviors, the chi square analyses of group effect resulted in non-significant findings. This does not, however, detract from the qualitative support made by the classroom teachers in their comments to the Perception of Reading Improvement Survey. The teachers noted that a group of tutors and tutees had made substantial gains in observable reading-related behaviors. Their comments also included gains in nonacademic behaviors. It is noteworthy that within both the sixth grade and second grade classes, teachers selected "other" students (not from either the tutors, tutees, or control groups) as having made substantial progress as well. This adds some ambiguity to the results. Perhaps, as in the study by Cochran (1993), a post- intervention survey should have been administered to the teachers asking about the reading improvement of specific students, either those students who served as tutors and as tutees, or, a broader a survey requesting teachers' perceptions of reading improvement made among control group and experimental participants. The

latter would be more apt since it still conceals the identity of the participants, thus supporting "blind" responses.

Another extraneous variable which may have further obscured the conclusions on this variable is the fact that the standardized test scores had just been presented to the teachers. The possible halo effect of these test scores was not a consideration in the project's conception, nor were the standardized scores on a comprehension-based city-wide test a valid outcome index following a short-term decoding based intervention. This issue is addressed further in the latter part of the chapter.

Social validity

The comments made by the participants both in the Tutoring Feedback Survey and during ongoing discussions provide a strong demonstration that nearly all of the tutors and tutees found this to be a very worthwhile and enjoyable experience. It is noteworthy that there was a high attendance turnout by all involved students. There were occasions upon which some students asked permission to be excused, but the drop- out rate was zero. In a single instance a tutor left for 3 weeks, but returned with a family-related excuse. It can be inferred, from numerous statements about feeling important and appreciating the fact that the younger children were listening to them, that the tutors gained a sense of enhanced status and respect within the program environment. Based upon the relatively minimal change in intellectual self-concept, it is probable that this sense of enhanced status did not generalize to the regular classroom setting. The tutees made statements regarding their feelings of privilege related to having

the help of an older child. The tutees, more so than the tutors, perceived that the tutoring helped them learn skills necessary to improve their schoolwork. It is likely that the older and younger students enjoyed the one-to-one attention, and the social and academically related feedback from the dyadic interaction.

Several remarks made by the tutors and tutees raised an important angle which has been neglected in the research literature. This is the consideration that such an after-school program provides for the basic needs of safety and nurturance. Some of the tutors mentioned that they preferred to come to the program rather than being out in the neighborhood where there was more opportunity for trouble. Thus a sense of safe haven was provided by the program. Furthermore, numerous tutors and tutees remarked that the snack was a highlight of the sessions. Hence some aspect of nurturance was satisfied. The investigator is persuaded that these considerations enhanced program attendance and attention to task during the sessions.

Strengths of study and educational implications

Relative to many of the previous investigations in cross-age tutoring research, this study represents a strong and carefully designed empirical project. An effort were made to employ control groups and to account for pre-intervention group differences in terms of the dependent variables. Additionally, it is felt that enough procedural information is provided to permit a reasonable replication of this study by future researchers.

Perhaps the most significant contribution of this study was made in terms of tutor training. Much of the training content and procedures were culled from the

investigator's personal experiences in working with at risk students. Having organized and supervised many cross-age "teacher helper" programs with at-risk students, the investigator was aware of the peaks and pitfalls of these interactions. Similar experience in working with elementary age and adolescent clients at a university reading clinic had provided valuable experience in designing motivating activities to reinforce explicit skill instruction. The tutors were trained during both a relatively comprehensive pre-intervention period and on an ongoing basis via the booster sessions and as-needed conferences. The initial five day training was very organized and full of hands-on exercises. The tutors appeared highly enthusiastic and motivated to prove their responsibility and ability. This also served as a bonding period between the supervising adults and the students. As judged by the subsequent tutoring sessions and ongoing meetings, most of the instructionally appropriate behaviors and predictable interpersonal considerations were addressed during the pre-tutoring training.

The booster sessions are a relatively unique feature of this project which afforded opportunities for integrity monitoring and trouble -shooting. The issues that were addressed during these meetings were academic as well as non-academic in content. The academic content involved the concepts included in the upcoming lessons. As time progressed the tutors needed little review as to the daily routines. They did, however, need to demonstrate that they could complete the worksheets with little confusion, and that they could pronounce the words and label all of the items on the pages. If a new "game" was introduced it was

practiced during the booster sessions. This was also a forum for discussions and modeling or behavior management and the airing of grievances regarding seemingly rigid rules and other interpersonal distractions.

Numerous students took advantage of the individuality of the lunchtime conferences. In total there were 14 conferences during the course of the project. The nature of the meetings involved students asking permission to do an alternate activity for one day, several students having difficulty managing either resistant or passive behavior on the part of their tutee, students needing more rehearsal time to better grasp a concept being taught, and several others needing pep talks to maintain their enthusiasm and prolonged participation in the project as the weather turned spring-like.

The behavioral model underlying the training and instruction was deemed as an important element in the overall positive academic and social effects. The theoretical framework was embedded throughout the modeling and role playing of the training and applied at all points of the intervention phase. There was a clear objective for each lesson that was addressed by simple patterned activities. Each dyad progressed at a non-competitive pace that was contingent upon the observable attainment of the previous session.

As mentioned earlier, the investigator felt that the social context of the tutoring program particularly enhanced the social skills of the participants, and likely contributed to the academic gains as well. The social performance gains were noted both during the sessions and within the classroom. It is difficult to measure the characteristics of responsibility and commitment, but the

outstanding attendance and generally supportive dyadic interactions were testimony to the participants' sense of belonging to a privileged group.

Another important feature of this project was the consistent presence and supervision by three familiar school adults. All of the participants-students and adults- had received all of the training and were familiar with the same set of routines, rules, and reward systems. It is unrealistic to expect a group of elementary aged students to adhere to guidelines without the consistent monitoring and attendance of a trained adult. There were a few occasions during this project when rules and procedures had to be reviewed and /or revised.

Of particular interest to educators is the evidence that a cross-age tutoring program can provide an acceptable and prized vehicle for enhancing both the academic skills and motivation of low-achieving lower and upper grade students. These are the students for whom school has already become a place to experience repeated failure. These are the children for whom school education has to compete with the education of the street.

These are also the students most often referred by teachers for special education placement due to their disruptive or withdrawn school behavior. Although the teacher of a class of 30 students may not be aware of the level of each child's skill deficit, they are very aware of and disturbed by the student's behaviors. As early as first grade children are aware that they are unable to perform tasks that are seemingly simple for their peers. Many of these children begin a pattern of avoidance and/or negative attention getting behavior in the primary grades. In my experience as a classroom teacher and as a school

psychologist I have found it is possible to divert these patterns by structuring opportunities for successful school experiences, particularly in one-to-one or small-group settings such as that offered by cross-age tutoring.

In most traditional classrooms there is no room or time in the curriculum for remediation of basic skills beyond the third grade curriculum. As noted, most teachers are cognizant of some of the benefits of tutoring, yet they are reluctant to implement such a seemingly time and energy intensive program. It would be to the advantage of all school professionals to combine expertise to establish and monitor a school based cross-age tutoring program. This is an area in which the school psychologist is well trained to serve as either a consultant or a partner in supervision.

In an early study with high school students as tutors, Thelen (1969) made a timeless observation:

> Students thought that they knew most of the skills taught in the primary and middle grades. They hesitated about learning primary-level reading and math skills for their own benefit, but they were willing to relearn such skills so that they might become tutors (p. 23).

The positive findings of this project present some clear policy implications for urban school systems. We appear to be in the midst of a literacy awareness movement. President Clinton has called for a draft of literacy volunteers for our schools. Additionally, many school systems are hiring reading specialists to work in remedial

capacities. The author of this project suggests that these reading specialists be trained to develop and supervise small-scale cross-age tutoring projects within the schools that would take place during the school day.

A more general policy implication relates to the quality and content of preservice teacher education. General education teachers are too often taught to instruct in a teacher-centered model. It is important that more emphasis is placed upon developing such student centered techniques as cooperative grouping and peer learning. From my discussions and observations with teachers, it appears that many teachers , particularly new teachers, are afraid of losing control of their class. They fear that by allowing conversation or movement, they will not regain order as needed. Student-centered models of teaching should be introduced in graduate school in classes focusing upon behavior management and instructional techniques. Teachers should enter the field with a positive frame of reference in this area.

In response to both the promise of conducting another project to enlist the service of those control participants who were neither selected as tutors nor tutees, and to fulfill the need for a program at the classroom-level, the investigator is in the process of sharing the program results and training interested staff in the implementation of a cross-age tutoring program. The

investigator will serve as a building-level consultant for these staff members. The administration is supportive of this aspect of staff development.

Limitations and Implications for Further Research

There are a number of limitations of this study that need to be addressed. First, the program was conducted in one elementary school. To increase the generalization and the validity of the findings, a future project should include several schools with similar student body composition in the same geographic area. On a more ambitious scale, related research addressing low -achieving students at other grades with varying SES' and ethnic compositions would broaden the data base in the area of cross-age tutoring.

Secondly, due to the nonrandom enlistment of the participants, the generalizations of the project are constrained to students who were referred by their teachers and further to those with consent from their parents or guardians. It is not evident as to why consent was not received from all of the teacher- referred students nor from all of the most delayed readers. It is possible that a post-study interview or survey might enlighten this investigator as to the reasons for the non-participation of these groups. A telephone call, or personalized note/letter may have been received well and have resulted in wider participation. This practice of personal attention just prior to a parent-teacher, or parent-clinician conference greatly increases family member attendance.

The third limitation is related to the timing of this project. Due to the time demands of getting access, obtaining consents, tutor training, and staff conferencing, most projects tend to take place during the second semester of the

school year. In many school systems this schedule may impact upon the validity of some aspects of research because the end point assessments coincides with the publication of standardized reading and math scores. The test score awareness (to both students and teachers) may have a halo effect upon post testing responses, particularly in terms of reading related attitudes, intellectual self-concept, and teacher perceptions of reading improvement. Future projects should attempt to either adjust the time frame to span the Fall semester, or arrange to have post-testing prior to the overly emphasized standardized testing results. In the opinion of this investigator these scores represent misguided demonstrations of the short-term progress of low-achieving and/or disabled students. It is recommended that locally normed curriculum based indices be given at short intervals to indicate change or improvement for such populations (Hoy & Gregg, 1994).

A fourth limitation of this study is that it was conducted by a researcher rather than by the classroom or resource room teachers. A stronger measure of validity would be a cross-age tutoring project that is actually operated and planned at the "grass roots" level. It is more realistic to expect teachers to facilitate and accept this program if they own the program and contribute to outcomes directly.

An additional area for further study is the examination of longitudinal data on the maintenance of decoding skill gains and other observed reading changes. Qualitative comments from teachers in the next 2 grades would be useful in addition to ongoing quantitative findings.

As mentioned in the literature review, a well trained tutor group is very important to the success of a program. Despite our efforts to cover all possible scenarios, it was inevitable that new areas needed to be resolved and addressed as the project progressed. An area that came to my attention several times during the semester is that of behavior management. Despite role playing and discussions , a couple of the tutors felt ill at ease in responding to a younger child who was resistant or verbally challenging. Two pairings had to be switched due to a poor match in terms of personality. The switches were made early in the program as these interactions tended to occur as routines and guidelines were being established. It is probable that these are minor and unavoidable hitches within any program involving interpersonal interaction, but a future project may benefit from the incorporation of video clips of actual dyadic or classroom conflicts that present opportunities for a group discussion of conflict resolution strategies.

Finally, as Nevi (1983) stated, there is a good deal of speculation and little empirical research regarding the relative contributions of the various components of cross-age tutoring programs to measured outcomes. More specifically, is it the structure of the training, the rehearsal of the skills to be taught, the social interaction during tutoring, the nature of the materials used for instruction, or the practice during the sessions that account for the academic gains made by tutors? The present author speculated about the contributions of the systematic tutor training and intervention, as well as the role of the social context, but perhaps it is impossible to isolate and analyze each element. Clearly

there are complex relationships between all, and it is likely that they work in various combinations. Nevertheless, they provide fodder for future research.

Appendix A

Consent forms for subjects

Letter of Consent for Student Subjects

Dear Parent /Guardian,

My name is Laura Menikoff. I am completing a doctorate in Educational Psychology at the Graduate School and University Center of the City University of New York. As part of my studies I am conducting a research project on the effects of older children instructing younger children in beginning reading skills. I will be examining the benefits of this type of instruction upon children's reading ability, attitude toward reading, and self-concept. I will be training sixth grade students to work individually with second grade students. This tutoring project will take place either before school or after school. The tutoring sessions will be scheduled three times per week for thirty minutes each. The project will be supervised by myself and two research assistants in order to ensure that children are following sound tutoring procedures.

If your child is a participant, he or she will be given a brief test to determine the current reading level. All participants will also complete a questionnaire about their attitude toward reading, and a questionnaire about self-concept. At the end of the 15 week study your child's classroom teacher will be asked to indicate his or her impression of reading change.

Participation in this study is voluntary and all information will be kept confidential. There is no penalty for refusing to have your child participate, or for withdrawing from the study at any time. If you choose to have your child participate, be assured that test scores will not be placed in the school records or shown to any unauthorized personnel. If you wish, I will share your child's test

information at the conclusion of the project. The names of individual students will not appear in the final research paper.

It is not possible to involve every child as a tutor or a tutee in this project. If your child is not selected as a tutor or tutee in the initial project, at your request he or she will be included in a follow-up project.

Please discuss the research project with your child. If you choose to give consent for your child, sign and date the enclosed consent form and return it to school with your child. If you would like further information about this project you may call me at #718- 526-3305 ext. 424. If you would like to speak with the Sponsored Research Division of CUNY, you may call #(212) 642-2059.

Sincerely,

Laura Menikoff, M.S.

School Psychologist, P.S. 40

Consent Form for Student Subjects

Return to Room 401A

I understand the information pertaining to the project described on the reverse side of this page. I understand that participation is voluntary and that my child may withdraw from the study at any point without penalty. I understand that my child will take a series of brief tests measuring his or her reading ability, attitude toward reading, and self-concept. I understand that involvement in this project is a semester-long commitment on the part of the researcher and participants. I understand that my child's scores will not be reported to school officials or kept in school records. I understand that at my request, the results of my child's testing will be shared with me. It is understood that if the results of this study are published in a research journal, the names of individual participants will not be revealed. If my child is not selected as a tutor or a tutee in the initial project it is understood that my child will participate in a follow-up study at my request.

- I agree to let my child _____ of class _____ participate in the study described above.
- I do not agree to let my child _____ of class _____participate in the study described above.

_____ _____

Parent/Guardian's signature Date

_____

Laura Menikoff, M.S.
School Psychologist

Assent Form for Student Subjects

Dear _____,

My name is _____. I am helping in a research project about children teaching and learning from other children. Some of the older children at P.S. 40 will be trained to teach beginning reading to younger children. It is hoped that both the younger and the older students will improve their reading skills as a result of this extra help and practice. If you give your permission to participate in this study, I will give you a short reading test at the beginning, the middle, and the end of the study. You also will be asked questions about how you feel about reading, and you will be asked a number of questions about how you feel about yourself. You do not have to answer any questions that make you feel uncomfortable. There is no penalty for refusing to be in the study or for changing your mind after starting in the study. Your participation is totally voluntary. All of the information I collect will be kept private. It will not be given to your teacher or kept in the school records. Your parent however, may ask me to share the results. You may be present at that meeting if you wish. The project will last until the end of school.

I cannot pick every child to be in the "tutoring" group during the first project. If you are interested and are not chosen to be a "tutor" or a "tutee," (these words are defined as "teacher" and "student") then I promise that you will be in the second research project.

I will answer any questions that you may have about this project.. I have already received your parent's permission for you to be a member of this project. If you are interested in joining the research projects, please sign at the bottom of this paper. I thank you for taking the time to talk with me.

_____Yes, I want to be involved in this tutoring project.

_____No, I do not want to be involved in this tutoring project.

_____ _____

Student signature Date

_____

Laura Menikoff, M.S.

Appendix B

Diagnostic Measures

Participant Screening Instrument
(To be completed by teachers prior to the selection of participants)

Please indicate the names of any students in your class who often exhibit (at least three times per week) any of the following behaviors-

a) refusing to follow classroom rules

b) bullying, threatening, or intimidating other class members

c) bullying, threatening, or intimidating school authority figures

d) initiating physical fights

e) angering quickly

f) deliberately destroying the property of others

g) blaming others for own mistakes or misbehaviors

h) is truant from school (at least twice per month)

Names (s)_____

_____

_____

_____

_____

Decoding Skills Test- Subtest II

Sample Page

#1	#2	#3
hit	shut	hide
fed	path	cute
nut	brick	doze
job	flesh	fake
lag	prop	tone

#4	#5	#6
brave	loud	threw
drove	join	grain
flake	raw	choice
globe	loaf	bound
crime	bail	preach

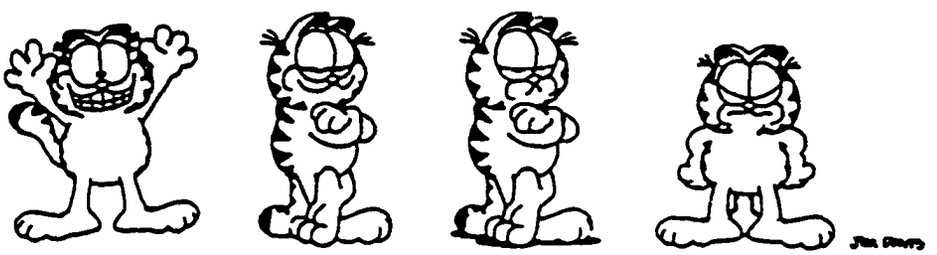
Elementary Reading Attitude Survey

Sample Page

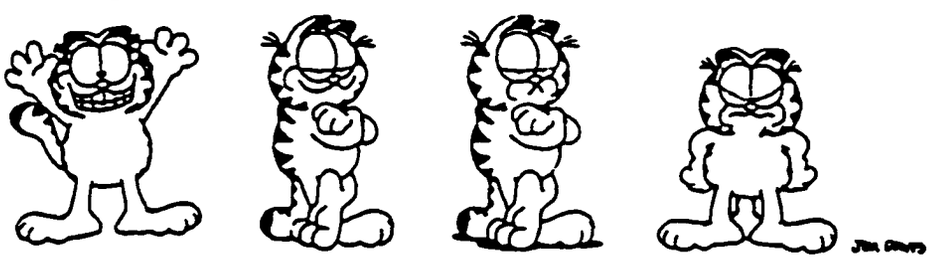
Elementary Reading Attitude Survey

School _____ Grade _____ Name _____

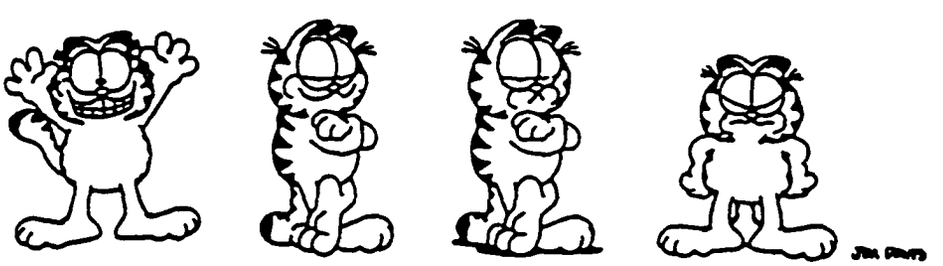
1. How do you feel when you read a book on a rainy Saturday?



2. How do you feel when you read a book in a school during free time?



3. How do you feel about reading for fun at home?



DO NOT MARK IN THIS AREA

Answer Sheet Code: (A) (B) (C) (D) (E)

Examiner: Answer Sheet Code required

Piers Harris Children's Self-Concept Scale

PAGE 2

	Yes	No
33. My friends like my ideas.	Y	N
34. I often get into trouble.	Y	N
35. I am obedient at home.	Y	N
36. I am lucky.	Y	N
37. I worry a lot.	Y	N
38. My parents expect too much of me.	Y	N
39. I like being the way I am.	Y	N
40. I feel left out of things.	Y	N
41. I have nice hair.	Y	N
42. I often volunteer in school.	Y	N
43. I wish I were different.	Y	N
44. I sleep well at night.	Y	N
45. I hate school.	Y	N
46. I am among the last to be chosen for games.	Y	N
47. I am sick a lot.	Y	N
48. I am often mean to other people.	Y	N
49. My classmates in school think I have good ideas.	Y	N
50. I am unhappy.	Y	N
51. I have many friends.	Y	N
52. I am cheerful.	Y	N
53. I am dumb about most things.	Y	N
54. I am good-looking.	Y	N
55. I have lots of pep.	Y	N
56. I get into a lot of fights.	Y	N

	Yes	No
57. I am popular with boys.	Y	N
58. People pick on me.	Y	N
59. My family is disappointed in me.	Y	N
60. I have a pleasant face.	Y	N
61. When I try to make something, everything seems to go wrong.	Y	N
62. I am picked on at home.	Y	N
63. I am a leader in games and sports.	Y	N
64. I am clumsy.	Y	N
65. In games and sports, I watch instead of play.	Y	N
66. I forget what I learn.	Y	N
67. I am easy to get along with.	Y	N
68. I lose my temper easily.	Y	N
69. I am popular with girls.	Y	N
70. I am a good reader.	Y	N
71. I would rather work alone than with a group.	Y	N
72. I like my brother (sister).	Y	N
73. I have a good figure.	Y	N
74. I am often afraid.	Y	N
75. I am always dropping or breaking things.	Y	N
76. I can be trusted.	Y	N
77. I am different from other people.	Y	N
78. I think bad thoughts.	Y	N
79. I cry easily.	Y	N
80. I am a good person.	Y	N

Teacher Perception of Reading Improvement Survey

Please indicate each child in you class for whom you have observed a significant improvement in reading ability during the school term. For each child please comment upon the observed reading change, i.e. has the child demonstrated improvement in terms of decoding, sight word recognition, listening comprehension, fluency, willingness to read aloud, etc.

Child's name_____

Comments_____

_____

_____

_____

Child's name_____

Comments_____

_____

_____

_____

Child's name_____

Comments_____

_____

_____

_____

Child's name_____

Comments_____

_____

_____

The Tutoring Project Feedback Survey

(These are interview questions presented at the conclusion of the project)

Tutor Version

1. What did you like about being a tutor?
2. What did you not like about being a tutor?
3. How do you think you benefited from being a tutor?
4. How do you think that your second grade tutee benefited from your help?
5. Would you like to be a tutor again?

Tutee Version

1. What did you like about the tutoring program?
2. What did you not like about the program?
3. What do you think you learned?
4. Would you like to be in this program again?

Appendix C

Tutor Training Sessions

Overview

General comments to the supervising adults

During the training a variety of concepts and principles are initiated through adult-directed discussion and example, yet it is important to foster an atmosphere that allows the participants to ask questions and share their opinions, insights, and misconceptions. The purpose of these sessions is to instruct and to clarify. Despite the presentation of these sessions as addressing discrete topics, in reality there is a good deal of overlap and reinforcement of skills amongst the sessions.

Point out to the tutors that even though the lessons may seem easy or "babyish", the program must start at a point at which the tutees can have some success and feel confident. State that some second graders will move more quickly than others through the activities. This is not a competition for the tutors or the tutees. Additionally remark that there may be some points at which the sixth graders have confusion. Encourage them to ask for help.

Topics for the tutoring sessions

Day 1- an orientation to the tutoring project

Day 2- providing corrective feedback and positive reinforcement

Day 3- instruction with phonics worksheets

Day 4- the reading aloud of a story to a younger child

Day 5- the use of games as teaching activities

Session 1

Topic: An introduction to the tutoring project

I. Definition of tutor

A. A tutor is a helper for a younger student who is having difficulty with a school subject.

B. A tutor is a helper to the adult in the classroom.

II. The project

A. The daily routine

1. Everybody meets at either 7:30 or 3:00 in the library.
2. Partners will be assigned .
3. Partners sit in the same seats each session.
4. Sessions begin with a snack that is provided.
5. Worksheets will be at the tables prior to arrival.
6. If there is time during the session, a tutor may go to the adults to get an additional "game" or book to share with his/her partner.
7. At the end of the session place all materials in the folder .
8. You may ask questions of the adults at any point during the session.
9. Walk quietly in the hall with an adult to be dismissed.

III. Curriculum overview

A Explode the Code workbooks

B. Tutor copies of the corrected worksheets and protocols

C. Paragraphs containing phonics elements

D. Games to reinforce the phonics elements

IV. The benefits of being a tutor

A. Internal rewards

B. Extrinsic rewards

1. Letter of commendation

2. Certificate at Graduation Honors Day

3 .Pizza party at the termination of the project

Session 2

Topic: Corrective feedback and positive reinforcement

General comments to the supervising adults:

During this session, the main point to be emphasized is that corrective feedback should be stated in a positive rather than in a negative manner. Making a mistake is not a "bad" or "stupid" behavior. Rather, effort should be praised and responding should be encouraged. The session on reinforcing behavior is placed early in the tutor training as the investigator believes that this is an essential and integral component of establishing a constructive atmosphere for learning and student risk taking. The discussion should include questions posed by the adult targeting the students' feelings and behaviors following his/her having made a mistake publicly.

"How do you feel when you have read aloud in class and you make a mistake?"

This may result in a discussion about students feeling embarrassed or foolish because classmates laugh, or feeling humiliated when the adult or peers imply that they had made a major error. A smaller number of students express that they don't mind making a mistake or that they understand that everyone makes mistakes and it is part of learning. The adult should model situations in which a teacher provides either supportive or clearly negative feedback

Student: Dog is spelled DRG"

Teacher: Wrong! Wrong! Wrong! Can't you spell anything right?

Student: Dog is spelled DRG

Teacher: Nice try. Listen to the word as I say it then try again.

Student: I just can't do this. It's too hard.

Teacher: You always want to give up. You're a quitter.

Student: I just can't do this. It is too hard.

Teacher: You've been doing a terrific job. I'll help you with the next one.

After the brief modeling the students, discuss how they would respond the next time the teacher called upon volunteers to read aloud. The students will then be given some phrases to employ during their sessions. The students are encouraged to add phrases to the list.

"Good job"

" You almost got it!. "

"Good work. Now let's try that one more time."

" Terrific effort."

"You got almost all of these items right!."

"I liked the way you sounded out the first letter. "

Several brief commonly occurring scenarios will be suggested and subsequently feedback will be practiced in pairs. The students will alternate being the tutor and the student. An adult will sit in on each dyad and monitor the use of supportive feedback. When necessary, the adult will do more modeling within the dyad.

The adult will introduce the use of stickers as a reinforcement which can be given by the tutors to the tutees at the end of each session for academically and socially constructive behavior. The sixth graders invariably enjoy the role of being in charge of sticker dispensation.

If a tutor is having difficulty handling a non-compliant, challenging, or unresponsive tutee, an one-site adult should be consulted. Tutors should not be responsible for administering disciplinary actions.

Session 3

Topic: The use of worksheets

General comments to the supervising adults

The main points to be imparted during this session are - 1) the younger students are to complete the worksheets as independently as possible, 2) the tutors must adhere to the sequence of worksheet pages, and 3) the tutors must attend to the accuracy of the tutees' responses. In regard to the first point, the

older children are to be supportive and facultative as necessary. It is not their role to do the work for the younger student. Most or the younger children will not object to the older students completing the work, so it is critical for the adults to monitor that the younger students are working as independently as possible. The sixth graders will get a chance to complete the worksheets on their own during the booster sessions. Additionally they will be given a fully correct prototype of each lesson prior to beginning the sessions.

During this session the adults introduces a typical worksheet series from one of the early lessons. The tutors will always begin a lesson with a brief introduction to the concept of the target sound(s) or word(s). The introduction follows a relatively uniform format that the tutors are given a chance to read and practice within their rehearsal dyads. The adult reviews the directions on each page and stresses that the tutors may read the directions if the younger child needs assistance. Make the tutors aware that in some instances the younger children will not need a lot of help during the initial sessions, but that support will be increasingly needed as the skills become less familiar and more complex. The tutors must be informed that they are to give frequent positive feedback to the younger students. State that the adults realize that the sixth graders also need encouragement and positive reinforcement to do their tutoring role well. Following the lessons, the tutors will consult with an adult to determine whether the lesson should be repeated again during the next meeting. A criterion of two or more errors per page is generally set as indicating further instruction in that target area.

Session 4

Topic: The reading aloud of a story to a younger child

General comments to the supervising adults

The main points to be imparted in this session are- 1) that picture books and simple text are enjoyable beyond the ages of preschool , and 2) that there is an audience when one reads a story to a younger child. Most of the older students have never read a story aloud to someone else, nor have they had the experience of being read to as younger children. They have a misguided perception that it is an embarrassment to be observed in possession of a picture book or an easy text.

The adult begins the session by asking the students to remember any favorite stories that had been read to him or her by family members or a teacher when they were younger. There will be a few students who will recall a Dr. Seuss book and another couple who will remember a favorite fairy tale. When asked if they have ever read a book to a younger child 2 or 3 will report that they read to a sibling or to a niece or nephew. A discussion ensues, guided by the question "How did you feel when you were reading to the little child?", and "Did the child seem to enjoy your reading to him or her?" The goal of the discussion is to address the sense of empowerment, benevolence, and mutuality that can be received by sharing storytime.

The adult selects a couple of simple texts to use for demonstration purposes. The sixth grade students are assured that they will not be required to read a whole book to a youngster, but that they may want to share a short story if there is time

at the end of a session. The tutors are told that they will be helping the tutees read a short paragraphs that contains newly learned words.

At our session, the books chosen were I Can't Said the Ant by Polly Cameron and Who Took the Farmer's Hat? by Joan Nodest. The chosen books must meet the criterion of simplicity of text such that the tutors can read them aloud with minimal halting and anxiety. The recommendation is made that the students preread a book before reading aloud to a younger child.

The adult points out that when sharing the book, either the tutor and tutee should sit side by side, or the tutor should hold the page facing the child, particularly if there are pictures. The adult models reading slowly and expressively. The use of expression is a hard skill for the students to master. They will perform better if they are made aware of intonation by the adult providing a series of contrasting examples of a passage read in a monotonous fashion and the same passage read with appropriate emotion. This is a characteristic of good readers that is often taken for granted. Poor readers must gain direct instruction, observe modeling, and follow this with rehearsal.

Following the modeling, the tutors are paired off and given a xeroxed copy of one of the texts. After reading the text silently they alternately read a page to each other. The adults circulate among the pairs, making suggestions regarding affect, pacing, and book position. When necessary the adults will provide further modeling to the pair.

Session 5

Topic: The use of games as teaching and learning activities.

General comments to the supervising adduce

During this session the main point imparted is that teaching and learning can be done through "play' and be enjoyable to both the teacher and the student. Note that the games are not meant to be competitive, but rather collaborative. In some cases, the game formats will be familiar, but the content can be adapted to teach any skill. Stress the flexibility of this type of device.

The adult describes and models playing each game, employing a tutor as the second player. Following the modeling, pairs of tutors rehearse the game playing. The adults monitor the adherence to the game structure and monitor the dialogue, corrective feedback, and reinforcement.

Sample games

Bingo

Materials: Bingo cards, bag to hold the index cards, index cards containing either a word, a letter, or letter combinations, markers

How to play: Both the tutor and the tutee start the game with a bingo card. The tutor and the tutee alternately pick an index card from the bag without looking. The person who picks calls out the target sound. A player who has a Bingo card containing that target sound, covers the square with a marker. The winner is the first player to completely cover a series of five boxes either horizontally, vertically, or diagonally.

Word Board Game

Materials: A generic game board containing a start and end point and a path between the two points, index cards each containing either a word, a letter, or a letter combination, playing pieces, a spinner or a die

How to play: Both the tutor and the tutee select their playing piece. The spinner or die is rolled to determine who goes first. The low roller begins. The players alternately turn over the top index card from a stack. Depending on the skill being taught, if the player correctly responds, he or she may move the number of spaces on the spinner or die. The target criteria my be such responses as the following- identifying the word or letter, stating a word that begins with a certain letter, stating a rhyming word, stating whether a word is real or a nonsense word, etc.

The Word Jump Game

Materials: Index cards with either single words, letters, or letter combinations

How to play: The tutor has a stack of 10 index cards each containing either a word, letter, or letter combination, all of which have a related instructional concept. The tutor reviews the cards with the tutee. They discuss the general concept that appears to link the cards. The tutor then lays out the cards on the floor with at least one and one-half feet between them. The tutor calls out the word, letter, or letters and the tutee must repeat the target sound and jump onto that index card. The game is over when the tutee has recognized and jumped onto all 10 of the target cards.

Appendix D

Curriculum

Goals

To improve the associations between printed letters and letter sounds

To improve basic sight word recognition

Materials

Upon the recommendation of researchers and educators that the most effective tutoring materials are those that provide frequent performance feedback and clear distinction between correct and incorrect responses, the investigator selected the early workbooks from the Explode the Code (Price & Hall, 1992) series as the main component of the lessons. Each book addresses a limited set of phonetic elements which are rehearsed in a well developed set of exercises. These workbooks are a vehicle for practice in the skills of visual and auditory discrimination, basic decoding, writing, sight word recognition, and literal comprehension. Each student will also have a personal word bank of sight words written on index cards which are to be reviewed for a few minutes at the beginning of each session. In addition to the workbook sheets and word banks, each lesson will include a brief paragraph integrating some of the new and previously learned material. The paragraphs will be composed by the investigator.

The materials will not be sent home. They will remain in the office of the investigator. They will be distributed at the beginning of each session and collected at the conclusion of each session.

Content

Lessons 1-5

Lessons 1 through 10 consist of an introduction to and/or review of consonant sounds that frequently are problematic for poor elementary school readers. It is possible that some of the tutees will not have trouble with these letter/sound associations, but it seems advisable that a standard sequence be followed when using students as tutors. For those students who demonstrate mastery of these consonants, an accelerated pace is possible. The investigator will review the daily progress for each case in order to determine an appropriate pace of instruction.

Five to eight sight words will be introduced in every lesson. The words are chosen from the Fry Instant Word List (Fry, 1980).

Lessons 6-23

Lessons 6 through 23 introduce and/or review short vowel sounds. Since this is an aspect of common deficit at least two lessons will be devoted to each short vowel. There are three review lessons within this segment in order to monitor and reinforce the application of previously learned information.

Lessons 24-35

Lessons 24-35 introduce and/or review initial and final consonant blends. These are presented in the context of one syllable words both in isolation and within short sentences.

Lessons 36-51

Lessons 36-51 present one syllable words ending in a long vowel including y, silent e words, and the digraphs sh, th, wh, ch, ng, and ck.

Advanced concepts

For those few tutees who have an accelerated grasp of these concepts the following concepts will be discussed: compound words, common prefixes and suffixes, and closed and open syllables.

Appendix E

Sample Lessons

Typical lesson format

Activity	Time allotment
Snack	
Sight word review (during selected lessons)	5 minutes
Phonics workbook (explicit instruction)	15 -20 minutes
Paragraph reading (Contextual instruction)	10 minutes
or	
Decoding game (curing selected lessons)	10 minutes

Sample Lesson 1

Objective: To learn the association between the printed letter *Oo* and the short vowel sound /o/

Materials: worksheets glue, pencil, hiliter, sight word cards, *Oo* picture, and tutor and tutee notebooks

This is an example of a lesson that will be challenging to many of the students, as vowel sounds are a common deficit area for both the sixth graders and the second graders. For some of the tutees, this lesson may need to be either presented or reviewed over a two session period. The reviews may involve slight variations of this lesson.

Tutor: Today we will study the vowel *Oo* and the sound /o/ that it makes. The letter *Oo* makes two sounds - a long /o/ that you hear in the word *open*, and a short /o/ like you hear in the word *operation*. Here is a picture of an octupus. Does octopus have a long /o/ or a short /o/ sound?

The child and the tutor sound the correct /o/ sounds for either the long or short vowel words. -

over	opera
oval	olive
opal	onyx

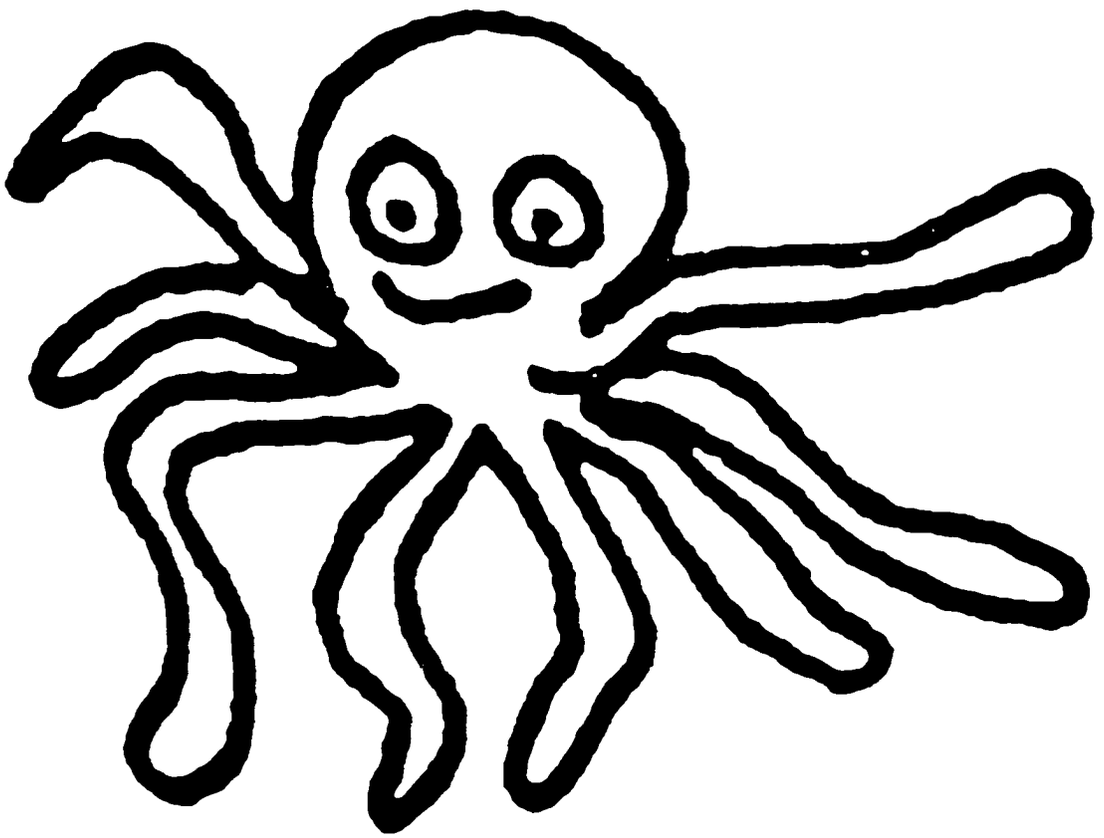
Tutor: In these words the /o/ is in the middle of the word. I will say two words. Tell me the words with the short /o/ sound in them.

note	not
hop	hope
cope	cop
mop	mope

Tutor: Now I will give you pairs of nonsense words. Tell me which nonsense words has the short /o/ sound in them

Zod	zode
bote	bot
pog	poge
hobe	hob

Tutor: This picture of an octopus will remind you of the short */o/* sound that we are studying today.



Note. The worksheet illustrations on pages 128-144 of this text are from Explode the Code by N. Hall and R. Price, 1994, Cambridge, Massachusetts: Educators Publishing Service. Copyright 1994 by the Educators Publishing Service. Reprinted with permission.

Tutor: These words in the left all have the short /o/ sound in the middle. Let's read the words together.

Tutor: Cross out the same word over here.

Sample item

log	leg	fog	~~log~~

Worksheet 2

Tutor: Read the words out loud.

Tutor: Copy the word and then put an x on the picture that goes with it.

Sample item

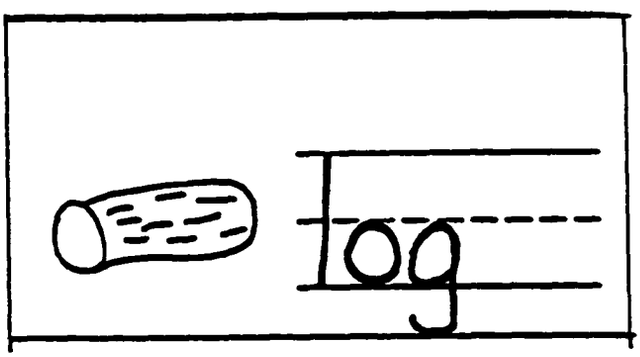
log log			

Worksheet 3

Tutor: Find the word that goes with the picture and write it.

Sample item

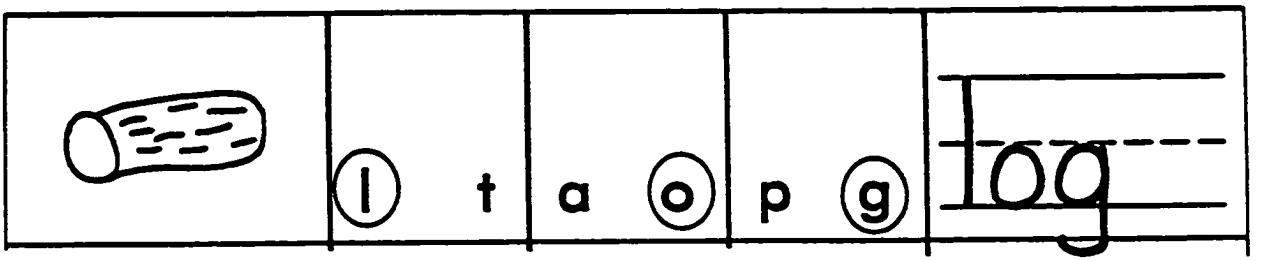
mom	~~log~~
hop	box



Worksheet 4

Tutor: **Spell the word.**

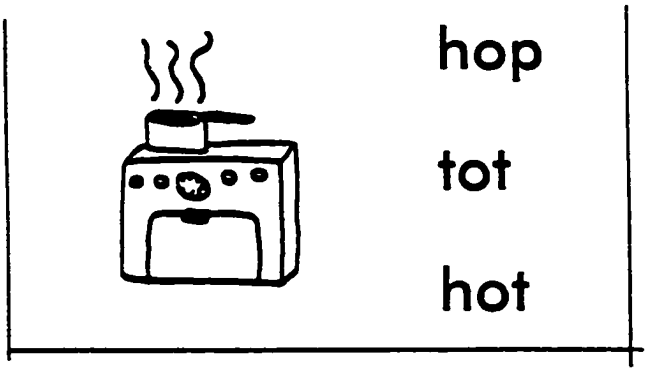
Sample item



Worksheet 5

Tutor: **Circle the correct word that goes with the picture.**

Sample item



Paragraph

Tutor: **We are going to read a short story that has many words with the short** */o/*

sound. First I will read it to you.

Tutor: **This time I will read a sentence and you will echo the sentence.**

Tutor: **This time we will take turns reading the story.**

Tutor: **Take the hiliter and mark the words that have the /o/ sound.**

Paragraph

Bob got a pot. The pot was hot. The pot went plop.

Bob got a mop to clean the spot. Bob said to Rob

"This is not a lot of fun. I have got to stop.

Sight words

mop

not

stop

got

plop

Bob

Rob

spot

lot

hot

pot

Sample Lesson 2 (A review lesson)

Objective: To learn the association between the printed letters *c,r, br, fr dr, gr* and the sounds */cr/ , /br/. /dr/, /gr/, and /fr/*

Materials: worksheets glue, pencil, hiliter, sight word cards, and tutor and tutee notebooks

This is an example of a lesson that will be challenging to many of the students, as consonant biends are a common deficit area for both the sixth graders and the second graders. This is a review lessons which is administered following lessons which present each of these three blends individually. For some of the tutees, this lesson may need to be either presented or reviewed over a two session period.

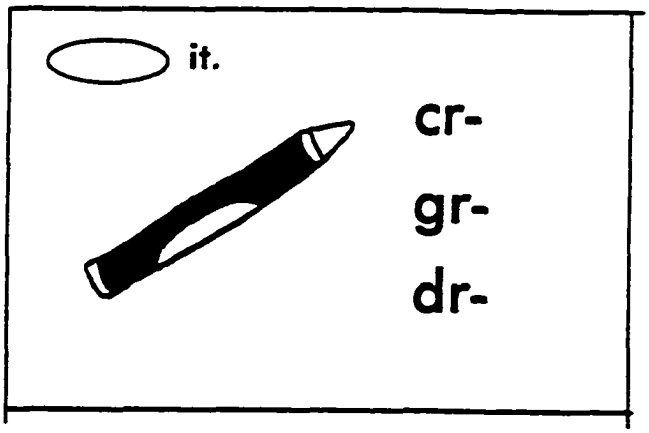
Worksheet 1

The child is encouraged to read the directions and captions independently. If he/she is unable or reluctant to do so, the tutor will read the instructions.

Tutor: Tell me what there pictures look like.

Tutor: Circle the letters that begin each word.

Sample item



Worksheet 2

Tutor: Place an X on the same word.

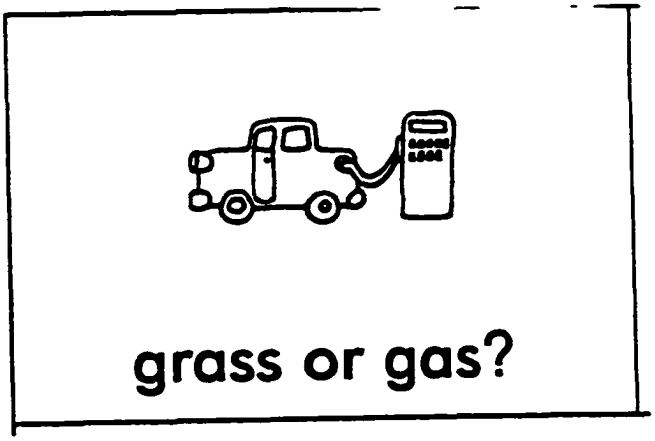
Sample item

drag	dag	drap	drag

Worksheet 3

Tutor: Circle the correct word.

Sample item



Worksheet 4

Tutor : Spell the word.

Sample item

	dr gr	e u	ss t	_____ - - - - - - - - - _____

Worksheet 5

Tutor: Yes or no?

Sample item

	No	Yes
Can a crab mop the hut?	☐	☐

Exercise

P. S. 40 Menu

Bread basket

brown bread

brad crumbs

crisp crackers

Main meal

cream soup

fried chicken

crab cakes

Beverage

fruit punch

Desserts

crusty pies

frozen yogurt

cream puffs

Game- Nonsense word jump game

If there is enough time, the tutor will place 10 index cards on the floor. Each card contains a nonsense word beginning with one of the target consonant blends. The tutor will make it clear that these are not real words. And then ask the child to jump form word to word after each word is called out by the tutor. When the child lands on the word, he/she must say the word. If desired, the tutor may have a turn jumping while the tutee reads the words.

Craz	crig
crub	cruv
frot	frag
frep	brel
brum	briz

Sample Lesson 3

Objective: To learn the silent e rule

Materials: worksheets glue, pencil, hiliter, sight word cards, and tutor and tutee notebooks

Introduction

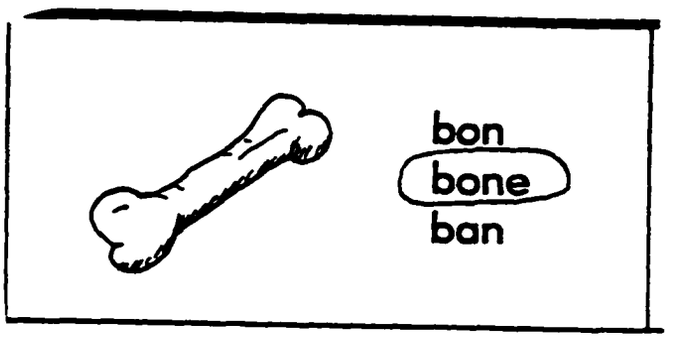
Tutor: Today we will learn the silent e rule. This rule says that if a word has e at the end, the e is silent and the vowel before it says its name. For example rod/rode. Do you hear the difference? Do you see the difference?

(Other examples: wad / wade, can / cane. Lop / lope, sit / site, kit / kite)

Worksheet 1

Tutor: Circle the word that names the picture.

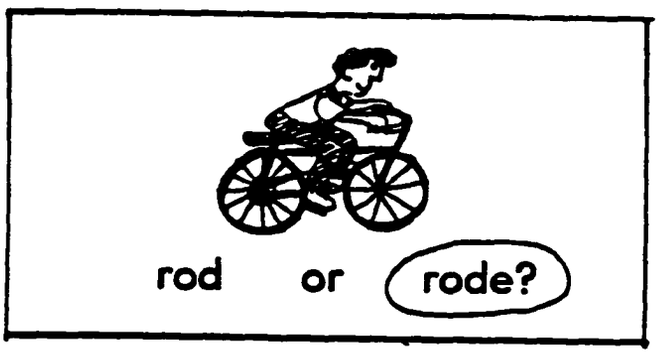
Sample item



Worksheet 2

Tutor: Circle the word that goes with the picture.

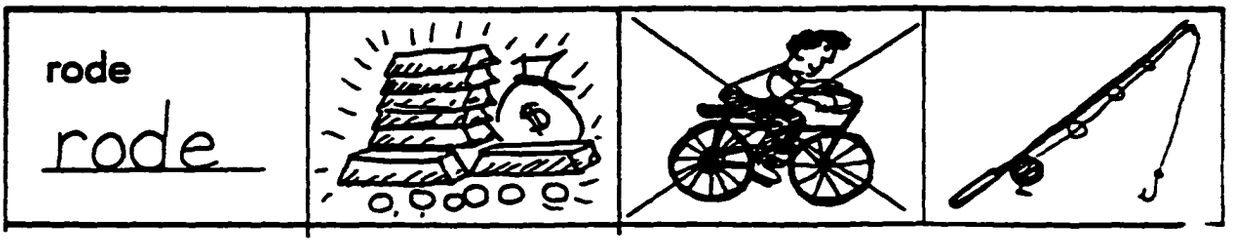
Sample item



Worksheet 3

Tutor: **Read, write, and put an x on the picture that goes with the word.**

Sample item

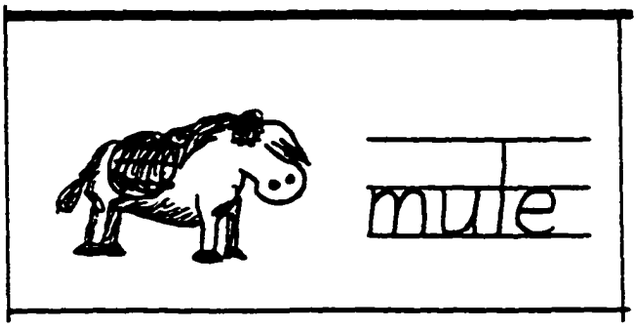


Worksheet 4

Tutor: **Match and write the word.**

Sample item

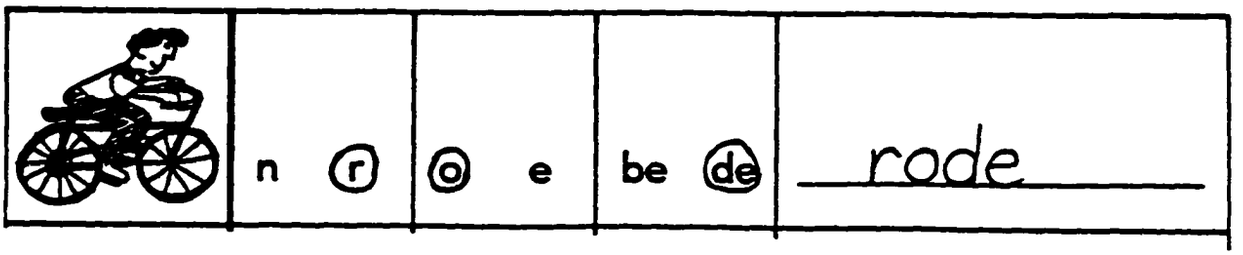
gate poke
~~mule~~ bite



Worksheet 5

Tutor: **Spell the word.**

Sample item



Worksheet 6

Tutor: **Read the sentence and check yes or no.**

Sample item

Can you ride a bike fast?	Yes ☒ no ☐

Paragraph

When it was time to dive into the pool. I gave my towel to my mother and she ate a cookie while I dove. I dove nine times. When I came out of the pool I ate a slice of cake. My mom and I rode our bikes back home.

Note: After the tutee has read this the tutor asks him or her to highlight all of the words having a silent e.

Word Jump Game

Real word cards

cut	**cute**
can	**cane**
dot	**dote**
kit	**kite**
bit	**bite**

Nonsense words

hab	**habe**
gid	**gide**
lzid	**zide**
yop	**yope**
ret	**rete**

Sample Lesson 4

Objective: To associate the printed letter *sh* with the sound */sh/*.

Materials: worksheets glue, pencil, hiliter, sight word cards, and tutor and tutee notebooks

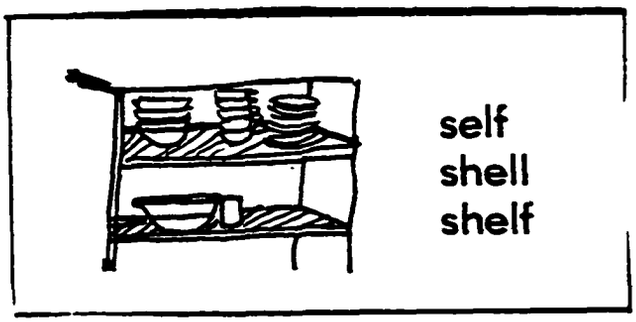
Introduction

Tutor: Today we will on the letters that make the *Sh* sound. Sh at the beginning or end of a word sounds like *sh* as in shell, shop and ship. An *sh* at the end of the word sounds like wish, fish, and cash. Can you think of some words staring with the *sh* sound" Can you think of so words ending in the sh sound?

Worksheet 1

Tutor: Say the word and circle the word that names the picture

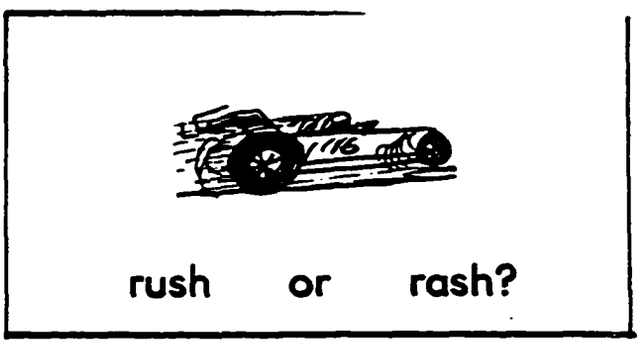
Sample item



Worksheet 2

Tutor: Say the words and circle the word that goes with the picture

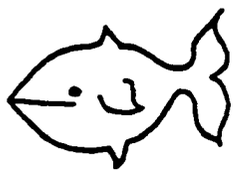
Sample item



Worksheet 3

Tutor: **Read, write, and put an x on the picture that goes with the word.**

Sample item

fish _____			

Worksheet 4

Tutor: **Spell the word that goes with the picture.**

Sample item

	sh shr	o i	mp p	_____

Worksheet 5

Tutor: **Put an x on the sentence that goes with the picture.**

Sample item

The shade of the lamp fell off and broke. Luke broke his leg as he fell off the ship.	☐ ☐	

Worksheet 6

Tutor: Write the name of the picture using a word with the letters sh.

Sample item

_____

Tongue twister

She sells sea shells by the sea shore.

Riddle

Shelly shrank into his shell.

Shelly did this very well.

Shelly shook, and to my shock

Shelly looked just like a rock.

What is Shelly?

Silly poem

Splish splash

Splish splosh

Oh no! I forgot to wash!

Sample Lesson 5- Game Days (sessions 6, 12, 18, 24, 30, 36, 42)

This lesson is similar to that which took place on alternate Fridays throughout the semester. On these days the adults set up play stations. At each of the 4 play stations there is a different activity. The activities are comprised of game-like events that allow the rehearsal and practice of decoding skills previously introduced during the sessions. The adults tailor the activities for different levels of skill as needed. Each station could fit up to 3 dyads (tutors and tutees) at one sitting. Generally the activities are played within the dyads, with the tutor supporting rather than competing with the partner. If the joining of dyads seems appropriate a foursome may engage in a game. The adults circulate from table to table to give encouragement and ensure that the rules are followed and turns are shared. After completing each activity the players receive a sticker and rotated to another table. Everyone who completes a round at a game gets a sticker. The goal is that every dyad completes each of the 4 activities during the session. At the completion of the session the adults give out simple good sportsmanship prizes to all the participants. The prizes consisted of such small items as pencils, pads, letter stencils, and erasers.

Sample play station activities

Upwords

This is a board game somewhat like Scrabble. However, instead of simply building new word by using a common letter from an existing word on the board, a player can place a letter on top of one in an existing word thus creating a new word. For example, *hat* becomes *rat* by a player putting an *r* on top of the *h*.

Word Sorts

A word sort is a categorization/classification activity. Essentially an individual has a set of words on index cards from which to select several that have a common element. For example, a person may set out 6 cards on the table that all begin with the letter *s*. On a slightly more advanced level, an individual may select a series of cvc words that all contain a short e sound. The object is for the other person to identify the common element amongst the words. The tutors lead this game by being the first to select a series of words. The tutees then get a chance to stump the tutors.

Word Jump

The tutor has a stack of 10 index cards each containing either a word, letter, or letter combination, all of which have a related instructional concept. The tutor reviews the cards with the tutee. They discuss the general concept that appears to link the cards. The tutor then lays out the cards on the floor with at least one and one-half feet between them. The tutor calls out the word, letter, or letters and the tutee must repeat the target sound and jump onto that index card. The game is over when the tutee has recognized and jumped onto all 10 of the target cards.

Memory

This game is similar to Concentration. There is a stack of index cads containing words that are selected to rehearse a particular concept. The stack contains doubles of each word, or in the case of a compound-word memory game there are pairs of words that go together to form compound words, for example *bat* and *boy*. The cads are reviewed prior to arranging them face down on the table in a

series of rows. The players take turns turning 2 cards face up. If the cards go together the player puts them in his or her personal pile. If they do not go together the cards are again placed face down and put back into play. The goal is to accumulate pairs of cards until all of the cards are gone from the center.

Word Board Game

The board games at the play station can be adapted for many target concepts. If the goal is the rehearsal of syllable awareness, the game may be played as follows. If when the player rolls the die a 2 is shown, the player must say a 2 syllable word so that he or she may move ahead 2 spaces. If the goal is to practice reading cvc words, a person may have to read the cvc word on a game card in order to advance the number of spaces on the die or spinner.

Bingo

Bingo is a flexible game format which can be adapted to practice many target skills. For example the Bingo card s may contain sight words, words beginning or ending with particular sounds, rhyming words, etc. Both the tutor and the tutee start the game with a bingo card. The tutor and the tutee alternately pick a word card from a bag without looking. The person who picks calls out the target sound. A player who has a Bingo card containing that target sound, covers the square with a marker. The winner is the first player to completely cover a series of 5 boxes either horizontally, vertically, or diagonally.

Silly sentences

This activity consists of a tutee reading 5 simple sentences such as-

It was so hot I froze in bed.

A dog is glad when a bone is had.

Batboy and Batman went outside to get a tan.

The creepy critter crept up the crib.

Appendix F

End of Project Certificate

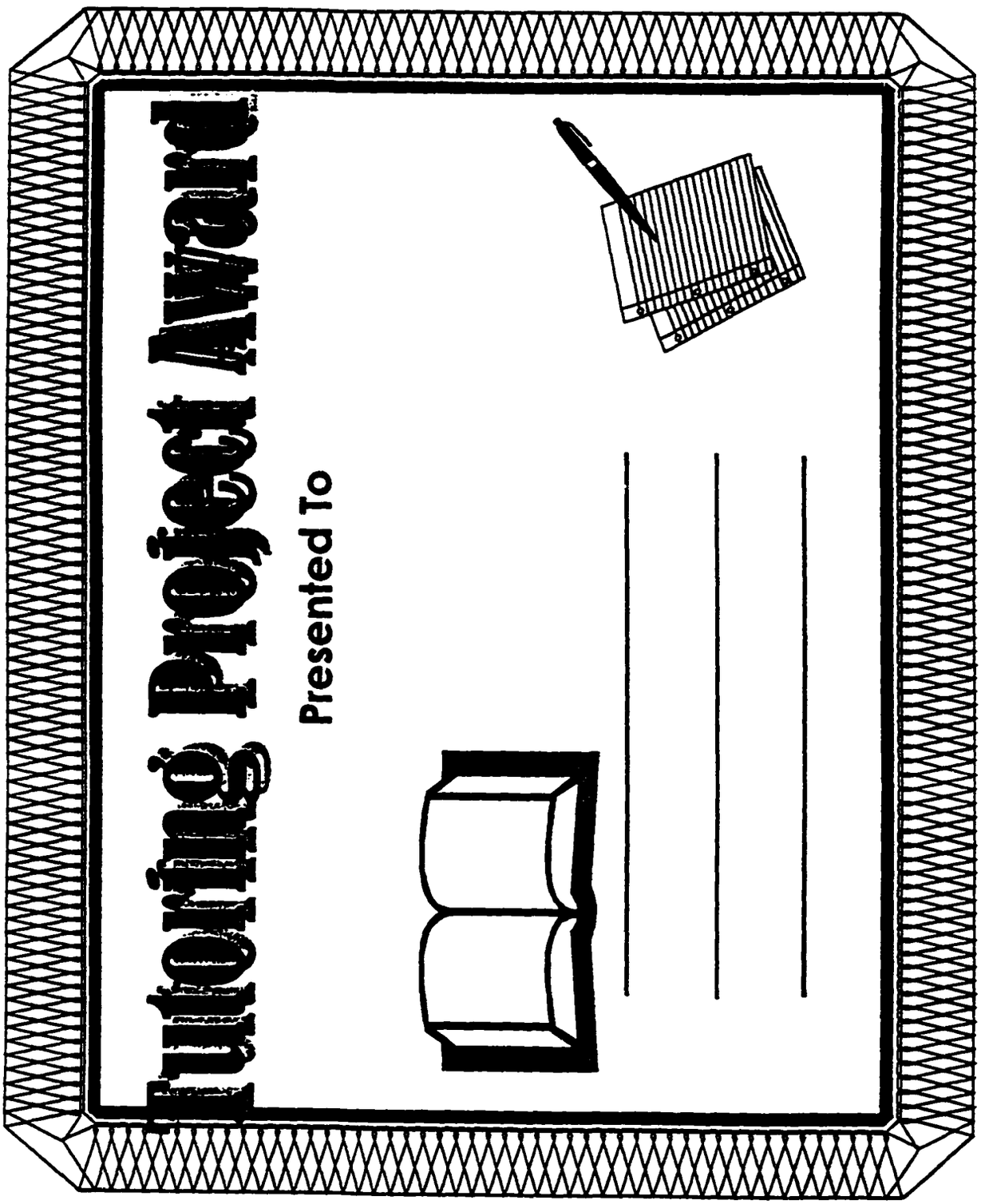


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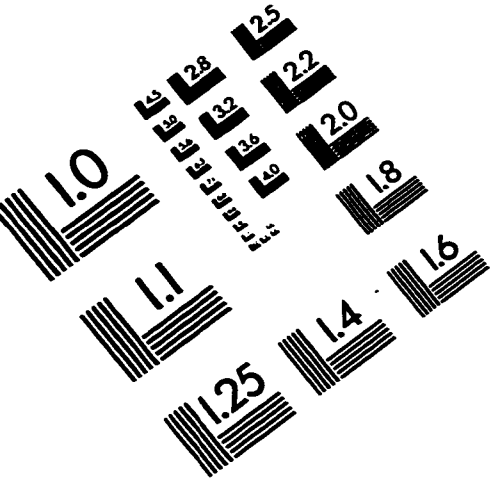
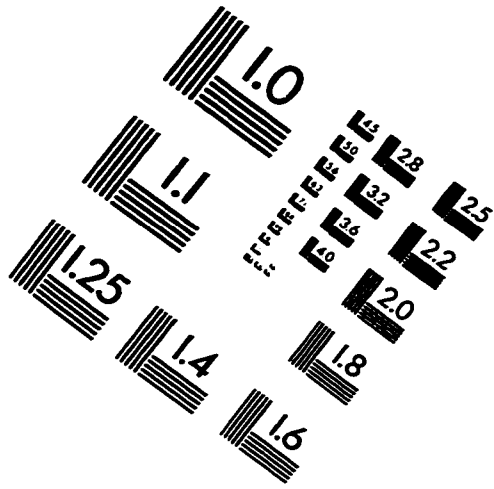
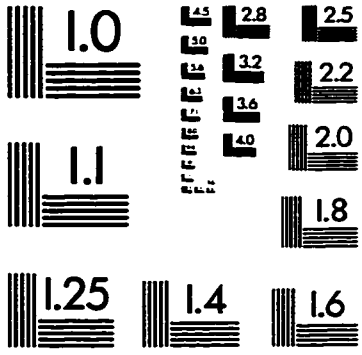
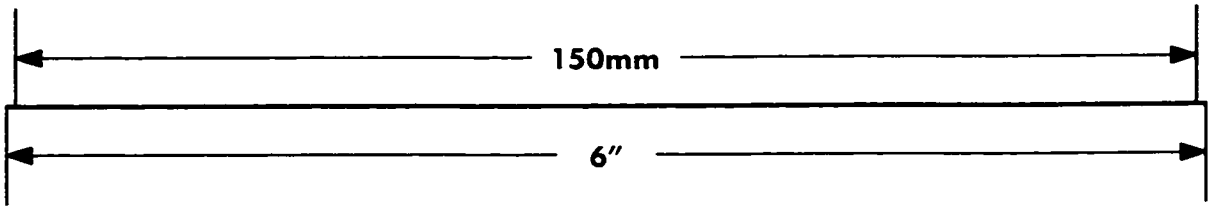
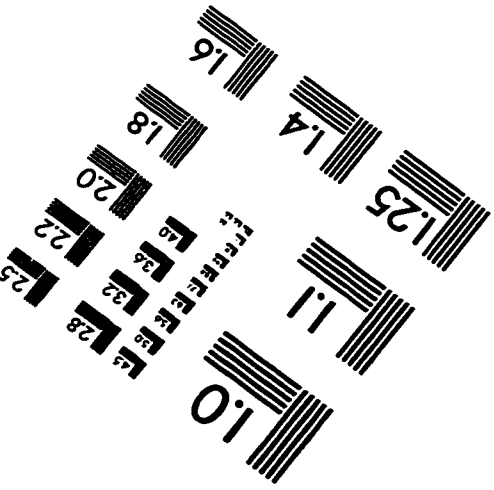
IMAGE EVALUATION
TEST TARGET (QA-3)











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