The Effects of Cross-Level Peer Facilitated Learning on the Mastery of a Structured Reading Program

Elaine R. Bartos

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THE EFFECTS OF CROSS-LEVEL PEER FACILITATED LEARNING
ON THE MASTERY OF A STRUCTURED READING PROGRAM

by

Elaine R. Bartos

A Project Report
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Specialist in Education
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
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The Effects of Cross-Level Peer Facilitated Learning on the Mastery of a Structured Reading Program

Elaine R. Bartos, Ed.S.
Western Michigan University, 1994

This study examined the effects of cross-level peer facilitated learning on the total amount of time needed for special education students who attended a southwestern Michigan inner-city elementary school, to complete to 100% mastery the teacher-directed portion of the reading lesson. Cross-level peer tutoring was defined as a process in which a more proficient student worked with a less proficient student on a one-to-one basis in the academic area of reading. The tutoring took place prior to the teacher instruction with 20 students from three special education reading groups. The tutoring sessions took place for a duration of 5-9 weeks.

The findings of the present study indicate that: (a) pre-exposure to the reading material with cross-level peers, reduced the instructional time needed to complete to 100% mastery the teacher-directed lesson; and (b) individuals maintained, if not improved, their accuracy on reading checkouts when cross-level tutoring was implemented.

The study shows that this method is an effective, efficient way to lead to more lessons being completed during the school year, which can help close the existing performance gap between special education students and general education peers.
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Elaine R. Bartos
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CHAPTER I

INTRODUCTION

No two students function identically. Differences exist in the ways in which children interact with others, as well as how and the rate at which they learn. Some children have extensive problems in thinking, hearing, speaking, socializing, or moving (Hallahan & Kauffman, 1991). These problems dramatically effect their needs for instructional programming. Many students who differ extensively from their peers have been identified as exceptional children, who can be defined as "those who require special education and related services if they are to realize their full human potential" (Hallahan & Kauffman, 1991, p. 6). Within this broad category are children who have been classified as learning disabled (LD), educable mentally impaired (EMI), and emotionally disturbed (ED).

A defining characteristic of the LD student is the presence of academic deficits. Generally, the LD student is functioning two years below his or her grade level (Hallahan & Kauffman, 1991). The student identified as EMI has an IQ score between 50 and 70 (Dunn, 1963; Hallahan & Kauffman, 1991) and typically experiences learning difficulties within the general education classroom (Dunn, 1963). With the close relationship that exists between intellectual ability and achievement, it is not unexpected for the EMI student to lag well behind their nonhandicapped peers in achievement (Hallahan &
For students classified as ED, it has been shown that they typically have intellectual abilities that fall into the low average range (around 90). At this intellectual level, many ED students fall into the category of slower learner or mildly retarded (Hallahan & Kauffman, 1991). Kauffman, Cullinan, and Epstein (1987) investigated the characteristics of students (204 males, and 45 females), who were identified as seriously emotionally disturbed, and were receiving special education services in a variety of settings (e.g., rural, suburban, and urban districts). The results of their study indicated that of 142 students out of the 249 who had WISC-R scores available, the mean score was 91.2. In addition, "no more than 30% of the seriously emotionally disturbed students were estimated to be functioning at or above grade level in any academic area" (Kauffman et al., 1987, p. 178). The above results support Hallahan and Kauffman's (1991) findings that the intellectual functioning of an ED student typically falls in the low average range, and that the ED students usually do not achieve to the level expected for their mental age.

With such decrements in achievement level for the LD, EMI, and ED students compared to their nonhandicapped peers, concern regarding the effectiveness of special education has arisen (Cegelka & Tyler, 19709; Kavale, 1990; Martson, 1987; Shinn, 1986). One such concern is in its inability to close the gap between the performance level of special education students and their general education peers. Using program evaluation, Shinn (1986) assessed the effectiveness of a
special education program designed for mildly handicapped students with reading difficulties. Employing curriculum-based assessment, Shinn answered four questions related to program effectiveness of special education. For the present study, the question, "To what extent did mildly handicapped students improve in reading skills?" (Shinn, 1986, p. 51) is of interest. To answer this question, the rate of progress of mildly handicapped students and randomly selected general education peers were compared. The raw scores obtained on the curriculum-based assessments for the mildly handicapped students and the normative sample were converted into z-scores. The z-scores were then used to show change in the performance decrement between these two groups across testing times. The results showed that in relation to their general education peers, the performance decrement of the special education students increased across time of testing. This suggests, that special education services alone may not be effective in helping to close the performance level gap between special education students and their general education peers. With this implication, concerns have arisen about what can be done to increase the academic performance of exceptional children, therefore, reducing the existing performance discrepancy. One intervention proven to be effective in increasing the academic performance of exceptional children is tutoring, both peer and cross-age (e.g., Byrd, 1990; Maheady, Sacca, & Harper, 1988; Vacc & Cannon, 1991).

Research on Tutoring

Many researchers have studied the effects of tutoring across a
variety of subjects and settings. For example, working with special education students as the tutor and tutee, Scruggs and Osguthorpe (1986) compared cross-age tutoring with peer tutoring within special education settings. The overall results were positive. Gains were made for the tutor and the tutee. From their findings, Scruggs and Osguthorpe concluded that both cross-age tutoring and peer tutoring were effective to use in remedial and special education settings.

Maheady et al. (1988) examined the effects of class-wide peer tutoring (CWPT) on the academic performance of mildly handicapped and nondisabled high school students. In this study, 50 students (27 males and 23 females) participated. Fourteen of the students were identified as learning disabled, or behavior disordered, and the rest of the students were nonhandicapped. The students who participated were enrolled in a special district-wide project called Pupils Achieving Scholastic Success. The students were enrolled in three tenth grade social studies classrooms in a large urban high school that was implementing this project.

At the beginning of the program, the social studies teacher instructed the class in the usual manner, which involved teacher-lead lecture, media presentation, and review of homework. In addition, the teacher developed a 30-item study guide that covered that week's material; the study guide was distributed to each student to be used on his or her own. Every Friday, each student took a 20-item quiz over the assignments for that week. CWPT was introduced sequentially into each classroom. The students were randomly divided into two teams. From the students within the same team, tutoring dyads were
formed with each student serving both as a tutor and a tutee. During 2 weeks of CWPT the dyads worked together on the 30-item study guides.

To assess the effects of class-wide peer tutoring, the test scores on weekly social studies quizzes were analyzed. At baseline, each class scored between 50-70% on the weekly quiz, with an average of 65.96%. With the implementation of CWPT, immediate and dramatic increases in test scores were demonstrated by both mildly handicapped and nondisabled students. An average of 21.66 percentage point gain was made over the course of the program. During this program, the mildly handicapped students made higher gains (mean = 23.15 points) than their nondisabled peers. The weekly quiz scores of the mildly handicapped students often exceeded the scores of their nondisabled peers.

Cross-age tutoring is another tutoring strategy that can be used to help increase the skills and academic performance of exceptional children. In this situation, an older student is considered an "expert in a certain content or skill area" (Scruggs & Osguthorpe, 1986, p. 187). He or she aids the younger, less proficient child in learning skills and/or knowledge through a tutoring dyad.

Vacc and Cannon (1991) investigated the effects of cross-age tutoring on beginning mathematical skill development of students who are moderately handicapped. Four moderately mentally handicapped students who attended a self-contained classroom in an elementary school participated in this study. The students were chosen based on their ability to communicate, and their developmental level in
mathematics. Students were placed into dyads with sixth grade non-handicapped student who served as the tutor. Tutoring took place for 30 minutes a day for 4 days, and lasted for 6 weeks. The dyad worked on specific math tasks that included: identifying the month and date, naming the days of the week (time), rote counting, counting 10 objects, and identifying number words through five. Results of the study revealed, with one exception, that the number of correct responses made by the subjects increased during the tutoring intervention in comparison to baseline. For example, at baseline, one subject made three correct responses when asked to count 10 objects. During the last four tutoring sessions, the subject made six correct responses when asked to do the same task. The results suggest that cross-age tutoring can be an effective program for students who are moderately mentally handicapped in learning beginning mathematics skills.

An area of tutoring which has recently become of interest to educators is the effect of previewing assignments, such as oral reading, on oral reading rate and oral reading errors (Rose, 1984; Sachs, 1984; Salend & Nowak, 1988). According to Rose (1984), previewing refers to any method that provides an opportunity for a learner to read or listen to a passage of the material to be learned before instruction and/or testing. In most studies the teacher has functioned as the primary previewer. However, it has been demonstrated that others can be employed as previewers, including peers.

For example, Salend and Nowak (1988) investigated the effects of peer-previewing on the oral reading skills of six LD students. The
students received supplemental instruction in reading, spelling, writing, and math. The students were placed into dyads with an older and more proficient student who served as the previewer. During the peer previewing sessions, which occurred for 15 days, 5 minutes a day, the previewer read aloud a passage from a book while the target student followed along independently. After the peer previewer finished the passage, the tutor read the same passage to the teacher. During this time, the teacher recorded the oral reading errors of the student. At baseline, the mean oral reading errors were 24.5 for Subject 1, 25.6 for Subject 2, and 18.8 for Subject 3. During the intervention phase, mean oral reading errors were 8.2, 10.4, and 6.5 respectively. Results of this study suggest that peer-previewing is an effective intervention for decreasing the number of oral reading errors, augmenting the accuracy of oral reading skills of LD students.

Purpose of the Study

Although research exists regarding the effectiveness of peer tutoring, cross-age tutoring, and previewing strategies on the academic performance of handicapped students, little information is known about the effectiveness of previewing using mastery of instructional techniques, such as those used in Direct Instruction. In a southwestern Michigan elementary school, special education students were taking more than the allocated time for reading to complete the teacher-directed portion of the lesson to 100% mastery. The objective of the present study was to investigate the effects of
cross-level peer-tutoring on the amount of time special education students in this school require to complete to 100% mastery the teacher-directed portion of the reading lesson using Direct Instruction. The underlying hypothesis of the study was that if students previewed their reading lesson prior to teacher instruction, it would take less time to complete to mastery the teacher-directed lesson in class. If this were the case, teachers could complete more lessons during the school year, thus, moving toward closing the performance gap between special education students and their general education peers.
CHAPTER II

METHOD

Subjects

Initially, a total of 21 students from three reading groups served as subjects for the study. During the study, one student moved leaving 20 students (14 males and 6 females) completing the study. For the Reading Mastery-I group there was a total of nine members in grades K-2 of which eight received cross-level tutoring; for the Reading Mastery-II group there was a total of six students in third grade of which five received tutoring; for the Corrective Reading B1/B2 group there was a total of five students in grades 5 and 6 and all of the members of this group received the intervention. All students attended an inner-city elementary school in southwestern Michigan. The students ranged in age from 5 to 12 years old, and have been identified as either learning disabled, educable mentally impaired, or emotionally impaired. They attended a cross-categorical resource room for reading instruction, and had at least 5 months experience with the Direct Instruction reading program prior to the beginning of the study.

Setting

Tutoring took place in the tutee's resource room or outside in
the hallway nearby the room. Four to six students were tutored simultaneously. During the tutoring sessions other instruction was occurring in the classroom. However, dyads were separated from group instruction to the extent possible, with noise and other distractions reduced.

During the tutoring sessions, the tutor and the tutee occupied the same desk, or were close to one another at a table or on the floor. The tutee typically sat in front of the material, and the tutor sat on either side of the tutee.

Materials

The materials were selected from the Direct Instruction Corrective Reading Series B1 and B2 by Engelmann et al. (1988a, 1988b), and from the reading Mastery Reading Series I and II by Engelmann and Bruner (1983a, 1983b). Different levels of these series were used for each dyad to match the levels taught during teacher-directed instruction.

Also, the school psychologist and the researcher developed materials to be used by each dyad and the classroom teacher. These materials included a point chart (Appendix A) to keep track of the points earned by the tutee during the tutoring session, a student information sheet (Appendix B) to record the number of errors made and words read by the tutee during check-outs, and a teacher information sheet (Appendix C) which was used to keep track of the lesson number, the time to complete the lesson, and the number of tasks mastered per lesson.
Independent Variable

Definition

For the purpose of this study, cross-level peer-facilitated learning was defined as a process in which a more proficient student worked with a less proficient student in the academic area of reading on a one-to-one basis.

Dependent Variable

Definition

The dependent variable was the total amount of time it took to complete the teacher-directed portion of the lesson to 100% mastery. Mastery was defined as all members of the group responding on signal and with no errors. Errors included mispronunciation, omissions, and additions of sounds or words, as well as not knowing a word.

Scoring Procedure

A record sheet was used to keep track of the amount of time it took to complete the teacher-directed portion of the lesson. It included the date, start and stop time, the lesson on which the instruction ended, the last exercise completed to 100% mastery, and any comments by the teacher. The researcher used this information to obtain the total amount of time taken to complete the instructional lesson, so as to determine if any changes in this time occurred from baseline to intervention.
Procedure

Tutor Selection and Training

Tutors were selected from fifth and sixth grade students who were in general education for all of their classes. A total of 24 students were trained to be tutors. Initially, 21 were tutors selected to be tutors on a daily basis and 4 were substitutes. During the study, 3 of the tutees did not receive tutoring, therefore, the number of tutors on a daily basis was reduced to 18, and 6 students became substitutes. The students were selected to become tutors based on teacher recommendations, and their desire to participate in the study. Teachers recommended a student to become a tutor if he or she had a good attendance record, enjoyed working with others, and was reading at or near grade level.

The school psychologist, the school psychologist intern, and the experimenter conducted the training. Three separate groups of tutors were trained, such that the training group only contained the tutors for a specific reading group (e.g., the Reading Mastery-I group, the Reading Mastery-II group, or the Corrective Reading B1/B2 group). The tutors were trained an average of 27 minutes for each of 3 days. This shows that in less than 2 hours, students mastered the essential skills necessary to help others receive extra reading practice in a structured format.

Following introductions and explanation of the tasks of the tutor, the tutors were provided with an orientation to the peer tutoring material. This included the point sheet, material to be
read during tutoring, and the student record sheet. Next, the tutors were taught through explanation, demonstration, and role playing how the tutoring sessions were to be conducted. The trainers provided to the tutors the following information: the definition of an error (e.g., omission of words, addition of words, mispronunciation of words, and more than 3 seconds to read the word), how to correct errors, what to do if no error was made, how to award points and how many, how to provide feedback, and how to fill out the student record sheet. After this information was provided to the tutors, the trainers' role played the process of tutoring, followed by the tutor's role playing the tasks. During this time, the tutor played the tutor's and the tutee's role.

For the remaining two training sessions, most of the time was spent role playing. Prior to beginning the role playing the tutors were questioned about the correction procedure, the criterion for what was an error, and the awarding of points. This was done to ensure the mastery of this information. The correction procedure that occurred during the tutoring was broken down into three components based upon the correction procedure used in Direct Instruction (Carnine, Silber, & Kameenui, 1990, p. 20).

1. The "model" component was the first step. When an error occurred the tutor immediately stopped the student from reading, pointed out the error, and read the material to the tutee in its correct form. For example, if the word "pen" was misread as "pin" the tutor would say "Stop. The word is Pen."

2. The second part of the procedure was the "test" step. This
was included to ensure that the student learned the correct version of the material. After the tutor read the material correctly, the tutee would repeat the material in its correct format.

3. The "retest" was the final step. This was used to show that the tutee had retained the corrected form of the material. The step involved the tutee returning to the beginning of a sentence, row, or column of words and rereading the material.

**Tutoring Sessions**

The tutoring sessions occurred 3 days a week for the Reading Mastery-II group, and 4 days a week for the Reading Mastery-I group, as well as for the Corrective Reading B1/B2 group. The tutoring occurred for 15 minutes a day for a duration of 5 to 9 weeks. During this time, 14 minutes were spent working on the tutee's reading material to be taught by the teacher either later the same day or the next day. During this time, the tutor listened to the tutee read the material that was to be presented by the teacher during the instructional lesson. If an error was made by the student, the tutor used the correction procedure learned in training. The tutor continued to use the procedure until the tutee read the specified row, column, or sentence correctly. Also, periodically during the tutoring session, the tutor provided some type of positive social feedback to the tutee.

The last minute of the tutoring session was spent on a 1-minute timed reading checkout of the material just covered. The checkout involved having the tutee read for 1 minute while the tutor kept
track of the total number of words the tutee read, and the number of errors made by the tutee. This information was recorded on the student information sheet. For the 1-minute timed checkout, the tutors assisted the tutee in reading a word only if it took him or her longer than 3 seconds to read it. No other corrections were provided to the tutee. Also, when the tutor did assist the student, the student continued to read on; he or she did not go back and reread the sentence again. This data provided the teacher with information regarding the student's oral reading accuracy and rate during the intervention.

During each of the tutoring sessions, points were awarded to the tutee. The tutee could earn two points for each row, sentence or column read correctly on the first try, and one point after reading the material correctly, of one or more errors were made during the initial reading. In addition, the tutee earned points equal to the number of words he or she read correctly during the 1-minute timed reading. The number of points earned for each tutoring session, as well as the cumulative number of points earned, was recorded on the student information sheet. For each student, a set number of points to be earned for each student was established by the researcher. This criterion was based on the average number of points the tutee earned at the end of the first week of tutoring. When it was reached, the tutee earned an extra reinforcer (e.g., a certificate with candy and pencils attached to it). Conditions were arranged so that the additional reinforcer was earned between the second and third week of tutoring. After the tutee earned the first extra reinforcer,
the number of points needed to earn the next increased 50 to 100 points, depending on the daily points earned. Points were not cumulative, in that once the first extra reward was earned, the tutee started from zero toward the next extra reinforcer. This process continued throughout the study.

**Instructional Lesson**

All aspects of the teacher instructional lesson remained the same during baseline and intervention. During both phases, the classroom teacher conducted the reading group in the same manner, continued to allot the same amount of time for teacher-directed portion of the reading lesson, recorded the information required of the teacher information sheet, and conducted lesson checkouts when required.

**Reading Checkouts**

During the intervention, two types of reading checkouts occurred. One was conducted by the researcher, as noted earlier, it involved a 1-minute timed checkout on the material just covered during the tutoring sessions. The other type of checkout was a lesson checkout conducted by the classroom teacher for those students in the Reading Mastery-II group and the Corrective Reading B1/B2 group. The lesson checkouts were based upon those developed by the authors of the Direct Instruction material being used in the reading lesson.

For the Reading Mastery-II group, the lesson checkouts were
conducted every fifth lesson (5, 10, 15, etc.). The checkouts involved the students individually reading some part of that day's story. The material to be read during the checkout and the criteria to pass them varied. For checkouts 5, 10, and 15, the students had to read the first part of the material in 2.5 minutes or less with three or fewer errors to pass. For checkout 20, the students had to read the first part of the lesson in less than 2 minutes with three or fewer errors. The criteria to pass checkout 25 included that the students read the whole story in less than 3 minutes with four or fewer errors. To pass checkout 30, the students had to read the first two pages of the story in less than 2 minutes making three or fewer errors. The criteria to pass checkout 40, the students needed to read the first page of the story in less than 2 minutes with three or fewer errors. To pass the checkout for lessons 45, 60, and 65, the students had to read the first page of the material in less than 2.5 minutes making four or fewer errors. To pass checkouts 50 and 55 the students had to read the first page of the story in less than 2 minutes with four or fewer errors. Baseline for the reading checkouts occurred every fifth lesson from lesson 5 to 30. Checkouts for lessons 40 through 65 occurred every fifth lesson during the intervention.

There were two types of lesson checkouts for the Corrective Reading B1/B2 group. One was an individual checkout on the first part of the story read that day. The criterion for passing this checkout was reading the section with two or fewer errors. The second checkout consisted of a 1-minute individual timed reading over
the previous story. The criteria for passing this checkout included being able to read the specified amount of material with three or fewer errors in 1 minute.

In order to assess whether cross-level peer-tutoring had an effect on the rate and accuracy of reading for students, the researcher chose to keep track of the number of trials taken to pass the lesson checkouts for the Reading Mastery-II group. Of the students in this group, data were not collected on two to them; one student who chose not to participate in the tutoring, and the second who missed a significant amount of school due to a death in the family. Also, a datum is missing for student Number 2 on checkout 25, and no lesson checkout was conducted by the teacher for Lesson 35.

**Treatment Integrity**

During the intervention, accuracy checks of the tutoring sessions were conducted on a daily basis by the experimenter. All tutoring sessions were monitored to ensure the accuracy and integrity of the procedure. Positive and corrective feedback were provided to the tutors following each observation. If errors in the procedure were observed, corrective feedback was given in a model-lead-test format (Carnine et al., 1990). For example, if a task was not conducted accurately, the experimenter demonstrated the correct way of doing the task, performed it correctly with the tutor, and then watched the tutor execute the procedure alone.

Also, periodically during the intervention, the researcher
observed the teacher-directed lesson for both classroom teachers. During the observation, the teacher conducted the lesson as it should be done.

Experimental Design

The experimental design employed during the study was an AB design. The A phase was the baseline phase in which there was no intervention. The B phase was the intervention in which there was implementation of cross-level peer facilitated learning. Continuous measures of the intervention were taken to determine the effects of the cross-level peer tutoring on the amount of time needed to complete the teacher-directed portion of the lesson to 100% mastery.

Social Validity

Teacher Attitude Questionnaire

A teacher attitude questionnaire (Appendix D) was completed by the classroom teachers at the end of the study. The questionnaire asked the teachers to provide various information. This included their feelings of the study, whether it was positive or not, would they use a similar procedure in the future, and what changes they would make if the tutoring occurred again within their classroom.
CHAPTER III

RESULTS

A summary of the total number of subjects for each group that participated in the study, the average time taken to complete the teacher-directed portion of the lesson to 100% mastery during baseline and intervention, the savings in time from baseline to intervention, and the recommended time to complete the teacher directed portion of the lesson is presented in Table 1. The allocated time to complete the teacher-directed portion of the lesson, which matched the recommended time stated by the authors of the material used for reading instruction is shown in Figures 1-4, 6, and 7 by a horizontal line. The vertical line in Figure 5 separates the checkouts conducted during baseline, and those done during the intervention.

The total amount of time taken to complete the teacher-directed portion of the lesson to 100% mastery during baseline and intervention for the Reading Mastery-I group (n = 9) is shown in Figures 1 and 2, respectively. At baseline (see Figure 1) the total time taken was an average of 57 minutes, while during intervention (see Figure 2) the total time taken was an average of 53 minutes. There was a reduction of 4 minutes on average to complete similar lessons during the intervention in comparison to the baseline phase.

For the Reading Mastery-II group (n = 6), the total time taken to complete the teacher-directed portion of the lesson during
### Table 1
Summary Information

<table>
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baseline and intervention is represented by Figures 3 and 4, respectively. The average total time taken during baseline was 51 minutes (see Figure 3), while the average total time taken during intervention was 35 minutes (see Figure 4). At one time during the intervention (Lessons 47 and 48) the group completed all of that day's lesson and began some of the next day's lesson (see Figure 4). During cross-level peer-tutoring, there was a savings of 16 minutes on average to complete the teacher-directed portion of the lesson to 100% mastery.

Also, the number of trials taken to complete the lesson checkouts for the Reading Mastery-II group is shown in Figure 5. During baseline and intervention, it took students 2 and 3 one trial to complete the checkouts to criteria. It took Student 1 one trial to pass all the checkouts during baseline and intervention with one exception, checkout 60, which took 2 trials. For Student 4, it took an average of 1.5 trials to pass the checkouts to criteria during baseline, and an average of 1.3 trials to pass them during intervention.

The Corrective Reading B1/B2 group (n = 5) took an average of 41 minutes during the baseline phase to complete the teacher-directed portion of the lesson to 100% mastery (see Figure 6). Figure 6 also shows that during the teacher-directed portion of the lesson, the students completed all of Lesson 41 and all of Lesson 42 to 100% mastery. The same group took an average of 35 minutes (see Figure 7) to complete similar lessons with the implementation of cross-level peer facilitated learning. From Figure 7, it is seen that for some
lessons, the students completed all the material for that day, and some of the following day's lesson. This is shown by an asterisk at the appropriate position. By comparing Figures 6 and 7, there was a savings of 6 minutes on average to complete the teacher-directed portion of the lesson to 100% mastery from baseline to intervention.

Figure 1. Baseline for Reading Mastery-I (n=9).
Figure 2. Intervention for Reading Mastery-I (n=9).

Lesson Number

L100  L99  L98  L97  L96  L95  L94  L93  L92  L91

Total Time to Complete Teacher Directed Portion of Lesson (Minutes)

0  5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85
Figure 3. Baseline for Reading Mastery-II (n=6).

TOTAL TIME TO COMPLETE TEACHER DIRECTED PORTION OF LESSON (MINUTES)

LESSON NUMBER

L20
L21
L22
L23
L24
L25
L26
L27
L28
L29
L30
L31
Figure 5. Number of Trials to Pass Checkout for Reading Mastery-II (n=4).
Figure 6. Baseline for Corrective Reading B1 & B2 (n=5).

TOTAL TIME TO COMPLETE TEACHER DIRECTED PORTION OF LESSON (MINUTES)
Figure 7. Intervention for Corrective Reading B1/B2 (n=5).
Discussion

The results of the present study indicate that pre-exposure to the reading lesson with cross-level peers can decrease the amount of time it takes for the group to complete the teacher-directed portion of the lesson to 100% mastery.

For all reading groups in the study, average time to complete the teacher-directed portion of the lesson decreased from baseline to intervention. Data collected for individuals in the Reading Mastery-II group showed that accuracy and rate in reading remained at a high level or improved when cross-level peer facilitated learning was implemented.

Throughout the intervention, the teacher recorded the instructional time for each reading lesson and the last task taught to 100% mastery. Data revealed that it took the Reading-Mastery-I group an average of 57 minutes to complete the teacher-directed portion of the lesson to 100% mastery during the baseline phase. After the intervention was implemented, it took the same group an average of 53 minutes to complete similar lessons. This savings of 4 minutes on average shows that with pre-exposure to the reading material, during a 35-minute instructional lesson, which was typically the allotted time for instruction by the teacher, the students could complete more lessons throughout the school year if this savings in time was maintained. The completion of more lessons may lead to reducing the performance gap between these special education students and their general education peers.
During baseline, the Reading Mastery-II group took an average of 51 minutes (see Figure 3) to complete the teacher-directed portion of the lesson to 100% mastery. When cross-level peer-tutoring was implemented, it took the same group an average of 35 minutes (see Figure 4) to complete the teacher-directed portion of the lesson to mastery criterion. This suggests that during a 35-minute instructional lesson, which was generally the time allotted for reading by the classroom teacher, the reading group could complete the entire teacher-directed portion of the lesson to 100% mastery. If this level of efficiency was maintained with cross-level peer facilitated learning, the students could move through the series at an optimal rate. For this group of students, many more lessons could be taught to mastery criterion during the school year. During the intervention, at one time, the group was able to complete all of that day's reading material and begin some of the next day's (see Figure 4). This further implies that the group could complete more lessons during the school year with the implementation of the cross-level peer-tutoring; therefore, moving toward closing the existing performance gap between the special education students in the Reading Mastery-II group and their general education peers.

Figure 5 shows the number of trials it took 4 students in the Reading Mastery-II group to pass the lesson checkouts to criteria during baseline and intervention. Students 1, 2, and 3 consistently passed the checkouts on the first trial during baseline and intervention, with one exception for Student 1, who took two trials to pass checkout 60. At baseline, Student 4 took an average of 1.5 trials to
pass the lesson checkouts, while it took the same student an average of 1.3 trials when cross-level peer facilitated learning was introduced. This finding suggests that for the Reading Mastery-II group, cross-level peer-tutoring did not negatively affect the high level of performance on accuracy or rate demonstrated before the intervention. This is illustrated in that although the group took less time to complete the teacher-directed portion of the lesson during intervention, the students continued to pass the lesson checkouts on the first trial, or improved on the number of trials needed, with one exception.

The teacher-directed portion of the lesson for the Corrective Reading B1/B2 group should take between 25 to 30 minutes (Engelmann et al., 1988c, 1988d). During baseline, the Corrective Reading B1/B2 group took an average of 41 minutes (see Figure 6) to complete the teacher-directed portion of the lesson to 100% mastery. An average of 35 minutes (see Figure 7) were needed by the same group to complete similar lessons with the implementation of cross-level peer facilitated learning. The classroom teacher assigned the maximum suggested time of 30 minutes to conduct the teacher-directed portion of the reading lesson. Also, several times during both baseline and intervention, the teacher provided an additional 5 minutes for the group to complete the teacher-directed portion if they were close to doing so. Prior to intervention, the group took an average of 11 minutes over the teacher allocated time. This shows that even with the additional 5 minutes for reading, the students on average could not complete the teacher-directed portion of the lesson. In
comparison, with cross-level peer-tutoring, the same group took only 5 minutes on average over the allocated time of 30 minutes. This shows that the additional 5 minutes provided was enough time to allow the group to finish the material scheduled for that day.

Both the Reading Mastery-I group, and the Corrective Reading group received 4 days of tutoring per week, while the Reading-Mastery-II group received 3 days. A possible reason that the Reading-Mastery-I group did not show a greater reduction in time to complete the teacher-directed lessons with 4 days of tutoring may be related to the fact that the students in this group are beginning readers. According to the classroom teacher, a large group of students with diverse reading abilities, it typically takes longer for some students to master the material, thus slowing the group's move to the next lesson. For the Corrective Reading B1/B2 group, not having a larger reduction in time for mastering the teacher-directed lesson during intervention may have been related to the level of difficulty of the material. In addition, the teacher skipped some lessons during both baseline and intervention. Within the Corrective Reading series, lessons build on the preceding lessons. Since this group did not complete the entire sequence, this could have increased the time needed to be spent on later lessons.

Although during intervention, three times the group was able to complete the teacher-directed portion of the lesson to criterion and begin some of the next day's lesson which is indicated by asterisks (see Figure 7), it is questionable if the ability to do this was due to the implementation of cross-level peer facilitated learning during
or time to do the lesson. For these lessons the teacher provided an additional 10 to 15 minutes to conduct the lesson, with the exception of Lessons 20 and 21.

Reading lessons were also skipped between baseline and intervention for the Reading Mastery-I group and the Reading Mastery-II group. This occurred because reading instruction did not take place every day due to other school activities and vacations. When this happened, instead of continuing the sequence of lessons the next day reading occurred, the teacher moved ahead to the lesson scheduled on the calendar for that day. Similarly, during intervention for the Reading Mastery-II group, as well as during baseline and intervention for the Corrective Reading B1/B2 group, lessons were skipped. According to Engelmann and Bruner (1983a, 1983b), if between five to eight errors are made on the proceeding lesson, the teacher can skip the next lesson and move ahead. This may be a reason as to why the classroom teacher for the Reading Mastery-I group skipped lessons.

For the Corrective Reading B1/B2 group, the decision to skip lessons during both the baseline and the intervention phase were teacher based. One goal of the Corrective Reading series is to work toward moving into the next level of the series. The teacher may have decided to skip lessons to move the group through the level at a faster rate. For this group, this may have allowed for the change in level from B1 to B2. In addition, due to other school activities and vacation occurring during the baseline phase, lessons were skipped. Instead of continuing with the next lesson to be taught the next time reading instruction occurred, the teacher began at Lesson 55.
Lastly, some data were not included due to a lack of completion of the lesson to 100% mastery. For this reason, data for lesson numbers 26, 33, 45, 55, and 56, were not included.
CHAPTER IV

CONCLUSIONS

The present study shows that with the implementation of cross-level peer facilitated learning, the students in the Reading Mastery-II group could complete to 100% mastery the teacher-directed portion of the lesson within the allocated time. The students in the Reading Mastery-I group and the Corrective Reading B1/B2 group could complete the teacher-directed portion to criterion in less time than prior to intervention. Overall, cross-level peer facilitated learning has been demonstrated to be an effective, efficient method to reduce the amount of time needed to complete the teacher-directed portion of the lesson to 100% mastery. As a result, additional lessons can be completed throughout the school year. In addition, the intervention has been shown to improve, or not negatively affect the accuracy or rate on reading checkouts although less time was taken to complete the lesson. For the special education students involved in the study, cross-level peer-tutoring had helped and is considered critical if the existing performance gap between these students and their general education peers is to be closed.

The results of the teacher attitude questionnaire revealed that for both classroom teachers, the tutoring had a positive effect in helping the students master the lesson and keep up with the pace of the material. The teachers considered the tutoring a worthwhile
activity and will do it again, as well as recommend it to other teachers. Some changes they would make included: starting the tutoring earlier in the year, and anticipating some students would not be comfortable with tutoring by their peers. This suggests that not only does cross-level peer facilitated learning have an educational implication, but also is considered a positive, worthwhile intervention by teachers.
CHAPTER V

IMPLICATIONS OF THE STUDY

1. During the study, tutoring occurred for a duration of 5 to 9 weeks. In this time, the students took less time to complete the instructional lesson to 100% mastery. A question arises whether there would be a greater reduction in time taken to complete the teacher-directed portion of the lesson to mastery; as well as increase in the number of lessons completed during the year, if tutoring was conducted throughout the school year? Further research should look at this issue, and see what the implications are on reducing the existing performance gap between special education students and their general education peers.

2. During the study not all students from two of the groups participated in every aspect of the study; however, the results reflect all members' average time taken to complete the teacher-directed portion of the lesson. Further research should involve conducting a similar study with every member of the group to see if tutoring provided to all members would have a significant effect on the time taken to complete the teacher-directed lesson.

3. During the study, lessons were skipped. For Direct Instruction, lessons build on the preceding lessons. A question arises, whether the skipping of lessons lead to the students not gaining the skills needed for the next lesson, which in turn cause them to take
additional time to master it. Also, the teacher of the Corrective Reading B1/B2 group did not conduct all of the lessons to 100% mastery, in that tasks comprising the teacher-directed portion were skipped. However, this group did show a reduction in time to complete the teacher-directed portion of the lesson from baseline to intervention. A question arises as to whether this group would have a greater reduction in time if all portions of the instructional lesson were completed to 100% mastery.

Without the completion of all portions of every lesson in sequence, concern arises regarding whether the students obtained the preceding skills necessary to complete the next reading lesson successfully in a reasonable period time. Further research should be conducted to see the impact between groups. Those in which the entire teacher-directed portion of the lesson was taught and the lessons were taught in sequence; and those groups in which lessons were skipped and the entire teacher-directed lesson was not always taught to 100% mastery. This information can be used to see whether these issues have a significant effect on the time needed by students to complete the teacher-directed lesson to 100% mastery.
Appendix A

Tutoring Point Sheet
## Tutoring Point Sheet

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Appendix B

Student Information Sheet
## STUDENT INFORMATION SHEET

**Tutor’s Name** ______________________________ 

**Youth Being Tutored** ______________________________ 

**Group** ______________________________ 

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Appendix C

Teacher Information Sheet
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**Group** __________________________

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Appendix D

Teacher Attitude Questionnaire
Teacher Attitude Questionnaire

1) Do you feel that the peer tutoring had a positive effect in helping the students master the lesson and keep up with the pace of the material? Why/Why not?

2) Would you use a similar procedure in the future and recommend it to other teachers? Why/Why not?

3) What would you change about the peer tutoring that occurred within your classroom?

4) Additional comments
Appendix E

Human Subjects Institutional Review
Board Approval Letter
Date: March 31, 1993
To: Elaine Bartos
From: M. Michele Burnette, Chair
Re: HSI RB Project Number 93-02-13

This letter will serve as confirmation that your research project entitled "The effects of cross-level peer facilitated learning on the mastery of a structured reading program" has been approved following full review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: March 31, 1994

xc: Farris, PSY
Appendix F

Informed Consent-General Education
Dear Parent/Guardian,

My name is Elaine Bartos and I am a second year school psychology student at Western Michigan University. Presently, I am working under the supervision of Mike Vreeland, the school psychologist at your child's school. We are asking your permission for your child to take part in a study. If your child takes part, he or she will be a helper for a student who needs extra practice in reading. Your child will be spending 15 minutes three days a week with another student at Edison. During this time, your child would help the student who needs extra practice in reading.

If your child is involved in this study, the work would take place beginning in April and continue until the end of the school year. The benefits for your child would be that he or she is getting an experience of learning how to work with others who are not as skilled and teach them, therefore helping him or her become better at a task.

You may choose not to have your child take part in this study, also you may choose to allow your child to take part in this study and later on decide you do not want him or her too, this is O.K., your child may stop at any time. Either way, there will be no negative consequences for you or your child.

Thank you for reading this, if you have any questions, please feel free to call myself, or Mike Vreeland at Edison Elementary School (616) 337-0550.

I give permission for (your child's name) __________________________

Your signature_________________________ Date________________
Appendix G

Informed Consent—Special Education
Dear Parent/Guardian,

My name is Elaine Bartos and I am a second year school psychology student at Western Michigan University. Presently, I am working under the supervision of Mike Vreeland, the school psychologist at your child's school. We are asking your permission for your child to participate in a study involving having him or her receive extra practice in reading. Your child would work with another student at Edison and together they would spend time studying the reading material used in your child's reading class.

The reason for this study is to determine if early practice with the reading material before it is presented in a lesson will decrease the number of errors made by the students in their reading groups; as well as increase the amount of material learned during the reading lesson. To see if this occurs, information needs to be taken from your child's reading group. The teacher along with the researcher will be collecting information on the number of exercises mastered during your child's reading lesson. This information will be used to see if there was a change in the amount of material that was taught from before your child had the early practice to when the early practice was given to him or her. Any information about your child to be removed from the school will not have your child's name on it. There will be a number given to your child's reading group instead.

If your child participates in this study, he or she may have the early practice during part of his or her class time. Every effort will
be made to have the early practice occur during nonteaching time.

If your child takes part in the study, the work would begin in April and continue until the end of the school year. It would involve 15 minutes of your child's time three days a week. If it is successful, the benefits to your child would be that he or she is able to read more material correctly during a reading lesson; as a result, more reading material will be able to be done. This would allow your child to improve his or her performance in reading.

If you wish you may choose not to have your child participate in the study. Also, if you permit your child to participate and later you no longer want him or her too, your child can withdraw from the study at any time. Either way, there will be no negative consequences for you or your child.

Thank you for taking time to read this, if you have any questions, please feel free to call either myself or Mike Vreeland at Edison Elementary School, (616) 337-0550.

______________________________
I give permission for (your child's name) to be part of this study.

Your signature _____________________________ Date ____________________
Appendix H

Informed Assent Form-General Education
Dear Student,

My name is Miss Bartos. I was wondering if you would help me with my school work? If yes, then for 15 minutes, three days a week you will be working with another student at Edison. With this student you and he or she would do some reading. Beginning in March and continuing until the end of the school year, the other student and you would go over his or her next day reading lesson. You would act like a teacher. Telling the student how to say words he or she may not know and listening to him or her read to you.

You do not have to agree to work with me. Also, if you do, and later do not want to, that is O.K., you may stop and nothing will happen to you.

If you have any questions ask me, your teacher, Mr. Vail, or Mr. Vreeland.

By signing my name below, I agree to work with Miss Bartos and the other student.

Print name here__________________________

Sign name here__________________________  Today's Date________________
Appendix I

Informed Assent Form—Special Education
Dear Student,

Hello, my name is Miss Bartos. I am asking you today if you would be willing to help me do some work for my school. If you say yes, then you and another student here at Edison will spend 15 minutes of the day with each other doing some reading. You will go over reading lessons which you will be doing with your teacher the next day. We want to see if going over the reading lesson with a student helps you read more words and sentences with your teacher.

You do not need to say yes, but if you do and later you want to stop nothing will happen to you.

If you have any questions please ask me, your teacher or Mr. Vreeland or Mr. Vail.

I want to do the reading lesson with another person from Edison
Put your name here ____________________________ Date ____________

Behavior Record Demonstrating Willingness to Participate

Verbal (i.e. began reading, did not say no)

Overt (i.e.: walk to seat without difficulty, sat up right, paid attention)
BIBLIOGRAPHY


