

4-2011

Grade Level and Gender Differences in a School-Based Reading Tutoring Program

Sau Hou Chang
Indiana University Southeast

Follow this and additional works at: https://scholarworks.wmich.edu/reading_horizons



Part of the [Education Commons](#)

Recommended Citation

Chang, S. H. (2011). Grade Level and Gender Differences in a School-Based Reading Tutoring Program. *Reading Horizons*, 51 (1). Retrieved from https://scholarworks.wmich.edu/reading_horizons/vol51/iss1/6

This Article is brought to you for free and open access by the Special Education and Literacy Studies at ScholarWorks at WMU. It has been accepted for inclusion in Reading Horizons by an authorized editor of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.





Grade Level and Gender Differences in a School-Based Reading Tutoring Program

Sau Hou Chang, Ph.D.

Indiana University Southeast, New Albany, IN

Abstract

The purpose of the present study is to investigate the grade level and gender differences in a school-based reading tutoring program. The treatment group included 10 first-grade and 12 second-grade struggling readers, and the control group included 41 first-grade and 63 second-grade nonstruggling readers. The tutors were teacher candidates in an elementary education program at a Midwest university. Each student in the treatment group was given four 30-minute tutoring sessions every week for one semester. Results showed that first-grade struggling readers had a significantly higher reading gain than second-grade struggling readers. In addition, first-grade male struggling readers had significantly higher exit Developmental Reading Assessment (DRA) scores than their entry DRA scores, but first-grade female struggling readers did not have significantly higher exit DRA scores than their entry DRA scores.

According to the 2007 National Assessment of Educational Progress (NAEP), 33% of fourth graders read below the basic level for their grade, and 67% of fourth graders read below the proficient level for their grade (Lee, Grigg, & Donahue, 2007). This statistic is of concern for many reasons, among them that students who fail to acquire basic reading skills during early grades are at risk not only for poor academic outcomes but also for problematic behaviors (Elbaum, Vaughn, Hughes, & Moody, 2000). In addition, Federal initiatives such as the America Reads Challenge Act of 1997 and the No Child Left Behind Act of 2001 proposed that all students would read independently by the end of third grade and both initiatives proposed that adult volunteers serve as individual reading tutors for students who were at risk for reading failure.

In a typical classroom, little time is available for individual students to read aloud under the classroom teacher's direct supervision. This lack of supervised reading time is particularly harmful to struggling readers who desperately need practice in a situation where feedback is available. A number of studies reported one-to-one tutoring as one of the best methods for working with students who were at risk for reading failure (Allor & McCathren, 2004; Hedrick, 1999; Moore-Hart & Karabenick, 2000; Vadasy, Jenkins, Antil, Wayne, & O'Connor, 1997). In fact, one-to-one tutoring was found to increase time on task, ensure instruction at the appropriate level, and afford timely reinforcement and corrective feedback during reading (Wasik & Slavin, 1993).

Research notes important features in successful reading tutoring programs. For example, Wasik (1998) reviewed four one-to-one tutoring programs and identified several common programmatic elements: structured tutoring sessions, ongoing training, regular participation, and supervision of tutors by a qualified professional. Leal, Johnson, Toth, and Huang (2004) identified other elements as important to the effectiveness of one-to-one tutoring: supervision by certified reading specialists, intensive instruction, assessment-based programming, and regular reflective evaluation on the part of the tutor. Morris (2006) reviewed five one-to-one tutoring programs and further found successful elements to include twice-weekly tutoring lessons with guided reading, word study and reading for fluency, and supervision of the tutoring by a knowledgeable reading teacher.

A number of school-based reading tutoring programs are based on these programmatic elements. Allor and McCathren (2004) developed a one-to-one reading tutoring intervention that included a game to teach phonemic awareness and letter-sound correspondence, structured word-study activities, reading of leveled books, and simple comprehension strategies. Hedrick (1999) designed a one-to-one reading tutoring program that included rereading familiar material, reading new material, writing about the new material, and working with words (word identification or vocabulary activities). Moore-Hart and Karabenick (2000) developed a tutoring program that focused on reading and comprehending literature, conducting word building strategies to reinforce knowledge of letter-sound relationships or word recognition activities to reinforce fluency, and engaging in reading/writing activities (i.e., choral readings, readers' theater, or journal writing). Vadasy, Jenkins, Antil, Wayne, and O'Connor (1997) developed a one-to-one phonologically-based tutoring

program that included letter sounds and beginning sound instruction, rhyming, auditory blending, segmenting, spelling and analogy use, story reading, and writing.

All of these school-based reading tutoring programs used nonprofessionals as tutors and found that the programs had a positive impact on the reading ability of the struggling readers. Allor and McCathren (2004) used minimally trained college students to tutor at-risk first-grade readers over a school year and found significant differences on measures of phonemic awareness, nonsense word reading, and real-word identification between the treatment and control groups. Hedrick (1999) used teacher education students to tutor third, fourth, and fifth graders throughout one school year and noted that students demonstrated measurable progress in reading at the end of the tutoring program. Moore-Hart and Karabenick (2000) had undergraduate students tutor culturally diverse elementary students aged 6 to 10 years old over one school year and their research showed that the reading tutoring benefited all students. Vadasy et al. (1997) used community volunteers to tutor at-risk first graders for one semester and found significant differences between the treatment and control groups on one nonword reading and one spelling measure.

Even though using nonprofessionals as tutors in school-based reading tutoring programs has been shown to be beneficial to struggling readers, little is known about the grade level and gender differences in tutoring programs. Leal et al. (2004) identified differences by grade level and gender in a four-month reading tutoring program. Tutors were undergraduate preservice teachers working on a reading endorsement to add to their licensure and data were collected from six different groups of students over the course of six years. The tutoring included fluency reading, reading aloud, writing, interactive games, and evaluations. Results of this study showed that even though students showed increase in reading skills, no differences were found among grade levels and gender. However, the lack of grade level and gender difference might have been due to the collection of data from six different groups of students over six years.

The purpose of the present study is to further investigate the grade level and gender differences in a school-based reading tutoring program using nonprofessionals as tutors. Specifically, two research questions are asked. First, is there a reading grade level difference in the reading gain of students in a school-based reading tutoring program? Second, does gender make a difference in the reading gain of students in a school-based tutoring program?

With limited resources, policy makers may not be able to provide tutoring programs to all struggling readers at all grade levels. The findings of this study could provide information on the gender and grade level that benefit more from the tutoring programs. Therefore, policy makers may refer to the findings in allocating the limited resources. This information could be critical for policy makers and others who want to develop their own school-based reading tutoring programs.

Method

Participants

The School

The elementary school participating in the present study was located in the urban fringe of a large city in the Midwest. In addition to classes from preschool through grade five, the school served as a magnet school for special education services including gifted and talented education. The school population was approximately 608 students in 2007 and was composed of 77% Caucasian, 10% multiracial, 9% African American, 2% Hispanic, and 2% Asian and half of the students received free or reduced lunches. The school employed 35 teachers and one full time school counselor. In addition to two computer laboratories at the school, there were a couple of computers for students to use in each classroom.

The Tutees

Table 1 presents the demographics of the 96 first graders and 94 second graders.

Table 1. *Demographics of the First and Second Graders*

	First Graders (N = 96)	Second Graders (N = 94)
Gender		
Male	58	49
Female	38	45
Lunch Status		
Free/Reduced Lunch	63	45
Ethnicity		
Caucasian	70	76
African American	11	6
Multiracial	8	11
Hispanic	3	3
Native American	2	0
Asian	2	0

At the beginning and end of the school year, all first and second graders were given the Developmental Reading Assessment (DRA) (Beaver, 2003). Forty-nine first graders (51%) and 24 second graders (26%) had reading scores below their grade levels. Twenty (41%) of these 49 first graders and 13 (54%) of these 24 second graders with the lowest DRA scores were selected for the tutoring program by their teachers to receive supplemental reading tutoring for one semester in addition to regular classroom instruction on reading. Among the 20 first graders, four were on Individual Education Plans (IEP), three moved to another school, and three had incomplete DRA scores and among the 13 second graders, one moved to another school. Since students on an IEP received additional instruction from special education services, their DRA scores were not included in the present study even though they remained in the tutoring program. Those students who moved anytime after the start of the tutoring program were also excluded. Students with incomplete scores were those who replaced the students who had moved, and their DRA scores were also excluded. Therefore, 10 first graders and 12 second graders with complete data were included in the treatment group. Forty-one first graders and 63 second graders who did not participate in the tutoring program were included in the control group.

The Tutors

The tutors were teacher candidates in the Elementary Education Program at a university also located in the Midwest. They were required to take their first undergraduate field experience as part of the course Educational Psychology and Child Development. In addition to classroom observation and journal writing, the tutoring program was part of the course requirements in their field experience. All teacher candidates successfully completed the tutoring program. The teacher candidates were randomly assigned to tutor students at different grade levels. There were 41 teacher candidates (8 male and 33 female) tutoring first graders and 34 teacher candidates (4 male and 30 female) tutoring second graders in the present study.

The School-Based Reading Tutoring Program

The tutoring program was initially designed by two teachers from the participating school and the reading specialists from the local school district. They used the state standards and school curriculum as the basis of the program. Teacher candidates attended a one-hour introductory session at the beginning of the semester to

learn how to implement the tutoring program. This session included the principal of the participating school providing an overview of the program, two teachers who designed the tutoring program discussing the instructional materials, and two reading specialists who designed the tutoring program introducing reading activities and tutoring techniques to teacher candidates.

The program focused on reading fluency, reading comprehension, building vocabulary, and practicing writing. Specifically, the structure of the first-grade program included reading a book, talking about main idea, plot, characters, and checking comprehension, reviewing unfamiliar words, writing a sentence about the story, putting the sentence in correct word order, and practicing sight words. The structure of the second-grade program included reading a story, answering comprehension questions, learning unfamiliar words in the story, practicing sight words and using them to make sentences, and writing letters to their teachers about something they read or learned that week.

The two schoolteachers who served as program coordinators were available the first time the teacher candidates conducted a tutoring session and generally modeled at least one session for each teacher candidate. A tutoring manual available for reference contained sample lesson plans for first and second graders and the program coordinators prepared a folder with the weekly tutoring materials for each student. At the end of each session, teacher candidates wrote their comments on student progress and assessed the students' reading, comprehension, and writing. The teacher candidate who came the next day to tutor the same student read the comments and decided where to start the next session. The program coordinators reviewed each student's folder to check progress and put new tutoring materials in the folders for the following week. Each student received 30 minutes of individual reading tutoring from Monday through Thursday for one semester. The teacher candidates provided 30 minutes of individual tutoring each week to two different students. Therefore, each student received a weekly total of two hours of one-to-one tutoring provided by four different teacher candidates and every teacher candidate provided 60 minutes of tutoring divided equally between two students each week.

Instrument

The Developmental Reading Assessment (DRA) (Beaver, 2003) is a criterion-referenced test with no normative data, and the test-retest reliability statistics range from .92 to .99. For the purposes of this study, the DRA was administered in a

one-to-one conference between the classroom teacher and the first- or second-grade student at the beginning and end of the school year as required by the school district. The teachers received DRA training previous to the study and all had prior experience in administering the assessment. The administration of the DRA began with the teacher or the student selecting a book that was at or near the student's level. The teacher introduced the selected text and asked the student to predict its outcome based either on an examination of the illustrations or from reading the beginning paragraphs aloud. The next step in the assessment was to have the student read aloud and retell the story. Finally, the teacher asked the student about her/his reading preferences, such as who read to her/him and what stories s/he liked to hear.

During the conference, the teacher made written observations about the student's responses and behaviors during the following activities: previewing and predicting, oral reading and strategies used, comprehension and response, and reading preferences. At the end of the conference, the teacher took the DRA continuum form associated with the selected text, and completed it with a rubric to describe the different levels of reading engagement, oral reading fluency, and comprehension. Using a list of pertinent statements, the teacher circled those that best described the results from the conference. After examining the pattern of circled statements, the teacher translated students' scores into reading levels and identified their strengths and weaknesses. The reading levels as defined by the DRA are presented in Table 2.

Table 2. *Reading Level of the Developmental Reading Assessment (DRA) (Beaver, 2003)*

Grade Level	Reading Level
Kindergarten	1-2
Grade 1	
Pre-Primer	3-8
Primer	10
Grade level	12-16
Grade 2	18-28
Grade 3	30-38
Grade 4	40
Grade 5	50
Grade 6	60

Results

Unless noted otherwise, a significant level of $p < .05$ was used on all statistical tests in this study. Table 3 presents the means and standard deviation of the entry and exit DRA scores by gender and group.

Table 3. Means and Standard Deviations of the Developmental Reading Assessment (DRA) by Gender, Grade levels, and Score ($N = 125$)

	Entry		Exit		Total		Reading Gain	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
First-Grade Tutored	2.55	(2.03)	17.20	(3.16)	10.20	(2.73)	14.65	(4.57)
Male ($n = 8$)	2.81	(2.20)	16.50	(2.33)	9.66	(2.27)	13.69	(4.25)
Female ($n = 2$)	1.50	(.71)	20.00	(5.66)	10.75	(3.19)	18.50	(4.95)
First-Grade Nontutored	7.65	(8.43)	18.61	(5.70)	13.08	(6.42)	10.96	(5.61)
Male ($n = 20$)	4.45	(4.06)	17.60	(5.05)	11.03	(4.56)	13.15	(3.86)
Female ($n = 21$)	10.69	(10.31)	19.57	(6.22)	15.13	(8.27)	8.88	(6.28)
Second-Grade Tutored	11.83	(4.22)	19.83	(7.00)	15.83	(5.34)	8.00	(5.46)
Male ($n = 6$)	12.00	(4.20)	22.67	(3.93)	17.33	(4.07)	10.67	(4.50)
Female ($n = 6$)	11.67	(4.63)	17.00	(8.56)	14.33	(6.60)	5.33	(5.32)
Second-Grade Nontutored	24.23	(6.66)	33.10	(7.48)	28.70	(7.13)	8.87	(4.26)
Male ($n = 28$)	24.57	(7.07)	33.71	(7.48)	29.14	(7.28)	9.14	(3.10)
Female ($n = 34$)	23.94	(6.39)	32.59	(7.56)	28.27	(6.98)	8.65	(5.06)

Reading Scores by Gender and Group

The DRA scores were analyzed in a 2 (score: entry, exit) x 2 (gender: male, female) x 4 (group: first-grade tutored, first-grade nontutored, second-grade tutored, second-grade nontutored) mixed Analysis of Variance (ANOVA), with score as a within-subjects factor, gender and group as between-subjects factors. Results showed a main effect of score, $F(1, 117) = 314.614, p < .001$, partial $\eta^2 = .729$, and a main effect of group, $F(3, 117) = 61.398, p < .001$, partial $\eta^2 = .612$. However, there was no main effect of gender, $F(1, 117) = .039, p = .843$, partial $\eta^2 = .000$.

There was an interaction between score and group, $F(3, 117) = 6.1, p = .001$, partial $\eta^2 = .135$. Further pair-wise comparison using a Bonferroni correction showed that all groups had higher exit DRA than entry DRA scores. No interaction

was found between score and gender, $F(1, 117) = 1.135, p = .289$, partial $\eta^2 = .01$, or between group and gender, $F(3, 117) = 1.673, p = .177$, partial $\eta^2 = .041$. However, there was an interaction between score, group and gender, $F(3, 117) = 2.961, p = .035$, partial $\eta^2 = .071$. Further pair-wise comparison using a Bonferroni correction showed that first-grade tutored male students had a higher exit DRA score ($M = 16.50, SD = 2.33$) than entry DRA score ($M = 2.81, SD = 2.2$). All first-grade nontutored students had higher exit DRA scores (Male: $M = 17.60, SD = 5.05$; Female: $M = 19.57, SD = 6.22$) than entry DRA scores (Male: $M = 4.45, SD = 4.06$; Female: $M = 10.69, SD = 10.31$). All second-grade nontutored students had higher exit DRA scores (Male: $M = 33.71, SD = 7.48$; Female: $M = 32.59, SD = 7.56$) than entry DRA scores (Male: $M = 24.57, SD = 7.07$; Female: $M = 23.94, SD = 6.39$). All second-grade tutored students, male or female, did not show difference between entry and exit DRA scores.

Entry and Exit Reading Scores by Gender and Group

Further analyses were done to compare the entry and exit DRA scores separately. A 2 (gender: male, female) x 4 (group: first-grade tutored, first-grade nontutored, second-grade tutored, second-grade nontutored) factorial Analysis of Variance (ANOVA) was conducted to compare the entry DRA scores by gender and group. There was a main effect of group, $F(3, 117) = 61.957, p < .001$, partial $\eta^2 = .614$. Further pair-wise comparison using a Bonferroni correction showed that second-grade nontutored students had a higher DRA entry score ($M = 24.23, SD = 6.66$) than second-grade tutored ($M = 11.83, SD = 4.22$), first-grade nontutored students ($M = 7.65, SD = 8.43$), and first-grade tutored ($M = 2.55, SD = 2.03$). Second-grade tutored students also had a higher DRA entry score ($M = 11.83, SD = 4.22$) than first-grade tutored students ($M = 2.55, SD = 2.03$). However, there was no main effect of gender, $F(1, 117) = .306, p = .582$, partial $\eta^2 = .003$, or interaction between gender and group, $F(3, 117) = 2.335, p = .077$, partial $\eta^2 = .056$.

In addition, a 2 (gender: male, female) x 4 (group: first-grade tutored, first-grade nontutored, second-grade tutored, second-grade nontutored) factorial Analysis of Variance (ANOVA) was conducted to compare the exit DRA scores by gender and groups. There was a main effect of group, $F(3, 117) = 47.063, p < .001$, partial $\eta^2 = .547$. Further pair-wise comparison using a Bonferroni correction showed that second-grade nontutored students ($M = 33.10, SD = 7.48$) had a higher DRA exit score than second-grade tutored ($M = 19.83, SD = 7.00$), first-grade

nontutored ($M = 18.61$, $SD = 5.7$), and first-grade tutored students ($M = 17.20$, $SD = 3.16$). However, there was no main effect of gender, $F(1, 117) = .035$, $p = .851$ partial $\eta^2 = .000$, or interaction between gender and group, $F(3, 117) = 1.305$, $p = .276$, partial $\eta^2 = .032$.

Reading Gain by Gender and Group

Table 3 also presents the means and the standard deviation of the reading gain between the entry and exit DRA scores by gender and group. A 2 (gender: male, female) x 4 (group: first-grade tutored, first-grade nontutored, second-grade tutored, second-grade nontutored) factorial Analysis of Variance (ANOVA) was conducted to compare the gain between entry and exit DRA scores by gender and groups.

There was a main effect of group, $F(3, 117) = 6.1$, $p = .001$, partial $\eta^2 = .135$. Further pair-wise comparison using a Bonferroni correction showed that first-grade tutored students had a significant gain of DRA score ($M = 14.65$, $SD = 4.57$) over second-grade tutored ($M = 8.00$, $SD = 5.46$) and second-grade nontutored students ($M = 8.87$, $SD = 4.27$). However, there was no main effect of gender, $F(1, 117) = 1.135$, $p = .289$, partial $\eta^2 = .01$. There was an interaction between gender and group, $F(3, 117) = 2.961$, $p = .035$, partial $\eta^2 = .071$. Further pair-wise comparisons using a Bonferroni correction showed that first-grade nontutored male students showed a significant higher gain of DRA scores ($M = 13.15$, $SD = 3.86$) than first-grade nontutored female students ($M = 8.88$, $SD = 6.28$).

Discussion

The purpose of the present study is to investigate the grade level and gender differences in a school-based reading tutoring program. Specifically, two research questions are asked. First, is there a reading grade level difference in the reading gain of students in the school-based reading tutoring program? Second, does gender make a difference in the reading gain of students in a school-based tutoring program?

Grade Level Difference

All students in the first- and second-grade, tutored or nontutored, showed significantly higher exit DRA scores than their entry DRA scores. No matter which grade students were in and whether or not students were in the school-based reading tutoring program, their reading scores were higher at the end of the school year

than at the beginning of the school year. Different factors may be involved in raising the DRA scores of all of the first and second graders, such as maturation, classroom reading instruction, reading tutoring program, and family reading environment. The regular reading activities throughout the school year seemed to be sufficient to improve the reading of nontutored students. However, without the tutoring program, there may not have been an increase in the exit DRA scores of struggling readers. The tutoring program and the regular reading activities seemed to improve the oral reading fluency and comprehension of struggling readers as measured by the DRA.

With a closer look at the increased DRA scores at the end of the school year, the first-grade tutored students had a significantly higher reading gain than second-grade tutored students. Even though the entry DRA scores of first-grade tutored students were significantly lower than those of second-grade tutored students, the gain in the exit DRA scores of first-grade tutored students did not significantly differ from those of second-grade tutored students at the end of the school year. It appears that the first-grade struggling readers benefited more than second-grade struggling readers from the early school-based reading interventions.

The critical role of first grade in reading acquisition, together with the one-to-one reading tutoring program, seemed to contribute to the significant reading gain of these first-grade struggling readers. Many children in the first grade begin to develop metalinguistic awareness (Woolfolk, 2010), their understanding of how language works becomes explicit, and they are able to study and extend the rules of language. This study supports the idea that the development of language knowledge and the assistance of tutoring programs are invaluable to first-grade struggling readers.

The high reading gain of the first-grade tutored students over second-grade tutored students does not mean that early school-based reading interventions do not benefit second-grade struggling readers. In fact, the entry and exit DRA scores of second-grade tutored students were significantly lower than those of second-grade nontutored students. However, there was no difference between the reading gain of second-grade tutored and second-grade nontutored students. Even though the second-grade struggling students started with lower entry scores and ended with lower exit scores than second-grade nonstruggling students, the school-based reading interventions did appear to help the second-grade struggling students achieve reading gains similar to second-grade nonstruggling students. Therefore, the tutoring

program did improve the reading of second-grade struggling readers, but to a lesser extent than their first-grade counterparts.

In response to the first research question, the present study found grade level difference in the reading gains between first-grade tutored students and second-grade tutored students as the first-grade tutored students had a significantly higher reading gain than second-grade tutored students.

Gender Difference

All first- and second-grade nontutored students, male or female, showed significantly higher exit DRA scores than their entry DRA scores, therefore no gender difference was found among nontutored students. Regular classroom reading activities seemed to work the same for both male and female students. On the other hand, no difference was found between the entry and exit DRA scores in second-grade tutored male and female readers. The tutoring program did not seem to be of specific benefit to second-grade male or female students. Even though the exit DRA scores were higher than the entry DRA scores, the difference was not large enough to be significant. The insignificant difference between the entry and exit DRA scores in tutored students may be due to the small number of participants as there were only six second-grade male, and six second-grade female struggling readers.

A gender difference was found between first-grade male and female struggling readers. First-grade male struggling readers had significantly higher exit DRA scores than their entry DRA scores, but first-grade female struggling readers did not have significantly higher exit DRA scores than their entry DRA scores. Consequently, early school-based reading interventions seem to benefit first-grade male struggling students more than first-grade female struggling students. There have been a greater number of males with reading problems reported in a number of studies (Limbrick, Wheldall, & Madelaine, 2008; Rutter et al., 2004). Hawke, Olson, Willcut, Wadsworth, and DeFries (2009) pointed out that greater variance of reading performance in males may account for their higher prevalence of reading difficulties. With lower reading scores, male struggling readers are likely to show greater improvements with reading intervention. The greater variance of reading performance in males (Hawke et al., 2009) may account for their better response to tutoring programs.

In addition to entry and exit DRA scores, a better picture of gender difference in the school-based tutoring program is to look at the reading gains. No difference was found between the reading gain of second-grade male and female students,

regardless of whether they were in the tutoring program or not. Regular classroom reading activities and participation in the tutoring program had the same impact on the reading gains of all second-grade male and female students. Also, no difference was found between the reading gain of first-grade tutored male and female students. Although first-grade tutored male students showed significantly higher exit DRA scores than their entry DRA scores, their reading gain was the same as first-grade tutored female students.

Another gender difference in reading gains was found between first-grade nontutored male and female students. First-grade nontutored male students showed a significantly higher reading gain than first-grade nontutored female students. Classroom reading activities benefited first-grade nonstruggling male students more than first-grade nonstruggling female students.

In response to the second research question, the present study found that gender played a part in the difference between the reading scores of first-grade tutored male and female students. First-grade male struggling readers had significantly higher exit DRA scores than their entry DRA scores, but first-grade female struggling readers did not have the same.

Implications for Reading Tutoring Programs

Reading Intervention Should Start Early

The present study found a grade level difference in individual success in the school-based reading tutoring program. Specifically, first-grade tutored students had a significantly higher reading gain than second-grade tutored students. This research supports the idea that school-based reading interventions should start as early as first grade, if not before. To receive federal funding for the schools, students in American public schools are required to take state achievement tests. For example, students in Indiana take the Indiana Statewide Testing for Educational Progress-Plus (I-STEP+) which includes English and math from grades 3-8, science from grades 4 and 6, and social studies from grades 5 and 7 (Indiana Department of Education, 2011). Illinois requires the Illinois State Achievement Test (ISAT) that includes reading and math from grade 3-8, and science from grades 4 and 7 (Illinois State Board of Education, 2011). Students in Ohio take the Ohio Achievement Test that includes reading and math from grades 3-8, science and social studies from grade 5 and 8, and writing from grade 4 and 7 (Ohio Department of Education, 2011). Even

though state achievement tests do not start until grade 3 in these states, school-based reading interventions should start as early as first grade so that the biggest reading gains can be achieved well before the state achievement tests.

In fact, Reading Recovery, an early intervention program to help low-achieving first graders to learn to read, reported that approximately 75% of students who completed the full 12- to 20-week individualized intervention could meet grade-level expectations in reading and writing (Reading Recovery Council of North America, 2010). The success of Reading Recovery is encouraging, but the cost of providing one-to-one reading intervention to all first graders by a specially trained Reading Recovery teacher is discouraging.

To help struggling first graders to read, a school-based reading tutoring program may be an alternative to the Reading Recovery program. Even though the described school-based reading tutoring program does not provide sustained individualized intervention by trained reading specialists, the one-to-one support and instruction may be the more crucial component to the reading improvement of struggling readers. However, important features suggested by successful reading tutoring programs (i.e., Leal et al., 2004; Morris, 2006; Wasik, 1998) should be considered when developing a school-based reading tutoring program designed to benefit struggling readers.

Male Struggling Readers Benefit More from Early Intervention

The present study also found a gender difference in the effectiveness of this school-based reading tutoring program. Specifically, first-grade male struggling readers had significantly higher exit DRA scores than their entry DRA scores, but first-grade female struggling readers did not have the same benefit. Since first-grade male struggling students benefited more than first-grade female struggling students, school-based reading interventions may target male struggling readers to gain higher reading scores. If limited resources are available to school-based tutoring programs, priority might be given to first-grade male struggling readers who need one-to-one instruction.

The Use of Teacher Candidates as Tutors

The present study found an increase of exit DRA scores of struggling readers at the end of a school-based tutoring program. Specifically, all tutored students in the first- and second-grade showed significantly higher exit DRA scores than

their entry DRA scores. With such a promising result from using teacher candidates as tutors in the school-based tutoring program, teacher educators may want to incorporate this idea when they design the field experience or practicum for teacher candidates. Not only will a school-based tutoring program benefit struggling readers, it will also provide an opportunity for teacher candidates to explore their passion for teaching and practice their knowledge of pedagogy and reading assessment and instruction.

Limitations of the Study

Even though the present study found grade level difference in the reading gains between first-grade tutored students and second-grade tutored students, and gender differences between the reading scores of first-grade tutored male and female students, there are a number of limitations to be considered in applying these findings.

First, there were confounding variables attributing to the reading gains. The DRA test was administered at the beginning and the end of the school year, but the tutoring program only lasted for one semester. What happened between the end of the tutoring program and the administration of the exit DRA test may have confounded the findings of the present study. The differences between the entry and exit scores of the tutoring group may have not come solely from the tutoring program.

Second, there were a small number of students in the tutoring program as there were only eight male and two female first graders and six male and six female second graders in the tutoring program. With such a small number of students in the tutoring program, even though the differences of the reading scores seem very big, it may not be statistically significant. To reach significant difference, the reading scores have to be very far apart.

Third, there were four tutors tutoring each student. Even though the intervention materials were the same for all tutored students, different tutors may have delivered the materials differently. Thus, the integrity of the tutoring program poses another concern.

Recommendations for Future Studies

With a promising result of using nonprofessionals as tutors in school-based reading tutoring programs, more studies should be conducted to inform those who

would like to develop their own school-based reading tutoring programs. First, if first-grade struggling readers improved more than second-grade struggling readers, would kindergarten struggling readers improve more than first-grade struggling readers? Second, if first-grade male struggling readers responded the best to school-based tutoring programs, would first-grade female struggling readers respond better to different types of reading intervention?

Conclusions

The present study supports the federal initiatives for school-based reading tutoring programs recruiting adult volunteers as individual reading tutors for struggling readers at elementary schools. The promising findings of the present study may encourage more schools to develop their own school-based reading tutoring programs and seek volunteers as individual reading tutors from the community or local higher education institutions. Teacher educators may also consider using teacher candidates as tutors when they design their field experiences. When considering the best use of resources to develop school-based reading tutoring programs, it is important to consider the grade level and gender of struggling readers. The school-based reading tutoring program should also start early since first-grade struggling students had a significantly higher reading gain than second-grade struggling students. In addition, priority should be given to first-grade male struggling readers since they had significantly higher exit DRA scores than their entry DRA scores.



References

- Alor, J., & McCathren, R. (2004). The efficacy of an early literacy tutoring program implemented by college students. *Learning Disabilities Research & Practice, 19*, 116-129.
- Beaver, J. M. (2003). *Developmental reading assessment*. NJ: Pearson Education.
- Elbaum, B., Vaughn, S., Hughes, M. T., & Moody, S. W. (2000). How effective are one-to-one tutoring programs in reading for elementary students at risk for reading failure? A meta-analysis of the intervention research. *Journal of Educational Psychology, 92*, 605-619.
- Hawke, J. L., Olson, R. K., Willcutt, E. G., Wadsworth, S. J., & DeFries, J. C. (2009). Gender ratios for reading difficulties. *Dyslexia, 15*, 239-242.
- Herick, W. B. (1999). Pre-service teachers tutoring 3rd, 4th, and 5th graders one-on-one within the school setting. *Reading Research and Instruction, 38*, 211-219.
- Illinois State Board of Education. (2011). *Student assessment-ISAT*. Retrieved from <http://www.isbe.state.il.us/assessment/isat.htm>
- Indiana Department of Education. (2011). *ISTEP+ Spring 2010 Results*. Retrieved from <http://www.doe.in.gov/assessment/2010/>
- Leal, D., Johanson, G., Toth, A., & Huang, C. (2004). Increasing at-risk students' literacy skills: Fostering success for children and their preservice reading endorsement tutors. *Reading Improvement, 41*, 51-72.
- Lee, J., Grigg, W., & Donahue, P. (2007). *The Nation's Report Card: Reading 2007* (NCES 2007-496). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.
- Limbrick, L., Wheldall, K., & Madelaine, A. (2008). Gender ratios for reading disability: Are there really more boys than girls who are low-progress readers? *Australian Journal of Learning Difficulties, 13*, 161-179.
- Moore-Hart, M., & Karabenick, S. A. (2000, April). *Becoming successful readers: A volunteer tutoring program for culturally diverse students*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED 443077).
- Morris, D. (2006). Using noncertified tutors to work with at-risk readers: an evidence-based model. *The Elementary School Journal, 106*, 351-362.
- Ohio Department of Education. (2011). *What's expected?* Retrieved from <http://ohio3-8.success-ode.state-oh-us.info/WhatExpected/Default.aspx?transition=None>
- Reading Recovery Council of North America. (2010). *Reading recovery: Basic facts*. Retrieved from http://www.readingrecovery.org/reading_recovery/facts/index.asp

- Rutter, M., Caspi, A., Fergusson, D. M., Horwood, L. J., Goodman, R., Maughan, B., Moffitt, T. E., & Carroll, J. (2004). Gender differences in reading difficulties: Findings from four epidemiology studies. *Journal of the American Medical Association*, *291*: 2007-2012.
- Vadasy, P. F., Jenkins, J. R., Antil, L. R., Wayne, S. K., & O'Connor, R. E. (1997). The effectiveness of one-to-one tutoring by community tutors for at-risk beginning readers. *Learning Disability Quarterly*, *20*, 126-139.
- Wasik, B. (1998). Using volunteers as reading tutors: guidelines for successful practices. *The Reading Teacher*, *51*, 562-570.
- Wasik, B. A., & Slavin, R. E. (1993). Preventing early reading failure with one-to-one tutoring: a review of five programs. *Reading Research Quarterly*, *28*, 178-200.
- Woolfolk, A. E. (2010). *Educational Psychology* (11th ed.). Boston: Allyn & Bacon.

About the Author

Sau Hou Chang is an Assistant Professor in Educational Psychology at Indiana University Southeast. She teaches Educational Psychology and Child Development, and supervises field experiences. Her current research focuses on the application of cognitive psychology to education, supporting struggling readers, and professional development of teacher candidates.

