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Intervention After Grade 1: Serving Increased Numbers of Struggling Readers Effectively

The present study replicated the original evaluation of the Howard Street tutoring model (Morris, Shaw, & Perney, 1990), an intervention for struggling readers in second and third grade. It also evaluated the effectiveness of supervised paraprofessionals (Title I aides) in delivering that tutorial.

For an entire school year, teachers or paraprofessionals, working under the supervision of a reading specialist, tutored 40 struggling readers twice per week for 45 minutes per session. The tutored group's instruction included guided reading in leveled texts with controlled vocabulary, word study, and reading for fluency. The control group's instruction, which was provided daily in a small-group context, featured guided reading and phonics work in the classroom basal reader. Analysis of covariance was used to compare the performance of the two groups on several end-of-year reading measures. Results showed that, overall, the tutored group outperformed the control group on each of the posttest reading measures (standardized and informal). In addition, the subset of students tutored by paraprofessionals outperformed the control students. In fact, results indicated that in the structured tutoring context, paraprofessional tutors were almost as effective as certified teachers.

There continues to be strong interest in one-to-one intervention for primary-grade students who experience reading difficulties (Hiebert & Taylor, 2000; Snow, Burns, & Griffin, 1998; Swanson, Hoskyn, & Lee, 1999). Wasik and Slavin (1990) pointed out that supplemental tutoring can increase the amount of time a child spends reading text while receiving

immediate and necessary performance feedback. In addition, a tutor can completely adapt the level and pace of instruction to the needs of the child. If a child requires additional instruction at a particular level, this can be provided; if a child is experiencing success, the tutor can quickly move forward. Wasik and Slavin (1990) correctly noted that such individualized pacing is not possible in even "one-to-two or one-to-three instruction, where adaptation to individual needs becomes progressively more difficult" (p. 6). Therefore, despite the fact that one-to-one tutoring of struggling beginning readers is time-consuming and expensive, many reading authorities agree that it can be a very effective form of intervention (see reviews by Shanahan, 1998; Shanahan & Barr, 1995; Wasik & Slavin, 1993).

Intervention in Grade 1: Research Findings and Concerns

Most current tutorial interventions target at-risk first-grade children. Some research-tested programs include Reading Recovery (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994), Book Buddies (Invernizzi, Rosemary, Juel, & Richards, 1997), and Early Steps (Morris, Tyner, & Perney, 2000; Santa & Hoien, 1999). An emphasis on first-grade intervention stems from evidence that students who do not experience reading success in first grade are likely to continue as poor readers (Bruck, 1992; Juel, 1988; Stanovich, 1986). Further impetus comes from studies showing that children at risk for reading difficulties can be identified before formal instruction begins (Hurford et al., 1994). Empirical evaluations of first-grade interventions have shown that one-to-one tutoring can help at-risk first-grade readers get off to a more successful start than control group peers who receive more conventional small-group instruction (see Pinnell et al., 1994; Santa & Hoien, 1999).

Despite an overall positive history in both theory and practice, several concerns have been raised about first-grade interventions. In Reading Recovery, not all first graders who receive tutoring achieve grade-level performance by the end of the year. Even after 60 or more lessons, 15% to 30% of Reading Recovery students are not discontinued successfully (Center, Wheldall, Freeman, Outhred, & McNaught, 1995), and some children are removed from the program early if they make insufficient progress

(Shanahan & Barr, 1995). In addition, students may be discontinued when they reach or exceed the class average, or when they complete 20 weeks of intervention. In schools where the class reading average is well below national norms, or where 20 weeks is not sufficient for satisfactory progress, this means that intervention ceases before some Reading Recovery students reach desired grade-level standards.

Students who receive Early Steps tutoring average between primer and end-of-first grade level on passage-reading measures administered at the end of the year, significantly outperforming their control group peers, who tend to finish first grade at the preprimer level (Brown et al., 2000; Morris et al., 2000; Santa & Hoien, 1999). But this means that while most Early Steps students make substantial progress as readers, some of them exit first grade not yet solidly on grade level.

Follow-up investigations of these first-grade interventions suggest that the heightened performance trajectory achieved in first grade may flatten somewhat in subsequent grades, when intensive intervention is no longer provided (Brown et al., 2001; Hiebert & Taylor, 2000; Shanahan & Barr, 1995). Thus, whereas one-to-one tutoring may accelerate students' reading performance in first grade, it may not be sufficient to "finish the job." Some struggling readers may require intervention in subsequent years in order to reach or maintain grade-level performance.

Intervention in Grade 1: Who Provides It?

Another concern about first-grade reading interventions that is frequently raised by administrators is resource allocation. One-to-one tutoring is always costly, but especially so when highly trained reading specialists tutor only a small number of first graders each day. (A Reading Recovery tutor serves approximately four students per half-day.) It is estimated that in some high-poverty schools, as many as 40% of the primary-grade students may be reading below grade level (NAEP, 1995). In these schools, a reading specialist working one-to-one obviously cannot serve all the children who need and deserve help. To address the problem of numbers served, some schools have implemented low-cost volunteer programs, using unpaid adults or college students earning minimum wage to tutor at-risk

first-grade readers (Baker, Gersten, & Keating, 2000; Fitzgerald, 2001; Invernizzi et al., 1997). Because this approach bears directly on the present investigation, we will examine the extant research carefully.

In Invernizzi et al.'s (1997) Book Buddies intervention, community volunteers tutored low-reading first graders twice per week for 45 minutes per session. The volunteer tutors followed a structured lesson plan, which included (a) rereading of carefully leveled stories, (b) a phonics lesson geared to the child's needs, (c) sentence writing in which the child was assisted in "hearing" sounds within words, and (d) guided reading of a new story. It is important to note that a reading specialist "supervised" volunteers in a ratio of 1:5, observing the lessons, modeling as necessary, and assisting the volunteers with lesson planning. At the end of the school year, the reading performance of children who received 40 or more lessons (N = 130) was compared to the performance of children who received less than 40 lessons (N = 38). The full treatment group outperformed the partial treatment group on word recognition (d = .98), but there was no comparison of the groups on contextual reading. Invernizzi et al. did provide evidence that tutored children's performance increased across three successive cohorts of the Book Buddies program.

Fitzgerald's (2001) investigation of a first-grade intervention was similar to the Invernizzi et al. (1997) study in design, if not in implementation. Work-study college students tutored at-risk first- and second-grade readers twice per week, using a 40-minute lesson plan similar to that used in Book Buddies. The college tutors received 12 hours of training prior to tutoring and another 10 hours across the school year. However, they were not closely supervised with regard to lesson planning or intervention delivery. In fact, the seven tutor coordinators (or supervisors) in Fitzgerald's program were graduate students who had little background in reading. As did Invernizzi et al. (1997), Fitzgerald used a within-program comparison group to evaluate program effectiveness. She found that first and second graders who received 25 weeks of tutoring (N = 64) outperformed controls who received 6 to 12 weeks of tutoring (N = 19) on several measures. However, Fitzgerald did not separate the first- and second-grade achievement results; thus, it is not possible to determine if high-treatment students at one grade level significantly outperformed low-treatment students at that level.

Baker et al. (2000) took a different approach with their volunteer tutoring program, Start Making a Reader Today (SMART). SMART was a large-scale tutoring program, serving more than 7,000 students in the state of Oregon. Because of its widespread implementation, SMART was designed as a supplemental program that would place minimal demands on those who coordinated the tutoring (i.e., AmeriCorps workers or teacher assistants who had little formal training in reading). Tutor training was relatively brief (one to two hours) and focused on increasing students' motivation to read. In addition, a volunteer handbook, provided to each tutor, described four basic teaching strategies: (a) read to the child, (b) read along with the child (i.e., choral read), (c) read a section of text and then have the child reread it, and (d) ask questions as the child reads. In Baker et al.'s evaluation of SMART, they followed the progress of 43 children who were tutored across Grades 1 and 2. The children were tutored for 30 minutes twice per week, receiving, on average, 73 lessons over the two-year period. At the end of first grade (or after 36 tutoring lessons), Baker et al. compared the achievement of the SMART-tutored children with control group peers who were not tutored. The researchers found a statistically significant difference favoring the tutored group on an informal, oral reading measure, but no statistically significant difference on two standardized reading measures (Woodcock word identification and Woodcock passage comprehension; Woodcock, 1987).

There are similarities among these volunteer tutor programs. In each program, volunteers worked one-to-one with at-risk first grade readers for 30 to 45 minutes twice per week. The programs differed, however, in the amount of guidance or supervision provided to the volunteer tutors. In the Invernizzi et al. study, an on-site reading specialist mentored the volunteers and closely monitored the content and pacing of their lessons. In the Fitzgerald study, volunteer tutors were provided with training sessions throughout the school year; however, they received little guidance in planning lessons and little on-site feedback regarding their teaching technique. Finally, the Baker et al. SMART program provided virtually no training or supervision for volunteer tutors. The idea seemed to be that literate, well-meaning adults would respond intuitively and effectively to the needs of struggling young readers.

The appeal of volunteer tutoring programs in first grade is that a large number of struggling beginning readers can receive one-to-one help. However, the evidence produced by the three studies just reviewed is tenuous. The Invernizzi et al. (1997) and Fitzgerald (2001) studies produced positive results, but the researchers used an unconventional, within-program control-group design. In these studies, the finding that students who received more of the treatment did better than students who received less is suggestive, but not conclusive. The Baker et al. (2000) study, which did use a conventional control group, showed a significant difference between the tutored and control students on an informal measure of oral passage reading, but no significant differences between the two groups on two standardized measures of reading achievement.

Broadening the Intervention Focus: Beyond Grade 1

Schools serving large numbers of at-risk readers often look for alternatives to expensive, teacher-staffed interventions. If such schools still want to achieve the power of one-to-one reading intervention in first grade, some evidence supports the use of community volunteers as reading tutors. Book Buddies (Invernizzi et al., 1997) is a good example of such a program. But is first grade the only, or even the optimal, time period to intervene with nonprofessional reading tutors? Could, for example, volunteer tutoring in second and third grade produce equally good results? Researchers have not directly addressed this question. However, two control-group studies did examine the effectiveness of volunteer tutoring beyond first grade.

In the SMART volunteer tutoring program, Baker et al. (2000) followed 43 low readers who were tutored in first grade and continued to receive tutoring in second grade. At the end of first grade, the tutored group outperformed the control group on an informal oral reading measure ($d = .53$) but not on standardized measures of word identification and passage comprehension. At the end of second grade, the tutored group outperformed the control group on the informal oral reading measure ($d = .53$) and on the standardized word identification measure ($d = .44$). However, it is difficult to determine how much of the achievement difference at the end of second grade should be attributed to first-grade tutoring and how much to second-grade tutoring.

The Howard Street Tutoring Program (Morris et al., 1990) was another volunteer effort that focused on struggling readers beyond first grade. In this after-school program conducted in an urban Chicago neighborhood, college students, community residents, and suburbanites tutored struggling second- and third-grade readers two times per week for 60 minutes per session. Under the close supervision of a reading specialist, the volunteer tutors provided the children with systematic instruction in guided reading, word study, writing, and reading for fluency. The children, on average, received 50 tutoring lessons during the year. Data collected on two year-long cohorts of tutored students ($N = 30$) and their matched controls showed effect sizes in favor of the tutored group that ranged from moderate ($d = .61$; $d = 69$) to large ($d = 1.07$; $d = 1.78$) for word recognition and passage reading, respectively. Moreover, at the end of the year, one-third of the tutored students had reached grade level, and another third had progressed a full year in reading ability. This finding was in contrast to a control group in which only one student reached grade level and only 20% gained a full year of reading ability.

The results from the Howard Street study (Morris et al., 1990) suggest that a volunteer tutoring program that serves struggling second- and third-grade readers might be an important complement to a first-grade intervention. That is, providing less intensive, but ongoing, tutoring to intervention students who do not reach grade-level expectations at the end of first grade may help them reach grade level by the end of second or third grade (see Morris, 2003). For intervention students who achieve or come close to achieving grade level in first grade, the second-grade tutorial may help maintain or even strengthen their reading achievement. And, finally, for at-risk children who, for whatever reason, do not receive reading support in first grade (e.g., the school did not have enough first-grade intervention slots), volunteer tutors in second or third grade can provide desperately needed one-to-one reading assistance.

What degree of supervision is needed in a tutoring program that seeks to provide this kind of intervention for struggling second and third grade readers? In her review of 17 volunteer tutoring programs, Wasik (1998) stated

> The first [similarity among the programs] concerns the presence of a designated coordinator who knows about reading and reading instruction. It seems essential that a knowledgeable person provide a basic understanding of the reading process to volunteers and also give them feedback on their tutoring sessions. (p. 282)

The Howard Street tutoring program achieved notable results with a supervisor-tutor ratio of 1 to 10. That is, the reading specialist "supervisor" planned lessons for 10 tutor-child pairs and also observed the lessons to monitor progress and adjust instruction as needed. Although the time devoted to lesson planning was considerable (approximately 90 minutes for each tutoring day), such planning allowed the reading specialist to "extend his/her reach," providing quality one-to-one reading instruction to 10 struggling readers.

Unfortunately, volunteer tutors may be difficult to recruit in some communities. Adults in the immediate community may have work schedules that preclude volunteering, and potential sources of tutors such as colleges, businesses, or retirement villages may be far away. Therefore, a question arises: Can other school-based personnel effectively deliver the Howard Street model of intervention? Many schools—especially those with Title I funding—employ large numbers of noncertified teachers as paraprofessionals or teacher aides (Rowan & Guthrie, 1989). To date, long-term evaluations of Title I programs suggest that paraprofessionals' impact on student achievement has been negligible (see Slavin, Karweit, & Wasik, 1994; Word et al., 1990). However, given a one-to-one context and professional supervision, could Title I aides provide effective intervention for struggling readers? This is an important question for schools with large numbers of at-risk readers, limited resources, and few prospects for community volunteers.

Using paraprofessionals to tutor struggling readers raises questions of training and supervision. Research suggests that tutoring effectiveness varies not only across, but also within, programs (Shanahan, 1998). Not surprisingly, tutors with more training and experience are more effective at improving student achievement (Cohen, Kulik, & Kulik, 1982; Wasik, 1998; Wasik & Slavin, 1993). Allington (2000) raises serious questions about the qualifications of many educators who work with readers most

in need, suggesting that these students often are served by teachers and tutors with the least experience and background. Therefore, achieving maximum effectiveness with Title I aides as intervention tutors would seem to require high-quality, ongoing professional development and supervision. However, a search of the research literature (Psychlit, ERIC 1985-2001) revealed no experimental or quasiexperimental investigations of programs that used supervised paraprofessionals to tutor struggling readers.

The Current Study

Concerns associated with current models of first-grade intervention, the possibilities suggested by the Howard Street tutoring model, and the lack of research on the effectiveness of Title I aides as reading tutors provided impetus for the current study. Further impetus was provided locally by district administrators and reading specialists who believed that more needed to be done to address the needs of struggling readers beyond Grade 1. Thus, we decided to pilot an adaptation of the Howard Street tutoring program in three elementary schools under the name "Next Steps." The present study had two purposes. First, we attempted to replicate the evaluation of the Howard Street tutoring model (Morris et al., 1990). The original study had been conducted after school hours in a community center using university-based reading specialists to supervise the volunteer tutors. We wanted to see if tutoring could be done during school hours with school-based reading teachers assuming responsibility for tutor supervision. Second, we attempted to evaluate the effectiveness of supervised paraprofessionals (Title I aides) as intervention tutors.

Method

All students attended one of seven Title I elementary schools located in a large, urban school district in the Intermountain West. Prior to commencement of the study, all seven schools provided tutoring (Reading Recovery, Early Steps, or Reading One-To-One) for at-risk first graders and small-group, supplemental instruction for struggling readers above Grade 1. Using a quasiexperimental, matched pairs design, three Early Steps schools were assigned to the treatment condition (Next Steps), and four Reading Recovery and/or Reading One-To-One schools were assigned to the comparison condition (small-group Title I instruction).

Participants

Students. Student demographics were similar across treatment and control schools. Specifically, in treatment schools, 40% of the students were of color, 24% were English Language Learners (ELL), and 48% qualified for free or reduced lunch. In control schools, 43% of the students were of color, 25% were ELL, and 44% qualified for free or reduced lunch.

Students in the treatment group were selected in the following manner. Classroom teachers identified their lowest 12 readers, to whom we administered pretests. To be included in the treatment group, a child had to meet criteria on the pretests (see below for information about tests). Specifically, second graders had to score at least 10 on the word recognition test and read contextually at the preprimer to primer level. Third graders (or above) had to score at least 14 on the word recognition test and read contextually at the primer to early-second-grade level. Thus, although the classroom teachers initially identified a pool of potential subjects, inclusion in the treatment group depended additionally on children's pretest performance demonstrating that they fell below grade level, yet possessed the minimum reading skills necessary to benefit from a twice weekly intervention. Once the treatment-group students had been selected ($N = 43$), each was matched to a child from a large pool of comparison students to whom the same pretests had been administered.

Forty students from the treatment schools were available for both pretests and posttests: 20 second graders, 15 third graders, 3 fourth graders, and 2 fifth graders. Forty-three students from the comparison schools completed the pretests and posttests: 17 second graders, 17 third graders, 4 fourth graders, 2 fifth graders, and 3 sixth graders.

Tutors. Certified teachers and paraprofessionals employed at the seven schools participated as tutors in this study. The teaching experience of treatment-group and comparison-group instructors was similar, with averages of 10.8 ($SD = 9.6$) and 10.1 ($SD = 7.5$) years of experience, respectively. Treatment group tutors included 18 certified teachers (i.e., classroom teachers, special educators, and reading specialists) and 16 paraprofessionals (i.e., Title I or ELL aides). The classroom teachers and special educators, whose participation in the study was voluntary, viewed one-to-one tutoring in the

treatment group as a rare professional development opportunity. They each tutored one child from their respective classrooms. The reading specialists and paraprofessionals tutored (one-to-one) from one to three students, randomly assigned from the remaining students in the treatment pool.

In the comparison schools, certified teachers ($N = 18$) and paraprofessionals ($N = 12$) provided district Title I reading intervention; that is, small-group, supplemental instruction in Open Court, the district's adopted reading program (*Collections for Young Scholars*, 1997). The comparison-group teachers and paraprofessionals worked with small groups of two to six students. Teachers worked with students from their homerooms and the remaining students were randomly assigned. All comparison group tutors—including the paraprofessionals—had from one to three years' experience teaching the Open Court program.

District requirements and expectations for paraprofessionals were similar across treatment and control schools. All paraprofessionals held high school diplomas. A few (four in the treatment group and five in the control group) held associate's degrees. At the time of the study, all paraprofessionals were seeking to demonstrate that they met the definition of "highly qualified" for new federal requirements and, as such, were involved in the same district-wide professional development experiences.

Supervisors. Three reading specialists, one at each treatment school, assumed the role of Next Steps supervisor. All three supervisors had completed a master's program in reading and were experienced primary-grade teachers. They began the study having completed a one-year practicum in tutoring at-risk first-grade readers (see Morris et al., 2000). None of the supervisors had previous experience tutoring students beyond grade one or supervising the tutoring efforts of other teachers. The supervisors' responsibilities included initial assessment, placement of students with tutors, materials preparation, scheduling, tutoring at least three students, coaching tutors, and serving as a liaison between the lead trainer and the tutors.

The coaching aspect of the supervisors' role was extremely important and warrants explanation. Each supervisor served as an on-site coach for the Next Steps tutors (teachers and paraprofessionals) at her school. After students were assessed and assigned to tutors, the supervisor modeled one

Next Steps lesson. Then she provided each tutor with an initial set of lesson plans (texts and word study materials geared to a child's "instructional level"). This set of plans took the tutor through the first six to eight tutoring lessons, at which point additional training was provided. Thereafter, tutors took responsibility for their own lesson planning. During the course of the school year, the supervisor conducted monthly observations of the tutors as they conducted a 45-minute intervention lesson. The treatment-group teachers and paraprofessionals received an equal number of observations. The dual purpose of these observations was to monitor student progress and to give tutors immediate feedback to improve their effectiveness. In particular, the supervisor provided clear guidance in making "pacing decisions" (Barr, 1982); that is, whether or not to advance a child to the next level in text reading or word study.

In the event a student was not making sufficient progress, the supervisor helped the tutor adapt the intervention. This coaching often included explicit modeling of subtle aspects of intervention. For example, if a student experienced difficulty reading short-vowel words, the supervisor might say, "Show the child how to blend across each sound in the word quickly and then say the word. Watch how I do it." If a student's oral reading was disfluent at times, the supervisor might model how to use echo reading: "When his reading starts to get 'choppy,' don't be afraid to jump in and do some echo reading. You read a few lines to model. Point with your finger and read slowly enough that he can track you visually, but quickly enough to have phrasing and expression. Then have him 'copycat' you. Watch me."

In addition to conducting formal lesson observations once per month, supervisors provided a great deal of ongoing, informal coaching as requested by the tutors. Requests for help were varied but usually specific, for example, "Could you show me one more time how to play the 'Points' game with word study?" "I know the accuracy criterion, but what rate does Joaquin need to attain before I bump him to a third-grade text?" "Since Mary is reading well in the second-grade basal, should she start doing some silent reading? How often and how much at a time?"

In the control schools, reading intervention was provided according to standard district guidelines, that is, reinforcement of the Open Court reading

curriculum. As such, each control certified teacher functioned autonomously in pacing students through the Open Court program. Paraprofessionals who provided control group reading intervention were supervised by a certified teacher at their particular grade level. That is, paraprofessionals relied on their teacher supervisors to set the instructional pace for guided reading lessons and the study of phonics and vocabulary concepts.

Lead Trainer. In the treatment group, neither the supervisors nor the tutors had prior experience providing intervention to struggling readers beyond Grade 1. For this reason, the school district enlisted the help of a lead trainer (second author) for the duration of the study. Visiting the schools four times during the year, the lead trainer used a "practicum" approach that emphasized on-site observation and feedback. For example, on the lead trainer's visit to a school with eight participating tutors, there were two rounds of tutoring. First, four tutors conducted a lesson with their students while the lead trainer, supervisor, and other tutors observed. A debriefing session followed in which the lead trainer fielded questions and led a discussion about the children's performance. Next, the other four tutors conducted a second round of lessons, which was again followed by a debriefing session. The trainer used these debriefings, which were based on the tutoring he observed that day, to review previously covered concepts, to introduce new aspects of the intervention, and to correct misperceptions about tutoring procedures. The observations made and issues raised during the lead trainer's four visits were an important information source for both the Next Steps tutors and their supervisors.

Between each of the lead trainer's visits, the first author conducted an additional training session that followed the practicum model. Thus, the tutors at each of the three Next Steps schools received a total of eight 2½ -hour training sessions during the school year. Typically, feedback to the tutors focused on pacing, with the goal of ensuring that students were placed at appropriate instructional levels in text reading and word study.

Pretest Measures

A team of reading specialists administered four pretests in September: two informal measures (word recognition and passage reading) and two standardized measures (pseudoword decoding and passage comprehension).

The former provided performance-based assessment often valued by reading specialists and classroom teachers. The latter provided psychometric rigor with regard to issues of reliability, validity, and normative comparisons.

Word recognition (informal). The child read a list of 40 words, graded in difficulty from early first grade to fourth grade (7 to 10 words at each level) (see Appendix A). The words were selected from the graded lists in *Basic Reading Vocabularies* (Harris & Jacobson, 1982). Using Cronbach's alpha, reliability was .83 on the pretest administration of the word recognition list and .78 on the posttest administration.

To administer the test, the examiner placed a blank index card under each word. If the child was unable to read a word within five seconds, the examiner moved on to the next word. Testing continued until the child missed seven words in a row. One point was awarded for each word read correctly (scores could range from 0 to 40).

Passage reading (informal). The child read aloud up to five passages (four narrative, one informational) that progressed in difficulty from preprimer to late-second grade (see Appendix B). These passages, whose readability was checked with the Dale-Chall formula, had been field-tested for graded difficulty in previous studies (e.g., Morris et al., 2000; Santa & Hoien, 1999). Thus, the passages represented a continuous variable assigned a value on an interval scale.

Children began reading at Level 1 and progressed until they failed to meet accuracy and/or rate criteria, at which point the examiner discontinued this portion of the assessment. As the child read aloud, the examiner noted errors made (substitutions, insertions, omissions, self-corrections, and examiner helps) and recorded the time needed to complete the passage. The child received one point for each passage that was read with adequate accuracy and rate (see Table 1). (Scores could range from 0 to 5.)

Pseudoword decoding (standardized). To provide a measure of decoding ability, the child attempted to read (or decode) pseudowords (e.g., *ap*, *raff*, *bim*, *roo*, *bufty*, *tadding*) in the word attack subtest of the *Woodcock Reading Mastery Tests* (Woodcock, 1987). (Scores could range from 0 to 37.)

Passage comprehension (standardized). The child attempted items in the passage comprehension subtest of the *Woodcock Reading Mastery Tests*. This subtest used a cloze procedure to assess comprehension. (Scores could range from 0 to 36.)

Posttest Measures

In May, 83 students who completed the study were posttested individually using the same assessments administered for the pretest.

Word recognition (informal). This task was identical to the word recognition pretest (scores could range from 0 to 40).

Passage reading (informal). This task was identical to the passage-reading pretest except that three passages (third-, fourth-, and fifth-grade difficulty) were added to the inventory. These texts required the reader to attend to both narrative and expository elements. In scoring the posttest, we used more stringent criteria for accuracy and rate (the children were one year further along in school) and added a comprehension criterion (see Table 1). (Scores could range from 0 to 8.)

Table 1. Performance Criteria for Passage Reading (Pretest and Posttest)

	Pretest		Posttest		
Grade level	Accuracy	Rate	Accuracy	Rate	Comprehension
	(%)	(wpm)	(%)	(wpm)	(%)
Preprimer	85	–	85	40	–
Primer	90	30	90	40	60
1-2	90	30	90	40	60
2-1	92	45	92	55	60
2-2	92	45	92	55	60
3	–	–	92	70	60
4	–	–	92	80	60
5	–	–	92	90	60

Pseudoword decoding (standardized). This task was identical to the pseudoword decoding pretest except that the item range was extended (scores could range from 0 to 43).

Passage comprehension (standardized). This task was identical to the passage comprehension pretest except that the item range was extended (scores could range from 0 to 45).

Treatment Group Instruction

All participating students—whether in the treatment or comparison group—received daily classroom instruction in Open Court, the district's adopted reading program. In addition, treatment students received two 45-minute, one-to-one tutoring lessons each week. Tutoring occurred outside the classroom wherever empty space could be found: the school library, the auditorium stage, the lunchroom, book closets, and hallways. The time of day varied according to school, teacher, and tutor schedule. Across the school year, the average number of Next Steps lessons per child was 53.

The components of the Next Steps lesson plan reflected traditional instructional principles that have recently received research support (see Barr, Blachowicz, Katz, & Kaufman, 2002; Pressley, 1998; National Institute of Child Health and Human Development, 2000; Stauffer, Abrams, & Pikulski, 1978):

- Determine the student's reading instructional level—the level where he or she is challenged but not frustrated—and present text at that level until evidence suggests a higher level has become appropriate.
- Using interesting reading material, build comprehension through questioning and discussion of text as it is read.
- Assess the student's word recognition along a continuum of written word knowledge (e.g., beginning consonants, short vowels, long and r-controlled vowel patterns, multisyllable words) and then, over time, provide systematic and developmentally appropriate phonics instruction.
- Build reading fluency through the reading of easy texts and the timed rereadings of familiar texts.
- Read interesting selections to the child in order to build his/her world knowledge, vocabulary, familiarity with the structure of written language, and to develop in the child a love for reading.

Toward these ends, each Next Steps session included guided reading of instructional-level material, word study, fluency training, and the tutor reading aloud to the student. However, the writing component of the original Howard Street tutorial (Morris et al., 1990) was omitted so that the lesson would fit within a 45-minute time frame.

Guided reading (18-20 minutes). The lesson began with guided oral reading of a new text on the student's instructional level. In listening to students read aloud, tutors were able to address the important fluency-related issues that often plague struggling readers: accuracy, rate, and expression. For reading material, we chose six to eight of what we deemed to be the most interesting stories from each level (e.g., Primer, 1-2, 2-1) of commercial basal reader series (e.g., Houghton Mifflin, Laidlaw, Holt) that were published between 1975 and 1986. These traditional basals—unlike the literature-based basals of the 1990s—provided repetition of high-frequency vocabulary (Cunningham, Koppenhaver, Erickson, & Spadorcia, 2004), a text feature that we believed to be important for struggling readers in this phase of development. Tutors used these basal stories with students whose reading levels ranged from primer to late-second grade. Once students attained a late-second grade reading level, tutors transitioned to tradebooks for guided reading (e.g., *The True Story of Balto; Keep the Lights Burning, Abbie* [2nd]; *Helen Keller, Stone Fox* [3rd]). Late second-grade level also marked a gradual transition from oral to silent reading, with a goal of moving the student toward reading independence.

Comprehension was an important focus during guided reading. Tutors were instructed to build and activate background knowledge before reading by providing a preview. During reading, they were instructed to ask questions directed at important events or concepts. Each basal selection came with a comprehension guide prepared by the supervisors. The guide included 8 to 12 questions (literal, inferential, predictive) along with page numbers designating when to ask the questions. The questions asked children to make (and check) predictions and track important developments (problem, resolution, main point, supporting evidence). Tutors differed as to how much they relied on the comprehension guides, but many reported that they were useful. When students experienced comprehension

difficulty, tutors rephrased the questions, provided modeling or more extensive explanation, and/or directed students to reread a specific portion of the text.

During guided oral reading, tutors provided additional support in the form of echo reading and partner reading (Morris, 1999). Echo reading was often used at the beginning of a story or when syntactically difficult passages caused the student to become disfluent. Specifically, the tutor read a short passage aloud, finger-pointing slowly enough to allow the child to track the words visually but quickly enough to be expressive. The student then echo-read the same passage, trying to emulate the tutor. Partner reading was used when an increase in oral reading errors or a decrease in fluency signaled that the child was fatigued. The tutor simply took a turn reading a page or so of the text, and the student picked up where the tutor left off. Partner reading supported students' reading fluency and tended to increase the amount of text that could be covered in a given session.

Every third lesson or so, tutors collected accuracy and rate data during guided reading. When students read with adequate accuracy (e.g., 93%) and rate (e.g., 50 words per minute in a second-grade text) in at least two out of three trials, they were moved to the next text level. In this way, tutors ensured that students consistently read text at their instructional level.

Word study (8 to 10 minutes). Word study activities in the Next Steps tutorial were designed to help the child attend to, and eventually internalize, frequently occurring spelling patterns (e.g., CVC, CVCe, CVVC, CV-r). For each student, systematic word study instruction began with a review of short-vowel words (e.g., *bat*, *drag*, *hid*, *slip*, *rob*, *chop*). From there, students progressed at their own pace to more complex patterns, including e-marker long vowels (e.g., *take*, *ride*, *spoke*), vowel pairs (e.g., *nail*, *dream*, *float*), and r-controlled vowels (e.g., *hard*, *shirt*, *burn*). Motivating games featuring categorization, memory, and spelling (see Morris, 1999) were used to focus the child's attention on the relationship between spelling pattern and pronunciation. At regular intervals, the tutor checked student mastery of the patterns under study. Timed trials, in which the student attempted to read a randomized deck of 40 word cards in less than one minute, were used to assess progress.

Although regularly patterned words were the focus of instruction, tutors also paid attention to frequently occurring, irregularly spelled words (e.g., *they, there, of, from, who, was*) that caused the children to stumble in contextual reading. The tutors noted these difficult words and initiated "word bank" drills that helped the children commit them to sight memory.

Reading for fluency (10 to 12 minutes). To increase fluency and reading rate, students read easy texts (one or two levels below instructional level) and, on occasion, reread favorite instructional-level stories. However, the most frequently used fluency-building activity was an adaptation of repeated readings (Samuels, 1979). In this activity, the student read aloud an instructional-level passage for two minutes and the tutor recorded the number of words read and errors made on a graph. Then the student immediately reread the passage, trying to improve his or her previous scores. The process was repeated the following tutoring lesson. Thus, the child read each 200-word passage four times, leading to fluency gains that were graphed and celebrated by both student and tutor.

Tutor reads to student (5 to 7 minutes). The Next Steps lesson concluded with the tutor reading aloud a narrative or expository selection written at the student's listening comprehension level. At appropriate points, the tutor stopped to initiate discussion about important events and/or vocabulary as they occurred in the story. The children looked forward to and appreciated this read-aloud part of the tutoring lesson.

Control-Group Instruction

In addition to the regular reading and language arts curriculum, students in the control group received approximately 45 minutes of supplemental, small-group reading intervention each day of the week. This intervention was designed to reinforce the Open Court reading program that was being used in the children's classrooms. Similar to the treatment group, control group intervention occurred wherever empty space could be found, and the time of day varied according to school, teacher, and tutor schedule. During the first half of the school year, control-group teachers and paraprofessionals who worked with second graders used Open Court's "transition program," a curriculum that fosters word recognition development

through systematic, direct instruction in phonological awareness and decoding. In a typical transition lesson, the instructor led the students in blending words that contained particular spelling patterns. After reading words and sentences containing the patterns, the students spelled the same patterns in a sentence dictation exercise. During the remainder of the lesson, the students read a story that emphasized the target spelling patterns along with high-frequency words. Sometimes students read the story in a group, taking turns reading sections aloud; other times, they read the story by themselves or with a partner and then reread it aloud in the group. As students read, the instructor asked them literal, inferential, and application questions to promote comprehension of the story (e.g., "Why was the mom upset?") and text-to-self connections (e.g., "Have you ever been in a club?").

During the second half of the year, control-group instruction for both second- and third- grade children focused on small-group guided reading. Instructors used teachers' manuals and stories from the Open Court anthologies and from some older basals that featured controlled vocabulary. Typically, instructors began the lesson by previewing difficult vocabulary and concepts. Then, students took turns reading aloud, with the instructor stopping them at appropriate points to check their recall of important information, to elicit predictions, or to use a particular comprehension strategy. At the end of the lesson, instructors sometimes asked students to complete story-related worksheets as reinforcement for the vocabulary words or comprehension strategies that had been covered. With the exception of occasional worksheets, the third grade curriculum did not provide a systematic phonics and/or phonological component for struggling readers.

Results

The first goal of this study was to replicate the original evaluation of the Howard Street tutoring model (Morris et al., 1990) within a school context. ANCOVAs, with pretest scores as covariates, were used to compare the performance of the tutored group and the comparison group on each of the four posttest measures (word recognition, passage reading, Woodcock pseudoword decoding, and Woodcock comprehension). Pretest scores

were used as covariates because attrition reduced the number of viable matched pairs. Table 2 shows that children in the Next Steps tutoring group outperformed ($p < .05$) children in the comparison group on each of the posttests. Moreover, effect sizes on the four posttests were moderate to large, ranging from about one half (0.51) to a little more than one (1.18) standard deviation.

Table 2. Pretest-Posttest Performance of Treatment Group and Comparison Group

Dependent variable	Group	*N*	Pretest Mean *(SD)*	Posttest Mean *(SD)*	Posttest Adjusted mean	*F*	*d*
Word recognition	Treatment	40	18.5 (5.8)	31.8 (3.3)	32.0	17.7**	.93
	Compare	42[a]	19.4 (5.4)	28.7 (4.8)	28.6		
Passage reading	Treatment	40	1.9 (0.7)	4.1 (1.2)	4.1	10.8**	.72
	Compare	43	2.2 (0.7)	3.3 (1.2)	3.2		
Woodcock pseudoword	Treatment	40	17.7 (6.2)	25.6 (6.3)	24.7	5.3*	.51
	Compare	41	14.9 (6.8)	21.4 (5.9)	22.2		
Woodcock passage comprehension	Treatment	40	19.2 (5.3)	29.3 (4.3)	29.1	28.2**	1.18
	Compare	41	18.2 (4.8)	24.4 (4.2)	24.6		

[a] There were 43 children in the comparison group. Due to absences at the end of the school year, one or two comparison-group students did not receive all four posttests.

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

To determine if the treatment effect held across grade levels, tutored and comparison students' performance on passage reading was compared for second and third graders. Table 3 shows a statistically significant difference between tutored and comparison students' passage reading at third grade, but not at second grade. This finding, which also applied to the unadjusted posttest means in Table 3, is somewhat surprising because the tutored second-grade children actually advanced further from pretest to posttest (2.6 points) than did the tutored third-grade children (1.8 points). However, third-grade children in the control group gained only 0.6 points in passage reading, compared to a 1.7 point gain made by the second-grade controls. This produced a larger between-group difference at third grade and the statistically significant treatment effect. (Two points of gain on the passage reading measure equals approximately one year's growth in reading achievement.)

Table 3. Pretest-Posttest Results for Passage Reading at Second Grade and Third Grade

Grade	Group	*N*	Pretest Mean *(SD)*	Posttest Mean *(SD)*	Posttest Adjusted mean	*F*	*d*
2	Treatment	20	1.6 (.5)	4.2 (1.4)	4.2	3.2	n.s.
	Compare	17	1.8 (.6)	3.5 (1.0)	3.5		
3	Treatment	15	2.3 (.7)	4.1 (.8)	4.1	14.0*	1.33
	Compare	17	2.4 (.6)	3.0 (.9)	2.9		

Note. This table refers to the second graders ($N = 37$) and third graders ($N = 32$) who participated in the study. Fourteen other students, fourth through sixth grade, also participated in the study.

*$p < .001$

The second goal of this study was to evaluate the effectiveness of supervised paraprofessionals in delivering the Next Steps tutoring. We did this in two ways. In the first analysis, ANCOVAs were used to compare the performance of students tutored by paraprofessionals to the performance of students in the comparison condition. Table 4 shows that the 21 students tutored by Title I teacher aides outperformed the comparison group on three of the four posttests: word recognition, passage reading, and Woodcock comprehension.

Table 4. Pretest-Posttest Performance of Paraprofessional-Tutored Students and Comparison-Group Students

Dependent variable	Group	*N*	Pretest Mean *(SD)*	Posttest Mean *(SD)*	Posttest Adjusted mean *(SD)*	*F*	*d*
Word recognition	Paraprofess.	21	18.4 (6.4)	31.2 (3.2)	31.4	8.6**	.78
	Compare	42	19.4 (5.4)	28.7 (4.8)	28.5		
Passage reading	Paraprofess.	21	1.8 (.7)	3.9 (1.1)	3.9	4.3*	.55
	Compare	43	2.2 (.7)	3.3 (1.2)	3.2		
Woodcock pseudoword	Paraprofess.	21	17.7 (5.8)	23.5 (6.1)	22.6	0.1	n.s.
	Compare	41	14.9 (6.8)	21.4 (5.9)	22.2		
Woodcock passage comprehension	Paraprofess.	21	18.4 (5.0)	28.6 (4.5)	28.5	14.3**	1.01
	Compare	41	18.2 (4.8)	24.4 (4.2)	24.5		

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

Effect sizes ranged from about one half (0.55) to one (1.01) standard deviation. On the passage-reading task, the students tutored by paraprofessionals advanced a full year (2.1 points) in reading, while the comparison students advanced only one-half year (1.1 points).

In a second analysis, again using ANCOVAs, we compared the performance of students tutored by paraprofessionals to that of students tutored by certified teachers (i.e., almost one half of the children). Table 5 shows that students tutored by certified teachers fared a little better, but not significantly so, on three of the four posttests. Only on the fourth posttest (Woodcock pseudoword decoding) did the group tutored by teachers outperform ($p < .01$) the group tutored by paraprofessionals.

Table 5. Pretest-Posttest Performance of Treatment-Group Students Tutored by Paraprofessionals and Certified Teachers

Dependent variable	Group	*N*	Pretest Mean *(SD)*	Posttest Mean *(SD)*	Posttest Adjusted mean *(SD)*	*F*	*d*
Word recognition	Paraprofess.	21	18.4 (6.4)	31.2 (3.2)	31.2	1.5	n.s.
	Teachers	17	18.3 (5.4)	32.4 (3.5)	32.4		
Passage reading	Paraprofess.	21	1.8 (.7)	3.9 (1.1)	3.9	1.8	n.s.
	Teachers	17	2.0 (.6)	4.4 (1.2)	4.4		
Woodcock pseudoword	Paraprofess.	21	17.7 (5.8)	23.5 (6.1)	23.3	11.3**	1.10
	Teachers	17	17.3 (7.1)	27.9 (6.0)	28.1		
Woodcock passage comprehension	Paraprofess.	21	18.4 (5.0)	28.6 (4.5)	28.8	1.0	n.s.
	Teachers	17	19.3 (5.7)	30.2 (4.3)	30.0		

Note. Only 38 of the 40 treatment-group students are included in this table. Two students, who were tutored part of the year by a paraprofessional and part of the year by a teacher, were not included in this analysis.

** $p < .01$

Discussion

We replicated the Howard Street tutoring study (Morris et al., 1990) in a school context. The age of the students, number of tutoring lessons per week, reading materials, instructional procedures, and model of supervision were very similar in both studies. In our replication, teachers and

paraprofessionals (instead of community volunteers) served as tutors, and, due to time constraints, the writing component was omitted from the original Howard Street lesson plan. Results showed that 40 struggling readers, tutored twice per week, outperformed a comparison group on both standardized and performance-based end-of-year reading measures.

How much difference did the tutoring actually make? On the passage reading measure, the tutored group made a little more than one year's growth, whereas the comparison group made only one-half year's growth. This achievement difference between the two groups was also reflected on a standardized comprehension measure ($d = 1.18$). These results are similar to those reported in the original Howard Street tutoring study (Morris et al., 1990), where the tutored group made 12 months of passage-reading gain to the comparison group's 6 months of gain. On the other hand, results in the present study contrast with those reported by Baker et al. (2000). In that study, low readers, who were tutored by unsupervised volunteers, did not outperform a comparison group during the second-grade year.

Next Steps is a coherent tutoring program that includes several components: leveled reading materials, systematic word study, fluency work, streamlined instructional procedures, a one-to-one tutoring context, and supervision of tutors. Given the design of our study, it is not possible to identify which of these components contributed most to student achievement. However, we can make these statements about the Next Steps tutoring.

First, the intervention curriculum was carefully graded in difficulty, offering the student needed support with just enough challenge for growth in textual reading and word study. Second, the intervention was comprehensive, with time devoted during each lesson to reading for meaning, word study, and fluency practice. Third, the one-to-one context allowed students to work precisely at their instructional levels. Fourth, the tutors received regular feedback from supervisors that focused on intervention technique and pacing. And fifth, the tutored students probably did more textual reading than did the controls. A child who participated in Next Steps read text for approximately 30 minutes per lesson or 60 minutes per week. In the small-group control condition, which featured oral round-robin reading, each child read orally 5 or so minutes per day, or

25 to 30 minutes per week. Thus, over the course of the year, the tutored students may have read twice as much text as their control peers during supplemental reading time.

The comparison group's Title I reading instruction reflected conventional district practice. In a small group under the guidance of a teacher or paraprofessional, the comparison students read stories and studied phonics concepts from their classroom basal reader (Open Court). By the end of the school year, the second-grade comparison students made reasonable progress in passage reading—1.7 points or almost one year of growth (see Table 3). On the other hand, the third-grade comparison students made less than one-half year's growth (0.7 points). In fact, 8 of the 17 students in the third-grade comparison group did not improve from pretest to posttest. It is possible that these third-grade children, who read at a mid- to late-first-grade level in September, were placed too high (at frustration level) or paced too quickly through the Open Court reading program. This may account for their low performance on the May passage-reading posttest.

Using Paraprofessionals as Reading Tutors

An important finding in the present study was that paraprofessionals or teacher aides, working under the supervision of a reading teacher, proved to be effective tutors of struggling readers. The students tutored by paraprofessionals performed significantly better than comparison-group students who were taught in small groups. Further, results showed that in the structured tutoring condition, paraprofessionals were almost as effective as certified teachers.

This finding has some important implications for service patterns in schools that employ large numbers of paraprofessionals. Cost is often a limiting factor in providing one-to-one instruction to struggling readers, particularly when certified teachers are used as tutors (see Hiebert, 1994; Shanahan & Barr, 1995). However, if supervised paraprofessionals are employed as tutors, the cost can be greatly reduced and many more children served. It is also important to remember that the Next Steps model requires two intervention lessons per week, rather than daily tutoring. This means that a paraprofessional can serve two children per week in the same 45 minute time slot. The school district in which we conducted the current study, as well as surrounding districts, have shifted a substantial

portion of Title I resources in this direction. For example, in one school, every paraprofessional has three Next Steps "slots" as part of a daily assignment. On Mondays and Wednesdays, each paraprofessional tutors three second graders; on Tuesdays and Thursdays, the slots are filled by three third graders. Thus, each paraprofessional serves a total of six children per week. When eight supervised paraprofessionals deliver tutoring in this manner, 48 struggling primary-grade readers receive one-to-one reading intervention. Over the year, this translates to 37 hours of "instructional level" reading for each child.

Paraprofessional tutors also offer some advantages when compared to community volunteer tutors. First of all, attendance at tutoring sessions is not an issue for employed paraprofessionals, as it can be for some volunteers. A second advantage is that paraprofessional tutors, at least in this study, required less supervision than did the volunteer tutors described in the Howard Street (Morris et al., 1990) and Book Buddies (Invernizzi et al., 1997) interventions. After providing some initial model teaching and assistance with lesson planning, the supervisors in the present study stopped by approximately once every eight lessons to check on their paraprofessional tutors. In contrast, the Howard Street and Book Buddies supervisors planned all the lessons for their volunteer tutors and were physically present at each of the tutoring sessions. A third advantage relates to tutor turnover. In volunteer-staffed programs, tutors often leave after one year of service. Paraprofessionals on the other hand, frequently return to the same elementary school year after year. Given a structured tutoring plan, one can envision paraprofessional tutors becoming more skillful and independent with each passing year, thereby reducing the amount of supervision they require.

The Crucial Role of the Supervisor

The three school-based supervisors were crucial players in this study. Not only did these reading teachers assess students, organize materials, and construct initial lesson plans, but they were also—given their professional knowledge and experience—able to successfully guide the efforts of inexperienced reading tutors throughout the school year. If a tutor had difficulty with a teaching procedure (e.g., echo-reading), the supervisor modeled the procedure with the tutor's child. If a tutor forgot the next

step in an instructional sequence (e.g., "What comes after we finish short vowel work?"), the supervisor was there to answer the question. However, the most important guidance provided by the supervisor involved the pacing of tutorial instruction. If low readers are to "catch up" with their peers, they must work consistently at the cutting edge of their instructional level (not too easy, not too hard). Unfortunately, inexperienced tutors are often unsure about pacing—unsure about when to "bump a child up" a reading level (e.g., from late-first to early-second grade text) or when to move forward in word study (e.g., from short- to long-vowel patterns). When these decisions had to be made, the supervisor's input was invaluable. After observing a child read just a few pages of text orally, or sort words in a phonics activity, the supervisor was able to coach the tutor in deciding whether the child should be moved forward or not. This assistance with instructional pacing, occurring at least once per month, likely contributed to the reading gains made by the tutored students. We consider supervision of this kind to be one way for reading teachers to "extend their reach"—to work through less experienced tutors (i.e., volunteers, paraprofessionals) to provide quality reading instruction for "those students who need it most" (Allington, 2000).

The obvious next question is: "How do we develop supervisors?" First, a school must have a knowledgeable reading teacher, and this teacher must be willing to work through other adults to help meet the needs of struggling readers. At least one study suggests that not all reading teachers will choose to spend their time in such a supervisory role (see Broaddus & Bloodgood, 1999). Second, a prospective supervisor needs "clinical experience," that is, hands-on work with struggling readers under the tutelage of a mentor and then guidance in implementing a tutoring program. Until reading teachers thoroughly understand a tutoring model and are able use it effectively themselves, they will be unable to guide others in its use.

In this study, the three supervisors of tutors gained knowledge of the Next Steps model by having participated in a similar first-grade tutorial (Early Steps) one year earlier. They also benefited from the information and feedback offered by the lead trainer in his four visits to the school district. Nonetheless, year-long training in Early Steps or Reading Recovery is not the only way for a conscientious reading teacher to obtain in-depth

understanding of a tutoring model. Morris (2001) suggested a three-week summer practicum as a vehicle for training reading teachers to supervise volunteer (or paraprofessional) tutors. He stated:

> Twelve reading teachers and a trainer would come together from 9:00 A.M. to 12:30 P.M., Monday through Thursday. From 9:00 to 9:45 A.M., six of the teachers would each tutor a low-achieving second-grade reader while the trainer and the other six teachers would observe. Then from 9:45 to 10:30 A.M., six new second graders would come in, and the teachers would reverse roles (the original tutors becoming observers, and vice versa). After an hour of lesson planning and individual conferencing with the trainer, the teachers would attend a closing 1-hour seminar (11:30 A.M. to 12:30 P.M.). Here the trainer would lead discussions on teaching technique (guided reading and word study); would facilitate staffing of the children; and, in the last few days of the practicum, would answer questions that the teachers might have about starting up their own volunteer tutoring programs in the fall. (p. 189)

In such a summer practicum, participating reading teachers would learn through direct experience how to organize and implement a volunteer tutoring program. They would learn about reading materials and specific teaching techniques by using them daily, and they would learn a method for supervising tutors through the experience of being supervised themselves. Such learning through doing, all the while receiving feedback from an experienced coach (Schon, 1987), is a powerful and efficient way to learn a complex set of skills.

Limitations

This quasiexperimental study has several limitations. Our sample was relatively small, and the children were not randomly assigned to groups, but instead matched on pretest scores. Because the study was limited to one school year, we do not know the long-term effects of the tutoring. The components of the intervention (e.g., instructional activities, reading materials, type and amount of tutor supervision) were not systematically manipulated; therefore, it is not possible to determine which aspects of Next Steps contributed most to the program's success. Perhaps most important, the design did not control for the effects of one-to-one tutoring;

that is, it could have been one-to-one tutoring in general, not the specific characteristics of the Next Steps intervention, that led to the between-group differences. Limitations notwithstanding, this study did provide a needed replication of Morris et al. (1990), one of the few studies to show that noncertified reading tutors can help raise the achievement of struggling second- and third-grade readers. Moreover, to our knowledge, this is the first study to document the effectiveness of paraprofessionals as reading tutors in the primary grades.

Conclusion

In recent years, reading theorists, applied researchers, and teachers have devoted much attention to preventing reading failure in the primary grades. Promising one-to-one reading interventions have been developed, field-tested, and critiqued. Unfortunately, interventions that use certified teachers as reading tutors have proven to be expensive—too expensive, in many cases—for schools that serve large numbers of at-risk and struggling readers. Thus, the search for alternative intervention models has begun. A few studies have shown that community volunteers can be effective reading tutors, although program developers disagree as to how much professional supervision volunteer tutors require. The present study adds to this literature by showing that supervised paraprofessionals can also be effective in tutoring struggling readers.

Educational contexts differ. Some schools may be able to meet students' needs with tutoring in first grade; other schools may need an extensive tutoring program that covers first through third grade. Some schools may be able to use certified teachers as tutors; others may need to stretch their limited resources by using paraprofessional or community volunteer tutors. The important point is that alternative tutorial interventions need to be implemented, and their effects documented, in different educational contexts (urban, rural, and suburban; high, middle, and lower SES; primary, upper elementary, and middle school). We may find that given reasonable tutoring models, professional supervision, and a little institutional will, we will be able to reach, and effectively teach, more at-risk readers in the future than we have in the past.

References

Allington, R. L. (2000). *What really matters for struggling readers: Designing research-based programs*. New York: Pearson.

Baker, S., Gersten, R., & Keating, T. (2000). When less may be more: A 2-year longitudinal evaluation of a volunteer tutoring program requiring minimal training. *Reading Research Quarterly, 35*, 494-519.

Barr, R. (1982). Classroom reading from a sociological perspective. *Journal of Reading Behavior, 14*, 375-389.

Barr, R., Blachowicz, C., Katz, C., & Kaufman, B. (2002). *Reading diagnosis for teachers: An instructional approach* (4th ed.). Boston: Allyn & Bacon.

Broaddus, K., & Bloodgood, J. (1999). "We're supposed to already know how to teach reading:" Teacher change to support struggling readers. *Reading Research Quarterly, 34*, 426-451.

Brown, K. J., Reynolds, V., Lowe, S., Skidmore, D., Van Gorder, D., Patillo, S., et al. (2000, July). *Early Steps intervention in schools with explicit code instruction: Is it effective? Does isolated phonological awareness instruction increase effectiveness?* Paper presented at the annual meeting of the Society for the Scientific Study of Reading, Stockholm, Sweden.

Brown, K. J., Fields, M., Lowe, S., Skidmore, D., Van Gorder, D., & Weinstein, C. (2001, June). *The benefits of intervention for at-risk 1st graders: What happens in 2nd grade?* Paper presented at the annual meeting of the Society for the Scientific Study of Reading, Boulder, CO.

Bruck, M. (1992). Persistence of dyslexics' phonological awareness deficits. *Developmental Psychology, 26*, 439-454.

Center, Y., Wheldall, K., Freeman, L., Outhred, L., & McNaught, M. (1995). An experimental evaluation of Reading Recovery. *Reading Research Quarterly, 30*, 240-263.

Cohen, P., Kulik, J., & Kulik, C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal, 19*, 237-248.

Collections for Young Scholars. (1997) Columbus, OH: SRA-The McGraw-Hill Companies.

Cunningham, J., Koppenhaver, D., Erickson, K., & Spadorcia, S. (2004). Word identification and text characteristics. In J. V. Hoffman & D. Schallert (Eds.), *The texts in elementary classrooms* (pp. 21-37). Mahwah, NJ: Erlbaum.

Davidson, M. (1969). *Helen Keller*. New York: Scholastic.

Fitzgerald, J. (2001). Can minimally trained college student volunteers help young at-risk children read better? *Reading Research Quarterly, 36*, 28-46.

Gardiner, J. R. (1980). *Stone Fox*. New York: Harper Trophy.

Harris, A., & Jacobson, M. (1982). *Basic reading vocabularies*. New York: Macmillan.

Hiebert, E. (1994). Reading Recovery in the United States: What difference does it make to an age cohort? *Educational Researcher, 23*, 15-25.

Hiebert, E., & Taylor, B. (2000). Beginning reading instruction: Research on early interventions. In M. Kamil, P. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 455-482). Mahwah, NJ: Erlbaum.

Hurford, D., Johnston, M., Nepote, P., Hampton, S., Moore, S., Neal, J., et al. (1994). Early identification and remediation of phonological-processing deficits in first-grade children at-risk for reading disabilities. *Journal of Learning Disabilities, 27,* 647-659.

Invernizzi, M., Rosemary, C., Juel, C., & Richards, H. (1997). At-risk readers and community volunteers: A three-year perspective. *Journal of Scientific Studies in Reading*, *1*, 277-300.

Juel, C. (1988). Learning to read and write: A longitudinal study of fifty-four children from first through fourth grades. *Journal of Educational Psychology, 80*, 437-447.

Lobel, A. (1972). *Mouse tales*. New York: Harper Trophy.

Lobel, A. (1976). *Frog and Toad all year*. New York: Harper Trophy.

Melser, J. (1998). *Look for me*. Bothell, WA: Wright Group.

Milton, J. (1992). *Wild, wild wolves*. New York: Random House.

Morris, D. (1999). *The Howard Street tutoring manual: Teaching at-risk readers in the primary grades*. New York: Guilford.

Morris, D. (2001). The Howard Street tutoring model: Using volunteer tutors to prevent reading failure in the primary grades. In L. Morrow & D. Woo (Eds.), *Tutoring programs for struggling readers: The America Reads Challenge* (pp. 177-192). New York: Guilford.

Morris, D. (2003). Tutoring at-risk beginning readers. In D. Morris & R. Slavin (Eds.), *Every child reading* (pp. 60-79). Boston: Allyn & Bacon.

Morris, D., Shaw, B., & Perney, J. (1990). Helping low readers in grades 2 and 3: An after-school volunteer tutoring program. *Elementary School Journal, 91*, 133-150.

Morris, D., Tyner, B., & Perney, J. (2000). Early Steps: Replicating the effects of a first-grade reading intervention program. *Journal of Educational Psychology, 92*, 681-693.

National Assessment of Educational Progress. (2000). *America's report card*. Washington, DC: U.S. Government Printing Office.

National Institute of Child Health and Human Development (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction (NIH Publication No. 00-4769)*. Washington, DC: U.S. Government Printing Office.

Pinnell, G. S., Lyons, C., DeFord, D., Bryk, A., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high-risk first graders. *Reading Research Quarterly, 29*, 8-39.

Pressley, M. (1998). *Reading instruction that works: The case for balanced teaching*. New York: Guilford.

Roop, P., & Roop, C. (1985). *Keep the lights burning, Abbie.* Minneapolis, MN: Lerner.

Rowan, B., & Guthrie, L. (1989). The quality of Chapter 1 instruction: Results from a study of twenty-four schools. In R. Slavin, N. Karweit, & N. Madden (Eds.), *Effective programs for students at risk* (pp. 195-219). Needham Heights, MA: Allyn & Bacon.

Samuels, S. J. (1979). The method of repeated readings. *The Reading Teacher, 32*, 403-408.

Santa, C., & Hoien, T. (1999). An assessment of Early Steps: A program for early intervention of reading problems. *Reading Research Quarterly, 34*, 54-79.

Schon, D. A. (1987). Educating the reflective practitioner. San Francisco: Jossey-Bass.

Shanahan, T. (1998). On the effectiveness and limitations of tutoring in reading. *Review of Research in Education, 23*, 217-234.

Shanahan, T., & Barr, R. (1995). Reading Recovery: An independent evaluation of the effects of an early instructional intervention for at-risk learners. *Reading Research Quarterly, 30*, 958-996.

Slavin, R., Karweit, N., & Wasik, B. (1994). *Preventing early school failure: Research, policy and practice*. Boston: Allyn & Bacon.

Snow, C., Burns, M., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

Standiford, N. (1989). *The true story of Balto.* New York: Random House.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*, 360-407.

Stauffer, R., Abrams, J., & Pikulski, J. (1978). *Diagnosis, correction, and prevention of reading disabilities*. New York: Harper & Row.

Swanson, H., Hoskyn, M., & Lee, C. (1999). *Interventions for students with learning disabilities: A meta-analysis of treatment outcomes*. New York: Guilford.

Wasik, B. (1998). Volunteer tutoring programs in reading: A review. *Reading Research Quarterly, 33*, 266-291.

Wasik, B., & Slavin, R. (1990, April). *Preventing early reading failure with one-to-one tutoring: A best evidence synthesis*. Paper presented at the annual convention of the American Educational Research Association, Boston.

Wasik, B., & Slavin, R. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. *Reading Research Quarterly, 28*, 178-200.

Wetterer, M. K. (1990). *Kate Shelley and the Midnight Express*. Minneapolis, MN: Carolrhoda.

Woodcock, R. W. (1987). *Woodcock reading mastery tests – Revised* (Form G). Allen, TX: American Guidance Service.

Woods, M. L., & Moe, A. J. (1999). *Analytical reading inventory* (6th ed.). Upper Saddle River, NJ: Prentice-Hall.

Word, E., Johnston, J., Bain, H., Fulton, B., Zaharias, J., Lintz, M., et al. (1990). *Student/Teacher achievement ratio (STAR): Tennessee's K-3 class size study, final report*. Nashville, TN: State Department of Education.

Appendix A. Word Recognition Task

1. me
2. play
3. big
4. back
5. saw
6. cut
7. black
8. seen
9. because
10. paint
11. able
12. pull
13. gate
14. north
15. wrote
16. change
17. shoot
18. spill
19. crayon
20 taken
21. accept
22. seal
23. slipper
24. haircut
25. dresser
26. thread
27. bandage
28. unroll
29. window
30. storyteller
31. average
32. select
33. brilliant
34. explode
35. disease
36. miracle
37. coward
38. opinion
39. relationship
40. furnace

Appendix B. Passage Reading Task

Point code	Reading level	Passage	Number of words
0	Emergent	(unable to read preprimer passage)	—
1	Preprimer	*Look for Me* (Melser, 1998; entire book)	69
2	Primer	*Mouse Tales* (Lobel, 1972; pp. 18-23)	100

3	Late first grade	*Frog and Toad All Year* (Lobel, 1976; pp. 30-33)	100
4	Early second grade	*Wild, Wild Wolves* (Milton, 1992; pp. 15-16)	100
5	Late second grade	*Kate Shelley and the Midnight Express* (Wetterer, 1990; pp. 6-8)	100
6	Third grade	"Boxer" (Third-grade passage from the *Analytic Reading Inventory,* Woods & Moe, 1999)	143
7	Fourth grade	"Incredible Journey" (Fourth-grade passage from the *Analytic Reading Inventory*, Woods & Moe, 1999)	144
8	Fifth grade	"Sheila Young" (Fifth-grade passage from the *Analytic Reading Inventory*, Woods & Moe, 1999)	171