Preparing Teachers to Train Parents to Use Evidence-based Strategies for Oral Reading Fluency with Their Children

Sara Kupzyk, Edward J. Daly III, BCBA-D, & Melissa N. Andersen, PhD
University of Nebraska-Lincoln

Although there is promising evidence for parent-tutoring strategies for improving oral reading fluency, such parent tutoring programs are not widely used in schools. This study examined the effectiveness of providing parent training in school settings using teachers as trainers. An evidence-based reading package including listening passage preview, repeated reading, error correction, and performance feedback was developed. Three first-grade teachers were trained using video-training, written instructions, and practice with peers. Eight parents reviewed a similar manual and video and then met with teachers to practice the strategies and develop a tutoring plan. Parents then implemented the reading fluency tutoring package at home for 8 to 9 weeks. Student progress was monitored weekly using curriculum-based measurement of oral reading fluency within an A-B design. Results show oral reading fluency improved when treatment fidelity was good. Future applications of evidence-based tutoring practices and considerations for implementation and sustainability in school-based settings are discussed.

KEYWORDS: evidence-based practices, oral reading fluency, parent tutoring, teacher trainers, treatment fidelity.

Although reading is essential to academic success, 40% of fourth-grade students have oral reading fluency (ORF) difficulties (i.e., U.S. Department of Education, 2002). Collaborative efforts between home and school are needed to improve reading outcomes in the early grades. Students demonstrate higher reading achievement when parents and teachers have mutual goals and similar beliefs about how to help with reading (Msengi, 2007). In addition to increased achievement, home-school collaboration improves teachers' satisfaction and parents' confidence in supporting home learning (Christenson, 1995; King, King, Rosenbaum, & Goffin, 1999). Despite these benefits and federal recommendations for home-school collaboration (e.g., Elementary and Secondary Education Act/NCLB, 2001), teachers receive little or no training in how to engage parents as partners in the educational process (McCutchen & Berninger, 1999; Shumow & Harris, 2000). Therefore, it is important to examine training methods that can be used to prepare teachers to work with parents to enhance reading outcomes.

Parent tutoring in reading has been identified as a promising intervention for improving academic performance based on the criteria developed by the Task Force on Evidence-Based Interventions in School Psychology (Fishel & Ramirez, 2005). Specifically, large effect sizes were found for the effectiveness of parent tutoring on second through fifth grade students' ORF. ORF is defined as the ability to read connected text accurately, quickly, and with proper expression (National Institute of Child Health and Human Development [NICHD], 2000). When students are not fluent readers, their attention is focused on individual letter sounds and words, thereby detracting from their overall comprehension (NICHD, 2000). Fortunately, there are evidence-based practices that are easy to implement and can be used by parents to improve their children's ORF, such as listening passage preview (Daly & Martens, 1994), repeated readings (Rashotte & Torgenson, 1985), phrase drill error correction (O'Shea, Munson, & O'Shea, 1984), and performance feedback (Eckert, Dunn, & Ardoin, 2006). Combining these strategies has resulted in parent tutoring packages that have improved reading fluency (e.g., Daly, Shroder, & Robinson, 2001/2006;

Correspondence concerning this article should be addressed to: Edward J. Daly III. BCBA-D, University of Nebraska-Lincoln, 33 Teachers College, Lincoln, NE 68588-0345. E-mail: edaly2@unl.edu. This project was supported by a Graduate Research grant from the Wing Institute (Oakland, CA) to the first author.

Gortmaker et al., 2007). Specifically, students in first through fifth grade have shown gains in ORF on tutored passages (Duvall, Delquadri, Elliott, & Hall, 1992), curriculum reading passages (Resetar, Noell, & Pellegrin, 2006), high word-overlap passages (i.e., passages with 70-85% of same words as a tutored passage; Persampieri et al., 2006), and commercially available passages (Gortmaker et al., 2007) following four to five weeks of tutoring with individualized treatment packages developed from the strategies described earlier.

When trained, parents can successfully provide evidence-based tutoring, but teachers typically only provide general recommendations to parents about ways to support reading (e.g., reading books, going to the library), as opposed to providing training in specific strategies (Shumow & Harris, 2000). Yet, the results of the National Reading Panel indicated that informal or silent reading programs do not improve student reading, particularly for struggling readers (NICHD, 2000). Additionally, teachers interviewed by Shumow and Harris (2000) viewed parents as responsible for initiating home-school collaboration. Consequently, it is not surprising that parents report a lack of support from teachers about how to effectively help at home (Epstein & Hollfield, 1996). To enhance student outcomes, teachers and parents would benefit from receiving training in home-school collaboration and evidence-based reading strategies.

Although parent training has been conducted by researchers or support staff (e.g., school psychologists) in the extant research, teachers are in the most natural position to serve as trainers, as they have more frequent contact with parents and are primarily responsible for the student's instruction. Yet, teachers need training to serve in this role (McCutchen & Berninger, 1999; Shumow & Harris, 2000). Little is known about the effectiveness of parent tutoring when teachers serve as parent trainers. To be successful, it is essential that quality training for both tutor trainers (i.e., teachers) and the tutors themselves be delivered. Behavior skills training which includes instruction, modeling, practice, and feedback can be effective at improving procedural adherence to an intervention protocol, having been shown to improve teacher behavior management (Plavnick, Ferreri, & Maupin, 2010), and parent use of guided compliance (Miles & Wilder, 2009). However, the effort and time required of teachers and parents to participate in the training program may be prohibitive for some because of competing responsibilities like work, child activities, and parenting.

Research supports the use of technology for increasing the efficiency of parent training (Slider, Noell, & Williams, 2006). Video training has been shown to be an effective and acceptable means for teaching skills to parents, teachers, and staff (Blom-Hoffman, O'Neil-Pirozzi, Volpe, Cutting, & Bissinger, 2006; Macurik, O'Kane, Malanga, & Reid, 2008). There are many advantages of video-based training, including standardization of training, reduced cost and increased efficiency for school staff, and the opportunity for participants to observe individuals similar to themselves model the strategies.

Although research has supported family literacy programs (Epstein, 2001), and parent tutoring in the area of reading (Fishel & Ramirez, 2005), the availability of parent tutoring for ORF in school settings with teachers as trainers is unknown. The purpose of this study was to bridge the research-to-practice gap by training teachers to engage parents in the use of evidence-based tutoring strategies. To maximize the accessibility of parent training, we sought to develop efficient training and tutoring procedures. This study combined video training, standardized written instruction, and a brief practice session in which parents were able to receive teacher feedback. In addition, materials designed to prompt trainees to use the strategies (e.g., laminated steps, graph) were provided to enhance generalization of skills and ease of implementation. Using single-case design elements, we evaluated the effects of the training package on teacher and parent skills and the subsequent effect of parent tutoring on students' ORF. The effects of the training and tutoring were examined using an A-B case-study design. Three research questions were addressed: (a) Do teachers' skills in providing parent training improve following training?, (b) Do parents use more evidence-based practices for improving ORF following training by teachers?, and (c) Does students' ORF improve following structured parent tutoring?

METHOD

Participants

This study received prior approval by the Human Subjects Institutional Review Board at the University of Nebraska-Lincoln. The school administrator at a parochial, pre-kindergarten through eighth-grade Midwestern school (student population approximately 580) also approved the study. Three first-grade teachers (all female and White) at the school were recruited by the school administrators. The researcher met with teachers who expressed interest in participating to provide a description of the study and review the information presented in the consent form (e.g., procedures, time requirements, benefits, risks). Teacher consent was obtained prior to participation.

Eight first-grade students (mean age, 6.75; range, 6 to 7) and their parents (seven mothers, one father) were recruited by the participating teachers and agreed to participate. Specifically, teachers identified students in their classrooms who needed additional support with ORF and contacted their parents to determine their interest. Teacher 1 recruited four parents and teachers 2 and 3 each recruited two parents for participation. Prior to participation, parental consent and child assent were obtained. Seven of the students were White and one was Hispanic-American. All of the students and parents were native English speakers. None of the students were receiving special education services; however, toward the end of the study, a special education evaluation was initiated for Nichole.

Measures and Data Collection

Oral reading fluency. Correctly read words (CRW) per min and errors per min were calculated in first-grade AIMSweb progress monitoring-probes (Howe & Shinn, 2002) to assess the generalized effects of parent tutoring. Words were scored as correct if the student pronounced the word correctly within 3 s. Words were scored as errors if the student omitted, mispronounced, substituted, or failed to produce a word within 3 s. Three randomly selected probes were administered each week. The median CRW per min and errors per min was the score for a session. The mean rate of growth per week was also calculated by subtracting the last data point from the first data point for each phase and dividing by the number of weeks in the phase.

Skill and treatment fidelity. Procedural checklists (available upon request) were developed based on evidence-based practices for improving ORF and were used to assess the percentage of skill steps completed by teachers and parents. Specifically, teachers were rated on their skill in providing parent training and parents were rated on their skill in tutoring. To derive an exact percentage of treatment adherence, sessions were audio recorded and scored by a trained, impartial rater using the corresponding procedural checklist. The percentage of steps completed per session was calculated by dividing the number of steps completed by the total number of steps to be followed.

Social validity. Social validity of the training and tutoring procedures was assessed using the Intervention Rating Profile-15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985) and the Child's Intervention Rating Profile (CIRP; Witt & Elliott, 1985). The IRP-15 assesses general perceptions of the acceptability of an intervention by having parents and teachers rate each statement on a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). The reported internal consistency of the IRP-15 is .98 (Kratochwill, Elliott, & Busse, 1995; Martens, Witt, Elliott, & Darveaux, 1985). Similarly, the CIRP assesses children's perceptions of the acceptability of an intervention using a 5-point Likert scale, ranging from 1 (disagree) to 5 (agree). Results are reported as the mean item ratings. Internal consistency for the CIRP ranges from 0.79 to 0.89 (Turco & Elliott, 1986; Witt & Elliott, 1985).

Evaluation Design and General Procedures

A-B designs were used to assess the effects of the teacher and parent skills training, and the effects of parent tutoring on students' ORF. During baseline, teacher skills were evaluated using the procedural checklist during role play sessions with graduate research assistants serving in the roles of parent and

child. Teachers were asked to model how they would teach a parent to tutor their child to improve reading fluency. Following baseline, teachers received training via a manual and video created by the first author (described below and available upon request). Teachers were asked to practice training parents in role-play interactions with one another. Generalization of the teacher's skill in training parents was assessed during parent training sessions with participating families.

During the baseline phase, parents were asked to record themselves helping their child with reading three times per week. Following baseline, teachers met individually with parents to provide direct skills training. After the training was complete, parents were asked to record themselves helping their child with reading using the tutoring program three to four times per week at a convenient time at home. The parent-tutoring phase lasted a mean of 8.6 weeks (range, 7.6 to 9.7). Student performance was also measured for 2 additional weeks following structured tutoring during which tutoring materials were not provided. Students' ORF was assessed weekly in progress monitoring probes during baseline and parent tutoring.

Intervention

Teacher skill training. Teacher training included review of a manual and video and practice with peers. The manual and 30-min video (available upon request) included the following segments: (a) benefits of parent involvement and tutoring, (b) introduction to the evidence-based tutoring program (see Table 1 for the steps of the tutoring program), (c) considerations for implementation, (d) steps for parent training, and (e) how to monitor student progress. The segments included descriptions, specific steps, and demonstrations. After reviewing the materials, the teachers were asked to practice the parent training procedures three times in role-play sessions with one another alternating roles as the teacher, parent, and child. After each role-play, the individuals playing the role of parent and child assessed the teachers' completion of the skill steps following the outlined training steps (protocol available upon request) and discussed the steps completed correctly and incorrectly. Each role-play session lasted approximately 15 min.

Table 1: *Brief Description of the Tutoring Steps*

Step	Description
Attention and Praise for good behaviors	Parents were asked to give attention and praise for good behaviors including reading fluently, practicing difficult words, sitting nicely, and answering comprehension questions.
Pre-Check	The parent timed the student reading the passage for 1 minute and graphed the number of CRW and errors per min.
Show	The parent read the passage as the student followed along with his or her finger (i.e., Listening Passage Preview). As the student listened to the story, the parent watched to ensure the student was following along and guided the student to the correct location if he or she was not following along accurately.
Practice with Feedback (1)	The student practiced reading the story aloud two times (i.e., Repeated Readings) with feedback. While the student was reading, the parent read any error words to the student, had the student repeat the word, and then had the student continue reading. Following each reading, the parent corrected student errors by reading each error word, and then having the student read the word and the phrase that includes the word three times (i.e., Phrase Drill).
Practice with Feedback (2)	
Post-Check	The parent timed the student reading the passage for 1 minute and graphed the number of CRW and errors per min. The parent and student compared the number of CRW and errors per min from the pre-check to the post-check.
Discuss	The parent and student discussed the passage using post-reading strategies. Parents were given a list of general questions to ask following reading including: who was the story about, what happened in the story, what did you like about the story, and have you ever done something similar to the characters in the story. Parents were encouraged to have their children use complete sentences when responding to the questions.

Parent skill training. Following the completion of teacher training, each teacher trained two to four parents to use the tutoring program. Prior to meeting with the teacher, parents reviewed a manual and 30-minute video similar to that of the teachers (i.e., two sections were eliminated: steps for parent training and how to monitor student progress). During the meeting (approximately 30 min), the teacher, parent, and student first discussed why reading is important to them and why they would like to provide tutoring or practice reading at home. Next, they reviewed the tutoring program that was presented in the video and manual. The teacher provided a rationale for each step included in the program. Next, teacher and parent selected intervention components and developed a tutoring plan that included when, where, and how frequently tutoring was to occur. After planning for implementation of the tutoring program, the parent practiced the tutoring program with the child. During and following the practice, the teacher provided feedback to the parent by telling the parent the steps completed correctly and reviewing steps omitted or completed incorrectly. At the end of the session, parents were given a binder with materials for implementation (i.e., books, graph, timer, fidelity checklist) and asked to return the tutoring binder to school each week.

Parent tutoring using the evidence-based tutoring program. Once parent training was complete, parents were asked to use the tutoring program with their child at least 3 days per week for 15 to 20 min for 7 to 9 weeks. To begin each tutoring session, the parent placed the necessary materials (e.g., pencil, book, and graph) on the table and started the audio recorder. Then, the parent implemented the tutoring program following the five general steps outlined in Table 1: pre-check, show, practice with feedback, post-check, and discussion. For each tutoring session, the parent completed a tutoring record, which included the days they tutored, the length of the session, and the steps of the program that they completed.

The binder with the completed materials was sent to school with the child weekly and given to the experimenter. The experimenter removed the completed materials, added new materials, including four individually selected books, and sent the binder home with the child. To select books of appropriate difficulty level, the experimenter had each student read selections from books for 1 min each while assessing the percentage of correctly read words. Books in which the student read between 93 and 97% accuracy were selected for tutoring.

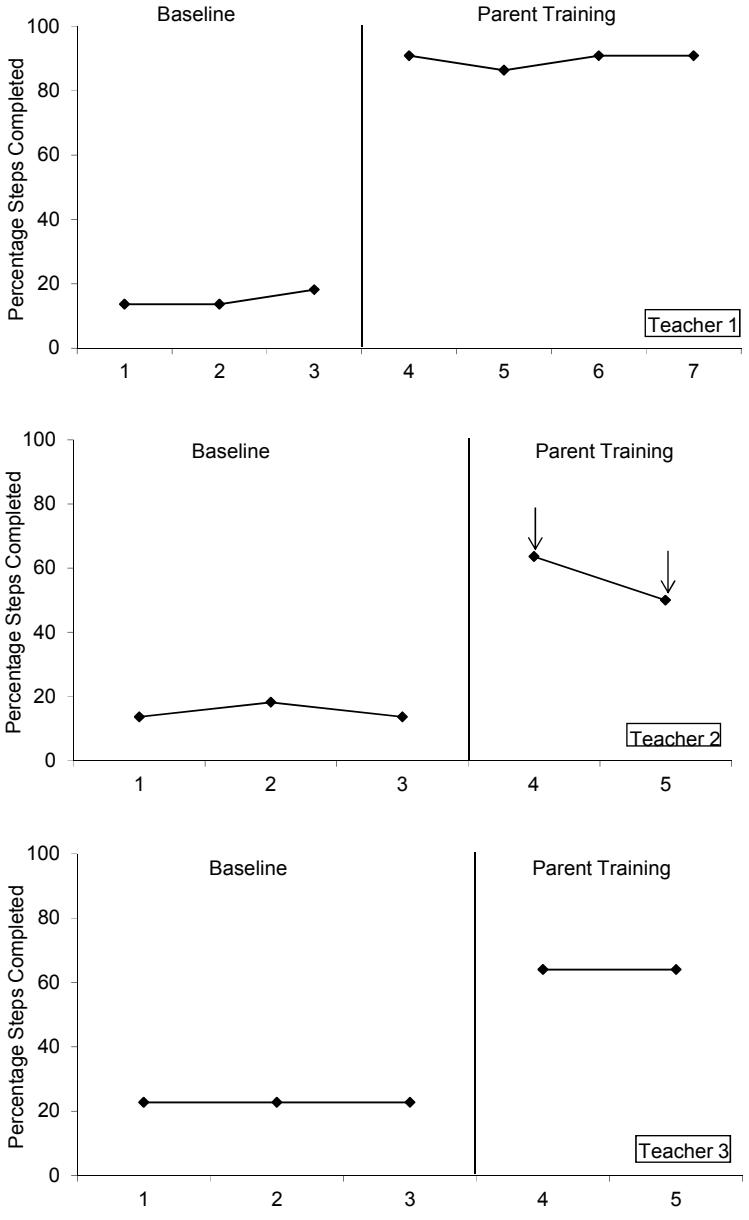
Interrater agreement. A trained, independent rater scored randomly selected reading passages and teacher skill in training for interrater agreement. The independent observer listened to 32% of the recorded reading assessments conducted by the experimenter and recorded CRW and errors per min. Interrater agreement was calculated for ORF measurements by dividing the number of agreements (i.e., both observers scored the same word as correct or incorrect) by the number of agreements plus disagreements and multiplying the result by 100 to obtain a percentage. Mean interrater agreement was 98% (range, 78 to 100%). For teacher skills, 50% of the sessions were scored for interrater agreement by dividing the number of agreements (i.e., both observers scored the same component as completed or not completed) by the total number of agreements plus disagreements and multiplying the result by 100. The mean interrater agreement was 86% (range, 82 to 91%).

RESULTS

Teacher Parent Training Skill and Fidelity

The percentage of parent training steps completed by each teacher during role play baseline meetings and intervention parent training meetings is presented in Figure 1. During baseline, teachers completed a mean of 18% of the parent training steps (Teachers 1 and 2 = 15%; Teacher 3 = 22%) with little to no variability in response from one session to the next. There was an immediate and consistent change in the percentage of steps completed across teachers following the training. Teachers completed a mean of 78% of the steps during meetings with participating parents and students. Whereas Teacher 1 implemented a mean of 90% of the steps during the parent trainings, Teachers 2 and 3 implemented a mean of 67% and 64% of the steps, respectively. Fidelity of parent training was classified by the authors as either high fidelity (i.e., 80-100% steps completed), moderate fidelity (i.e., 60-79), or low fidelity (<60%). Therefore, Teacher 1 provided training with high fidelity and Teachers 2 and 3 provided training with moderate fidelity.

Figure 1: *Percentage of parent training skill steps completed by each teacher during baseline and parent training sessions. Arrows indicate the data are based on 18 and 19 steps, as opposed to 22, as the audio recording was terminated prior to the end of the meeting and the steps could not be scored.*



Parent Tutoring Fidelity

Thirty percent of the recorded tutoring sessions were analyzed for parent tutoring behaviors. Table 2 shows summary data on parent use of the tutoring strategies prior to and following training. Given that Teacher 1 delivered training with high fidelity and Teachers 2 and 3 with moderate fidelity, the results for parent and student performance are organized according to the level of training fidelity.

Table 2: *Mean Percentage Fidelity of Tutoring Step Implementation Across Baseline and Post-Training Sessions by Parent and Level of Training Fidelity*

Teacher	Parent (Student)	Baseline	Post-Training
Teacher 1 (high fidelity)	Holly (Hannah)	22	60
	Nora (Nichole)	11	78
	Donna (Danielle)	--	--
	Tara (Tiffany)	15	88
	Total Mean Percentage	16	75
Teachers 2 and 3 (moderate fidelity)	Christine (Cory)	22	40
	Kristin (Karen)	22	39
	Ann (Andrew)	29	87
	Todd (Tanya)	11	42
	Total Mean Percentage	21	52

High fidelity. The results demonstrate that parents trained with high fidelity used few evidence-based tutoring strategies when asked to help their child with reading at home prior to training (i.e., mean of 16% of steps). Following training, the percentage of tutoring steps completed by parents trained with high fidelity increased to a mean of 75% (range, 60 to 88%). No data were available for Donna, as the recordings were not returned.

Moderate fidelity. Parents who received training with moderate fidelity completed a mean of 21% of the tutoring steps during baseline. After training, the parents completed a mean of 52% of the tutoring steps (range, 39 to 87%) following parent training. These parents failed to implement the second practice with feedback on the majority of the sessions.

Oral Reading Fluency

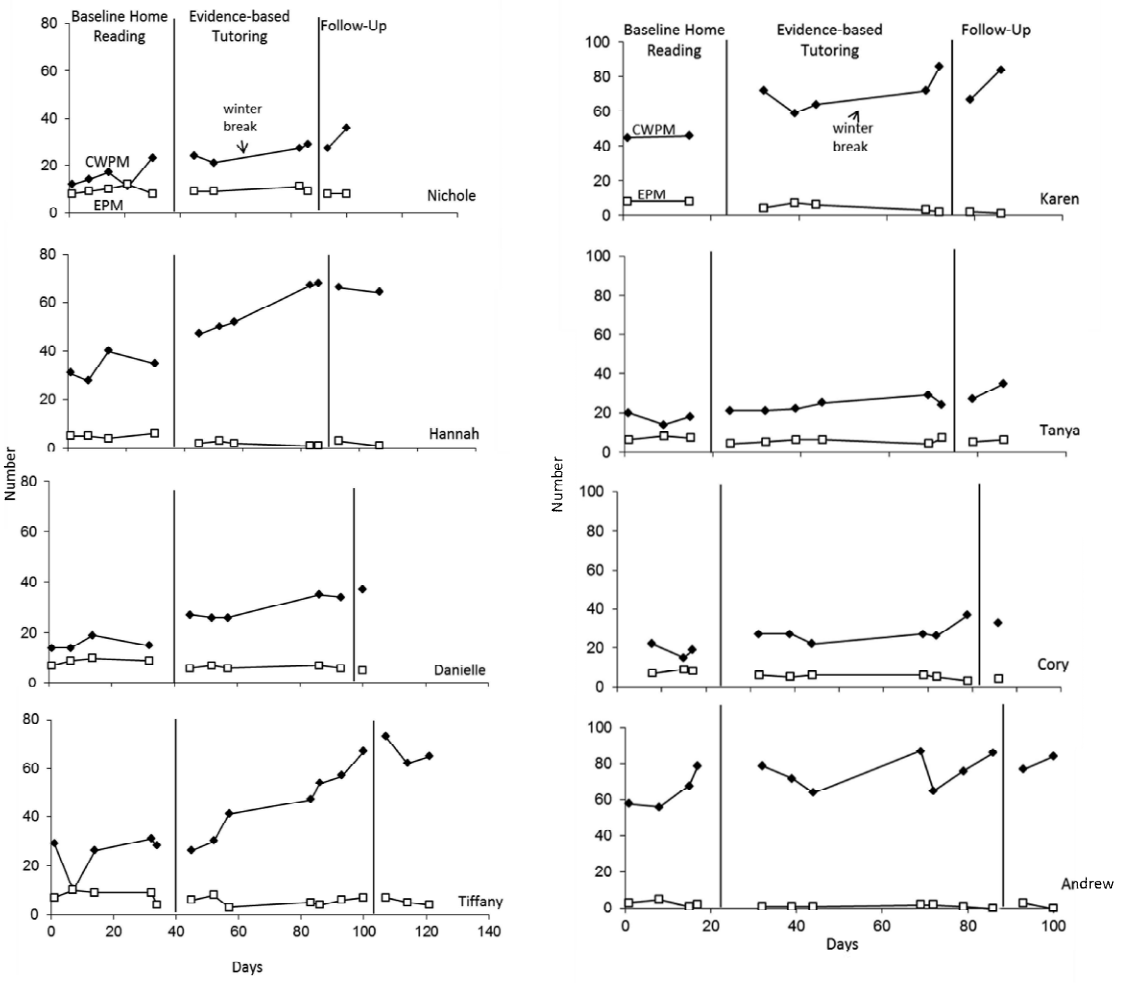
The number of CRW and errors per min during baseline reading sessions, evidence-based tutoring sessions, and follow-up sessions for each student are presented in Figure 2. With the exception of Andrew, all of the students' levels of ORF exceeded baseline levels during the tutoring and follow-up phases.

High fidelity. Visual inspection of the data shown in Figure 2 (left panel) indicates that students showed consistent performance during baseline, with the exception of Nichole who displayed an increasing trend. The students demonstrated a mean of 22.3 CRW per min (range, 15.4 to 24.8) with 7.7 errors per min (range, 5 to 9.4). Mean rate of growth per week was 0.9 words (range, -0.2 to 2.6). Upon implementation of the evidence-based tutoring program, the students demonstrated increases in level and trend in CRW per min. The number of CRW per min increased to a mean of 39.4 (range, 25.3 to 56.8) and the number of errors per min decreased to a mean of 5.8 (range, 1.8 to 9.5). Two of the students, Hannah and Tiffany, showed growth that surpassed the expected rate of 2 words per week for first grade students (Fuchs, Fuchs, Hamlett, Walz, & Germann, 1993). Specifically, Hannah increased by 2.7 words per week and Tiffany increased by 4.4 words per week. Nichole and Danielle showed more progress during the structured tutoring phase compared to baseline, but their rates of growth (i.e., 0.89 and 0.82 words per week) did not meet expected levels. During the follow-up phase, the mean number of CRW per min increased to 51.6 (range, 31.5 to 73) and errors per min decreased to 5.5 (range, 2 to 8). Although Hannah and Tiffany demonstrated a slight decrease during the follow-up phase, their ORF remained above baseline levels.

Moderate fidelity. During baseline, all of the students demonstrated stable responding except for Andrew, who showed an increasing trend (see right panel in Figure 2). Overall, during baseline students read a mean of 36.7 CRW per min (range, 17.3 to 65.3) with 6.4 errors (range, 2.75 to 8) and demonstrated a mean rate of growth of 1.7 words per week (range, -1.2 to 8.6). During evidence-based tutoring phase, the number of CRW per min increased to a mean of 49.4 (range, 23.7 to 75.6) and errors per min decreased

to 4 (range, 1.1 to 5.1). The mean rate of growth per week was 0.1 words (range, 0.4 to 1.8). None of the students met the expected growth rate for first grade students; however, Karen, Tanya, and Cory showed more positive, increasing trends in performance compared to baseline rates. During the follow-up phase, the mean number of CRW per min increased further to 54.1 (range, 31 to 77) and errors per min decreased to 3.5 (range, 1.5 to 5.5). Student performance remained above baseline levels with the exception of Andrew.

Figure 2: *Number of CRW and errors per min for each student whose parents were trained with high fidelity (left panel) and parents trained with moderate fidelity (right panel).*



Intervention Acceptability

Following completion of the study, the students completed the CIRP. Each item was read aloud to the student and the student rated the statements on a 5-point Likert-type scale. Analysis of student ratings revealed that the mean item rating across students was 4.3 (range, 3.2-5), indicating a high level of acceptability. Additionally, parents' and teachers' mean item ratings on the IRP-15 was 5.3 (range, 4.3-5.9) and 5.8 (range, 5.3-6), respectively. These results indicated a high level of acceptability of the procedures.

DISCUSSION

The purpose of this study was to examine the effectiveness of parent tutoring in a school setting with teachers as the parent trainers. Following the manual plus video training, teachers showed improvements in parent training, but provided training with varying levels of proficiency. Parents also demonstrated increases in tutoring skills, but those trained with higher fidelity provided tutoring with greater fidelity than those trained with moderate fidelity. Most importantly, consistent with previous research, implementation of evidence-based parent tutoring resulted in improvements in students' ORF, especially for those whose parents received high fidelity training (Gortmaker et al., 2007; Hook & DuPaul, 1999). Lastly, teachers, parents, and students rated the training methods and procedures and tutoring strategies as acceptable.

An interesting finding of this study was the variability in fidelity across teacher trainers and parent tutors and the impact of fidelity on students' ORF. To improve fidelity across trainees, researchers should examine more comprehensive and direct, yet practical and efficient methods for training teachers. For example, researchers might investigate the application of a pyramidal training model in which a group of teachers receive direct behavioral skills training and then serve as trainers for others in the school. Furthermore, to increase parent fidelity, researchers should more closely evaluate the ease of implementation and students' response to the strategies included in the tutoring program. Modifying and identifying alternative strategies to replace those that were not frequently used (i.e., phrase drill error correction) or produce a negative interactions between the parent and child may be warranted. In addition to further verification of the tutoring program, it appears necessary to examine practical strategies teachers could use to increase parents' fidelity of implementation such as ongoing communication with the parent via email or a home-school note.

A unique component of this study was the use of teachers as parent trainers. Preparing teachers to serve as parent trainers may lead to broader dissemination of evidence-based tutoring strategies for reading fluency. The training provided to the teachers was efficient and flexible, only requiring approximately 1.5 hours of time, and allowed teachers to study the materials at a time convenient to them (even outside of the school day). However, the data show that some teachers may require direct feedback from a skilled trainer to provide training to parents with high fidelity.

Another novel component of this study was the examination of parents' use of strategies prior to training. Although teachers often ask parents to read with their children to enhance reading development, little is known about what parents do without training. The results showed parents did not use evidence-based strategies when helping their children. Most notably, during baseline, none of the parents used repeated readings of the text which is viewed as an important component for improving reading fluency. The results from this study may be the first empirical data on parents' natural use of empirically supported intervention components.

Several limitations of this study should be noted. First, although the majority of students demonstrated increased growth in ORF following the implementation of structured tutoring, increasing trends in ORF prior to implementation of the program for Nichole and Andrew raise concerns about whether it was the tutoring program per se that resulted in improvements. In addition, the reliability of the parent fidelity data is unknown, as interrater agreement was not obtained. Furthermore, all parent training occurred within a two-week period, which caused a school break to interfere with data collection and precluded a more stringent experimental design (e.g., a multiple-baseline). Thus, the evaluation design was a case-study design with repeated measures over time. Whereas the use of objective, reliable, and valid performance indicators and replication across multiple subjects helped to increase the overall quality of the case study, the controlled case study fails to rule out threats to internal validity in a way that a true experimental design (e.g., a multiple-baseline design) can (Kazdin, 2011). Nonetheless, Kazdin pointed out that case studies are useful for developing "therapy techniques" (p. 5) and are a source of ideas that may stimulate more rigorously controlled research.

The greatest value of the present study may be its ability to encourage other researchers to examine methods for training more natural change agents (e.g., teachers) who have frequent contact with parents (and therefore potentially stronger relationships) to carry out parent tutoring. The current results indicate that this approach may prove fruitful. Researchers can refine the methods and add stronger experimental controls to isolate the effects of parent tutoring. For example, studies might be conducted to examine the effects of training teachers to a higher criterion of performance on parents' treatment integrity and child outcomes to examine if less variable outcomes can be achieved. Alternately, studies can be conducted to examine whether a more collaborative approach to intervention selection might improve results. In the current study, teachers and parents were trained to use an experimenter-derived ORF intervention. With more in-depth training, teachers and parents might develop individualized tutoring programs by selecting from a list of evidence-based strategies, which may increase parents' subsequent adherence to the tutoring protocol.

Second, the majority of the parent participants appeared to be motivated and involved in his or her student's education prior to implementation of the tutoring program; however some parents may need additional motivation to use a tutoring program. For example, Danielle's mother failed to return materials and did not appear to implement the program during the intervention weeks. Encouraging teachers to provide ongoing performance feedback to parents on implementation and sharing student growth in ORF may increase parent fidelity of implementation (Hagermoser-Sanetti, Luiselli, & Handler, 2007).

Given the unfortunate statistics on student reading performance at the national level, schools are in need of methods to enhance student reading development. This study provided an evaluation of the impact of parent tutoring on students' reading fluency by preparing teachers to train parents as tutors. Additional research on parent tutoring in school settings is important to effective dissemination of evidence-based tutoring practices. Further refinement and evidence for parent training and parent tutoring procedures would be beneficial, as such findings may provide schools with a meaningful way to collaborate with parents and improve students' reading fluency.

- - -

Sara Kupzyk is a doctoral candidate in the School Psychology Program at the University of Nebraska-Lincoln and will graduate in August of 2012. She is completing her pre-doctoral internship at the Munroe-Meyer Institute in Omaha, Nebraska where she provides outpatient behavioral health services for children and their families. Her interests include dissemination of effective practices within community settings, family-school partnerships, and systems-level change to improve family outcomes.

Edward J. Daly III, BCBA-D, is Professor of Educational (School) Psychology at the University of Nebraska-Lincoln, where he studies how to resolve academic and behavior problems within a functional assessment framework.

Melissa N. Andersen, PhD, is a postdoctoral fellow in Pediatric Psychology at the University of Michigan Health System where she provides inpatient and outpatient behavioral health services and conducts research with children with medical conditions. Her interests include comprehensive behavioral health care across settings, behavioral sleep medicine, behavioral parent training, and treatment adherence.

REFERENCES

Blom-Hoffman, J., O'Neil-Pirozzi, T., Volpe, R., Cutting, J., & Bissinger, E. (2006). Instructing parents to use dialogic reading strategies with preschool children: Impact of a video-based training program on caregiver reading behaviors and children's related verbalizations. *Journal of Applied Psychology, 23*, 117-131. doi:10.1300/J370v23n01_06

Chard, D., Vaughn, S., & Tyler, B. (2002). A synthesis of research on effective interventions for building reading fluency with elementary students with learning disabilities. *Journal of Learning Disabilities, 35*, 386-406. doi:10.1177/00222194020350050101

Christenson, S.L. (1995). Families and schools: What is the role of the school psychologist? *School Psychology Quarterly, 10*, 118-132.

Daly, E.J., III, & Martens, B.K. (1994). A comparison of three interventions for increasing oral reading performance: Application of the instructional hierarchy. *Journal of Applied Behavior Analysis, 27*, 459-469. doi:10.1901/jaba.1994.27-459

Daly, E.J., III, Shroder, J., & Robinson, A. (2001/2006).Testing treatments for oral reading fluency problems. Two case studies. *Journal of Evidence-Based Practices for Schools, 7*, 4-26 (reprinted from *Proven Practice: Prevention and Remediation Solutions for Schools, 4*, 2-10).

Duvall, S., Delquadri, J., Elliott, M., & Hall, V. (1992). Parent-tutoring procedures: Experimental analysis and validation of generalization in oral reading across passages, settings, and time. *Journal of Behavioral Education, 2*, 281-303. doi:10.1007/BF00948819

Eckert, T., Dunn, E., & Ardoin, S. (2006). The effects of alternate forms of performance feedback on elementary-aged students' oral reading fluency. *Journal of Behavioral Education, 15*, 149-162. doi:10.1007/s10864-006-9018-6

Edmonds, M., & Briggs, K.L. (2003). The instructional content emphasis instrument: Observations of reading instruction. In S. Vaughn & K. Briggs (Eds). *Reading in the Classroom: Systems for the Observation of Teaching and Learning*. Baltimore, MD: Paul H. Brookes Publishing.

Epstein, J. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Boulder, CO: Westview.

Epstein, J., & Hollifield, J. (1996). Title I and school-family-community partnerships: Using research to realize the potential. *Journal of Education for Students Placed At Risk, 1*, 263-278. doi:10.1207/s15327671espr0103_6

Fishel, M., & Ramirez, L. (2005). Evidence-based parent involvement interventions with school-aged children. *School Psychology Review, 4*, 371-402. doi:10.1521/scpq.2005.20.4.371

Fuchs, L.S., Fuchs, D., Hamlett, C.L., Walz, L., & Germann, G. (1993). Formative evaluation of academic progress: How much growth can we expect? *School Psychology Review, 22*, 27-48.

Gortmaker, V., Daly, E., McCurdy, M., Persampieri, M., & Hergenrader, M. (2007). Improving reading outcomes for children with learning disabilities: Using brief experimental analysis to develop parent-tutoring interventions. *Journal of Applied Behavior Analysis, 40*, 203-221. doi:10.1901/jaba.2007.105-05

Hagermoser Sanetti, L., Luiselli, J., & Handler, M. (2007). Effects of verbal and graphic performance feedback on behavior support plan implementation in a public elementary school. *Behavior Modification, 31*, 454-465. doi:10.1177/0145445506297583

Hook, C., & DuPaul, G. (1999). Parent tutoring for students with Attention-Deficit/Hyperactivity Disorder: Effects on reading performance at home and school. *School Psychology Review, 28*, 60-75.

Howe, K.B., & Shinn, M.M. (2002). Standard reading assessment passages (RAPs) for use in general outcome measurement: A manual describing development and technical features. Eden Prarie, MN: Edformation. Retrieved from http://www.aimsweb.com/uploads/pdfs/passagestechnicalmanual.pdf

Kazdin, A.E. (2011). Single-case research designs: *Methods for clinical and applied settings (2nd ed.)*. New York: Oxford.

Kratochwill, T.R., Elliott, S.N., & Busse, R.T. (1995). Behavior consultation: A five-year evaluation of consultant and client outcomes. *School Psychology Quarterly, 10*, 87-117. doi:10.1037/h0088299

King, G., King, S., Rosenbaum, P. & Goffin, R. (1999). Family-centred caregiving and well-being of parents of children with disabilities: linking process with outcome! *Journal of Pediatric Psychology, 24*, 41–52.

Macurik, K., O'Kane, N., Malanga, P., & Reid, D. (2008). Video training of support staff intervention plans for challenging behavior: Comparison with live training. *Behavioral Interventions, 23*, 143-163. doi:10.1002/bin.261

Martens, B.K., Witt, J.C., Elliott, S.N., & Darveaux, D.X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16*, 191-198. doi:10.1037/0735-7028.16.2.191

McCutchen, D., & Berninger, V. (1999). Those who know, teach well: Helping teachers master literacy-related subject-matter knowledge. Learning Disabilities. *Research and Practice, 14*, 215-226. doi:10.1207/sldrp1404_3

Miles, N.I., & Wilder, D.A. (2009). The effects of behavioral skills training on caregiver implementation of guided compliance. *Journal of Applied Behavior Analysis, 42*, 405-410. doi:10.1901/jaba.2009.42-405National Institute of Child Health and Human Development. (NICHD). (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: Reports of the subgroups* (NIH Publication No. 00-4754). Washington, DC: US Government Printing Office.

Msengi, S.G. (2007). Family, child, and teacher perceptions of African American adult assistance to young readers. *School Community Journal, 17*, 33-60.

NCLB (2001). No Child Left Behind. P.L. No. 107-110, 115 Stat. 1425 (2002). Retrieved from http://www2.ed.gov/policy/elsec/leg/esea02/index.html.

O'Shea, L.J., Munson, S.M., & O'Shea, D.J. (1984). Error correction in oral reading: Evaluating the effectiveness of three procedures. *Education and Treatment of Children, 7*, 203-214.

Plavnick, J.B., Ferreri, S.J., & Maupin, A.N. (2010). The effects of self-monitoring on the procedural integrity of a behavioral intervention for young children with developmental disabilities. *Journal of Applied Behavior Analysis, 43*, 315-320.

Persampieri, M., Gortmaker, V., Daly, E., Sheridan, S., & McCurdy, M. (2006). Promoting parent use of empirically supported reading interventions: Two experimental investigations of child outcomes. *Behavioral Interventions, 21*, 31-57. doi:10.1002/bin.210

Rashotte, C.A., & Torgenson, J.K. (1985). Repeated reading and reading fluency in learning disabled children. *Reading Research Quarterly, 20*, 180-188. doi:10.1598/RRQ.20.2.4

Resetar, J.L., Noell, G.H., & Pellegrin, A.L. (2006). Teaching parents to use research-supported systematic strategies to tutor their children in reading. *School Psychology Quarterly, 21*, 241-261. doi:10.1521/scpq.2006.21.3.241

Shumow, L., & Harris, W. (2000). Teachers' thinking about home-school relations in low-income urban communities. *Community School Journal, 10*, 9-24.

Slider, N., Noell, G., & Williams, K. (2006). Providing practicing teachers classroom management professional development in a brief self-study format. *Journal of Behavioral Education, 15*, 215-228. doi:10.1007/s10864-006-9033-7

Turco, T.L., & Elliot, S.N. (1986). Assessment of students' acceptability ratings of teacher-initiated interventions for classroom misbehavior. *Journal of School Psychology, 24*, 227-283. doi:10.1016/0022-4405(86)90060-9

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. (2002). National Assessment of Educational Progress (NAEP), 2002 Oral Reading Study.

Witt, J.C., & Elliott, S.N. (1985). Acceptability of classroom management strategies. In T.R. Kratochwill (Ed.), *Advances in school psychology* (Vol. 4, pp. 251–288). Hillsdale, NJ: Erlbaum.