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Parents Using Explicit Reading Instruction with Their Children At-Risk for Reading Difficulties

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Abstract

Kindergarten students at-risk for reading difficulties were selected for participation in a parent implemented reading program. Each parent provided instruction to his or her child using the reading program *Teach Your Child to Read in 100 Easy Lessons* (*TYCTR*; Engelmann, Haddox, & Bruner, 1983). Parents were expected to use *TYCTR* with their child 15 minutes a night, five nights a week. The intervention consisted of parents teaching 15 letter sounds and phonemic awareness skills within 30 formatted lessons. The experimenter assessed students daily at the school to measure correct words read on sentence list sheets. The experimenter also recorded categories of parents' questions and comments. Classification of responses occurred after instruction for the reading program ended and parent teaching of the child had begun. A multiprobe design demonstrated increased words read correctly. Parents had a high rate fidelity following the steps of each lesson with their child. Discussion of the results and implications for future research are presented.

Keywords: parent teaching, explicit instruction, at-risk reading, kindergarten, phonics

Over six million students qualify for special education services in the United States (National Center for Education Statistics, 2015). Of the students identified for services, almost all have difficulty learning to read and write (Fletcher, Lyon, Fuchs, & Barnes, 2007). Because of this, in the past decade, there has been a greater focus on early reading prevention in the primary grades (Denton, 2012). Though many individuals demonstrate average to above average intelligence, therefore have capabilities to be productive members of society (National Reading Panel, 2000). In contrast, the outcomes for poor readers are

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very concerning. Those who cannot read are less likely to graduate from high school. Consequently, those who cannot read are more likely to be unemployed and adjudicated, and therefore require government supports (Connor, Alberto, Compton, & O'Connor, 2014). Simply stated, being able to read is the gateway to achievement in our literacy driven society.

Historically, the nationwide problem of low levels of literacy along with the subsequent associated negative outcomes resulted in the National Institute of Children's Health and Development, and the United States Department of Education, combining to create the National Reading Panel (National Reading Panel, 2000). The Panel researched the existent literature for reading and literacy to find effective methods for teaching reading to young students. After reviewing over 100,000 studies on how students learn to read, the Panel outlined methods of reading instruction for use in the classroom and suggested a plan for additional research in reading development and instruction. The extensive review indicated students need explicit instruction in phonemic awareness, systematic phonics instruction, and methods to improve fluency and comprehension (National Reading Panel, 2000).

Researchers continue to address the need for assessment to analyze appropriate reading strategies, for students who struggle with reading, using these explicit models of instruction (Fuchs & Fuchs, 2006). Ideally, all teachers should implement reading instruction guided by scientific research. However, there are still thousands of teachers using reading approaches that have been disproven and/or have shown limited success (Carnine, Silbert, Kame'enui, Tarver & Jungjohann, 2006; Moats, 2000). Enlisting parents to help teach reading has a number of significant advantages. Namely, parents are the first and most important teachers of their children. In recent years researchers have capitalized on parents' singular and unique role with their children and found they are able to help with literacy instruction. Children have been able to learn many pre-skills at home with parents and increase vocabulary and pre-skill sub-tests in school (Erion, 2006; Fielding-Barnsley & Purdie, 2003; Justice, Kaderavek, Bowles, & Grimm, 2005; Resetar, Noell, & Pellegrin, 2006).

Literature Review

Because of the research behind effective instruction, we know that struggling readers should receive explicit instruction in the classroom. To support the child's learning, parents should also supplement with effective instruction in the home. With a review of the literature,

a range of family literacy projects will be summarized. In a phonics intervention incorporating children's literature books, experimenters worked with families having a history of a reading disability (Fielding-Barnsley & Purdie, 2003). A total of 49 students in kindergarten and their parents participated in a randomized control trial. Parents in the experimental group watched an instructional video in their home. Parent instruction consisted of modeling effective reading practices. Examples emphasized rhyme, rich vocabulary, alphabet knowledge, and alliteration. Parents also were given a pamphlet highlighting all content presented in the instructional video. At the end of parent instruction families received eight books that provided opportunities for implementing skills taught in instructional sessions. Parents were asked to read each of the eight books five times over the eight-week intervention. Students in the experimental group scored significantly higher in picture vocabulary, initial consonant identification, rhyme, and concepts about print. Students were tested at the end of the year and the experimental group maintained significant improvements on final consonants and concepts about print.

Similarly, 22 students with language impairments participated in a randomized control trial (Justice et al., 2005). Parents in the experimental group were given 10 storybooks and a reading schedule to follow for a 10-week period. Parents were then taught how to complete tasks at the end of each book. Tasks included finding rhyming words and finding beginning words that sounded similar to the other sounds. Parents in the control group were asked to read the books as they normally would at home, and complete the tasks at the end of the storybook. Tasks in the control group were framed around questions to expand the student's vocabulary. Parent instruction with the experimenter occurred in homes every other week for 15 min for both groups. Parents practiced skills until students reached 100% accuracy. Experimenters encouraged parents to provide supports to allow students to achieve success. Examples included, modeling the correct response, providing wait time, and withdrawing support over time when students achieve success. Though both groups had some growth, there was very little difference between experimental and control groups with measurements of rhyme and alliteration. Therefore parent instruction had little impact on the difference in reading ability for their children, as compared to the children of the parents who did not receive reading instruction.

In another study, van Otterloo, van der Leij, and Hendrichs (2009) examined parents with a reported diagnosis of dyslexia and their ability to teach their children to read. A randomized control trial was completed with 48 students and their parents. The group of parents

met at the beginning of the program. During the meeting materials were presented, program aims were discussed, and exercises were demonstrated. The experimenter urged parents to read directions before each lesson. Parents were also given opportunities to ask questions in the first 2 weeks of instruction. After four weeks experimenters held two more group meetings to provide additional material. Parents in the control group were given themed books each week along with reading comprehension questions, language exercises, and games which focused on morphology, syntax, and vocabulary. Students in the experimental group worked with a phoneme awareness and letter sound knowledge teaching program 10 min a day, 5 days a week for 10 weeks. Exercises included phoneme blending and sound identity of both initial and final sounds. Over time students in the experimental group made slightly more progress in measures of fluency of word reading with a mean score of 21 as compared to the control group mean score of 17.

To examine the effectiveness of supplementing tutoring for Oral Reading Fluency, 3 third grade students who were reading below grade level were selected for in home parent instruction (Daly & Kupzyk, 2012). Parents received instruction with listening passage preview, repeated readings, and flashcard instruction. After reading, each parent reported their child's reading time, number of errors, and reading score so the child could document progress. Students earned tangible rewards for improving his or her score 30% or above the screening score. Two out of three students met this goal 80 to 100% of the time through five weeks of the study. The other student met this criteria 60% of the time. After reviewing three forms of reading instruction, the students were able to select how their reading was assessed. The two students who consistently met their reading goals, both selected the assessment in which they repeatedly scored the highest. Because of this motivation of meeting reading goals, the research team could not clearly measure if parent intervention, or reading motivation made the difference in each student's reading ability. Because of the unclear reasoning of the success in this reading intervention, Daly and Kupzyk (2012) report that the field would benefit from collecting treatment integrity and social validity throughout reading instruction. With this data, teachers, parents, and researchers would have the confidence to support parent literacy interventions if there were effective programs that parents could implement with high treatment fidelity.

Parent fidelity measures are seen across an array of different studies to show evidence that parents can accurately implement reading interventions. For instance, Kupzyk, Daly, and Andersen (2012) worked with three teachers to teach and implement parent tutoring

strategies to build oral reading fluency. In the study, eight parents met with the teachers for training, then implemented an in-home tutoring package for 8 to 9 weeks. Students were assessed weekly by the parents using Curriculum-based Measures. Although the students demonstrated a positive upward trend, their rate of growth was not sufficient for first graders. The results of the study show promise for the efforts of family and school collaboration, but the reliability of parent fidelity data need to be further examined. The research team stressed the importance of building some form of ongoing communication throughout implementation of a reading program.

In another study, parents participating in an explicit instruction reading group of an in-home reading study were instructed for 3 hours and were assigned the program *Teach your Child to Read in 100 Easy Lessons or TYCTR* (Engelmann et al., 1983). *TYCTR* was framed around the explicit instruction model with a heavy emphasis on academic engaged time and high rates of correct responses. The program contains daily scripted lessons so parents could use purposeful language for instruction, corrections, and logical sequencing skills. The purpose of the program is to teach foundational decoding and comprehension skills critical for beginning reading. In the study, parent instruction consisted of introductions and demonstrations of the lessons. Experimenters emphasized role-play with correct letter pronunciation, blending, and error correction procedures. During the intervention the experimenter made one home visit and a telephone call to check treatment fidelity for each family in the study. Students learning from *TYCTR* were able to read text 16 months beyond preexperimental reading levels after parents taught reading lessons for four months (Leach & Siddall, 1990).

Ebey, Marchand-Martella, Martella, and Nelson (1999) examined if parents of preschool children could successfully teach their children to read using *TYCTR*. Of the seven parents and children who participated the results show basic reading skill gain scores of 0.9 grade equivalent and a standard score increase of 17 on the Woodcock Johnson-Revised (Ebey et al., 1999). The study results also demonstrated parents took an average of 23 minutes to conduct daily lessons, in line with the suggested 20-minute guideline provided in the *TYCTR* program guidelines. Social validity measured also indicated children and their parents were happy with the results of the program.

Understanding how parents can provide effective early reading instruction with fidelity is very important. Also, with the high-stakes associated with learning to read and the positive results demonstrating parents can teach their students reading skills, research examining parents using sophisticated programs based on explicit instruction

appear particularly urgent. Programs like *TYCTR* hold great promise, because it has been developed for novice implementers and has shown promising results. Yet, only a small number of studies documenting improved child reading outcomes from parent implementation of *TYCTR* have been published to date, and none have examined parents teaching their children who are identified are at-risk for reading difficulty (Ebey et al., 1999; Leach & Siddall, 1990). Therefore, the present study was designed to answer two experimental questions: (a) Does parent-implemented explicit reading instruction lead to children's gains in oral reading accuracy?, and (b) Do parents meet or exceed a procedural integrity criterion of 90% when implementing the intervention?

Method

Participants

Anthony and parents. Anthony was a 5-year-old White male. He lived primarily with his mother and older brother. Anthony's father's level of involvement with the family was unknown, but based on recordings he spent some evenings and weekends with his father. Anthony's teacher described him as an easy going and pleasant student. Anthony was able to identify several letter names and no letter sounds during the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) pretest. He was in the lowest performing teacher assigned reading group in the class upon entering the study. In Anthony's group, it was framed around identifying letters and being able to write and identify letters within words and sentences. Anthony's teacher reported that Anthony did not participate in front of peers. Therefore she had to check for Anthony's understanding of content in a one-on-one setting. Anthony's pre and posttest DIBELS scores appear in Table 1.

Table 1
Literacy Benchmark Checklist

	Pre-test		Post-test	
	Letter sounds	Letter names	Letter sounds	Letter Names
Anthony	0	9	24	25
Joe	0	3	9	25
Gus	0	18	12	30

Amy was the primary caregiver for Anthony and his older brother. Amy was 30-years-old and she completed high school. She practiced modeling skills multiple times until they were mastered and expressed positive comments towards the study. Andy, Anthony's father, was 33-years-old and earned a high school diploma. Andy did not ask many questions during parent instruction and was very encouraging when practicing with his son.

Joe and Gina. The second participant, Joe, was also a 5 year-old-white male. He lived on a farm with both parents and his older brother. Joe's mother was the tutor for each lesson. Joe's teacher reported that he had difficulty in most subject areas. He knew three letter names and no sounds upon entering the study. The teacher also mentioned that Joe had difficulty following simple two-step directions. He needed constant reminders to stay on task. Joe was also in the lowest performing reading group upon entering the study. Classroom instructional goals for Joe were framed around identifying letter names. He often had to refer to an alphabet chart with pictures to identify his letters. For a further description of Joe's pre and posttest DIBELS scores see Table 1.

Gina completed each lesson with her son Joe. She earned a two-year degree in nursing after high school. She was 40-years-old. She was very cooperative during instruction and worked very hard learning to correctly model sounds and words.

Gus and Sam. Gus, the third participant, completed all lessons with his father. Gus, a 5-year-old white male, lived with his mother, father, and two brothers. His teacher felt that Gus was a good student who needed very specific directions to remain focused. He did well in other subject areas, but Gus had difficulty remaining attentive during literacy instruction. Gus knew less than half of his letter names and none of his letter sounds. He was in the second lowest reading group upon entering the intervention. His group was working on rhyming words within word families and tracing letters. Gus' pre and posttest DIBELS scores are displayed in Table 1.

Gus' dad, Sam, was a stay-at-home dad who completed the entire intervention with his son. Sam was 37-years-old and earned a degree 4-years beyond a high school diploma. Sam was cooperative during instruction and asked many questions. Gus appeared motivated to help his son learn to read.

Setting

One-on-one parent instruction took place at the school. Parents were instructed individually to maintain study design. The experimenter provided meals during parent instruction (e.g., pizza) to

encourage participation. The physical setting for all sessions occurred in the students' classroom with a television and a DVD player. All data were collected in a small instructional room next to the students' classroom. Each parent chose an area within their home to implement the intervention.

Home environments. Anthony and his mother had no specific location to complete their lessons. They worked wherever it was quiet and with minimal distractions. Sometimes they worked at the dinner table or in Anthony's bedroom. They usually completed lessons in the evening after dinner. Anthony's father did not report where lessons were completed in his home. Joe and his mother usually completed lessons in Joe's bedroom or in the living room. They typically completed 1 to 2 lessons during the evening hours. And Gus and his father completed lessons in Gus' mother and father's bedroom. Lessons were completed each evening before or after dinner. On weekends, Gus and his father completed two lessons, one in the morning and one in the evening.

Materials

All instructional lessons used in the study originated from *TYCTR*, based on the fast-cycle component DISTAR Reading I and II (Engelmann & Bruner, 1977) and written especially for parents. Each parent-tutor was provided with the book for his or her home. The lessons were designed with basic concepts of Direct Instruction: review of previous material, correct letter pronunciation and blending, and directions for error correction procedures. Students were assessed with the one of eight different sentence list sheets (see Figure 1) to measure progress over time. Each sentence list sheet contained sentences using all 15-letter sounds, which was eventually taught by the parent. Progress was monitored on each school day, to assess the effect of instruction on each student sounding out words (Barnes & Harlacher, 2008). There were 30 words on each sheet and each letter sound was used at least two times and no more than 12 times. There were 10 sentences with 2 to 4 words in each sentence. Only 10% of the words within each sentence practice sheet were hard words as defined by Carnine, Silbert, Kame'enui, & Tarver (2010). The same letters did not appear in the same position for more than two words in a row. Alphabet letters from the reading program were created with Arial style size 32 font. Sentences were created based on the scope and sequence of sounding out words (Carnine et al., 2010). Students were asked to read for 30 seconds, and then the experimenter counted and wrote number of correct and incorrect words on the top of the sentence practice sheet.

the old ram fēll.
sit and ēat.
mud on thad.
no dan.
rod is old.
ma and tēd.
the fun cat.
do cut it.
a fin can.
that can sit.

Figure 1. Sample sentence list sheet. Each sentence list sheet contained sentences using all 15-letter sounds.

Parents were given audiocassettes and tapes to record all lessons. Each parent was also given a device for accurately providing an auditory recording to review letter sounds to his or her child. The device had a keyboard with lowercase letters and corresponding buttons. Each time a button was pressed the letter sound was produced. A binder containing all 30 lessons, daily checklist for a successful

lesson, and pronunciation guide was given to parents. To motivate parents, a $10.00 gift card of their individual choice of stores (e.g., Wal-Mart, Sheetz) was given for each time 5 lessons were recorded and returned to school.

Dependent Variable

Oral reading fluency. Words were identified as correct if a student sounded out all letters of the word or if a student could read the word at a normal rate without sounding out each letter. A student could sound out the word then say the word quickly as modeled during tutoring. Any word read incorrectly and then self-corrected was marked as correct. Students also could repeat the word, or pause before they read the correct word was marked as correct. Words were marked correct if the student produced imperfect pronunciation due to dialect, articulation, or second language influence.

Insertions, substitutions, and reversals were marked as incorrect. Insertions were when a student inserted a word or letters to make a new word. When students substituted they deleted a letter sound in the word or word in the sentence. Random guessing errors were marked incorrect, when the student pronounced words not closely resembling any form of the words listed. Each time a student said one or several letter sounds or letter names but did not sound out the entire word, all of the sounds given to represent the isolated word were counted, in total, as one incorrect response.

Lesson checklists. The experimenter created an itemized checklist for all steps parents were expected to read in each lesson to measure intervention fidelity (see Figure 2 for an example). Each lesson had a different number of steps. Throughout the intervention, parents were expected to complete a range of 23 to 76 steps. The experimenter completed an itemized checklist for every audio tape recording of lessons for each student and parent. There was a space for the experimenter to check each task the parent had to accurately complete. Intervention fidelity was measured by the number of steps accurately completed divided by the number of steps complete and accurate plus number of steps not complete or accurate and multiplied by 100%. The second observer then listened to 25% of all audio tape recordings across lessons for each student, and completed the same steps to assess intervention fidelity.

Independent Variable

Parent implementation of *TYCTR*. Parents used the book *Teach Your Child to Read in 100 Easy Lessons or TYCTR* (Engelmann et al., 1983) which consisted of 100 formatted lessons. In the current study the

Lesson 1 Checklist

Task 1 Sounds introduction

___ 1
___ 2
___ 3
___ 4
___ 5
___ 6

Task 2 Say it fast

___ 1
___ 2
___ 3
___ 4
___ 5
___ 6
___ 7
___ 8

Task 3 Say the sounds

___ 1
___ 2
___ 3
___ 4
___ 5

Task 4 Sounds review

___ 1
___ 2

Task 5 Say it fast

___ 1
___ 2

Figure 2. Lesson checklists. This is an itemized checklist to check each task the parent accurately completed during lesson implementation.

parents taught the first 30 formatted lessons introducing only 15 letter sounds in the program. In the lessons students were introduced to sounds, instructed to produce letter sounds, letter sound blending, sounding out words, rhyming words, and reading words. In every other lesson students were introduced to one to two new letter sounds, and the letter sounds were reviewed throughout the lessons. Parents followed an instructional method of model, lead, and test. The parents taught students to say words slowly, placing emphasis on each sound. Parents also said compound words slowly and had the students respond quickly. As the lessons continued, students blended sounds together to make words. Words also were put together to make sentences. Writing tasks, picture comprehension, and word finding tasks were all removed, because the present study's primary focus was on decoding and blending. Parents were asked to dedicate 15 minutes a night for 5 nights a week in the home. Parents were told upon completion of the study they could finish *TYCTR* and teach the remaining 70 lessons.

Experimental Design

To measure progress with sentence list sheets the experimenter implemented a multiple baseline design variant called multiple probe design across students (Horner & Baer, 1978; Kennedy, 2005). The design allowed for monitoring any change in student behavior before intervention while eliminating the necessity for recording continuous baseline of the remaining students who were not in intervention. As some students remained in baseline for an extended period, multiple sentence list sheets minimized the threat of reading repeated testing while still allowing for a demonstration of improvement during the intervention condition. The study design also accounted for maturation effects and history (Kazdin, 2011). Additionally, by measuring data and collecting recorded lessons regularly the experimenter was able to compare lesson progress and number of words taught with the amount of words students were able to sound out on the sentence list sheets. Using the single case experimental design facilitated monitoring growth of each participant as they progressed through the reading program. Visual inspection was used to evaluate the effects of the intervention.

Procedures

Pre-screening. The teacher administered the DIBELS letter naming identification and beginning sound fluency subtests to all students upon entering kindergarten and another two times throughout the school year (see Table 1 for scores). The test measures phonologi-

cal awareness and ability to recognize and produce the initial sound in orally presented words (Kaminski & Good, 1998). Assessments were scored according to DIBELS criteria for correct and incorrect letters and sounds. Test scores were used by the experimenter as a pretest screening for students at-risk for reading difficulty. Students who read no letter sounds and identified less than half of the letter names were identified as not making a satisfactory level of progress (Kamps, Abbott, Greenwood, Wills, Veerkamp, & Kaufman, 2008) and were therefore deemed at-risk. The three students nominated by the teacher, who were at-risk, and given parent permission forms became participants for the experiment (i.e., Anthony, Joe, Gus).

Baseline. During baseline the experimenter administered one, 30 second timed sentence practice sheet. No error correction followed any of the baseline passages. Students were praised for participation after each assessment. Because all students were at zero for a period of four days the first student was selected based on parent availability. The remaining students continued in baseline and were assessed with weekly sentence list sheets. The experimenter administered a sentence list sheet before each student began intervention phase to assure students had a stable baseline.

Parent training. All parent instructional sessions occurred in the school at each parent's convenience. Two training sessions were held across two days, totaling approximately two hours and thirty minutes for each parent. Sessions were formatted to facilitate consistent directions for audiocassette recordings and lesson procedures. The experimenter read formatted directions for the training sessions. Parents also were given checklists for using the audiocassette recorder and implementing components highlighted from training sessions.

During the first parent training session, approximately 90 minutes in length, parents were asked to complete a sample lesson with the experimenter to assure parents were able to read and were interested in implementing explicit instruction. The experimenter then handed out support materials for instruction: How to have a successful reading session, pronunciation guide, and the audio recording of the letter sounds. Next, the parent watched a 40 minute interactive video, *Reading for All* (Haddox, 2002) instructing parents on *TYCTR*. The video covered the importance of following the script, how to sound out each letter, saying words fast and slow, rhyming, and representation of each letter symbol. Parents were given opportunities to model how to say each sound. Next, there was an overview of feedback and corrections. Again, parents had opportunities to practice skills and receive feedback. Last, parents were given the chance to carry out blending and rhyming skills. At the end of the first instructional

session parents were asked to complete a list of questions to share more information regarding family history and the home literacy environment. The experimenter also asked where gift cards should be purchased. All parents selected Wal-Mart. Parents were then asked what small reward the experimenter could provide (e.g., stickers, bracelets) their child for participating each evening.

On the second instructional session, approximately one hour, the experimenter reviewed the support materials for instruction. The experimenter and the parent reviewed skills previously learned during the first instruction session. Next, the parent watched another 30 minutes of *Reading for All* (Haddox, 2002), which modeled the first formatted lesson in *TYCTR*. Parents again practiced skills and received feedback from experimenter. After watching the video, the experimenter provided more opportunities to role-play and provide feedback. Parent questions were answered. Following this session, parents were given the instructional binder, audiocassette, tapes, and contact information for the experimenter.

Parents teaching reading. After each of the first four parent lessons the student brought in the tape for the experimenter to assess assure each parent was meeting the 90% criteria of each lesson. To motivate parents to send the tapes for the first four lessons, parents were given a gift card of choice for $5.00 each time the student brought in the instructional tape in the first four lessons. After the first four sessions parents were then expected to send tapes to school after every five completed lessons. To further encourage parents to record and send in tapes, they were given a gift card of choice for $10.00 each time the experimenter collected 5 lessons. The additional tapes were collected to measure intervention fidelity, no experimenter feedback was provided unless parents had questions. The experimenter called each parent weekly to check in and answer questions.

Maintenance. Four weeks after each student and parent individually finished 30 lessons, the experimenter returned to the school to administer sentence list sheets over three days. Sentence list sheets followed baseline procedures. After the final maintenance session, students concluded their participation in the study.

Interscorer Agreement

The experimenter instructed an additional observer to score child reading data. The experimenter and the second observer both scored sample sentence sheets until they attained 90% accuracy for scoring words correct per min. Then the second scorer listened to 25% of randomly selected sentence list sheets taped recordings for each student throughout the study. The second scorer used practice sen-

tence sheets to calculate the score. Interscorer agreement between the experimenter and the second observer was calculated according to the number of agreements divided by the number of agreements plus disagreements multiplied by 100%. Interscorer agreement for words correct and incorrect was 96% (range = 92%–100%).

Procedural Integrity

The experimenter completed an itemized task list for all 30 lessons for each participant. The second observer completed an itemized task list for 25% the lessons for each participant. The experimenter and the second observer both completed checklists on sample lessons until they attained 90% accuracy for tallying task completion. Agreement between the experimenter and the second observer was calculated according to the number of agreements divided by the number of agreements plus disagreements multiplied by 100%. Interscorer agreement for steps completed was 95% (range = 93%–100%).

Results

The following section provides a summary of student outcomes. Each participant's data is summarized within the baseline, intervention, and maintenance phases in Figure 3. Parent data is also illustrated and described to show the accuracy of implementation throughout the study.

Reading Sentence List Sheets

Figure 3 displays the correct words read per 30 seconds for Anthony, Joe, and Gus each day during baseline, intervention, and maintenance. The solid dots represent correctly read words for each sentence list sheet. Each student read a minimum of four sentence list sheets during baseline. Figure 3 has the horizontal axis scaled with calendar days and placed in real-time. The space between some data represents weekends and times when the students could not attend the measurement session (e.g., illness, assembly). The vertical axis shows the total number of correct words read per 30 seconds.

Words correct within 30 seconds. None of the students read any words correct during baseline. Anthony's data points were stable with a zero trend for baseline. Occasionally Anthony stated, "I do not know" for sentences. Other times he did not say anything. Joe often made up words (e.g., tractor, cow) during baseline. Gus also had a stable baseline with zero words read correctly. Gus attempted to sound out words but was unable to blend them together to make words.

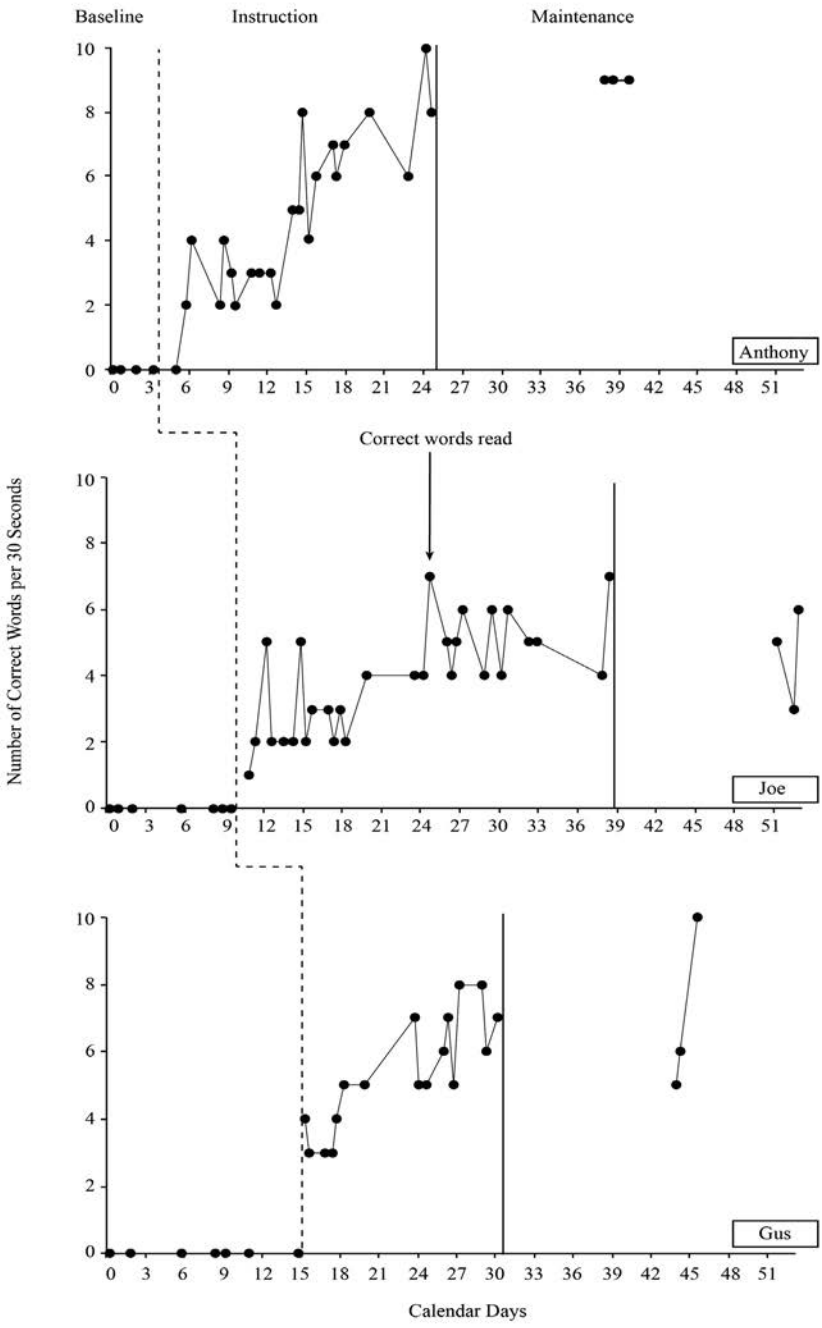

Figure 3. Number of words correct. Solid dots represent correctly read words for each sentence list sheet.

Anthony was selected to begin intervention first. The intervention lasted seven weeks, and Anthony had 23 different assessments of the sentence list sheets. Over the course of that time, seven sentence list sheets were administered three times, one sheet was administered four times. Using the split-middle design (Kazdin, 2011) Anthony's data points showed a stable, moderate increase in trend over time. One month after completion of the 30 lessons maintenance data were collected for Anthony. He continued a high rate of reading words correctly. His words correct were stable with a maintaining trend for three different reading sheets over a number of days. During baseline Anthony had a mean rate of zero responses. Anthony's mean rate of responding during intervention phase was 4 words read correctly. Anthony's mean rate of responding during the maintenance increased to 9 words read correctly.

The intervention lasted nine weeks for Joe and Gina. Joe's data presented a moderate increasing trend of words correct during intervention. His words correct were stable. One month after the 30 lessons were completed maintenance data were collected. Data points were within the high end of the range to data collected during intervention. Words read correctly also showed a moderate amount of variability. Joe had a mean rate of zero words read correctly during baseline. During the intervention Joe had a mean rate of three words read correctly. Joe's mean rate of responding during the maintenance improved to four words read correctly.

Gus and Sam completed two lessons on the first day of intervention, and Gus and Sam completed more lessons each week compared to other participants. The intervention phase lasted for five weeks. Gus had a rapid increase in trend of words read correct over time. Data for words read correct were stable. The instructional phase was over when parents completed 30 lessons. During maintenance Gus was able to continue to read at a rapid increasing trend with stable data points. Like the other students, Gus also had a mean rate of zero words read during baseline. During the intervention Gus had a mean rate of five responses. Gus' mean rate of responding was seven words during maintenance.

Lesson Completion and Accuracy

Table 2 displays percentage of the steps completed by parents and accuracy for each lesson. The average percentage of accuracy and completion for all three participants was 88%. Listening to all recordings revealed a consistency among the three participants, they regularly skipped one item in the lessons. Parents rarely repeated sections when the directions stated "Let's read that again." Not repeating

Table 2
Parent Completion and Accuracy

Parent	Range of completion and accuracy	Average percentage of completion and accuracy
Amy	78–100	92
Andy	58–100	79
Gina	78–100	88
Sam	82–100	96

words appeared to be the most common error with all parents. Occasionally parents did mispronounce letter sounds. Sam had difficulty with the "th" sound because it is a blended sound, and coincidently blending sounds were not on the sound recording. Fortunately, Sam was able to correct his error within two lessons once the pair started sounding out "th" within words. Gus and Sam had the highest average of accuracy and completion, with a rate of 96%.

Gina mispronounced several vowel sounds, but she also was able to correct herself within several lessons when she heard the vowels sounds within words. Joe and Gina's percentage of completion and accuracy was 88%, an average rate for all three pairs. Accuracy and completion varied with Anthony's parents. Amy's average was 92% and Andy's average was 79%. Amy did have errors pronouncing vowel sounds and she was able to correct herself within several lessons. Andy also made errors with vowel sounds, but he never made corrections with letter sounds. Often times when Andy was practicing "Say it Fast" he would practice letter names and not letter sounds. After Amy was able to correct letter sounds Anthony was then able to pronounce correct sounds with his dad.

Discussion

The purpose of the present study was to determine if students who were at-risk for reading difficulty could learn to read through parent instruction with a modification of the explicit instruction beginning reading book, *Teach Your Child to Read in 100 Easy Lessons*. Furthermore, the present study observed parents' ability to implement the reading program with fidelity as measured by completion and accuracy of parent implementation.

The systematic assessment of students' lessons demonstrated clear student improvements as a result of parent intervention. None

of the students could read any words during baseline. Only upon introduction of letters and their corresponding sounds did students begin sounding out these letters and reading words and sentences on the sentence list sheets. Based on the demonstrated experimental control, maturation can be ruled out as an explanation for the observed change in behavior (Kazdin, 2011). All child progress corresponded with the direct application of the intervention. The stable baseline for all students indicate current teaching methods were not addressing students' needs for building phonemic awareness and decoding words. Thirty days after parent instruction ended maintenance data demonstrated students were still able to read words at a high level with very few words read incorrectly. Indeed, Gus' last maintenance data point was higher than any of his previous data points in the correct words phase. Gus' data suggest that he learned reading skills and could apply them at a very high level.

During baseline students either guessed at letter names or words. Random guessing can cause frustration and confusion because students who are taught to guess continually practice reading errors rather than applying a strategy for learning sounds and words (Carnine et al., 2010; Torgesen, 2002). Avoiding random guessing is especially important for teaching students who are at-risk for reading difficulty. By teaching students with *TYCTR*, parents gave purposeful feedback for error correction so students would work on connecting letters with sounds rather than relying on random guessing. Joe commonly guessed words during baseline yet he quickly stopped once he learned the strategy for sounding out words. Often times, incorrect words during intervention were the students' attempts to sound out letters they recognized. Students were unable to blend the entire word, however, because they had not learned all of the letters within the words.

As previously reported (Drouin, 2009), students can benefit from parent instruction. Yet very few studies report the precise level of intervention fidelity as measured by completion and accuracy within a reading program (Regtvoort & van der Leij, 2007; Schreder, Hupp, Everett, & Krohn, 2012). Specifically, the present study indicated parents could implement an explicit instruction reading program with high rates intervention fidelity as measured by completion and accuracy.

Average scores for lesson completion for all parents were 88%. Despite the perception parents have low rates of implementation accuracy, their completion rate is slightly lower than teacher integrity of 94% (Ziolkowski & Goldstein, 2008) or paraprofessional integrity at 90% (Lane, Fletcher, Carter, Dejud, & DeLorenzo, 2007) within other reading interventions. Further analysis showed most parents made

the same error of not repeating words a section. Parents had a limited amount of errors with modeling letter sounds. Yet, despite providing parents with auditory versions of letter sounds, at times modeling certain sounds was still difficult for parents. However, because parents were able to hear sounds when practicing familiar words, parents quickly corrected errors of letter sounds in future lessons. With the structure of repetition of few skills in the lessons of *TYCTR* parents were able to make self-corrections and consistently teach lessons.

Although in past studies fathers rarely participated in research and reading related activities with their children (Frieman & Berkeley, 2002; Leach & Siddall, 1990), Sam father Gus was fully engaged. Sam attained high levels of completion and accuracy as compared to other parents. Gus and his father completed lessons daily. They were very motivated to complete lessons and wished to continue with the program after the study was over. Although this was only one example of a father implementing a reading intervention, the results are promising for a father completing the study. Gus shared how much he enjoyed the new connection that he made with Sam, and he loved the support he had with the reading script each night. That support is not always present with homework.

Even with research suggesting parents' motivation for investing in research is based on the incentives maintaining their participation in the study (Kline, Grayson, & Mathie, 1990; Rice & Broome, 2004), several parents declined meals for the instructional sessions. Plus, when they were asked about which store they would like gift cards from they reported they thought this was a great bonus, but they did not realize that gift cards were included. Though it cannot be discounted, financial support could have motivated parents to maintain participation in the study. It is common for students to drop out of parent involvement reading studies (Fielding-Barnsley & Purdie, 2003; Justice et al., 2005; Vinograd-Bausell, Bausell, Proctor, & Chandler, 1986) for various reasons. Yet in the present study, all three parents who completed initial parent training followed through with teaching all 30 lessons to their children.

Study Limitations

Though DIBELS is commonly used in the schools as a primary indicator for students who need further reading intervention (Kamps et al., 2003), it is important to consider multiple levels of screenings to avoid an increase in false positives and false negatives (Compton, Fuchs, Fuchs, Bouton, Gilbert, & Barquero, 2010). When using DIBELS there are issues with considering Letter Naming Fluency (LNF) and Initial Sound Fluency (ISF) subtests for accurately selecting students

at-risk (Goodman, 2006). With letter naming fluency subtests it is important to consider some students may take longer to identify and answer letter names therefore earning a low score which looks similar to a student who only knows a limited number of letters. As a result, but for different reasons both students would still be identified at-risk. Plus, with initial sound fluency these pictures have specific names and sometimes can be identified with multiple names (e.g., bear or cub). Therefore if the student is not providing the exact classification as addressed by the answer booklet, students could have inaccurate scoring based on alternate naming of pictures. Finally, this study included only three participants. These results may not generalize across all students with these characteristics. Replication is needed to provide more evidence to support this intervention.

Future Research

Empirical evidence suggests parents can teach explicit letter sounds and blending skills in the home (Drouin, 2009; Erion, 2006; Justice et al., 2005). The present study suggests parents with a range of educational backgrounds could implement explicit instruction lessons at high rates of completion and accuracy. However, it is unknown if these participants will avoid reading difficulties as they continue through school because they completed only 30 lessons. Therefore, it would be beneficial to follow the students through school and determine the long term impact of the instruction. Additionally, examining the effect of students completing all components of the 100 lessons over an extended period of time would offer productive information. By teaching the entire series student reading outcomes such as comprehension and testing identification could be compared.

In the present study, following explicit parent training parents were able to complete lessons without feedback on their performance. The children were able to improve their reading during this process. Because each parent was making similar mistakes throughout their lessons it would be more valuable for the parents to receive immediate feedback on their performance (Coulter & Grossen, 1997) so students would not be practicing errors on a regular basis. Therefore, having the experimenter or teacher providing contact with all persons responsible for delivering instruction would be important to examine (Kupzyk et al., 2012). Additionally, replicating a large scale controlled study with students and parents would specify how *TYCTR* could benefit more students who are struggling to read.

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