THE EFFECTS OF FLUENCY TRAINING ON THE FIDELITY WITH WHICH PARAPROFESSIONALS IMPLEMENT A READING INTERVENTION

by

Renee Magnusson

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Approved:

_____	_____
Timothy Slocum Major Professor	Kimberly Snow Committee Member
_____	_____
Ben Lignugaris/Kraft Committee Member	Byron Burnham Dean of Graduate Studies

UTAH STATE UNIVERSITY
Logan

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ABSTRACT

The Effects of Fluency Training on the Fidelity with which Paraprofessionals Implement a Reading Intervention

by

Renee Magnusson, Master of Science

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Major Professor: Dr. Timothy A. Slocum
Department: Special Education and Rehabilitation

In schools, didactic training is a common method for promoting intervention fidelity. Despite its prevalence, however, a number of literature reviews suggest that didactic training alone is not an effective way to promote intervention fidelity. Training seems to be more effective when coupled with daily or weekly performance feedback in applied settings. However, given the level of resources in typical public schools, this amount of performance feedback for all teachers and paraprofessionals may not be feasible. Therefore, there is a need to explore additional means of promoting intervention fidelity. The current study examines the effects of fluency training on intervention fidelity by paraprofessionals in an applied setting. Results suggest that systematic fluency training can improve intervention fidelity, even when the interventions are complex and are being conducted by paraprofessionals with limited formal education. The study's findings also suggest that ongoing monitoring of implementation fidelity is necessary, because maintenance of these effects is idiosyncratic. (96 pages)

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Renee Magnusson

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INTRODUCTION

Cost of Reading Failure

Reading ability provides the foundation for all school-based learning (Lyon, 2001). Therefore, when students experience serious reading problems, the academic consequences are grim. The delayed development of reading skills affects vocabulary growth (Cunningham & Stanovich, 1998) and interferes with opportunities to develop comprehension strategies (Brown, Palincsar, & Purcell, 1986). Beginning in fourth grade, a large portion of school content is delivered via the printed word (Jacobs, 2002). Poor readers are cut off from some or all of this content, and it becomes difficult for them to complete assignments, perform well on tests, or to participate in other academic activities. Thus, reading failure often leads to school failure. Poor reading skills are correlated with school suspension (Arcia, 2006), dropping out of school (Daniel et al., 2006), and low levels of post-secondary educational attainment (Kutner et al., 2007).

The consequences of reading failure extend beyond the academic realm. A strong correlation exists between reading failure and incarceration (Beebe & Muller, 1993; Christle & Yell, 2008; Rogers-Adkinson, Melloy, Stuart, Fletcher, & Rinaldi, 2008). Also, on the National Adult Literacy Survey of 1992, the unemployed are substantially overrepresented in the lowest 2 levels on each literacy scale. In the same survey, those with lower literacy levels generally earned lower incomes (Sum, 1999). Reading failure is also correlated with suicidal ideation in youth (Daniel et al., 2006), feelings of shame in adults (Parikh, Parker, Nurss, Baker, & Williams, 1996), and a range of adverse health outcomes (Berkman et al., 2004). Thus, it is apparent that "failure to learn to read places

children's futures and lives at risk for highly deleterious outcomes" (Lyon, 2001.)

Direct Instruction

Given the high cost of reading failure, it is critical to address the needs of struggling readers. One approach is through Direct Instruction (Adams & Engelmann, 1996). Direct Instruction is a highly structured model for teaching reading. During Direct Instruction, teachers follow a script that maximizes clarity of communication. Using this script, teachers present concepts and skills in a strategic sequence of small steps. Teachers continuously assess students' mastery of the content, and they use techniques to ensure that students are motivated and actively engaged with the instruction. Lesson pace is brisk, errors are corrected immediately, and review is built into the curriculum (Watkins & Slocum, 2004).

Direct Instruction can improve the skills of a wide variety of students (Adams & Engelmann, 1996; Watkins & Slocum, 2004). The available research includes students in special education (Forness, 2001; White, 1988) as well as students in general education (Engelmann & Carnine, 1989; Tarver & Jung, 1995). The effectiveness of Direct Instruction is strongly supported by empirical data, as noted by a number of independent reviews (American Federation of Teachers, 1998; Borman, Hewes, Overman, & Brown, 2003; Herman et al., 1999).

Corrective Reading

Corrective Reading: Decoding (Engelmann et al., 1999) is a Direct Instruction curriculum that emphasizes decoding skills. The curriculum is designed for remedial

readers--those who have received reading instruction in the past, but who continue to have trouble with reading. Specifically, it is designed for students in grades three through twelve who add or omit words when reading, who read synonyms for printed words, who do not read at an adequate rate, who confuse words with similar spellings, and who tend to make word-guessing mistakes (Engelmann, Hanner, & Johnson, 1999).

In a number of research studies, researchers have documented the effectiveness of this curriculum with students with decoding problems. In their literature review, Przychodzin-Havis et al. (2005) cited 28 published studies that examine the effectiveness of *Corrective Reading.* Twenty-seven of these 28 studies found positive results for *Corrective Reading.*

Intervention Fidelity

While *Corrective Reading*'s effectiveness is well documented, this effectiveness could be compromised in cases where the program is not implemented with fidelity. Intervention fidelity is the degree to which a treatment is implemented as planned (Noell, 2008), and its importance is widely recognized. A number of researchers have documented correlations between high intervention fidelity and desirable student outcomes. Noell et al. (2005) found a moderate statistically significant correlation between treatment integrity and desirable child behavioral outcome when studying teachers' implementation of treatment plans following consultation. DiGennaro, Martens, and McIntyre (2005) documented a correlation between classroom teachers' improved treatment integrity and students' decreased off task behavior. Other researchers, including Greenwood, Terry, Arreaga-Mayer, and Finney (1992), Sterling-

Turner, Watson, and Moore (2002), and Witt, Noell, LaFleur, and Mortensen (1997) also documented correlations between intervention fidelity and desirable student outcomes. In studies where levels of fidelity are manipulated, conditions with low intervention fidelity are functionally related to poorer student outcomes (Noell, Gresham, & Gansle, 2002; Vollmer, Roane, Ringdahl, & Marcus, 1999; Wilder, Atwell, & Wine, 2006).

These research findings underscore the general importance of intervention fidelity. In specific cases where Direct Instruction is being used, the importance of intervention fidelity becomes even more apparent. A critical feature of Direct Instruction programs is that each component is interrelated, and each exists to maximize the programs' instructional efficiency and power (Watkins & Slocum, 2004). Therefore, it would appear to be vital that all parts of the programs be implemented with fidelity. This supposition is supported by research. Carlson and Francis (2002) found that classroom teachers' successful implementation of Direct Instruction teaching techniques was related to positive student performance in reading.

Responsiveness to Intervention

RTI provides a means for identifying and helping students who are struggling, and a system for the timely identification of students for possible placement in special education (Fuchs, Mock, Morgan, & Young, 2003; Vaughn & Fuchs, 2003). RTI is implemented differently in different schools, but the general approach can be described as follows: all students receive "generally effective" instruction from their classroom teachers using evidence-based curricula. Student progress is monitored, and those whose academic progress is below acceptable levels receive more intensive help. Again, their

progress is monitored. Students who still do not show adequate progress may be referred for a special education evaluation (Fuchs et al., 2003). The underlying idea is that special education should only be considered after the student receives high-quality and reasonably intensive instruction in general education.

In settings where a Responsiveness to Intervention (RTI) model is in place, intervention fidelity is critical (Noell & Gansle, 2006; VanDerHeyden, Witt, & Barnett, 2005). If students receive low-fidelity instruction, they may be over-identified for increasingly intensive intervention. This over identification draws resources away from students who truly need them, and may place students in unnecessarily restrictive environments. These unfortunate results can be hard to avoid, however, given the difficulty of ensuring high intervention fidelity. This is especially true in tier 2 environments where interventions are often delivered by paraprofessionals. Most paraprofessionals have minimal training as educators, so the task of providing high-fidelity interventions is especially challenging for them.

Promoting High-Fidelity Intervention

Didactic Training

In school settings, didactic training is a common method for promoting intervention fidelity. Didactic training for teachers takes place outside the classroom. The training is usually a combination of lecture and demonstration, with little or no time for practice. Despite its prevalence, however, a number of literature reviews suggest that didactic training alone is not an effective way to promote intervention fidelity (Joyce & Showers, 2002; Noell, 2008; Rose & Church, 1998; Scheeler, 2008). According to these

reviews, people who participate in didactic training may acquire new skills, but they are unlikely to generalize all of these skills into applied settings. However, Slider, Noell, and Williams (2006) noted that while many researchers suggest that didactic training is not an effective way to promote intervention fidelity, other researchers demonstrate exceptions to this general finding (Lerman, Vorndran, Addison, & Kuhn, 2004; Moore & Fisher, 2007; Slider et al., 2006). These researchers provided didactic training that resulted in the generalization of new skills to applied settings.

Slider et al. (2006) conducted a study with three master's level teachers. These teachers received didactic training in the form of print packets and videotapes. These training materials provided models of effective classroom management strategies. All three participants generalized new skills into their natural teaching environments.

In the Moore and Fisher (2007) study, participants were taught how to conduct functional analysis sessions. Three different methods were used to deliver information: (1) lectures, (2) partial video modeling, and (3) video modeling that contained a large number of therapist exemplars. Video modeling with therapist exemplars produced mastery-level performance eight out of nine times that it was introduced, and probes suggested that participants had generalized their new skills to the natural environment.

Lerman et al. (2004) conducted a study in which teachers received didactic training on preference assessment, direct teaching, and incidental teaching. In addition to face-to-face instruction, participants were given opportunities for practice and performance feedback in the training setting. All participants generalized new skills into an applied setting, although in some cases the level of performance was not as high as it was in the training classroom.

Performance Feedback

Even if initial training promotes a high level of intervention fidelity, this level may not stay high for very long. Many studies show that intervention fidelity tends to deteriorate over time. Performance feedback is an effective means for countering this deterioration (Hagermoser-Sanetti, Luiselli, & Handler, 2007; Mortenson & Witt, 1998; Noell, Duhon, Gatti, & Connell, 2002; Noell, Witt, Gilbertson, Ranier, & Freeland, 1997; Witt et al., 1997). In each of the studies listed above, teachers received initial training and began implementing interventions with a high degree of fidelity. However, this level of fidelity soon declined. In most cases, when the teachers received performance feedback, their intervention fidelity improved.

Performance feedback involves monitoring a specific behavior and providing feedback to the individual regarding that behavior (Noell et al., 2005). Hagermoser-Sanetti et al. (2007) found that performance feedback was most effective when it included both graphic and spoken elements. When studied as a staff training method to promote intervention fidelity, performance feedback is more effective than didactic training (Gilbertson, Witt, Singletary, & VanDerHeyden, 2007; Moore et al., 2002; Sterling-Turner et al., 2002; Stormont, Smith, & Lewis, 2007), consultation only (Noell et al., 2005; Reinke, Lewis-Palmer, & Martin, 2007), weekly follow up interviews (Noell et al., 2005), and commitment emphasis training (Noell et al., 2005).

Fluency Training

Although performance feedback is the most commonly studied tool for promoting and sustaining intervention fidelity in applied settings (Noell, 2008; Rose & Church,

1998), it is not always feasible. Given the level of resources in typical public schools, it may not be possible to provide daily or weekly data collection and performance feedback for all teachers and paraprofessionals. Therefore, it would be worthwhile to explore additional means of promoting intervention fidelity.

Fluency training shows promise as a tool for promoting intervention fidelity, even though it is not commonly discussed in this context. Fluency training aims to increase the rate of accurate performance; the end goal is to reach a level of speed and accuracy that is useful in applied settings (Binder, 1996). Some researchers suggest that when learners achieve certain frequencies of accurate performance, they maintain what they have learned (Bucklin, Dickinson, & Brethower, 2000; Ivarie, 1986); remain on task for longer periods (Binder, Haughton, & Van Eyk, 1990); and integrate component response classes into composite response classes (Bucklin et al., 2000; Evans & Evans, 1985; Johnson & Layng, 1992). All of these outcomes can contribute to intervention fidelity. Therefore, it would be worthwhile to examine the effects of fluency training on intervention fidelity in an applied setting.

Direct Instruction Teaching Skills

Given an appropriate combination of training and feedback, teachers can develop the skills necessary to implement *Corrective Reading: Decoding* with fidelity. When the program is implemented with fidelity, paraprofessionals will use a brisk presentation rate, a high praise rate, and effective error corrections.

Presentation Rate

When *Corrective Reading* is implemented with fidelity, students are given a high rate of opportunities to respond actively to academic requests. Research findings support this brisk instructional pace. Carnine (1976), Darch and Gersten (1985), and Sutherland, Alder, and Gunter (2003) noted that when opportunities for active student responding were increased, students' correct responses and on-task behavior also increased.

Praise Rate

"Contingent teacher praise, with its ease of implementation and limited time demands, is not only feasible for classroom application, but also serves as a powerful instructional variable for promoting reading achievement of children evidencing behavioral and/or learning disorders" (Gable & Shores, 1980, p. 106). Teacher praise contingent on student performance increases students' correct responding (Darch & Gersten, 1985; Gable & Shores, 1980) and on-task behavior (Darch & Gersten, 1985; Ferguson & Houghton, 1992; Madsen, Becker, & Thomas, 1968; Sutherland, Wehby, & Copeland, 2000).

Error Corrections

Providing systematic error corrections is related to improved student outcomes in reading (Carlson & Francis, 2002) and other academic areas (Brophy & Good, 1986; Rosenshine & Stevens, 1986). Error corrections that require active student responses are more effective than those that do not require active student responses (Barbetta, Heron, & Heward, 1993; Barbetta & Heward, 1993; Drevno et al., 1994). The *Corrective Reading: Decoding* program calls for error corrections that involve active student responding.

PURPOSE STATEMENT

Given the high cost of reading failure, it is critical to address the needs of struggling readers. Researchers have shown that *Corrective Reading: Decoding*, a Direct Instruction program, can improve the reading skills of students at risk for reading failure. However, while *Corrective Reading*'s effectiveness is well documented, this effectiveness could be compromised in cases where the program is not implemented with fidelity. Furthermore, when *Corrective Reading: Decoding* is used in a Response to Intervention framework, low levels of treatment fidelity could prevent school personnel from correctly identifying the students for whom intensive intervention is truly warranted. This risk is especially great when paraprofessionals with little formal training deliver the program. Therefore, in an effort to promote the accurate identification of students at risk for reading failure, it is worthwhile to examine methods for ensuring and maintaining high levels of treatment fidelity by paraprofessionals who present the *Corrective Reading: Decoding* as an intervention. In several preliminary studies, researchers suggest that when learners perform skills with a certain level of fluency, they maintain what they have learned, remain on task for longer periods, and integrate component response classes into composite response classes. All of these outcomes can contribute to intervention fidelity. Therefore, the current study examines the effects of fluency training on intervention fidelity in an applied setting. The following research questions were addressed:

1. To what extent does fluency-based training in presentation rate, praise rate, and error corrections affect paraprofessionals' acquisition and maintenance of

these skills in a tier 2 classroom setting using the *Corrective Reading: Decoding* program with students at risk for reading failure?

2. If fluency practice does not result in the demonstration of adequate skills in presenting the reading intervention, to what extent does the addition of graphic and verbal performance feedback based on classroom performance result in acquisition and maintenance of these skills?

METHODS

Participants

Paraprofessionals

Five paraprofessionals who provided supplemental reading instruction to small groups (3-6 students) of at-risk students participated in the study. These paraprofessionals provided daily instruction from the *Corrective Reading: Decoding* program throughout the school year.

During the study, participants completed a questionnaire and reported on their prior experience and training. (See Appendix A for paraprofessional questionnaire.) According to these self reports, all of the paraprofessionals in the study completed high school. In addition, three paraprofessionals completed at least some college, and one had completed a bachelor's degree in elementary education. The most experienced paraprofessional had 12 years of teaching experience; the least experienced had 10 months of experience. The amount of experience they had with Direct Instruction ranged from 10 months to 5 years.

All five paraprofessionals reported that they had received large-group didactic training from the school district. During this school year, most had received some follow-up small group training as well, and one had received performance feedback. Despite this training, all of the paraprofessionals who participated in the study demonstrated praise rates below three per minute, four of five participants used effective corrections less than 65% of the time, and two of five participants presented the intervention ineffectively. Table 1 shows paraprofessionals' performance on each

behavior. Shaded cells indicate areas where paraprofessionals were below the standard for adequate performance.

Table 1

Teaching Behaviors in Baseline

	Mean correct presentation rate/minute	Mean praise rate/minute	Mean accuracy on error corrections
Level that demonstrates need	Below 6	Below 3	Below 65%
Ms. Allen	7.7	2.40	55.24%
Ms. Dean	0.35	1.86	40.00%
Ms. Jones	0.03	0.35	19.58%
Ms. Lewis	12.11	2.56	49.40%
Ms. Tate	19.98	0.40	62.08%

Setting

Classroom

Paraprofessionals and students were observed in their classrooms during group instruction in two schools. In school 1, the classroom contained eight tables, and there were five to seven chairs around each table. Each table was separated by temporary walls that were about seven feet high. Eight groups participated in reading instruction at the same time.

In school 2, the classroom contained five tables with five to seven chairs around each table. The tables were separated by bookshelves that were around three and a half feet tall. Five groups participated in reading instruction at the same time.

Fluency Training

In school 1, fluency training took place in the school's media center. Participants sat at one of four tables, with three to five people at each table. In school 2, fluency training was held in the same classroom where reading intervention occurred. Participants sat at one of three tables with five to seven people at each table.

Materials

The paraprofessionals in the study implemented level B1 or B2 of the *Corrective Reading: Decoding* program (Engelmann et al., 1999). Levels B1 and B2 each include 65 scripted lessons, and each lesson could be completed in 45 to 50 minutes. Lessons began with a word-attack section in which students read isolated words and letter sounds. Next, students practiced reading connected text in the form of stories. While reading these stories, they answered comprehension questions orally, and they also re-read passages to build fluency. Finally, they completed workbook exercises related to the words and passages they had just read. As students moved through the lesson, the teacher followed a script designed to maximize communication clarity. The script called for the teacher to model new responses, to signal for group unison responses, and to correct errors.

Dependent Variables

Dependent variables were measured during the word attack section of each lesson. Dependent variables included three aspects of paraprofessionals' behavior: presentation rate, praise rate, and the percentage of error correction steps completed correctly.

Presentation Rate

The first dependent variable was presentation rate, defined as the rate at which paraprofessionals correctly call for group academic responses. A presentation for group responding was considered correct if the paraprofessional used a clearly audible and consistent cue, pause, and signal, as well as appropriate wording of the instruction or direction. Appropriate wording aligned to the script in terms of what teachers and students should do. Omitted cues were considered incorrect. When asking the students to spell a word, the signal for the first letter of the word was evaluated and scored, but if the paraprofessional signaled for each subsequent letter in the word, these were not scored. Time spent on individual turns, discussions of vocabulary words, or other conversations were not included in the rate measure. The number of correct presentations were counted as events during an observation period and described as a rate of presentations per minute. The target presentation rate for classroom teaching was fifteen or more responses per minute across three out of four sessions. This target was created based on expert opinion (C. Watkins, personal communication, January 2009; K. Engelmann, personal communication, January 2009). Teachers' lessons were videotaped daily, and researchers recorded data about presentation rate while watching the videos.

Praise Rate

Praise statements were defined as positive statements made by the paraprofessional and directed to one or more students following an appropriate social, behavioral, or academic response. Praise was counted if it was general ("You did it!" or simply "Yes") or specific ("Wow! You read those words just right!" or "Yes, the word

is…") Praise statements were counted as events during an observation period and described as the rate of praise per minute. The target criterion for praise rate was four or more praise statements per minute across three out of four sessions (C. Schneider, personal communication, January 2009). Teachers' lessons were videotaped daily, and researchers recorded data about praise rate while watching the videos.

Error Corrections

An error correction was considered correct when the paraprofessional did all of the following:

1. stopped before presenting another item (stop);
2. said the correct answer (model);
3. asked the students to respond to the missed item (test);
4. provided at least one opportunity for responses on other items (distracters); and
5. asked the students to respond to the missed item again (retest).

An academic error was counted when one, some, or all students answered with a response that was different than the one called for in the teacher presentation book, or when they did not respond to the question within two seconds of the teacher signal. Sometimes, when students provided the correct answer, they answered before or after the signal, or they dragged out their responses. These errors were considered signal errors (Lignugaris/Kraft & Marchand-Martella, 1993), and while they were important to address, they were not counted as errors in this study. (They were, however, discussed as part of the fluency training, and participants were told how to recognize and address

them.)

Accurate error corrections were measured as the percent of the five error correction steps completed for each error correction attempt. After the paraprofessional had made five error correction attempts, these values were averaged and counted as a data point. However, no attempts were averaged across phase changes, so in some cases, a data point represented fewer than five attempts. (These instances were noted on the graphs.) The target criterion for percent accuracy on error corrections was 95% of error correction steps completed accurately across three out of four sessions (adapted from Lignugaris/Kraft & Marchand-Martella, 1993). A record of uncorrected attempts was also kept. These data are reported as the number of error correction attempts divided by the total number of errors, multiplied by 100%.

Interobserver Agreement on Dependent Measures

A second observer independently coded least 30% of observations across each phase (baseline, all interventions, and maintenance) in both the training and classroom settings.

For error corrections, inter-observer agreement was calculated as the number of exact agreements on each step, divided by the total number of steps (agreements plus disagreements), multiplied by 100%. There was a mean agreement of 95.99%, with a range of 83.33 to 100%.

For presentation rate and praise rate, agreement was determined for each 10-second interval. The interval was scored as 1 (complete agreement), 0 (complete nonagreement), or as a decimal (partial agreement.) For example, if one observer

recorded four events in the 10-second interval, and the second observer recorded three events, the smaller number of events was divided by the larger to yield a decimal of 0.75. This score was added to the scores for all of the other intervals. Then, this sum was divided by the total number of intervals and multiplied by 100%. For presentation rate, there was a mean agreement of 93.04%, with a range of 76.36 to 98.15%. For praise rate, there was a mean agreement of 93.62%, with a range of 78.47 to 100%.

Measurement Procedures

Across all phases of the study, data were collected about paraprofessionals' classroom performance. Paraprofessionals' lessons were videotaped daily, and videos were watched to obtain data about the dependent measures.

During the fluency training phase, additional data were collected. Each training session concluded with a two-minute training probe. During these probes, study participants were given the script from a lesson that they had taught recently in the classroom. They taught a portion of this lesson in the training setting while other paraprofessionals acted as students. Data about the dependent measures were collected during this probe.

Independent Variables

Fluency Training

The complete fluency training course was delivered three times: once at school 1 and twice at school 2. Ten to 15 paraprofessionals participated in each session. These participants included nearly all of the paraprofessionals employed at each school. During

the training, data were collected only about those paraprofessionals who met the criteria for inclusion and who agreed to participate in the study.

Training sessions lasted for one hour and were conducted daily for 5 days. Training sessions were held either before school or after school. Classroom observations of paraprofessionals in the study were conducted concurrently with this training.

During the training, the instructor introduced skills in a sequential manner. She provided the rationale for the skill, modeled the skill, provided opportunities to practice in role-playing situations, and provided positive and corrective verbal feedback. (See Appendix B for an outline of training topics and activities.)

After the paraprofessionals correctly performed each skill, the instructor led the participants in fluency practice. Fluency practice differed from other types of practice in that it was timed, and it included instructions to participants to increase their rate of accurate performance. Before each round of fluency practice, the trainer communicated a target rate of performance that was above the classroom target rate. (See Table 2 for a comparison of classroom target rates and training target rates.) She explained that practice at the increased rate was designed to increase the likelihood that the skills would generalize to the teaching classroom. The target presentation rate in the training session was 15 presentations per minute. The target praise rate for training was 6 praise statements per minute.

During the training for correct presentations, the instructor gave a rationale for group responses. She described and modeled the three parts of a correct presentation: the cue, pause, and signal. The paraprofessionals then practiced this skill for accuracy. This

Table 2

Teaching Behavior Target Rates for Classroom and Training Settings

Teaching behavior	**Classroom Target Rate**	**Training Target Rate**
Presentation rate	15 or more per minute	20 or more per minute
Praise Rate	4 or more per minute	6 or more per minute
Error corrections	95% accurate	95% accurate with target presentation rate

practice was conducted in small groups of three to four paraprofessionals. Each paraprofessional in the group was given a list of words. One person was designated as the teacher, and the other people responded as students. The "teacher" practiced calling for group responses by asking, "What word?", then pausing, and then signaling. The other paraprofessionals in the group responded as the students. After practicing for several minutes, they switched roles so that each person had a chance to act as the teacher.

During this initial practice, the paraprofessionals were asked not to make errors. The instructor circulated through the room and provided participants with positive and corrective feedback. After this accuracy practice, the paraprofessionals practiced for increased fluency. They practiced as they had before, but this time they set a timer and recorded how many correct presentations they could make in a minute. The target rate was 20 presentations per minute.

After the fluency practice, paraprofessionals received training on praise rate. First, the instructor gave a rationale for praising students. She then described the features

of effective praise. Because effective praise is varied, the instructor led the paraprofessionals in an activity where they generated a different praise statement for each of the most common letters of the alphabet. Afterward, the paraprofessionals wrote these praise statements on index cards and used the cards to practice saying the praise statements fluently. Later, they incorporated these praise statements into their practice sessions. They practiced as they did before, with one paraprofessional acting as the teacher and the rest acting as students. The "teacher" called for group responses, aiming to maintain a fluent rate of 20 presentations per minute while adding in praise. Then the switched roles until each person had a chance to act as the teacher.

Next, the instructor described and modeled what to do when students made signal errors (i.e. when they did not respond on signal). The paraprofessionals practiced correcting signal errors in their small groups. Again, they took turns calling for group responses, and again the target fluency was 20 presentations per minute. This time, however, the people acting as students read from word lists that had been marked. Whenever they saw a marked word, they were to intentionally make a signal error. This ensured that the paraprofessional acting as a teacher had ample opportunities to correct signal errors.

Next, training was provided on watching students as they responded (i.e. monitoring students.) The instructor explained why and how to monitor students. Then the paraprofessionals practiced monitoring students while praising and correcting signal errors.

Following the training on monitoring, training was provided on how to correct academic errors. The instructor described and modeled the steps for correcting academic

errors. Then the paraprofessionals practiced correcting academic errors in small groups. During this practice session, the people acting as students read from word lists that had been marked. Whenever they saw a marked word, they were to intentionally make an academic error. This ensured that the paraprofessional acting as a teacher had ample opportunities to correct academic errors. After most of the paraprofessionals could correct errors accurately, they practiced for fluency, working to maintain a correct presentation rate of 20 per minute while still correcting errors on 40% of words.

During the training on praise, the instructor introduced a behavior management technique called "praise around." Praise around involved (a) ignoring students' minor off-task behavior, (b) praising other students for appropriate behavior, and (c) when the student who misbehaved changes his behavior, praising that student immediately. The instructor modeled this technique and explained that it could help to maintain a high percentage of positive comments from the teacher. Paraprofessionals then practiced using this strategy while calling for group responses. People from their groups role-played misbehaving students, and the object was to maintain the fluent level of 20 presentations per minute while using the praise around technique.

As the training progressed, paraprofessionals practiced making correct presentations at this fluent rate while new skills were added one at a time, as described above. Throughout these training steps paraprofessionals used a very simple word attack script (for every word in a word list, they asked "what word"). On the last day of training, paraprofessionals were given a more complex task than they had completed before, one that required them to ask "What sound?" and then "What word?" for each word on a word list. They used this script to make correct presentations at a fluent rate,

while concurrently praising students, correcting content errors, and monitoring students.

Each session ended with a 2-minute training probe for the paraprofessionals who were participants in the study. These probes provided a measure of paraprofessionals' skills in the training setting. During the probes, the study participants were given a script from the word attack section of a *Corrective Reading: Decoding* lesson that they taught recently. Several other paraprofessionals acted as students, and the first paraprofessional was instructed to teach the material as she would in a classroom setting. During the training probe, paraprofessionals were asked to use a "teaching pace" (as opposed to the accelerated "fluency pace" that was practiced during the training). Graphic and verbal performance feedback were provided at the end of the two-minute probe. Graphic feedback consisted of a graph with the paraprofessionals' rates of praise and presentation, the percent correct of error corrections, the positive to negative feedback percentage, and a line that marked the target rate. Verbal feedback included positive statements about improvements.

Performance Feedback

Following the fifth fluency training session, if a paraprofessional failed to meet the criteria for presentation or praise rate in the classroom setting for three out of four sessions, and if there was no increasing trend in the data, performance feedback was given (Di Gennaro, Martens, & Kleinmann, 2007; DiGennaro et al., 2005; Gilbertson et al., 2007; Hagermoser-Sanetti et al., 2007; Noell et al., 2000; Rose & Church, 1998; Witt et al., 1997). During the performance feedback phase, the instructor met with the paraprofessionals daily after class for approximately five minutes. During these

meetings, the instructor provided graphic and verbal feedback to the paraprofessional about that day's performance. These meetings continued until the paraprofessional met the target criteria in the classroom setting for three consecutive days. Graphic feedback consisted of a series of graphs representing each behavior, with a line indicating the target criterion for that skill. Verbal feedback included descriptions of the graphs, positive comments for components that were implemented well, information about components that did not meet criterion, and suggestions for improvement. The instructor offered to answer any questions from the paraprofessional. (See Appendix C for the performance feedback protocol.) She also gave a short written summary of the feedback to the paraprofessional to keep. (See Appendix D for the performance feedback observation recommendations form.)

Training Fidelity

Fluency Training

During fluency training, checklists of targeted components were used to assess implementation fidelity of the training procedures (see Appendix E). Each checklist listed the topics and activities that were planned for an individual training session. For at least 30% of training sessions, an observer completed one of these checklists. The number of components completed accurately was divided by the total number of components and multiplied by 100% for an implementation fidelity measure.

The implementation fidelity measures that were obtained across the study were averaged, and a mean of 89% was obtained. This measure reflects an unforeseen problem with the treatment probes. During 3 days of training, one of the

paraprofessionals lost her voice and was unable to participate in the training probe. If the training probe for these three days is removed from the calculation, treatment fidelity increases to 95%.

Performance Feedback

We used checklists of targeted items to assess implementation fidelity of performance feedback (see Appendix F). Each checklist listed the items that were to be to be discussed in the performance feedback session. It also included a place for the observer to indicate whether or not the item was covered. An observer completed the checklist for at least 30% of the performance feedback sessions. Afterwards, implementation fidelity was calculated by dividing the number of items covered by the total number of items and multiplying that number by 100% for the measure of implementation fidelity. The mean treatment fidelity measure for performance feedback was 98%.

Interobserver Agreement on Training Fidelity

During at least 30% of all training sessions (both fluency training and performance feedback), the instructor and an observer completed the implementation fidelity checklist. Afterwards, the completed checklists were compared. The number of agreements was totaled, and this total was divided into the total number of items on the checklist and multiplied by 100%. These numbers were averaged across checklists, and an IOA of 99% for both fluency training implementation fidelity and performance feedback implementation fidelity was obtained.

Experimental Design

This study used a multiple baseline design across participants (Kazdin, 1982). Decisions about phase changes were made based on two of the three dependent variables: presentation rate and praise rate. Data about error corrections were not taken into consideration when making phase change decisions because it would not have been practical to make decisions based on three different variables.

The study involved four different phases: baseline, fluency training, maintenance, and performance feedback.

Baseline Phase

During the baseline condition, paraprofessionals were video recorded in the classroom, and data were collected about the three dependent variables. This data collection continued until a stable or downward trend in baseline data was observed for presentation rate and/or praise rate.

Fluency Training Phase

At this point, fluency training was introduced to a group of paraprofessionals, one or two of whom were participants in the study. Fluency training continued for five days, and during this time fluency probes were conducted during training sessions. In addition, data collection continued in the classroom.

Maintenance Phase

Following the training, the maintenance phase began. Procedures in this phase were the same as those in the baseline phase. This phase continued until a

paraprofessional failed to meet the criteria for presentation or praise rate on three out of four days and there was no increasing trend in these data. After these conditions were met, the performance feedback phase began as soon as possible for that paraprofessional, but not on the day before a weekend break.

Performance Feedback Phase

During the performance feedback phase, the instructor provided daily performance feedback based on classroom observations. This feedback continued until there were at least three consecutive data points at or above criterion for both presentation and praise rate. When this was the case, the paraprofessional went back into the maintenance phase, and daily monitoring of the dependent variables continued.

RESULTS

This study examined the effects of fluency training and performance feedback on the fidelity with which paraprofessionals implemented a reading intervention. Dependent variables included presentation rate, praise rate, and percent of error correction steps completed correctly. Data were collected as paraprofessionals delivered the word-attack section of their daily *Corrective Reading: Decoding* lessons. Additional data were collected at the end of each training session during a fluency probe.

Effects on Presentation Rate

Presentation rate was defined as the rate at which paraprofessionals correctly called for group student responses. A presentation for group responding was considered correct if the paraprofessional used a clearly audible and consistent cue, pause, and signal, as well as appropriate wording of the instruction or direction. Time spent on individual turns, discussions of vocabulary words, or other conversations were not included in the rate measure. The number of correct presentations were counted as events during an observation period and described as a rate of presentations per minute. Participants' presentation rate is shown in Figure 1.

Ms. Allen

Baseline. During session 1, Ms. Allen signaled for student responses by tapping on the table, but she did not cue students by saying something like, "What word?," and she did not pause before each signal. Because all of her presentations were incorrect during the first session, her presentation rate was zero. During the baseline

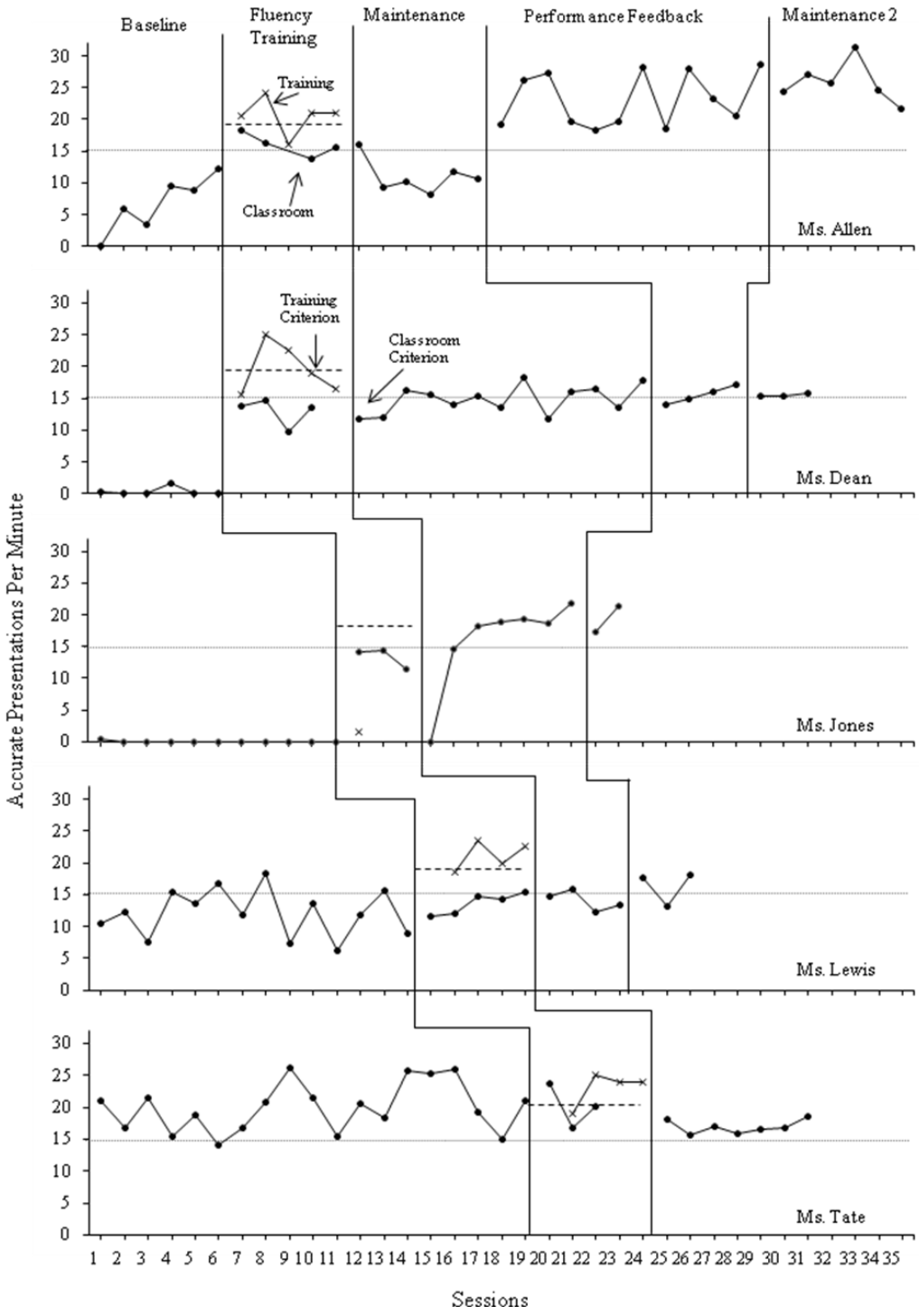

Figure 1. Paraprofessionals' presentation rate.

phase, her presentation rate increased to 12.32 presentations per minute. All of these data points were below the criterion of 15 correct presentations per minute. However, these data showed a steadily increasing trend with a slope of 2.18.

Fluency training: training setting. During the fluency training phase, data about Ms. Allen's presentation rate were collected daily in two settings: the training setting and the classroom setting. In the training setting, data were collected during two-minute probes at the end of each session. During these probes, Ms. Allen was given the script from a lesson she had recently taught, and she was asked to present the word attack section to a small group of training participants acting as students. In these probes, the criterion for presentation rate was 20 correct presentations per minute. (This was higher than the classroom criterion of 15 correct presentations per minute.) Mrs. Allen's presentation rate was above 20 for four out of five probes, with an average rate of 20.55 presentations per minute, and a range of 16 to 24.18.

Fluency training: classroom setting. During these five days of training, Ms. Allen taught four lessons in the classroom. (On the third day of training, she carried out an assessment during class, so there was not an opportunity to collect data about presentation rate.) During the first lesson, her classroom presentation rate was above criterion at 18.38 presentations per minute. During the second session of this phase, her presentation rate remained above the criterion line. It went slightly below the criterion during the third session (13.74), but it remained above all baseline data points. During the fourth session it was again above baseline at 15.69.

Maintenance. During the first session of the maintenance phase, Ms. Allen's presentation rate was 16.02. This was above criterion, and the level was similar to the previous data point. However, during the next five sessions, she often reverted to the behavior she had displayed during baseline: providing signals without cues or pauses. In addition, she often used praise as a cue. (For example, she said, "Good," then signaled, "Great," and then signaled again.) Therefore, her presentation rate dropped to baseline levels. After this continued for five sessions, a performance feedback phase was initiated.

Performance feedback. During the performance feedback phase, Ms. Allen's presentation rate immediately rose above criterion. It remained above criterion for the next 11 sessions. The rate was variable, however, and during three of the sessions it rose to 28 presentations per minute. This very rapid rate did not allow Ms. Allen time to provide an appropriate amount of think time or praise. The performance feedback phase was extended because of her low praise rate, even though her presentation rate was consistently above criterion.

Maintenance 2. During the six-session maintenance phase, Mrs. Allen's praise rate remained above criterion.

Ms. Dean

Baseline. During baseline, Ms. Dean's presentation rate remained close to zero. Her presentations were counted as incorrect because she consistently said the answers along with students, thus providing additional scaffolding not called for in the script. Also, her signals were not audible. After session three, the researcher asked Ms. Dean

not to say the answers with the students. She complied with this request, but her presentation rate remained close to zero because her signals were still not audible.

Fluency training: training setting. During the fluency training, data were collected about Ms. Dean's presentation rate in 2-minute training probes. She met the criterion on the second and third days of training, but not on the first, fourth, or fifth days. Her average presentation rate was 19.6 presentations per minute, with a range of 15.50 to 25.

Fluency training: classroom setting. Ms. Dean's presentation rate had been close to zero during baseline, but on the first day of the fluency training phase, it rose to 13.86 correct presentations per minute. Although this was below criterion, it represented a significant change in Ms. Dean's behavior. During the next three sessions, her presentation rate never met criterion, although it did come close. During the second, third, and fourth sessions, her presentation rates were 14.60, 9.68, and 13.47, respectively.

Maintenance. During the maintenance phase, Ms. Dean's presentation rate hovered around the criterion. It never went below the criterion for 3 out of 4 days, so it did not call for performance feedback. However, because Ms. Dean's low praise rate led to performance feedback, the maintenance phase ended after 13 sessions.

Performance feedback. Ms. Dean's presentation rate lost its variability during the performance feedback phase. Over four sessions, it rose gradually and consistently from 13.95 to 17.27.

Maintenance 2. Ms. Dean's presentation rate remained slightly above the criterion during the three sessions of the maintenance 2 phase.

Ms. Jones

Baseline. Ms. Jones' presentation rate was at or near zero during the baseline phase. During this time, she rarely called for group responses. Instead, she called on individual students to read words out loud. On occasion, when she did call for group responses, she did not provide correct cues, pause, or signals. Instead, she provided a cue for all students to start reading the entire list out loud, and then she read the words along with the students.

Fluency training: training setting. During the first day of training, no data were collected because we ran out of time. On the second day of training, Ms. Jones' presentation rate was 1.50 correct presentations per minute. She taught in much the same way she taught in the classroom. On the third, fourth, and fifth days of training, Ms. Jones did not participate in the training probes because she was ill and had lost her voice.

Fluency training: classroom setting. During the 5 days of fluency training, Ms. Jones taught three lessons in the classroom. (A school-wide assembly and a class party interfered with her teaching schedule on the other 2 days.) Her presentation rate during these lessons was significantly higher than it had been during baseline. During the first two sessions, her presentation rate was close to (but below) criterion at 14.12 and 14.30. During the third session, it decreased to 11.43 correct presentations per minute.

Maintenance. During the first session of the maintenance phase, Ms. Jones' presentation rate returned to zero. She provided correct cues and pauses, but she attempted to signal students by tapping a pencil eraser on the table. These signals were not audible, so all of her presentation attempts were scored as incorrect.

During the second session of the maintenance phase, Ms. Jones provided audible

signals along with correct cues and pauses. Therefore, her presentation rate rose to 14.57. For the next five sessions it remained above criterion, averaging 19.40 presentations per minute and ranging from 18.26 to 21.89.

Performance feedback. When performance feedback was initiated because of Ms. Jones' praise rate, her presentation rate dropped slightly to 17.30. Then, during the next session, it returned to 21.36.

Ms. Lewis

Baseline. During the baseline phase, Ms. Lewis' presentation rate was variable. It ranged from 6.13 to 18.25 correct presentations per minute, with an average of 12.11. It was below criterion during 10 out of 14 sessions. Overall, the data path had a slope of -0.07.

Ms. Lewis often modeled words for students when the script did not call for modeling. (She would say, "That word is cotton. What word?") Whenever she did model, her presentation was counted as incorrect.

Fluency training: training setting. During training, no data were collected on the first day. During the second day of training, Ms. Lewis' presentation rate was slightly below criterion at 18.50. During the next three days, it was above criterion, ranging from 20 to 23.50.

Fluency training: classroom setting. Ms. Lewis' presentation rate stabilized in the classroom during the fluency training phase. However, it did not rise above baseline levels, and it was above criterion only on the last day. Her presentation rate began at 11.51, and it gradually rose to 15.30. Ms. Lewis continued modeling many of the words,

even when this was not called for in the script.

Maintenance. Three of the first four data points in maintenance were below criterion. Therefore, performance feedback was initiated.

Performance feedback. Data during the performance feedback phase were variable. The first and third points were above criterion; the second was below. It would have been ideal to continue performance feedback, but the school year was ending and this was not feasible.

Ms. Tate

Baseline. Ms. Tate's presentation rate was high and variable during baseline. It was above criterion for 18 out of 19 sessions. Her presentation rate averaged 19.09 presentations per minute, and it ranged from 14.15 to 26.13. As was the case with Ms. Allen's presentation rate during maintenance, it seemed that Ms. Tate's rapid presentation rate did not allow her time to praise students. Her praise rate during this baseline was close to zero.

Fluency training: training setting. No data were collected on the first day of training. During the second day of training, Ms. Tate's presentation rate was slightly below criterion at 19 correct presentations per minute. During the next 3 days, her rate was above criterion, ranging from 24 to 25 correct presentations per minute.

Fluency training: classroom setting. During the fluency training phase, data about Ms. Tate's presentation rate overlapped with baseline data 100%. The data path continued to be variable, and it continued to be above criterion.

Maintenance. Ms. Tate's presentation rate lost its variability during

maintenance. It remained above baseline, but the average went down to 16.96, and it ranged from 15.81 to 18.59. During this same time, her praise rate went up. It seemed that the decreased presentation rate allowed her time to provide praise to students.

Effects on Praise Rate

Praise statements were defined as positive statements made by the paraprofessional and directed to one or more students. Praise was counted if it was general or specific. Praise statements were counted as events during an observation period and described as the rate of praise per minute. Participants' praise rate is shown in Figure 2.

Ms. Allen

Baseline. Ms. Allen's praise rate was 2.64 praise statements per minute during session one. This rate was below the criterion of four praise statements per minute. Over the next two sessions, her praise rate decreased to 0.94 praise statements per minute. Then, during session four it increased to 3.77 before dropping again during sessions five and six.

Fluency training: training setting. Praise was discussed during the first day of training, but it was not practiced until day two. Ms. Allen's praise rate during the first training probe was 3.00 praise statements per minute. After practicing praise on day two of training, Ms. Allen's praise rate increased significantly. It rose to 7.16, which was above the training criterion of six praise statements per minute. During day three of training, her praise rate decreased to 4.00, but it increased to 7.00 praise statements per

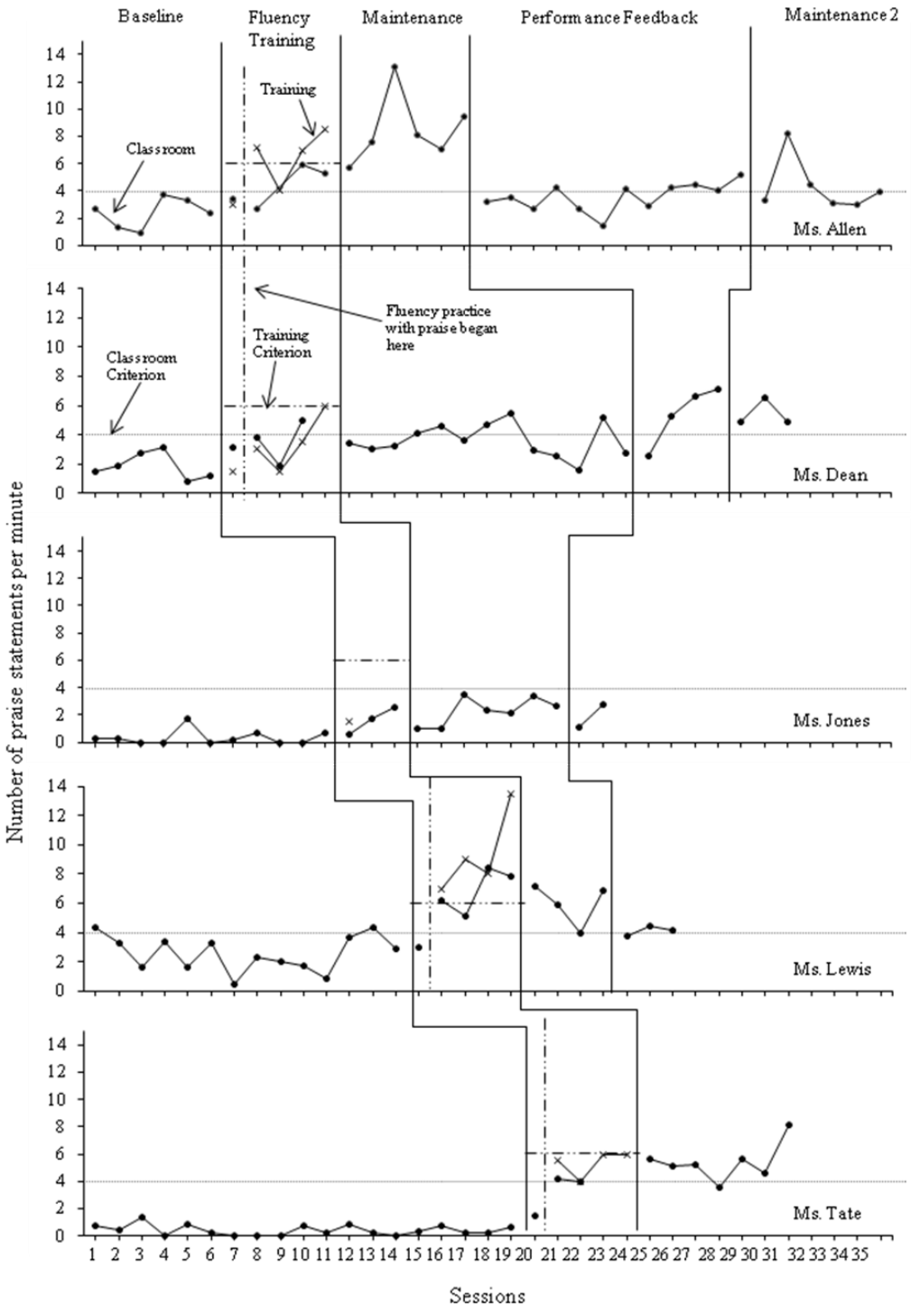

Figure 2. Paraprofessionals' praise rate.

minute on day four and 8.50 on day five.

Fluency training: classroom setting. On the first day of the fluency training phase, Ms. Allen's in-class praise rate was 3.38 praise statements per minute. This rate was below criterion, and it overlapped with her baseline praise rate. This was to be expected, though, because she had not yet participated in praise-related fluency practice. However, during session two, after she had practiced praising, Ms. Allen's in-class praise rate dropped to 2.66. This unexpected drop was followed by an increase in her praise rate during sessions three and four. During these sessions, her praise rate was 5.91 and 5.29, respectively. Both of these rates were above criterion.

Maintenance. Ms. Allen's praise rate was variable during the maintenance phase. It ranged from 5.70 to 13.14 praise statements per minute. This variability was tied to her occasional use of praise in the place of cues. These praise-cues resulted in an increased praise rate while her correct presentation rate decreased. Because her presentation rate was below criterion for three out of four days, performance feedback began.

Performance feedback. After receiving performance feedback, Ms. Allen stopped using praise statements in the place of cues. As a result, her presentation rate increased, but her praise rate decreased. Her praise rate had been 9.45 on the last day of maintenance, but it dropped to 3.25 on the first day of performance feedback.

Over the next 7 sessions, Ms. Allen's praise rate was variable, averaging 3.10 praise statements per minute. It went slightly above the criterion during sessions four and seven, but it was below criterion during the rest of the sessions. Then, during session nine, her praise rate rose above criterion to 4.27 and remained above criterion for four

consecutive sessions. At this point, performance feedback was discontinued.

Maintenance 2. Ms. Allen's praise rate remained above criterion for three out of six sessions during the maintenance 2 phase. During most sessions, her praise rate was close to criterion. An exception was day two, where her praise rate rose to 8.21 praise statements per minute.

Ms. Dean

Baseline. Ms. Dean's praise ranged from 0.78 to 3.14 praise statements per minute during baseline. Each of these data points was below criterion. Overall, the data path showed a slightly negative trend. During the last two sessions of baseline, Ms. Dean's praise rate was about one praise statement per minute.

Fluency training: training setting. Praise was practiced during the first day of training. During the training probe on that first day, Ms. Dean's praise rate was 1.50 praise statements per minute.

After praise was practiced on day two of the training, Ms. Dean's praise rate increased. However, her rate of 3.00 praise statements per minute overlapped with baseline, and it was also below criterion. Her praise rate continued to be below criterion on days three and four of the training; it met criterion on day five. These data suggest that Ms. Dean's praising skills were not fluent when the training ended.

Fluency training: classroom setting. During the fluency training phase, Ms. Dean's classroom data did not show a clear trend. On the first day of training, which is before praise was practiced, her praise rate was 3.18 praise statements per minute. This is below criterion and within baseline range, but it represents a distinct increase when

compared to the last two data points in baseline.

During the second session of the training phase, after Ms. Dean had received both instruction and practice in praising students, her praise rate increased slightly to 3.80 praise statements per minute. It dropped the next session to 1.89. During the fourth session, Ms. Dean's praise rate rose to 4.95 praise statements per minute, which was above criterion.

Maintenance. During the first three sessions of the maintenance phase, Ms. Dean's praise rate was below criterion. It ranged from 3.04 to 3.47 praise statements per minute. Beginning with session four, her rate rose above criterion during four out of five sessions. During session nine her rate dropped to 2.92 and began a downward trend that lasted for three sessions. Performance feedback should have been implemented at that point, but because spring break was approaching, it was delayed. During session 12, her praise rate abruptly rose to 5.19 and then fell to 2.78 during the next session.

Performance feedback. After performance feedback began, no immediate effect was observed. Ms. Dean's praise rate, which had been 2.78 before the phase change, dropped slightly to 2.59 praise statements per minute. However, during the second session, it rose above criterion to 5.27, and it continued rising during sessions three and four. Therefore, performance feedback was discontinued after session four.

Maintenance 2. Ms. Dean's praise rate remained above criterion during the three sessions of the maintenance 2 phase. Her rate ranged from 4.84 to 6.49 praise statements per minute with no clear trend.

Ms. Jones

Baseline. Ms. Jones' praise rate remained low throughout the baseline phase. Her rate was below one praise statement per minute during each of the 11 sessions. The one exception was session five, where her praise rate was 1.68 praise statements per minute.

Fluency training: training setting. Ms. Jones participated in one training probe during the five days of training. During this probe, her praise rate was 1.50 praise statements per minute. This rate was within baseline levels and was below the fluency goal of six praise statements per minute.

Fluency training: classroom setting. During the fluency training phase, Ms. Jones' praise rate showed an increasing trend, starting at 0.59 and rising to 2.54 praise statements per minute.

Maintenance. In maintenance, Ms. Jones' praise rate dropped to where it had been during baseline. Her praise rate was 0.98 praise statements per minute during the first session and 1.04 during the second session. Beginning with the third session, however, it rose above baseline, and it remained above baseline (but below criterion) for the duration of the phase. Between sessions three and seven, Ms. Jones' praise rate ranged from 2.18 to 3.48 praise statements per minute.

Performance feedback. There were only two sessions during the performance feedback phase. The second data point, which was higher than the first, was at approximately the same level as the last data point from the maintenance phase. This phase was terminated early due to the end of instruction for the year.

Ms. Lewis

Baseline. Ms. Lewis' praise rate was variable in baseline, ranging from 0.50 to 4.33 praise statements per minute. Overall, the data path had a slope of -0.02, which indicated a slightly decreasing trend.

Fluency training: training setting. During the training probes, Ms. Lewis' praise rate was consistently above the criterion of six praise statements per minute. Her rate showed an increasing trend, beginning at 7.00 and increasing to 13.50 praise statements per minute.

Fluency training: classroom setting. In the classroom, Ms. Lewis' praise rate was consistently above the criterion of four praise statements per minute. Her rate ranged from 5.12 to 8.00 praise statements per minute, and the data showed an increasing trend overall.

Maintenance. Ms. Lewis continued to praise at a high rate during the maintenance phase. Her praise rate varied from 3.99 to 7.19.

Performance feedback. Ms. Lewis' praise rate lost its variability during the maintenance phase. It remained near the criterion of four praise statements per minute.

Ms. Tate

Baseline. Throughout the 19-session baseline phase, Ms. Tate's praise rate remained below 1.4 praise statements per minute.

Fluency training: training setting. Fluency data about Ms. Tate's praise rate were not collected during the first session of training. During the second and third sessions, Ms. Tate's praise rate was below criterion. She praised 5.60 times per minute

the second day and 4.00 times per minute the third day. During the last two days of training, she met the criterion, praising at a rate of 6.00 praise statements per minute both days.

Fluency training: classroom setting. After she received training and practice in providing praise, Ms. Tate's classroom praise rate showed a significant improvement. She met the classroom praise rate criterion during the second session of this phase (i.e. the first session after practicing her praise). Her praise rate was also high during the third session of this phase, though slightly below the criterion at 3.96.

Maintenance. Ms. Tate's praise rate remained high during the maintenance phase. It was above criterion for six out of seven sessions, and it showed an upward slope of 0.25. On average, the rate was 5.42 praise statements per minute.

Effects on Error Corrections

An error correction was considered correct when the paraprofessional did all of the following:

1. stopped before presenting another item (stop);
2. said the correct answer (model);
3. asked the students to respond to the missed item (test);
4. provided at least one opportunity for responses on other items (distracters); and
5. asked the students to respond to the missed item again (retest).

An academic error was counted when one, some, or all students answered with a response that was different than the one called for in the teacher presentation book, or

when they did not respond to the question within two seconds of the teacher signal.

Accurate error corrections were measured as the percent of the five steps that were completed accurately for each error correction attempt. After the paraprofessional made five error correction attempts, these values were averaged and counted as a data point. However, no attempts were averaged across phase changes, so in some cases, a data point represented fewer than five attempts. (These instances are noted on the graphs.) Also, the data points from the fluency training setting do not represent an average of five error correction attempts, so they should be interpreted with caution. Participants' error correction data are presented in Figure 3.

Ms. Allen

Baseline. Ms. Allen corrected errors with variable accuracy during baseline. Her percentage of steps completed correctly varied from 27.78 to 69.44, and there was no clear trend in the data. All of these data were well below the criterion of 95%.

Fluency training: training setting. Even before the topic of content error corrections was introduced in the training, Ms. Allen's error correction accuracy improved. In the first session of this phase, she completed 92.86% of steps correctly; during the second phase, her percentage was 83.33. In session three, after the topic was introduced and practiced during training, her percentage of steps completed accurately dropped to 75.00. During the fourth and fifth days of training, she completed 100% of error correction steps correctly. It is important to note, however, that unlike the classroom data, these data points from the training setting do not describe an average of five error correction attempts. Therefore, they should be interpreted with more caution.

Fluency training: classroom setting. In the classroom, during sessions one and two of the fluency training phase, Ms. Allen completed 71.43 and 70.83% of error correction steps correctly. (This was before content error corrections were discussed and practiced in the training.) During sessions three and four, this percentage increased to 83.33 and 100%, respectively. (The data point for session 4 should be interpreted with caution, however, because it reflects only one error correction attempt.)

Maintenance. During the maintenance phase, Ms. Allen's error correction data fell to baseline levels. The first data point reflects an average of 64.29% of error correction steps completed correctly. The second data point reflects an average of 50.00% of steps completed accurately.

Performance feedback. After performance feedback was initiated, Ms. Allen completed error corrections with a greater degree of accuracy. The data path showed an increasing trend, starting at a level of 88.89% accuracy and moving up to 96.67%. This last data point was the first one above the criterion.

Maintenance 2. The accuracy of Ms. Allen's error corrections dropped during the maintenance 2 phase, but it did not return to baseline levels. During the first two sessions, she completed 83.33% of steps correctly. During the last session, she completed 100% of the steps, but this data point reflects an average of three error correction attempts instead of five, so it should be interpreted conservatively.

Ms. Dean

Baseline. Ms. Dean completed an average of 40.00% of error correction steps

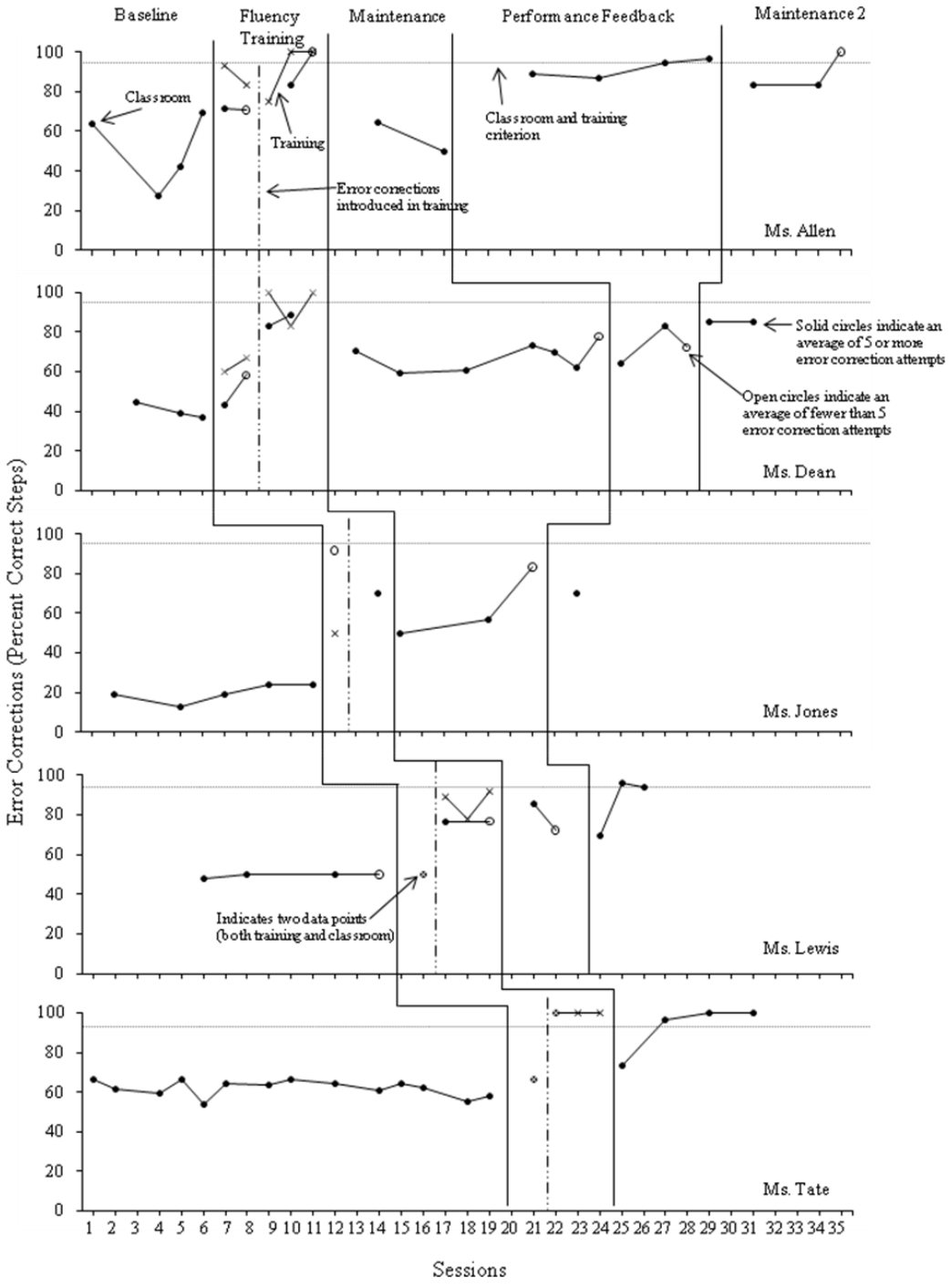

Figure 3. Percentage of error correction steps completed correctly by paraprofessionals.

accurately during baseline. Over three sessions, this percentage showed a steady decline with a slope of -2.62.

Fluency training: training setting. During days one and two of fluency training, Ms. Dean's error correction percentage increased to 60.00 and 66.67% accuracy, respectively. This was before the content error correction procedure was introduced or practiced during training. After this introduction and practice occurred, Ms. Dean's error correction accuracy increased significantly, reaching 100% during the third and fifth days of training. During the fourth day, she completed 83.33% of error correction steps.

Fluency training: classroom setting. In the classroom, Ms. Dean corrected errors with 43.33% accuracy. This percentage overlapped with data collected during baseline. During the second session, Ms. Dean completed 58.33% of steps correctly. (This data point averaged only two error correction attempts.) These first two sessions occurred before error corrections were covered during training.

After receiving training and practice in error corrections, Ms. Dean's error correction performance improved. She did not meet criterion during this phase, but she did correct errors with 83.33 and 89.89% accuracy during sessions three and four.

Maintenance. During maintenance, Ms. Dean completed an average of 67.53% of error correction steps. All data points were below criterion, but they showed a level change when compared to baseline. Individual data points ranged from 59.26% to 77.78%.

Performance feedback. After receiving performance feedback, Ms. Dean's average error correction percentage increased to 73.15. However, two of the three data points overlapped with those from the previous phase.

Maintenance 2. During maintenance, Ms. Dean's percentage of error correction steps was at its highest. She completed 85.42% of steps correctly during the first session and 85.19% of steps during the second session.

Ms. Jones

Baseline. Ms. Jones corrected errors with an average of 19.58% accuracy during the baseline phase. Data points ranged from 12.50% to 23.81%.

Fluency training: training setting. Ms. Jones participated in only one data probe during training, and that was before error corrections were discussed. She completed 50.00% of error correction steps correctly during this probe, which was significantly higher than baseline.

Fluency training: classroom setting. Two data points were collected in the classroom during this phase. The first one was before error corrections were taught and practiced. It documented that 91.67% of error correction steps were completed accurately over two error correction attempts. The second data point was collected after Ms. Jones received instruction and practice in error corrections. This data point documented that she completed 70.00% of error correction steps accurately over five error correction attempts.

Maintenance. During baseline, Ms. Jones' first data point showed that she completed 50.00% of error correction steps correctly. The next data point is higher, reflecting 56.67% of steps completed accurately. The third point is the highest of all at 83.33%, but it averages only two error correction attempts instead of five, so it warrants a more conservative interpretation. All three of these data points are below criterion, but

they represent a level change when compared to baseline.

Performance feedback. Only one data point was collected during the performance feedback phase. It indicates that Ms. Jones corrected 70.00% of error correction steps correctly.

Ms. Lewis

Baseline. During baseline, Ms. Lewis completed an average of 49.40% of error correction steps. The data path during this phase was almost completely level.

Fluency training: training setting. In the fluency training phase, Ms. Lewis completed 50.00% of error correction steps during the first session. Then, after receiving instruction and practice in how to correct errors, she showed marked improvement by correcting 88.89, 77.78, and 91.67% of error correction steps correctly over three different sessions.

Fluency training: classroom setting. In the classroom, Ms. Lewis corrected 50.00% of error correction steps accurately during the first session of the fluency training phase. This was before instruction in content error corrections began. After receiving this instruction, and after practicing error corrections, Ms. Lewis completed 76.19% of error correction steps accurately and repeated this level of performance during the next session.

Maintenance. Ms. Lewis completed 85.42% of error correction steps correctly during the first session of maintenance. During the second session, she completed 72.22% of the steps accurately.

Performance feedback. During the first session of the performance feedback

phase, Ms. Lewis completed 69.44% of error correction steps correctly. During the second session, she met criterion, correcting errors with 95.83% accuracy. This percentage dropped slightly during the third session to 93.75%.

Ms. Tate

Baseline. Ms. Tate completed an average of 62.08% of error correction steps during baseline.

Fluency training: training setting. During training, Ms. Tate completed 66.67% of error correction steps during the first training probe. Then, after receiving instruction and practice with this skill, she corrected errors with 100% accuracy during the next three probes.

Fluency training: classroom setting. In the classroom setting, Ms. Tate corrected 66.67% of steps correctly before she received training and practice with error corrections. Afterwards, she corrected errors with 100% accuracy.

Maintenance. During the maintenance phase, Ms. Tate corrected errors with 73.33% accuracy during the first session. Then, during the next three sessions she exceeded the criterion of 95% accuracy.

Social Validity Outcomes

A questionnaire (see Appendix G) was given to paraprofessionals after the fluency training. Examples of items on the questionnaire included "I enjoyed participating in the training" and "I felt that the training I received helped me improve my classroom teaching." For each item, paraprofessionals indicated "strongly agree,"

"agree," "neutral," "disagree," and "strongly disagree." Later, scores were coded and averaged across items and across the entire questionnaire. An answer of "strongly agree" was coded as a 5, an answer of "agree" was coded as a 4, and so on. This applied to all questions except number 13, which was negatively coded. Because it read, "This training had little effect on my teaching in the classroom," "strongly agree" was coded as a 1, "agree" was coded as a 2, and so on.

The mean rating on the questionnaire was 4.45 out of 5.00, which suggests that the training was perceived as acceptable by study participants. The questions that received the highest average scores (4.8) were number 6, "I feel that the training helped me praise more during class" and number 10, "I would recommend this training to other people." All items were scored as a 4 or a 5 by all participants, with the exception of question 13. This was the question that read, "This training had little effect on my teaching in the classroom." One participant scored it as 3, or "neutral." A second paraprofessional scored it as "2," or "agree." The paraprofessional who scored it as a 2 had scored all other items as a 4 or a 5, so it is possible that she misread the question, not noticing that it was the only one that was negatively coded.

DISCUSSION

Summary and Discussion of Findings

Effects on Presentation Rate.

In the first leg of the study, Ms. Allen's baseline presentation rate increased steadily. As a result, experimental control was not attained, and no conclusions can be drawn from her data about the effects of fluency training. Furthermore, in the fifth leg of the study, Ms. Tate's presentation rate was high and variable during the baseline phase. This meant that there was no chance to demonstrate an increase in rate following fluency training. Thus, data from the first and fifth legs of the study did not contribute to our understanding about the effects of fluency training on presentation rate.

The second, third, and fourth legs, however, did provide evidence that fluency training increased paraprofessionals' presentation rate. Ms. Dean's and Ms. Jones' presentation rates were close to zero throughout baseline. When fluency training was introduced, both paraprofessionals' praise rates showed a clear increase. Furthermore, Ms. Lewis' presentation rate showed a reduction in variability. Over time, these effects were maintained or improved.

In summary, in the three legs of the experiment where there was a chance to show an effect, one showed reduced variability and two showed dramatic effects. The dramatic effects were characterized by presentation rates that were at or near the criterion, in contrast with zero or near-zero baselines. The results were consistent in bringing paraprofessionals' presentation rates up to approximately 15 presentations per minute with limited variability. Because these effects occurred three different times at three

different phase changes, it is probable that that the independent variable was responsible.

Effects on Praise Rate

After she completed the fluency training, Ms. Allen began using praise as a presentation cue. This incorrect use of praise caused unusual patterns to develop in her data. Therefore, data about her praise rate do not combine with data from other legs to create a meaningful pattern.

An interpretable pattern does emerge, however, when looking at Ms. Dean's, Ms. Lewis', and Ms. Tate's data. In all three cases, the introduction of fluency training coincided with an immediate increase in praise rate. These results were maintained by Ms. Lewis and Ms. Tate. Ms. Dean's praise rate began to decline after eight sessions. As a result, performance feedback was introduced and praise rate returned to a high level. In Ms. Jones' case, the introduction of fluency training coincided with the beginning of a gradual increase in praise rate, and this increase was maintained.

In summary, fluency training had a positive effect on praise rate in four of five cases. Maintenance of these effects varied, with one paraprofessional requiring performance feedback to maintain the effects, and one paraprofessional showing an idiosyncratic set of results.

Effects on Error Corrections

Across all five legs of the study, fluency training was associated with a dramatic improvement in error corrections. This dramatic improvement can be characterized as follows: Ms. Dean, Ms. Jones, Ms. Lewis, and Ms. Tate all had stable baselines which ranged from an average of 19.58 to 62.08% of error correction steps completed correctly.

After the error correction steps were discussed and practiced during training, their average error corrections improved by a minimum of 27 percentage points in the classroom. Ms. Allen's baseline data were variable, with the highest data point being 69.44% of error correction steps completed correctly. After the error correction procedure was discussed and practiced during training, Ms. Allen followed an average of 91.67% of the error correction steps correctly in the classroom. This was an improvement of 22.23 percentage points.

Maintenance of these effects was inconsistent, with three types of results emerging: (1) in the cases of Ms. Lewis and Ms. Tate, the effects maintained; (2) in the cases of Ms. Dean and Ms. Jones, there was an initial decrease in the percentage of error correction steps completed, but the percentage remained above baseline levels; and (3) in Ms. Allen's case, error corrections returned to baseline levels during maintenance, but performance feedback appeared to reverse this effect. These results underscore the importance of monitoring participants after the conclusion of training. Training effects may be maintained in some cases, but in other cases, the addition of performance feedback may be necessary.

Limitations

Some limitations of the study and its findings should be noted. First of all, the study involved five paraprofessionals working at two elementary schools in one state. It is not clear whether factors were present that may have influenced the pattern of results, but such factors cannot be ruled out. The study's findings need to be replicated before generalizations can be made to other settings.

Secondly, the likely impact of observer reactivity should be acknowledged. Data collectors attempted to be as unobtrusive as possible, but their presence probably impacted paraprofessionals' behavior. This potential problem is mitigated somewhat by the fact that observers were present throughout all phases of the study and any reactivity would be expected to impact baseline phases as well as treatment phases. Still, reactivity could have interacted with the treatment to accentuate treatment effects.

Furthermore, this study was conducted in an applied setting, so it was not possible to achieve perfect experimental control. Replication across legs of the multiple baseline design addresses many potential threats from unknown contextual variables; however, factors beyond researchers' control may have impacted paraprofessionals' behavior.

In addition, some significant aspects of treatment fidelity were not measured in the study. For example, quality of praise was not measured. So, even when the paraprofessionals' praise rates increased, it is not known if this was high quality praise or not.

Also, training data show that some paraprofessionals did not achieve fluency in all skills during the fluency training. It would have been ideal to extend the training until all paraprofessionals were fluent in all training areas. However, funding and scheduling constraints prevented this from occurring. Paraprofessionals who achieved a greater degree of fluency during training did not necessarily show better results in the classroom. Therefore, it is unclear whether simply practicing would produce the same effects as those produced when participants engaged in fluency activities. This important question cannot be answered without further research.

Finally, it is important to note that the paraprofessionals in this study had been

trained in the past. All of them had an existing repertoire of skills, and they had been practicing these skills for several months or years. In all cases, they had been practicing some mistakes. It is possible that better effects would have been achieved if the treatment from this study had occurred earlier in these paraprofessionals' careers. That way, the fluency training would be competing with a smaller and weaker repertoire of skills and mistakes.

Implications

Results from this study suggest that systematic fluency training may improve intervention fidelity, even when the interventions are complex and are being conducted by paraprofessionals with limited formal education. However, this study's findings also suggest that ongoing monitoring of implementation fidelity is necessary, because maintenance of these effects is idiosyncratic.

This study breaks new ground by examining the link between fluency training and intervention fidelity. Furthermore, it adds to the body of research about promoting intervention fidelity by using paraprofessionals as research subjects. Additional research is warranted to determine how to best train paraprofessionals to implement interventions with fidelity. Useful future research could examine the effects of high-quality fluency training delivered prior to extensive in-classroom experience.

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APPENDICES

Appendix A

Paraprofessional Demographic Questionnaire

Paraprofessional Demographic Questionnaire

Please answer the following questions. The information will be anonymous and summarized as group data.

1. Age: _____
2. Educational background (please check the highest level completed):
    a. ____ 8th Grade
    b. ____ High School
    c. ____ Some college (no degree)
    d. ____ Associate's degree
    e. ____ Bachelor's degree
        What was your major?: _____
    f. ____ Some graduate school (no degree)
    g. ____ Master's degree
        What was your degree in?: _____
3. Do you have a teaching credential? Y N
    a. If yes, what state is the credential from? _____
    b. In what teaching area is the teaching credential (e.g., elementary education, special education, etc.)? _____
4. Number of years teaching or paraprofessional experience: _____
5. Number of years teaching with a Direct Instruction program: _____
6. Number of years teaching with *Corrective Reading: Decoding*: _____
7. Initial training in Direct Instruction (please check all that apply):
    a. ____ I participated in the training that the district provided at the beginning of the school year for the large group of paraprofessionals. Year: _____
        i. I went to the following sessions (please check all that apply):
            1. ____ General training on Direct Instruction (morning session)
            2. ____ Corrective Reading
            3. ____ Reading for all Learners
            4. ____ Reading Mastery
            5. ____ Early Reading Intervention

b. ____ I received my initial training on an individualized or small group basis with a literacy coordinator in the district (do not mark this if you attended the training at the beginning of the year).
c. ____ I received training in Direct Instruction from an Association for Direct Instruction conference, such as the one in Eugene, Oregon, or a regional ADI conference.
d. ____ I received training in Direct Instruction through a teacher preparation program at a College or University.
    i. College or University name: _____

8. Follow-up coaching in Direct Instruction (please check all that apply):
    a. ____ A literacy coordinator or other district employee has observed me teaching at least one of my groups and has provided feedback based on this observation.
        i. If you checked this item, please include the following information:
            1. Number of times this has been done this school year: _____
            2. Average amount of time the coach observed each time: ___
            3. Average amount of time the coach provided feedback on the session each time: _____
            4. Did the coach stop you during any session and show you how to perform a particular skill? Y N
            5. Did the coach show you how to perform a particular skill after any session? Y N
    b. ____ I have participated in small group training with other paraprofessionals conducted by a literacy coordinator that was not related to any particular observation of my skills.
        i. If you checked this item, please include the following:
            1. Number of times this has been done this school year: _____
            2. Average amount of time these sessions took: _____
            3. Average number of paraprofessionals who participated: ___
    c. Other, please describe: _____
    _____
    _____

Appendix B

Outline of Fluency Training Sessions

Outline of Fluency Training Sessions

DAY 1

5 minutes	Introductions, Rationale for Study
30 minutes	Focus, cue, pause, signal
	Rationale for group responses
	Description of the steps
	Modeling of the steps
	Accuracy practice
	Fluency practice
	Graph results
25 minutes	Basic behavior management / praise
	Keep them engaged
	Use your attention
	Features of effective praise (specific, varied, sincere, etc.)
	Alphabet of praise words
2 minutes	Training probe
	2 minute timing with *Corrective Reading* script (10% errors)
	Graph results

DAY 2

5 minutes	Practice praise word fluency
	Teach script with praise
40 minutes	Signal error corrections
	Definition of signal errors
	Rationale for correcting signal errors
	Procedure for correcting signal errors
	Strategies for reducing signal errors
	Model of how to correct signal errors
	Accuracy practice with signal error corrections
10 minutes	Monitoring students
	Rationale for monitoring students

Explanation of how to monitor students

Fluency practice with praise and monitoring

2 minutes Training probe

2 minute timing with *Corrective Reading* script (10% errors)

Graph results

DAY 3

5 minutes Accuracy practice (review) with praise words and signal error corrections

30 minutes Content error corrections

Two types of errors

Steps of content error corrections

Model of content error corrections

Accuracy practice with content error corrections

Fluency practice with content error corrections

2 minutes Training probe

2 minute timing with *Corrective Reading* script (10% errors)

Graph results

DAY 4

15 minutes Review content error corrections and practice

30 minutes Praise around

List of praise around steps

Practice with identifying incompatible behaviors

Model of praise around

Accuracy practice with praise around

Fluency practice with praise around

2 minutes Training probe

2 minute timing with *Corrective Reading* script (10% errors)

Graph results

DAY 5

10 minutes Review praise around and practice

10 minutes	Varied think time
	Rationale for varied think time
	Review of basic signal illustration
	Model of varied think time
	Accuracy practice with varied think time
30 minutes	Pulling it all together
	Accuracy practice with "what sound, what word"
	Accuracy practice correcting content, signal errors, praising, and monitoring with "what sound, what word"
	Fluency practice with all skills on "what sound, what word" script
2 minutes	Training probe
	2 minute timing with *Corrective Reading* script (10% errors)
	Graph results

Appendix C

Performance Feedback Protocol

Performance Feedback Protocol

Materials needed:

Treatment Fidelity forms

Graphs: Presentation rate

Praise rate

Error corrections

1. Review presentation rate graph
    a. Point out latest data point (tell what the value is for that point).
    b. Point out the overall level and/or trend for the current phase.
    c. Point out the criterion level for this skill.
    d. Positive for what has been done with fidelity
    e. Corrective for what needs to be done differently
    f. Recommendations for how to do it differently
    g. Any questions?

2. Review praise rate graph
    a. Point out latest data point (tell what the value is for that point).
    b. Point out the overall level and/or trend for the current phase.
    c. Point out the criterion level for this skill.
    d. Positive for what has been done with fidelity
    e. Corrective for what needs to be done differently
    f. Recommendations for how to do it differently
    g. Any questions?

3. Review error corrections graph
    a. Point out latest data point (tell what the value is for that point).
    b. Point out the overall level and/or trend for the current phase.
    c. Point out the criterion level for this skill.
    d. Positive for what has been done with fidelity

e. Corrective for what needs to be done differently
f. Recommendations for how to do it differently
g. Any questions?

4. Written summary: Recommendation from each graph.

Appendix D

Performance Feedback Observation Recommendations Form

Performance Feedback Observation Recommendations Form

Date: _____

Name: _____

Presentation Rate:

Praise Rate:

Error Corrections:

Positive to Negative ratio:

Other:

Appendix E

Sample Treatment Fidelity Form for a Fluency Training Session

Sample Treatment Fidelity Form for a Fluency Training Session

School 2 Training #2, Day 1

_____ Introductions, Rationale for Study (5 min.; Actual: _____ min.)

Focus, Cue, Pause, Signal (30 min.; Actual _____ min.)

_____ Rationale for group responses

_____ Description of the steps

_____ Modeling of the steps

_____ Accuracy practice

_____ Fluency practice

_____ Graph results

Basic Behavior Management / Praise (25 min., Actual: _____ min.)

_____ Keep them engaged

_____ Use your attention

_____ Features of effective praise (specific, varied, sincere, etc.)

_____ Alphabet of praise words

_____Fluency practice with praise words?

Training Probe

_____2 minute timing with Decoding script

_____10% errors

_____Graph results

Appendix F

Treatment Fidelity Form for Performance Feedback Sessions

Treatment Fidelity Form for Performance Feedback Sessions

Date: _____ Teacher: _____ Person giving feedback: _____

IOA: Y N Total time for feedback: _____

1. Review graph _____
    a. Y N n/a Point out latest data point (tell what the value is for that point).
    b. Y N n/a Point out the overall level and/or trend for the current phase.
    c. Y N n/a Point out the criterion level for this skill.
    d. Y N n/a Positive for what has been done with fidelity
    e. Y N n/a Corrective for what needs to be done differently
    f. Y N n/a Recommendations for how to do it differently
    g. Y N n/a Any questions?

2. Review graph _____
    a. Y N n/a Point out latest data point (tell what the value is for that point).
    b. Y N n/a Point out the overall level and/or trend for the current phase.
    c. Y N n/a Point out the criterion level for this skill.
    d. Y N n/a Positive for what has been done with fidelity
    e. Y N n/a Corrective for what needs to be done differently
    f. Y N n/a Recommendations for how to do it differently
    g. Y N n/a Any questions?

3. Review graph _____
    a. Y N n/a Point out latest data point (tell what the value is for that point).
    b. Y N n/a Point out the overall level and/or trend for the current phase.
    c. Y N n/a Point out the criterion level for this skill.
    d. Y N n/a Positive for what has been done with fidelity

e. Y N n/a Corrective for what needs to be done differently
f. Y N n/a Recommendations for how to do it differently
g. Y N n/a Any questions?

4. Review graph _____
    a. Y N n/a Point out latest data point (tell what the value is for that point).
    b. Y N n/a Point out the overall level and/or trend for the current phase.
    c. Y N n/a Point out the criterion level for this skill.
    d. Y N n/a Positive for what has been done with fidelity
    e. Y N n/a Corrective for what needs to be done differently
    f. Y N n/a Recommendations for how to do it differently
    g. Y N n/a Any questions?

5. Written summary: Recommendation from each graph.
    a. Y N n/a Graph 1
    b. Y N n/a Graph 2
    c. Y N n/a Graph 3
    d. Y N n/a Graph 4

Appendix G

Questionnaire for Paraprofessionals Regarding Training

Questionnaire for Paraprofessionals Regarding Training

Date: _____

Instructions: Please circle the answer that most closely represents your level of agreement with each statement about the observations and training you received.

1. I felt that the training I received helped me improve my classroom teaching.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

2. I enjoyed participating in the training.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

3. I feel that the training I received helps my students read better.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

4. I feel that the training I received helps my students behave better during class.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

5. I feel that the training helped me present items faster and more effectively in class.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

6. I feel that the training helped me praise more during class.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

7. I feel that the training helped me provide more positive than negative statements to my students.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

8. I feel that the training helped me provide more accurate error corrections to students in class.
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

9. I thought that practicing the teaching components at a fast rate during training helped me apply them to my teaching in the classroom..
   a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

10. I would recommend this training to other people.
    a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

11. This training had little effect on my teaching in the classroom.
    a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

12. Overall, I found this training to be worthwhile and helpful to me.
    a. Strongly agree. b. Agree. c. Neutral. d. Disagree. e. Strongly disagree.

13. Comments: