

# Strategies to Increase Reading Fluency

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**Problems in reading fluency have long been considered to be among the most common characteristics of students with mild disabilities and other special needs. In this article, we review research on reading fluency and provide recommendations for practice. Interventions that have received research attention include repeated reading, peer-mediated instruction, computer-guided practice, previewing, and combined approaches.**

**M**ost students with mild disabilities (including learning disabilities, emotional disturbance, and mental retardation) or other special needs experience difficulty in learning to read (Mastropieri & Scruggs, in press). Although problems with word reading skills and reading comprehension are often described, one of the most common characteristics of problem readers is a lack of reading fluency (Adams, 1990; Mathes, Simmons, & Davis, 1992).

Reading dysfluency inhibits good reading performance in several ways. A reduced reading rate, by definition, means that students read less text in the same amount of time as more fluent readers and therefore will have processed less text to remember, comprehend, or appreciate. Moreover, slower reading rates suggest that students may be putting more cognitive effort into identifying individual words than students who read with more automaticity and, therefore, may have fewer cognitive resources available to process meaning (LaBerge & Samuels, 1974; Samuels, 1987; see also Sindelar, 1987). Slower readers also may be less able to hold extended segments of text in their memories and may be less likely

to integrate those segments with the meaning of other parts of the text (see Mathes et al., 1992). Consistent with these ideas is the fact that the reading rate is correlated with other measures of reading, including reading comprehension (Fuchs & Fuchs, 1992).

Over the past two decades, substantial research attention has been devoted to improving reading comprehension, using such methods as direct questioning of text content, reinforcement, pictures and other text enhancements, and comprehension strategy training. Many of these treatments have been shown to be very effective (Mastropieri & Scruggs, 1997; Mastropieri, Scruggs, Bakken, & Whedon, 1996). However, reading programs that do not attempt directly to enhance the reading fluency of dysfluent readers cannot be considered complete—no amount of comprehension training can compensate for a slow, labored rate of reading (Henk, Helfeldt, & Platt, 1986).

## INTERVENTIONS TO INCREASE READING FLUENCY

### Search Procedures

Although reading comprehension and reading decoding training have received more research attention, several techniques for enhancing reading fluency have been studied. In this article, we review and synthesize the available research to clarify issues regarding fluency instruction in students with reading disabilities and to summarize findings in order to make specific suggestions for practice. We undertook a search of relevant databases

(e.g., ERIC) and a hand search of relevant journals in order to identify investigations of training procedures intended to increase reading fluency. Studies were included if reading interventions were implemented to increase reading fluency and dependent measures were included that assessed reading fluency, such as reading rate, number of words read correctly, number of oral reading errors, or some other type of reading fluency measure.

Our search revealed relevant studies published from 1981 to 1994 in *Journal of Educational Research*, *Journal of Learning Disabilities*, *Learning Disabilities Research*, *Learning Disabilities Research & Practice*, *Learning Disability Quarterly*, and *Reading Research Quarterly*. Students from Grades 1 to 12 with reading difficulties, including slow reading rates, participated in the investigations, although the majority of the participants were upper elementary age. The interventions employed were diverse but could be classified as repeated reading, peer-mediated reading instruction, computer-guided practice, and previewing. Details of these investigations are discussed separately by area.

### Repeated Reading

It has been suggested that reading fluency can be increased by the method of repeated reading (e.g., Moyer, 1982; Samuels, 1979, 1987). In this method students are given short reading passages that contain words generally recognizable to students. Students are asked to read the passage several times until a predetermined level of fluency or reading rate is attained, at which point students begin a new passage. Reading rate is often calculated by dividing the number of words read correctly by the total amount of reading time. Students may be involved in recording and charting their own progress. In some instances, a criterion (e.g., 95 words per minute) is established; in other instances, a specific number of repetitions (e.g., three to five) is specified (see Rashotte & Torgesen, 1985).

O'Shea, Sindelar, and O'Shea (1987) investigated the differential effects of repeated reading on 32 students with learning disabilities (LD) enrolled in Grades 5 through 8. They reported that students who read a passage seven times read that passage more fluently than students who read a passage only one or three times. Comprehension improved after the third reading. In a related investigation, Sindelar, Monda, and O'Shea (1990) reported that three repeated readings were effective for increasing fluency for students with LD in Grades 3 through 5, as well as for nondisabled students of similar reading fluency.

A related question concerns whether the longer term benefits of repeated reading are a function of word overlap across passages. Rashotte and Torgesen (1985) reported that repeated reading fluency gains over a 7-day

period were greatest when the subsequent reading passages contained a significant amount of overlapping words. In that investigation, students with LD in Grades 2 through 5 in the repeated reading conditions were asked to read computer-presented passages four times before proceeding to a new passage. Rashotte and Torgesen concluded that, although repeated reading increased the fluency performance on passages that were reread, repeated reading fluency effects were not observed when different passages did not contain a substantial number of shared words (for another opinion, see Otto, 1985).

Carver and Hoffman (1981) investigated the effects of a computer-assisted program using repeated reading to increase fluency in a small sample of high school students with reading dysfluencies. Students using the program were required to make word choices every fifth word before proceeding and could not proceed to the next passage until they achieved an accuracy and rate criterion. The authors reported a gain in reading fluency, but not in overall reading ability. Herman (1985) investigated the effects of repeated reading on 8 intermediate-grade students who read between 35 and 50 words per minute on instructional passages. Students practiced reading their respective passages for 10 minutes before tape-recording themselves reading the same passage as fast as possible. Students read each passage until they achieved a goal of 85 words per minute, at which point they started a new passage. Most students practiced reading the passages for 4 days before reaching the 85 words per minute criterion. After about 3 weeks of instruction, Herman concluded that accuracy and reading rate increased and transferred to new passages.

In a 12-week investigation, Knupp (1988) had elementary-age students with mild disabilities read 100-word passages repeatedly until they reached a criterion of 85 words per minute before proceeding to the next passage. Gains in accuracy, fluency, and comprehension were noted after the intervention period; however, the absence of a comparison group leaves open the question of the relative worth of the treatment.

Dowhower (1987) investigated the effects of independent versus read-along repeated reading with second-graders of below-average reading rate (less than 50 words per minute). Students in both conditions met independently with the researcher and practiced reading the passages. Students in the read-along condition listened to and read along with a taped recording of the passage, whereas students in the independent condition just read. Dowhower reported that both methods improved reading fluency and that the gains transferred to unpracticed passages containing overlapping and similar words. Students in the read-along condition improved more in their ability to read meaningful phrases. Dowhower noted that students whose reading rates were between 25 and 45 words per minute

appeared less frustrated in the read-along condition using the tape recording, and she interpreted this observation as indicating that the tape provided additional support for very slow readers. Likewise, she noted that students whose reading rates were higher than 45 words per minute appeared more able to practice reading independently.

Taken together, the investigations on repeated reading suggest that reading fluency can be improved when students with reading difficulties are provided with specific instructions, including repeated readings, guidance, and procedures for monitoring their reading performance. The sidebar summarizes the steps that can be used by teachers and students in implementing repeated reading procedures in classrooms.

### **Classwide Peer Tutoring**

One method thought to be helpful in improving reading fluency is to increase the amount of time students are individually directly engaged in reading. Peer tutoring is a commonly reported way of providing additional practice for students (Scruggs & Mastropieri, 1998). With a peer tutoring approach, one half of all students can be

#### **STEPS FOR IMPLEMENTING REPEATED READING STRATEGIES**

##### **Repeated Reading Directions for the Teacher**

1. Explain to students how practice helps reading.
2. Select appropriate reading rate goals for each student.
3. Select reading selections at appropriate reading levels for each student.
4. Determine how to calculate the reading rates by using precounted passages or by using a designated amount of minutes each time.
5. Teach students how to calculate, record, and interpret reading rates.

##### **Repeated Reading Directions for the Learner**

1. Choose a story that interests you from the list provided by your teacher.
2. Practice reading the story by yourself or with your teacher or friend for 10 minutes. (Alternatively, read the story or selection 3 times.)
3. Ask for help in pronouncing words when you need it.
4. After practicing the story, read it as fast as you can while using the stopwatch to time yourself.
5. Record your progress on your graph.
6. Compare your performance with the reading rate given to you by your teacher.

reading at a particular time, while the other half is actively engaged in monitoring their performance. This contrasts strongly with whole-class or even small-group individual reading, where only 1 student out of 5, 6, or 30 can be actively reading at a given time.

One recently studied peer intervention is classwide peer tutoring (Greenwood, Delquadri, & Carta, 1988; Mathes, Fuchs, Fuchs, Henley, & Sanders, 1994). Mathes and Fuchs (1993) investigated the effects of two conditions of classwide peer tutoring (CWPT) with a control condition on students' reading skills. In the CWPT repeated reading condition, students read each passage three times before proceeding to the next passage. Another CWPT group read continuously without re-reading passages. After a 10-week intervention, Mathes and Fuchs reported that CWPT positively influenced reading fluency more than typical reading instruction. Results indicated that the repeated reading condition was not superior to the sustained reading condition in promoting fluency. However, the students in the three reading conditions differed considerably on pretest scores, and these differences may in some way have affected outcomes.

In a related investigation, Simmons, Fuchs, Fuchs, Hodge, and Mathes (1994) investigated the effects of four variations of CWPT in classrooms that included students with LD, low-achieving students, and average-achieving students. The variations in peer tutoring involved role reciprocity and the use of repeated reading. After 14 weeks of tutoring, it was found that students in all CWPT conditions made more improvements in fluency than students in a traditional instruction condition, but that few differences were noted among the experimental conditions. Combined with the results of the previous investigation, this suggests that the strength of the intervention consists in the additional instructional time and student reading involvement afforded by the tutoring conditions. Neither investigation found that repeated reading, at least as implemented in these CWPT investigations, added to the overall effects of peer tutoring.

These findings indicate that peer tutoring results in reading fluency gains for students with reading difficulties. Moreover, peer tutoring may provide students with more opportunities to practice reading aloud along with other activities that are related to building fluency. The Sidebar presents a list of suggestions based on this research for teachers and students to use in implementing a peer tutoring program in classrooms.

### **Using Computers**

Another possible method for increasing practice to promote reading fluency is through computer-assisted instruction (see also Carver & Hoffman, 1981, described

previously). Jones, Torgesen, and Sexton (1987) investigated the effects of computer-guided practice on reading fluency using the Hint and Hunt program. The program emphasized recognizing words with different medial vowels and vowel combinations. One part of the program included a game-like activity that promoted reading speed. After 10 weeks of daily practice with the program, the experimental groups had increased in reading fluency and accuracy and generalized to reading similar words in context.

Other researchers (e.g., Reitsma, 1988) compared the effects of computer-based speech feedback with guided reading and reading-while-listening conditions and reported significant increases but equivocal results among treatment conditions. More recently, Royer (1997) and Royer and Sinatra (1994) described a computerized reading assessment procedure linked to reading fluency-building interventions. After initial reading difficulties in decoding and in reading fluency had been diagnosed, specific interventions were assigned for nightly homework activities. One typical intervention consisted of reading sight words from word lists as rapidly and accurately as possible while parents recorded the time per page and corrected any mispronunciations. Once the student had mastered a list of 40 words, a new list was introduced until a set of 160 words had been learned, at which point a new set of 160 words was started. Preliminary findings indicated that students' reading performance, including word reading rate, increased substantially as measured on the computerized reading tests following the simple recognition- and fluency-building exercises completed nightly at home with parents. These results suggest that practice in reading sight word lists can positively affect oral reading fluency for students with reading difficulties.

The findings from these studies indicate that computers can be used effectively to provide practice that builds reading fluency or can be used to assess measures of reading abilities.

### Previewing

Previewing is an intervention to increase reading fluency that involves pre-exposure to text material before passages are formally read. Students can be asked to preview the material aloud, silently, or by listening to the teacher previewing the material (Rose, 1984; Sindelar, 1987). Previewing is similar to repeated reading, but in some variations, such as listening to a teacher reading, students can gain exposure to vocabulary, phrasing, and emphasis before reading the text themselves. Moreover, previewing text material may make it simpler to anticipate and predict more difficult words.

Rose (1984) compared the effects of silent previewing and previewing with listening in six students with LD using an alternating treatments design. Rose concluded

## STEPS FOR IMPLEMENTING PEER TUTORING STRATEGIES

### Peer Tutoring Directions for the Teacher

1. Group students into pairs. Some researchers suggest ranking students by reading levels from 1 to 20, then matching the 1st reader with the 11th reader, the 2nd with the 12th, the 3rd with the 13th, and so on. This results in each pair having a stronger and less strong reader. You may want to select special tutoring partners for your students with disabilities.
2. Teach students how to be both a tutor and a tutee, and provide role-play practice and feedback.
3. Provide special instruction and practice on what you want the tutors to do, including how they should correct errors during oral reading, and how they should record performance and points.
4. Review classroom rules for tutoring.
5. Assign the groups to one of two teams for which they will earn points throughout the tutoring process.
6. Use a timer to tell students to start and stop reading.
7. Award points for appropriate tutoring and classroom behavior.
8. At the end of the week, have the students report the number of points earned to determine which team is the winner.
9. Publicly praise both teams for their respective positive performances.
10. At the beginning of the next week, reassign groups to teams.

### Peer Tutoring Directions for the Learner

#### For All Learners

1. Pick up your tutoring materials, and go to your tutoring place in the classroom.
2. Follow all tutoring rules, including using a quiet voice and being polite with your partner.
3. Find the place where you left off, and begin reading when the teacher starts the timer.

#### For the Tutee

1. Read aloud continuously for (time to be designated, e.g., 5-10) minutes from the assigned text to your tutor.
2. Read as much as you can without making mistakes.
3. Once you have read for (time to be designated) minutes, switch roles with the tutor.

#### For the Tutor

1. Remember to follow all of the rules for being a good tutor.
2. While the tutee is reading, watch for words missed.
3. If the sentence was read correctly, award (number to be designated) points.
4. If the tutee makes a mistake, point out the word, say it correctly, and have the tutee repeat the word and reread the sentence.
5. Record the reading performance and the appropriate number of points.
6. Once the tutee has read for (time to be designated) minutes, switch roles.

## STEPS FOR IMPLEMENTING PREVIEWING STRATEGIES

### Previewing by Listening for the Teacher

1. Decide on an appropriate passage for the student.
2. Explain the procedures to the student.
3. Instruct the student to follow along as you read the passage orally at a relatively slow conversational rate (approximately 130–160 words per minute).
4. Instruct the student to read aloud from the same passage for 1 minute.
5. Mark errors on a copy of the reading passage while you follow along.
6. Record and chart the number of words read correctly per minute by subtracting error words from the total number of words read.
7. Start the next lesson at the point where reading instruction stopped the previous lesson.

### Previewing by Listening for the Learner

1. Follow along in your book as the teacher reads aloud.
2. Read aloud from the text to the teacher for 1 minute.
3. Record your performance on your chart.
4. Check your progress on your graph. Work towards reading as much as you can without mistakes.
5. Begin the next lesson where you stopped reading.

### Taped Previewing for the Teacher

1. Decide on an appropriate passage for students.
2. Prerecord the passage on tape, reading at a slow conversational rate.
3. Show students the procedures for accessing the tape recorder and headphones.
4. Instruct students to follow along with the text as they listen to the tape.
5. After listening to the tape, instruct students to read aloud from the same passage.
6. Record and chart the number of words read correctly per minute.
7. Begin the next lesson at the point where reading instruction stopped the previous lesson.

### Taped Previewing for the Learner

1. Collect all necessary materials (e.g., tape recorder, headset, reading materials, stopwatch, chart).
2. Turn to the correct passage for the lesson.
3. Turn on the tape player and follow along with the text as you listen.

4. When the passage is completed, turn off the tape player and raise your hand to let the teacher know you are finished.
5. Read aloud from the text to the teacher for 1 minute.
6. Record your performance.
7. Check your progress on your graph. Work towards reading as much as you can without mistakes.

### Peer Previewing for the Teacher

1. Group students into pairs. You may want to use procedures similar to those described under peer tutoring (i.e., putting a stronger reader with a weaker reader). However, different combinations may also be effective.
2. Explain the roles of previewer and reader to each student.
3. Before the start of implementing the strategy, take time to train the previewer.
4. Once the peer previewing has been completed, instruct the reader to read that same passage aloud to you. Follow along with a copy of the text and record the reading errors.
5. The student's progress should be charted.

### Previewer Training for the Teacher

1. Model the procedures for previewing with the student.
2. Emphasize that he or she should read clearly and slowly enough for the reader to follow along.
3. Encourage the previewer to check with the reader to ensure that he or she is reading at a rate that he or she can follow.
4. Take turns playing the different roles with the previewer.

### Peer Previewing for the Learner

#### *For the Previewer*

1. Go through training with the teacher.
2. Read the passage aloud clearly and slowly.
3. When you find a word you do not know, try to figure it out on your own as best as you can.

#### *For the Reader*

1. Follow along with the text as the previewer reads the passage aloud.
2. Read the same passage to the teacher.
3. Check your progress on your chart.

that both previewing procedures increased fluency relative to the baseline (no previewing) condition, and that the highest levels of performance were achieved in the listening condition. Rose and Beattie (1986) compared the effects of teacher-directed and taped previewing on four students with LD. Both conditions resulted in greater fluency than the baseline condition, and the lis-

tening previewing condition was again associated with the highest oral reading rates.

Salend and Nowak (1988) investigated the effects of a peer previewing procedure on the reading rate and accuracy of three elementary school students with LD. Prior to reading each passage, an assigned peer previewer read the passage to the target student. The authors concluded

that the procedure resulted in a decrease in errors and an increase in reading fluency. Among the potential benefits listed by Salend and Nowak were ease of implementation, utility in inclusive settings, and the residual positive effects of peer mediation. Taken together, the findings from these studies suggest that various types of previewing activities improve students' reading fluency. The Sidebar provides suggestions for teachers and students to use when implementing previewing activities in the classroom.

## IMPLICATIONS FOR PRACTICE

In this review, we have identified a number of strategies that have been used effectively to promote reading fluency in students with reading problems. These investigations are not as numerous as in other areas such as reading comprehension; nevertheless, some techniques have been identified that can be of assistance to both teachers and students in improving reading fluency. These interventions include repeated reading, peer tutoring, computer-guided practice, and previewing. These interventions share some similar components; all include additional practice reading, frequently with the same passages or word lists. Several interventions had students read along while they listened or preview reading materials prior to reading the passages themselves. Moreover, most interventions asked students to try to read as fast as they could or to increase the rate at which they read. Implications of these strategies for practice have been described from the point of view of teachers who wish to increase the reading fluency of their students and from the point of view of the learners who wish to improve their own reading fluency. Careful application of these strategies—coupled with formative evaluation to measure their effects for individual students—can meaningfully improve reading fluency.

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