# EVIDENCE-BASED FLUENCY INTERVENTIONS
# FOR ELEMENTARY STUDENTS WITH LEARNING DISABILITIES

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**Abstract:**

Being a competent reader is fundamentally important for being successful in school as well as in adult life. Reading is the area in which students with learning disabilities (LD) struggle the most, as more than half of students with LD exhibit difficulty in reading as their primary disability. Teachers are critically important for helping students with LD to become better readers. Teachers should focus on teaching fundamental reading skills. The purpose of this paper is to discuss the importance of reading fluency for students with LD and provide information about two effective fluency interventions, repeated reading and peer-assisted learning strategies (PALS). When students with LD cannot read fluently, they lose their motivation and interest in most school activities connected to reading. There is a strong connection between reading fluency and text comprehension, and students with LD usually cannot establish strong comprehension skills due to their deficits in fluency skills. Fluency instruction should start in early grades because researchers have repeatedly shown that students between first and third grade benefit most from explicit and systematic fluency instruction. Research indicates three effective fluency teaching methods. The first method involves using a model or audio material through which fluent reading is modeled for students. The second method mainly focuses on reading the same passage several times, and the third method is related to providing immediate and corrective feedback when monitoring how students read. Repeated reading and PALS are two of the interventions comprising the aforementioned effective teaching methods for fluency instruction, and they are research-based reading interventions for students with LD.

**Keywords:** reading, fluency, learning disabilities, repeated reading, peer-assisted learning strategies

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## 1. Introduction

The first academic goal that children are expected to accomplish when they start school is learning how to read. Having strong reading skills is important because good readers tend to succeed in other subject areas including mathematics, social studies, and science (Valleley & Shriver, 2003). The importance of reading in elementary grades has been frequently emphasized, and being successful in reading in primary grades can predict a student's future education, including a college career. Being a competent reader is fundamentally important for being successful in school as well as in adult life (Fuchs, Fuchs, & Kazdan, 1999).

Although reading skills are recognized as crucial to survive in schools and daily life, twenty-five percent of adults in the United States (U.S.) are functionally illiterate (Riley, 1996). The situation is even worse for individuals with disabilities. Their estimated illiteracy rate is as high as 73% (Fuchs et al., 1999). Reading difficulties are first witnessed in early grades, and students with significant reading problems at younger ages lag behind their peers and continuously struggle with reading difficulties at older ages. Consequently, struggling readers encounter more academic challenges in upper grades compared to competent readers, and high school students with reading difficulties are more likely to drop out of school (Valleley & Shriver, 2003).

Reading is the area in which students with learning disabilities (LD) struggle the most, as more than half of students with LD exhibit difficulty in reading as their primary disability (Hall, Hughes, & Filbert, 2000; Jones, Torgesen, & Sexton, 1987). As the largest special education population in inclusive classrooms, more than 80% of students with LD are included in general education classrooms at least half the school day (Gersten, Fuchs, Williams, & Baker, 2001; Maccini, Gagnon, & Hughes, 2002). One of the most controversial issues in U.S. schools has been how to deliver reading instruction to students with LD because the majority of students with LD struggle with reading difficulties and their academic problems continue to grow if remedial reading interventions cannot be provided early on. Although a considerable number of students with LD are included in general education classrooms, those students usually experience severe academic problems due to their disability-related characteristics (Maccini et al., 2002). Salient problems that students with LD encounter in reading are difficulties in reading fluency, comprehension, word recognition, word analysis skills, and oral reading ability (Gargiulo, 2003; Gersten et al., 2001).

Teachers are critically important for helping students with LD to become better readers. Teachers should focus on teaching fundamental reading skills that are highlighted in the National Reading Panel (NRP) report (National Institute of Child Health and Human Development, 2000): Phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Among these skills, fluency has remained extremely challenging for students with LD who are having reading difficulties. Therefore, teachers of students with LD should utilize effective fluency interventions to improve fluency skills, and consequently, text comprehension (Chard, Vaughn, & Tyler, 2002).

The purpose of this paper is to discuss the importance of reading fluency for students with LD and provide information about two effective fluency interventions, repeated reading and peer-assisted learning strategies (PALS). First, the paper will briefly touch on basic reading skills and explain why reading fluency is critical among these skills. Second, the paper will discuss the importance of effective fluency interventions for students with LD. Third, the paper will provide information about repeated reading and PALS in terms of implementation steps, and effectiveness for reading fluency. Finally, the paper will discuss the strengths and weaknesses of these practices for fluency instruction.

## 2. A Critical Reading Skill: Fluency

The NRP report emphasizes the importance of five essential reading skills (phonemic awareness, phonics, fluency, vocabulary, and text comprehension), and these skills are mutually dependent because they are closely related to each other. Problems in any of these skills can impact improvements in other crucial skills and consequently reading comprehension (O'Connor, 2006). For effective reading instruction, teachers should focus on improving students' reading skills in their daily lessons, and provide intensive and individualized instruction to students with LD (Al-Otaiba & Rivera, 2006). Teachers need to make sure that all students in their classrooms master these reading skills because at least one in five students struggles with chronic reading problems (Lyon & Moats, 1997). In addition, the results of a national reading test showed that approximately 37% of fourth-grade students did not achieve the most basic reading level (Therrien, 2004).

Among these five fundamental reading skills, reading fluency reliably indicates that the person has basic reading competence (Fuchs, Fuchs, Hosp, & Jenkins, 2001). Furthermore, reading fluency remains one of the extremely challenging areas for students with LD (Chard et al., 2002). Students with LD are likely to fail to comprehend what they read if they experience difficulties in reading fluency (Therrien, Gormley, & Kubina, 2006).

As students proceed to upper grades, the goal of reading shifts from having fun to acquiring knowledge. Therefore, if students read slowly and in a halting manner, they will learn less and get frustrated (Valleley & Shriver, 2003). However, improving the fluency skills of these struggling readers can help them engage with the text. Essentially, when children acquire basic skills to read accurately and with proper expression, they can comprehend the text better. Empirical evidence suggests that the more time students spend on reading, the more skills they gain in reading achievement (Kuhn & Stahl, 2003).

Some researchers have considered reading fluency as an indicator of being a competent reader (Fuchs, Fuchs, Hosp, & Jenkins, 2001). However, there is more to fluency than oral reading. There are three critical components of fluency: "*(a) accuracy in decoding, (b) automaticity in word recognition, and (c) the appropriate use of prosodic features such as stress, pitch, and appropriate text phrasing*" (Kuhn & Stahl, 2003; p. 5). Poor readers

mainly struggle with decoding and spend considerable time trying to decode the text. They spent most of their energy to decode the text. As a consequence, they cannot improve their comprehension skills because they do not have adequate energy and focus to spend on comprehension. In contrast, fluent readers are able to decode words very rapidly, and hence, they can spend more time focusing on comprehension. Additionally, struggling readers also ignore punctuation. As a result, sentences become meaningless for these students. Finally, reading without appropriate expression contributes more confusion to reading comprehension (Therrien, 2004).

## 3. Fluency Instruction for Students with Learning Disabilities

When students with LD cannot read fluently, they lose their motivation and interest in most school activities connected to reading. Since struggling readers spend too much time decoding and do not enjoy reading a text, they may lose their self-confidence in reading. All of these difficulties in reading cause struggling students to lag further behind their peers (Hasbrouck, Ihnot, & Rogers, 1999).

Students usually develop their reading fluency skills during the elementary school years (Fuchs, Fuchs, Thompson et al., 2001). Even though fluency is considered a critical skill for improving reading, existing research on fluency instruction is limited (Therrien et al., 2006). Fluency is the least known area compared to all other reading skills. Additionally, it is extremely difficult for students with LD to overcome difficulties in reading fluency (O'Connor, 2006). Although research underlines the importance of reading fluency instruction, it is likely to be overlooked in classrooms (Welsch, 2006). Furthermore, there is a limited number of studies specifically examining fluency as an important outcome; rather, the majority of studies focus on accuracy in reading words (Speece & Ritchey, 2005).

There is a strong connection between reading fluency and text comprehension, and students with LD usually cannot establish strong comprehension skills due to their deficits in fluency skills. According to the NRP report, being a fluent reader is a prerequisite of comprehending what a student reads. Moreover, research indicates that reading fluency and comprehension are positively correlated with each other (Therrien et al., 2006). Besides its importance for comprehension, effective fluency instruction is important for students with LD for two additional reasons. First, the academic gap between good readers and struggling readers rapidly gets wider, even in the first grade. Therefore, teachers should utilize effective fluency interventions as early as possible to keep students with LD on track. Second, the development of reading fluency does not emerge after children start to read; instead, it occurs concurrently with early word recognition. That is why fluency instruction should also be emphasized during basic reading instruction (Speece & Ritchey, 2005).

Fluency instruction should start in early grades because researchers have repeatedly shown that students between first and third grade benefit most from explicit and systematic fluency instruction (Therrien et al., 2006; Valleley & Shriver, 2003). Since students with LD experience fluency problems at early age, teachers must focus on

remedying these problems as early as in first grade. To become fluent readers, students with LD first need to master phonological awareness and phonics skills in first grade (Speece & Ritchey, 2005). Even though there are some evidence-based interventions to improve reading fluency, it is challenging for teachers to integrate these practices into their daily reading instruction. It is getting even more difficult for general education teachers to offer individualized fluency instruction because students' abilities and skills significantly vary in the classroom as a result of inclusion practices. Consequently, teachers encounter greater diversity among their students and need to keep individual differences in mind while delivering fluency instruction (Hasbrouck et al., 1999).

Although the importance of fluency instruction is acknowledged, teachers of students with LD may not be aware of effective fluency teaching methods. Research indicates three effective fluency teaching methods. The first method involves using a model or audio material through which fluent reading is modeled for students. The second method mainly focuses on reading the same passage several times, and the third method is related to providing immediate and corrective feedback when monitoring how students read (Hasbrouck et al., 1999). Repeated reading and PALS are two of the interventions comprising the aforementioned effective teaching methods for fluency instruction, and they are research-based reading interventions for students with LD (Chard et al., 2002).

## 4. Repeated Reading

Existing literature on fluency instruction demonstrates that repeated reading is an evidence-based intervention to enhance reading fluency (Kuhn & Stahl, 2003; Therrien et. al., 2006; Valleley & Shriver, 2003) and comprehension skills (Therrien, 2004) of students with LD. Samuels (1979) and Dahl (1979) were the two researchers who developed the fundamental methods of repeated reading while implementing the automaticity theory of LaBerge and Samuel (1974). The automaticity theory claimed that comprehension difficulties among struggling readers could be accounted for by a large amount of reader attention required for decoding words in reading passages. Since the attention capacity of the brain is limited, people need to have automatic and accurate decoding abilities to effectively comprehend the material they are reading (Homan, Klesius, & Hite, 1993). Samuels and Dahl's research on automaticity showed that students who struggle with reading can improve their reading accuracy and fluency skills when exposed to repeated practices on a particular passage (Kuhn & Stahl, 2003).

Empirical studies proved that repeated reading is an effective intervention for students with LD because it helps students improve their basic word recognition skills to a point of automaticity. Consequently, these students become fluent readers with a faster and more accurate reading. Additionally, repeated reading intervention helps students to be proficient readers of syntactically appropriate phrases, which is also a critical element of reading fluency (Rasinski, 1990).

Repeated reading was developed as a supplemental reading program, and offers one-on-one practice opportunity for students with LD. During the repeated reading, to improve fluency skills, students reread the same passage out loud for an appropriate number of times (generally, 3-4 times) until a predetermined performance level is achieved. Meanwhile, teachers provide corrective feedback when students make mistakes while reading passages (Therrien et al., 2006). In each intervention session, students read different but level-appropriate reading passages. Students read the passage as a whole, and teachers closely monitor how they read (Kuhn & Stahl, 2003) using as little interruption as possible while reading. Teachers provide corrective feedback at the end of each reading after the student is completely done reading the passage (Allington, 2006).

To track students' progress, teachers need to time each reading and note words read correctly per minute (wpm). Research on reading suggests performance criteria for each grade level in terms of wpm: 53 wpm for first grade, 89 wpm for second grade, 107 wpm for third grade, and 123 wpm for fourth grade (Therrien et. al., 2006). Although teachers observe how students read and determine whether or not students attain the desired reading performance by noting wpm, teachers can employ self-monitoring techniques by having students chart their reading progress (Welsch, 2006). When a student achieves a preset performance level, the intervention continues with a new passage. Repeated reading intervention is more effective if students are allowed to read as many passages as possible with adequate performance criteria (Valleley & Shriver, 2003).

A crucial issue that teachers need to take into account for repeated reading intervention is how to choose appropriate reading passages. To properly enhance students' reading skills, teachers should be very careful while selecting reading materials for the intervention. Teachers need to keep the passages short and ensure that each passage has a concrete idea. The length of passages should be 53-66 words for first grade, 89-111 words for second grade, 107-133 words for third grade, and 123-153 words for fourth grade (Therrien et. al., 2006). Moreover, teachers should select passages containing overlapping words because studies showed that if students practice with such passages, they can improve their reading rate and accuracy faster compared to students who are exposed to reading passages with less overlapping words (Kuhn & Stahl, 2003). Teachers may witness lower outcomes in reading comprehension at the beginning of the intervention, but once students start to decode rapidly, their reading fluency and comprehension skills improve significantly (Chafouleas, Martens, Dobson, Weinstein & Gardner, 2004).

## 5. Peer-Assisted Learning Strategies (PALS)

Evidence from reading research suggests that elementary-age students can improve their reading skills if they cooperate in a structured learning environment (Fuchs & Fuchs, 2005). As a class-wide peer tutoring intervention, research has shown the effectiveness of PALS to improve reading fluency and comprehension skills of students

with LD in elementary grades. To acknowledge its success, the U.S. Department of Education Program Effectiveness Panel awarded PALS 'best practice' status (Fuchs, Fuchs, Thompson et al., 2001). The goal of PALS is to address the academic necessities of every child in regular classrooms by combining structured activities with repeated verbal interaction and feedback among tutors and tutees and with reciprocity of tutoring roles (Fuchs, Fuchs & Burish, 2000; Fuchs, Fuchs, Thompson et al., 2001). PALS is a supplemental reading program and can be implemented without interrupting the core reading instruction and dedicating too much time for activities (Fuchs, Fuchs & Kazdan, 1999).

The teacher ranks all students in the class from strongest to weakest in terms of reading abilities, and divides them in half to pair the highest performer in the top half of the list with the highest performer in the bottom half, and so on (Fuchs, Fuchs, Thompson et al., 2001; Fuchs & Fuchs, 2005). Although students are supposed to tutor reciprocally, the higher achieving students read first in each activity to model for the struggling readers (Fuchs, Fuchs, Kazdan & Allen, 1999). Both students in a pair read from the same reading material that is at the adequate level for the lower reader. Teachers usually select these reading materials from the literature according to the difficulty level for the lower readers in each pair (Fuchs, Fuchs, Thompson et. al., 2001). There are three activities in each PALS session: Partner Reading, Paragraph Shrinking, and Prediction Relay. Partner Reading is always the first PALS activity with 2 minutes of brief retellings each day, and this activity is critically important to improve the fluency skills of students with LD. During the Partner Reading activity, each student in a pair reads the same section from the reading material out loud for 5 minutes (Fuchs & Fuchs, 2005; Fuchs, Fuchs, Thompson et al., 2001). The tutor provides immediate corrective feedback when the tutee makes a mistake while reading. After reading the text, the lower-performing student summarizes the section s/he has just read in 2 minutes (Fuchs, Fuchs, Thompson et al., 2001). Peer-assisted repeated reading improves both reading fluency and comprehension skills of students with LD. If teachers allocate more time for peer-assisted repeated reading in this activity, they can observe more positive outcomes in terms of fluency and comprehension skills for struggling readers (Fuchs, Fuchs, Yen et al, 2001).

The second activity of PALS is Paragraph Shrinking. This activity is aimed at improving students' comprehension by identifying the main idea of passages. When students read the text, they stop at the end of each paragraph to figure out the main idea of the section they have just read. Prediction Relay is the last activity of PALS in the session. It expands the previous activity to a larger amount of text and requires students to make predictions for the following section of the reading and to confirm or disconfirm their predictions after they read the section (Fuchs, Fuchs, Thompson et al., 2001). Prediction Relay is an important activity to improve reading comprehension skills of students with LD because students learn how to automatically formulate ongoing predictions while they are reading a text (Fuchs, Fuchs, Kazdan, & Allen, 1999).

## 6. Strengths and Weakness of the Interventions

As evidence-based practices, both repeated reading and PALS have several strengths that make these interventions more appealing for teachers of students with LD. First, repeated reading intervention is relatively simple to implement and significantly improves students' fluency as well as comprehension skills. Second, since teachers provide individual attention during the repeated reading intervention, students receive one-on-one instruction and can improve their reading skills faster compared to regular whole-class instruction. Third, reading the same passage repeatedly helps students to develop word recognition as well as decoding skills, and the corrective feedback that students receive after each reading strengthens students' reading skills, especially fluency skills (Therrien et al., 2006).

Empirical studies suggest that PALS is also a strong intervention to improve reading fluency and comprehension skills of students with LD. First, since PALS is a supplemental reading program and can be utilized during the reading practice time, it does not affect regular reading instruction, and teachers do not need to allocate additional time to implement its activities (Fuchs, Fuchs, & Kazdan, 1999). Second, PALS allows students to determine their own learning goals, discover methods to achieve these goals, and formulate directions to assist their peers (Fuchs & Fuchs, 1998). Third, having a high achieving peer read the text first is an important aspect of PALS to strengthen reading fluency skills of students with LD (Fuchs, Fuchs, Kazdan, & Allen, 1999). Fourth, PALS does not require a set of readings; rather, teachers can use the same materials that they utilize for the regular reading instruction as long as they are at the reading level of the lower reader in each pair (Fuchs, Fuchs, Thompson et. al., 2001).

There are also concerns about the implementation of repeated reading and PALS interventions, and some researchers consider them as weaknesses of these practices. First, since repeated reading intervention requires one-on-one teacher support, some researchers found its procedures to be a time-consuming process (Kuhn & Stahl, 2003). Second, some studies found little effect of repeated reading on comprehension skills in the early stages of implementation (Chafouleas et al., 2004).

There are also some concerns articulated in the literature regarding the implementation of PALS. First, although studies on PALS showed strong benefits and considerable promise for students with LD in elementary grades to improve their reading skills, additional research needs to be conducted to determine whether high-achieving students have the ability to explain how they handle the difficulties they face while reading a text (Gersten & Baker, 1999). Second, even though PALS has yielded positive and strong evidence regarding its effectiveness, the program is not always beneficial for all students with LD. There have always been 10% to 20% of participating students who did not respond to PALS (Fuchs & Fuchs, 2005).

## 7. Conclusion

Reading is a critical skill to be successful in school as well in adult life, and since reading fluency is a fundamental factor to succeed in reading, being a fluent reader is considered a sign of being a competent reader. Being a fluent reader requires being able to read fast and accurately, but reading fluency is important to improve reading comprehension skills. Since text comprehension is the expected outcome of reading, reading fluency skills play a significant role to enhance students' comprehension skills. The importance of fluency is commonly accepted, but due to limited research, reading fluency is the least known area among other reading skills. The reason for the limited knowledge about reading fluency is that most studies on reading focus on accuracy rather than fluency.

Fluency is a crucial skill for students with LD, and difficulties in fluency as well as in other reading skills are common characteristics of these students. To assist struggling readers, teachers need to focus on the improvement of fundamental reading skills including fluency. As a result of effective fluency instruction teachers can improve students' reading fluency as well as comprehension skills. Fluency instruction should be provided as early as in first grade, and teachers need to utilize effective fluency interventions to achieve positive outcomes.

Repeated reading and PALS are two of the research-based effective reading interventions aimed at improving reading fluency and comprehension skills of students with LD. Repeated reading involves rereading the same passage several times until a predetermined criterion is attained. Repeated reading is considered a strong intervention because teachers monitor each student's reading individually and provide corrective feedback. Additionally, repeated reading intervention is a simple practice to utilize and brings significant improvements in students' fluency as well as comprehension skills. PALS utilizes peer-mediated instruction methods to focus on improving reading fluency and comprehension skills. There are three activities for each PALS session, and the Partner Reading activity especially helps struggling readers to improve their fluency skills by peer-modeling. The rest of the activities mainly focus on reading comprehension skills.

Even though extensive research exists on repeated reading and PALS, there are some concerns about their implementations in daily reading instruction. Repeated reading requires one-on-one instruction and some researchers consider it a time-consuming intervention. However, teachers can recruit volunteers including parents to provide assistance during repeated reading practices, and thus reduce the time and effort that they would spend otherwise. PALS sometimes does not work for some students as desired, and it is unclear how good readers can explain the problem-solving techniques that they use while reading. Therefore, additional research needs to be conducted to investigate these concerns.

Reading fluency plays a critical role in the development of reading skills, and teachers should incorporate fluency instruction into their daily reading curriculum starting in first grade. Repeated reading and PALS interventions are effective practices

to improve the reading skills of students with LD. All elementary grade teachers should use repeated reading and PALS as regular activities in their daily reading instruction. Additionally, researchers should get teachers more involved in research by giving them professional roles as research partners. If this were done, teachers might be able to more readily translate research results into practice.

**About the Author**

Macid Ayhan Melekoğlu completed the special education master's program in 2005 and the special education doctoral program in 2009 at the University of Wisconsin-Madison, USA. He is currently a faculty member at Eskişehir Osmangazi University in Turkey. His research interests include specific learning disabilities, assessment of reading skills, improving reading achievement, inclusion and teacher training in special education.

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