

Eliminating Reading Difficulty in an Elementary 4th Grade Student Based on Learning Style*

Metin Gülⁱ
Gazi University

Olcay Özdemirⁱⁱ
Zonguldak Bülent Ecevit University

Abstract

This study determines and corrects reading mistakes made during oral reading by a fourth grader with reading difficulty, and examines the effects of learning styles in reading comprehension development. Designed with the action research method, the study was conducted with a student from a state primary school in one of the city of Black Sea region selected in line with the purpose of the study. In the determination of the student participating in the research, "critical situation sampling" method which is one of the purposeful sampling methods, was used. Even though the student had no mental, auditory or visual insufficiency, her reading comprehension success is under peer averages, experienced a lot of difficulty and made many mistakes during oral reading. The study conducted with this student experiencing reading difficulty lasted 49 hours over twelve weeks. According to the Marmara Learning Styles Scale, the student's dominant learning preference is "tactile learning style". Therefore, the student's sense of touch was engaged with word box strategy, sandpit activity and the method of dictation. In order to improve his reading comprehension skill, the story mapping method was used. As a result of the 49-hour practice, the grade 2 word recognition and reading comprehension level rose from the "Frustration Level" to grade 4 word recognition and reading comprehension level known as the "Independent Level". The story mapping method is rather successful in developing the reading comprehension success of students with reading difficulty. The results of the study revealed that reading difficulty can be eliminated with reading practice based on learning styles.

Keywords: Fluent Reading, Story Mapping Method, Reading Difficulty, Learning Styles

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ⁱ **Metin Gül**, PhD Student, Gazi Faculty of Education, Gazi University, ORCID: 0000-0003-2388-6927

Correspondence: metinngul@gmail.com

ⁱⁱ **Olcay Özdemir**, Assist. Prof. Dr., Faculty of Education, Department of Basic Education, Zonguldak Bülent Ecevit University, ORCID: 0000-0002-0846-9546

INTRODUCTION

Reading is a crucial skill in meeting basic daily needs, academic and personal development, and social adaptation (Akyol, 2014; Edward et al., 2014). It comprises the first stage of learning. Merely vocalizing letters is not adequate for reading. The real purpose of reading is to comprehend what has been read and to express what has been understood (Akyol, 2014). Students who acquire reading skills can learn new information by reaching different sources. The goal of the Turkish curriculum is to enable individuals to read texts fluently and accurately, to read critically and question what has been read, and to make a habit of reading (MEB, 2020).

Reading and reading comprehension are among the most basic goals of education so that individuals can adapt to information age and continue their lifelong learning. In the advanced societies of our day, being able to write one's name and last name is not considered as literacy to create technology. Therefore, literacy programs should develop well-equipped, thinking and questioning readers who help advance their societies (Akyol, 2015).

Fluent Reading

Fluent reading refers to recognizing words and making meaning of sentences quickly and accurately (Bender, 2012). An important issue in reading is the development of fluent reading. Fluency acts like a bridge between word recognition and reading comprehension (Edward et al., 2014). One of the most important objectives of teaching reading skills is undoubtedly to support individuals as they acquire fluent reading skills (Yıldırım et al., 2015).

Fluent reading refers to the ability of readers to read words in a text automatically, effortlessly and effectively with a meaningful expression that enhances the meaning of the text. Fluency is about taking words and word recognition to the next level. Many readers can decode words correctly but cannot be fluent or automatic in word recognition. As these readers use most of their limited mental energy on pronunciation, they have to spend less time on comprehension, therefore leaving meaning lagging behind. Therefore, insufficient fluency often leads to insufficient understanding. Conversely, fluent readers can read words accurately and effortlessly, and recognize words and sentences upon seeing them. They spend only a small amount of cognitive energy to decode words. It is obvious that a reader like this can use more of their cognitive energy on text comprehension. Immediate recognition enables meaning-making as the reader moves on to the next step (Rasinski, 2003).

At the same time, another important element in fluent reading training, which is frequently forgotten in some programs, is prosody or reading with expression. An important part of oral fluent reading is the skill of reading with the right expression. Fluent readers increase and decrease their level and tone of voice. They speed up or slow down at proper parts of the text. They read words in meaningful groups or sentences. They pause at appropriate points in the text. These are all elements of expression, or what linguists call prosody. Failures in reading often include inaccurate, slow and non-fluent word reading. These failures are often called reading difficulties (dyslexia) (Breznitz, 2006; Rasinski, 2003).

Reading Difficulty

Despite having normal or above-normal intelligence, people may have difficulties in learning areas such as reading, writing or mathematics, as well as performing other tasks. This is referred to as specific learning disability. Reading difficulty is known as dyslexia; writing difficulty is known as dysgraphia; difficulty in learning mathematics is known as dyscalculia; and difficulty in physical coordination is known as dyspraxia (Clark et al., 2015; Høien & Sundberg, 2000; Reid & Green, 2014).

The inability of an individual with no mental or speech problems in reading a text is called "text blindness" by German neurologist Kusmaul (1987), "dyslexia" by Berlin (1887), "congenital

word blindness” by Dr. Morgan (1896) and Hinshelwood (1917), “developmental word blindness” by Orton (1925), “minimal brain dysfunction” by Yiğiter (2005), “learning difficulty” by Kirk and Bateman (1962) and “developmental neurological disease” by Eroğlu (2020). Brain-based research by neurologists make significant contributions to the understanding of the concept of reading difficulty.

For reading difficulty, Haris and Sipay (1990) used the terms “reading difficulty”, “reading disability” or “reading disorder”. The many terms that exist in the literature show that it is hard to define the limits of the concept of reading difficulty. When the terms are examined, although there may be differences among medical, educational and other institutions, their common point is the difficulties in recognizing words. When the studies on reading difficulties are examined, a child who could not read or write words correctly despite not having any health problems was diagnosed with "congenital word blindness" (Morgan, 1896). The difficulty was therefore seen as a sight problem. Today’s research, however, reveals that reading requires a mental process (Akyol, 2014) and that the brain has a special system to recognize and attach meaning to words (Dehaene, 2014).

Difficulties experienced by children can be pinpointed through the inadequacies that arise with their performance in academic fields when they start elementary school; however, certain clues that are the precursors of reading difficulties may also be observed in children's pre-school years. These include developmental delay, not understanding instructions, difficulty concentrating, and an inability to acquire early literacy skills (Santrock, 2018). However, children who display these symptoms should not be directly diagnosed with reading difficulty, and the process should be observed. It is critical to decide on early intervention for the child after examining the symptoms and observing, monitoring and evaluating the process. Research also shows that early diagnosis of and intervention in reading difficulty have significant results in improving children's reading success (Shaywitz, 2003; Torgesen, 2002).

The early indicators of reading difficulty include difficulty in concentration, failure to retain information, problems processing information, low motivation and interest in tasks, inability to understand instructions, inadequate vocabulary, insufficient writing and sound awareness, and listening comprehension problems (Kuruyer & Özdemir, 2019).

As children with reading difficulties have insufficient letter and sound matching skills, they cannot read aloud accurately by entering the sound structure of the word (Shaywitz, 2003). They therefore fail at reading (Kocwnower et al., 1983). As children with underdeveloped word recognition skills cannot sound words accurately, they also have problems in comprehension (Cain, 2010; Torgesen, 2002).

Neurologist Orton (1925) has listed the following properties for individuals with reading difficulty:

1. Rotating letters such as ‘u’ and ‘n’ and numbers such as ‘6’ and ‘9’,
2. Reversing the word ‘no’ as ‘on’, or the number ‘48’ as ‘84’,
3. Confusing short words; for example, reading ‘of’ as ‘if’.
4. Misreading words; for example, misreading ‘reading’ as ‘leading’.
5. Skipping over words or sentences when reading,
6. Confusing words that sound similar,
7. Speaking late,
8. Being unable to say tongue twisters, rhyming words,

9. Having problems in word recognition (not recognizing letters, syllables and words)
10. Having difficulty in writing,
11. Not being able to choose appropriate words when speaking.

According to Shaywitz (2003), the following are symptoms of a dyslexic child:

1. Having difficulty reading words,
2. Having difficulty sounding meaningless or unfamiliar words accurately (alphabetic principle, decoding, phonics, sounding out),
3. Making mistakes and having difficulty during oral reading,
4. Reading very slowly,
5. Mispronouncing words that are being read.

Children with reading difficulties have problems matching letters and sounds. Research on elementary school children have shown that the most important indicator of reading success is phonological awareness (Habib, 2000). It was found that when students who have difficulty reading gain phonological awareness, they develop accurate oral reading skills (Alexander et al., 1991). Phonological decoding is the matching of letters and sounds, and reading aloud correctly (Shaywitz, 2003). Students' word recognition skills are determined by the skill of accurately reading nonsensical words.

Students with reading difficulty spend a long time on word recognition and word discrimination processes; cannot pronounce words correctly, read rather slowly, and have difficulty in grasping what they read and consequently cannot make meaning (Kuruyer & Özdemir, 2019; Yılmaz, 2008). Reading difficulty negatively affects students' academic and daily lives (Çayır & Balcı, 2017). For this reason, it is essential to identify children with reading problems early and to take appropriate interventions to eliminate their problems (Kuruyer & Özdemir, 2019).

Reading Mistakes

Students with reading difficulties make various reading mistakes while reading. Their reading speed is also lower than their peers. They read words slowly, by pausing, and incorrectly. Some of the problems they experience during reading include "reversing, skipping, adding and repeating" (Akyol, 2015). Mistakes made during reading and their reasons are as follows:

Skipping and Additions

Addition mistakes are made less frequently than other reading mistakes and do not distort the overall meaning. If there are not too many addition mistakes and they do not distort the meaning, there is no need for much concern as these will not affect reading comprehension too much by themselves. Skipping mistakes can be seen in letters, syllables or entire words. Letter and syllable skipping usually occurs in the middle or end of words. The underlying causes of these mistakes may be reading quickly, careless reading, and word and letter recognition deficiencies (Akyol, 2015).

Reversals

One of the most common mistakes in elementary school, especially in the first grade, is reversals. Letters can be confused and reversed by children. The mistake of a student reading "d" as "b" is an example of letter reversal. Similarly, a student reading the word "no" as "on" has made the

mistake of word reversal. The mistake of reversal can occur in words as well. After the reading skill is mastered, these mistakes can be eliminated in a short while (Akyol, 2015).

Repetitions

The most important reason for repetitions is deficiency in word recognition skills. It may also be a bad habit acquired by the child. If a child keeps making the mistake of repetition while reading the material at their grade level, then their reading practice should involve lower level materials. If repetitions are significantly reduced, the problem may be word recognition (Akyol, 2015). If repetitions are not reduced but still continue, the problem may be more complex than word recognition alone. In order to overcome this habit, the student may be asked to read words more carefully while reading (Özkara, 2010).

Eliminating Reading Difficulty

Several different methods and strategies are used to eliminate the reading difficulties of individuals with reading difficulties. These methods and strategies are wordbox strategy (Joseph, 2002), repeated reading technique (Rosenberg, 1986), Carbo recorded book method (Bender & Larkin, 2003), 3P method (pause, prompt, praise) (Merret, 1998), echo reading (Carbo, 1996), choral reading (Richek, 2002), paired reading (Edward et al., 2014) and the neurological impress method (NIM) (Heckelman, 1969). 3P method consists of the feedback given by the teacher to the student in the form of “pause, prompt and praise”. In echo reading, while the teacher follows the student’s reading process, the teacher reads a small part of it aloud, and this practice proceeds until the texts are finished (Carbo, 1996). In choral reading, a group of students choose the text and read it aloud in chorus by working with a teacher. This method encourages students to learn vocabulary. As for paired reading, it is when two students or an adult and a student read the story in sequence (Carbo, 1990). Finally, the neurological impress method (NIM) (Heckelman, 1969) involves the teacher and a student reading together; in this practice, students learn to read fluently by modelling and imitating. Strategies used in the current research to eliminate reading difficulties are briefly explained below:

Repeated Reading

Repeated reading is an effective method in improving the reading skills of students with reading difficulties. In this method, misread words are noted during reading. Then, the misread words are written on a card and practice is repeated until the student reads the words they misread accurately (Rosenberg, 1986).

In plain words, one of the most effective ways to increase the reading fluency of students with reading difficulties is repeated reading. When using the repeated reading strategy, reading texts should take students to the independent level. Students should initially be able to read at least 95% of the words accurately. They should then be expected to read repeatedly until they reach 100% accuracy level in a teaching environment organized either by a teacher or peer (Bender & Larkin, 2003).

Recorded Book Reading

In recorded book reading, or Carbo reading method, students first listen to a recorded book read by a fluent reader, and then they read what they have heard. In first reading, the students should follow the words and read each word as they hear it. Following this, the students should listen to the recording a few times and at the same time read the text (Bender & Larkin, 2003). The students should be given recorded or CD books and other reading materials, and allowed to listen on their own while reading a printed version of the text. After a while, they will become independent readers even without a listening activity.

Word Box Strategy

The word box strategy, another method to be used in eradicating reading difficulty, is an effective method for students to gain sound awareness. The word box helps children with reading difficulties recognize and spell words (Joseph, 2002; Keesey et al., 2015).

Story Mapping

The story mapping method facilitates children's access to the important information in the text. The story map is quite effective in distinguishing important from unimportant information, creating interest in the text, forming and answering questions, visualizing information and understanding the text better (Akyol, 2014).

In recent years, there has been an increased need to design educational environments and materials based on individual differences. For this reason, it is important to determine the learning preferences of individuals. Rita Dunn (1992) argues that learning becomes permanent and effective when educational environments are organized according to individual learning styles to support personal learning processes. Maria Carbo (1980) built her concept of reading styles upon the learning styles developed by Dunn (1992). She observed that when individuals' reading styles are determined and learning environments are organized accordingly, success in reading increases. Previous research has shown that reading environments based on learning styles bring better results in fluent reading and reading comprehension, and help eliminate reading difficulties (Carbo, 1996; Carbo, 2003; Özdemir, 2013).

As the lacks and needs of students with reading difficulties vary, the intervention programs to be used should also be designed differently (Carbo, 1990). The programs should be created according to the learning styles of individuals (Haris & Sipay, 1990). It has been found that students are more successful in reading when their reading and learning styles match (Carbo, 1997). When learning processes are created according to individual reading styles, students with reading difficulties can learn to read well (Carbo, 2003).

Therefore, this study investigates the effects of activities based on individual learning preferences of a 4th grade student with reading difficulty on the development of reading and reading comprehension skills.

What are the effects of attempting to eliminate the reading difficulty of a 4th grader and to improve her reading skills by using learning styles on her:

- a) word recognition level?
- b) mistakes in oral reading?
- c) oral reading speed?
- d) reading comprehension level?

METHOD

This study was planned as action research, which is a qualitative research design. Kurt Lewin, the pioneer of action research, associates the idea of such research with the idea of doing experiments in the field rather than in a laboratory. He demands that an action research experiment not only express theory, but also the results of the theory in such a way that they can be fed directly back into the theory (Lewin et al., 1939; cited in Reason & Bradbury, 2001). Action research is the process of working in a real or created environment to understand the quality of education and instruction and, where necessary, intervene and improve it (McTaggart, 1997).

This approach in education means that primary school teachers must become research methods to discover, interpret and describe the realities of the classroom (Foshay, 1998). It is a systematic way for teachers to review their own practice. Action research is about checking if practices are as good as you wish them to be, identifying any area that needs to improve, and finding ways of improvement (McNiff, 2016)

Action research aims to improve an existing situation under the leadership of an expert (Karasar, 2015). For this reason, the present study chose to use action research to overcome the reading difficulty of a 4th grader.

Study Group

In order to create the study sample, a student suitable for the purpose of the study was selected by using the critical situation sampling method. In critical situation sampling, the researcher undertakes an in-depth examination of an issue that emerges as a problem (Ekiz, 2009). Prior to the study, the selected student was taken to a family physician to be screened for vision and hearing problems. No issue was detected in the examination. Afterwards, mental problems were also screened. As a result of examinations and tests, it was ascertained with a medical report that the student was not suffering from any health problems.

The student was chosen by the researcher, who is also a teacher, by observing factors such as having difficulty in reading and making more mistakes than her peers in her class. The reading skills of this student were tried to be developed by using the strategies known as the "Word Repetition Technique", "Echo Reading" and "Word Box" in the 2015-2016 school year. The student who was in the 3rd grade at the time of the study seemed to be at 2nd grade level. Her reading comprehension and word recognition skills improved (Özdemir & Gül, 2016).

The study group consisted of a female student attending grade 4 at an Elementary School during a semester who was not undergoing mainstreaming education. When the student was mentioned, her name was coded as (G.A.) for ethical reasons.

Information about the child was collected from her family which was conducted with G.A., a female student attending grade 4 was born on 16.07.2007 in a province of the western Black Sea region and is living in a village with her family. Her mother was using a hearing aid device and was a housewife. Her father was earning minimum wage. Both parents were elementary school graduates. They were living in a small house. G.A. had no study room of her own. Due to her hearing problem, the mother was not taking enough care of G.A. As the father had difficulty reading, she was not receiving enough feedback from her father either. The family was informed by the researcher about their child's conditions. G.A.'s teacher from Grade 1 mentioned in the interviews that she '*had difficulty reading, and could not learn to read*'. This problem that she was experiencing with reading affected her other classes as well. She had therefore developed a negative attitude towards the school.

Data Collection Tools

Data were collected by using the Marmara Learning Styles Scale designed by Şimşek (2007), the "Error Analysis Inventory" adapted to Turkish by Akyol (2014) from Harris and Sipay (1990), Ekwall and Shanker (1988) and May (1986), audio recordings, and texts included in Turkish textbooks for Grades 1, 2, 3 and 4 approved by the Board of Education. The permissions for the use of these scales were taken via e-mail.

Şimşek's (2007) "Marmara Learning Styles Scale" was used in the study. The Scale aims to identify the learning preferences of 3rd, 4th, and 5th graders aged 9-11. The content validity of the scale was .83, reliability coefficient was .6650, and Cronbach Alpha value was .6630. It therefore had an acceptable level of validity and reliability (Şimşek, 2007, p. 128).

The “Error Analysis Inventory” adapted to Turkish by Akyol (2014) from Harris and Sipay (1990), Ekwall and Shanker (1988) and May (1986) was also used in the data collection process. With this inventory that is used to evaluate reading and reading comprehension performance, the reader’s oral reading mistake types and reading comprehension level can be identified. Thanks to this tool, individuals’ reading levels can be identified.

Independent Level: Refers to the reader being able to read and comprehend material at an appropriate level without any help.

Instructional Level: Refers to the reader being able to read and comprehend material by taking support.

Frustrating Level: Refers to the level where the reader makes too many reading mistakes in the material and has difficulty comprehending (Akyol, 2014).

The student’s word recognition and comprehension level was determined with this inventory.

Implementation and Procedures

Data were collected at an Elementary School where the researcher was working as a teacher during the semester task. The researcher noticed that a 4th grader was making too many mistakes while reading. The student was asked to read a material at her grade level aloud and a voice recording was completed. According to the Error Analysis Inventory, the student was at the frustrating level in her own grade level. After informing her family about the research, the required written consent was obtained and the study was initiated.

The implementation started in March and ended in June of the same year. The process in at Elementary School lasted 49 hours over 13 weeks. Texts from Turkish textbooks for Grades 1, 2, 3 and 4 approved by the Board of Education were used. A total of 41 texts, 20 of which were informative and 21 of which were narrative texts, were used. With the Marmara Learning Styles Scale, the dominant learning style of the student was found to be tactile learning. The word box strategy was used as it was shown by previous research to be effective in improving phonological awareness skills, word recognition skills with word repetition technique, and prosody reading skills with echo reading strategy. In line with the student’s tactile learning style, the word box strategy and the sandpit activity were used.

The student’s reading level was identified by using the “Error Analysis Inventory” adapted to Turkish by Akyol (2014) from Harris and Sipay (1990), Ekwall and Shanker (1988) and May (1986). This tool measures word recognition and reading comprehension skills. After identifying the student’s reading level, the “Marmara Learning Styles Scale” developed by Şimşek (2007) was used to find her dominant learning style. Following improvements in reading at the word recognition level, reading comprehension practice was done. Story mapping was used to develop reading comprehension skills. The story mapping method facilitates distinguishing important from unimportant information (Akyol, 2014), making a visual schema, and thus enables information to become more easily recorded in memory (Boulineau et al., 2004).

The 4th grader’s word recognition and reading comprehension levels were determined, starting from her own grade level. For this purpose, texts were selected from the Turkish textbooks (grades 1, 2, 3 and 4) according to the level of the student, and level identification studies were completed. A pilot task of 8 hours was carried out with methods used in the literature to overcome reading difficulties (word repetition technique, word box strategy). After this, the methods to be used were determined. It was decided that the main study would involve the "Carbo recorded book method", "word repetition technique", "dictation practice", "word box strategy", "sandpit activity" and "story mapping". The actual implementation process was completed with 41 texts in total.

Stages followed to eliminate reading difficulty were as follows:

- One copy of the texts to be studied was given to the student and another copy to the researcher.
- After this process, visual reading was undertaken by examining the visual of the text in order to activate the student's preliminary knowledge. Her ideas were asked about what the text was saying.
- Before starting to study the text, the texts read by the researcher were recorded digitally at the level of the student. Expert opinions were taken about whether the audio recordings created in this way were appropriate. After ensuring that the experts thought they were "appropriate", the digitally recorded texts were played to the student via headphones before she read the text. During listening, she was asked to follow the text.
- Then, the student was asked to read the text aloud.
- The researcher underlined misread words during reading.
- Prior to each implementation, basic and in-depth comprehension questions were prepared for each text by the researcher, and expert opinion was taken. Once the experts announced the questions "appropriate", the student's post-reading reading comprehension level was identified.
- After this stage, the misread words were written with colored crayons on white paper. Each syllable was written in a different color. In line with the word repetition technique, the practice was repeated until the student read previously misread words accurately.
- Then, the word box strategy was used, where the words that the students misread were said by the researcher and the student was asked to form the words accurately (using domino style tiles with letters on one side).
- Mistakes in reading were pinpointed and communicated to the student by the researcher. The student was asked to write these on a white board. After this stage, the student was asked to read every word that became written aloud.
- Sentences containing the words most commonly misread by the student were determined by the researcher. Following this, the researcher read each of those sentences with emphasis, intonation and appropriate expression. Immediately after, the student was asked to read the same sentence. In this way, the teacher modeled prosody for the student.
- For motivation, the student was given positive reinforcement. When she showed signs of tiredness or reluctance, the work was interrupted. After the student regained motivation, the practice continued.
- During the implementation, proper ventilation was ensured in the environment. The benefits of drinking water were mentioned and the daily water intake of the student was checked. Clean air and water are essential for the brain. They are effective in the correct and regular functioning of the brain. In addition, the student was also encouraged to play games such as chase during break time as exercise accelerates blood circulation. Blood is the most essential nutrient for the brain. It transmits oxygen to the brain and ensures its functioning.
- The researcher explained to the student how story mapping is used and what benefits it has in practice involving narrative texts.

- After these stages were completed, the student was asked to read the same text aloud. Mistakes during reading were noted by the researcher. The results obtained were transferred to the "Error Analysis Inventory" and word recognition and reading comprehension levels were determined.
- Each practice continued until grade 4, which was the student's own grade level, and until the "independent level" in word recognition and reading comprehension.
- As the process of course repetitions at home is crucial for the development of the student after the practices which were carried out at school by teachers, the family was notified and it was ensured that similar practices were encouraged in the home environment by the family.

FINDINGS

The initial findings of the study came from the 8-hour pilot trial. Extending over a period of two weeks, this trial examined G.A.'s reading performance with the "word repetition technique", "dictation work", "word game" and "sand pit".

Table 1. Reading Comprehension Performance in Pilot Tasks

	Word Recognition Level	Oral Reading Mistake	Oral Reading Speed (in 1 min)	Reading Comprehension Level
Pilot 1	%80	7	53	%70
Pilot 8	%85	10	37	%100

Table 1 shows that the increase in G.A.'s word recognition level also improved her reading comprehension. It was observed that reading comprehension studies using story maps increased G.A.'s reading comprehension level.

During the main study, the texts were recorded digitally and played to the student via headphones. Then, the effects of the word repetition technique, dictation, word box strategy, sand pit and story mapping on G.A.'s reading and reading comprehension levels were examined. This lasted 41 hours in total, 4 hours weekly.

Table 2. Reading Comprehension Performance in the Main Study

	Word Recognition Level	Oral Reading Mistake	Oral Reading Speed (in 1 min)	Reading Comprehension Level
Main 1	%75	58	20	%50
Main 41	%95	11	38	%100

As can be seen in Table 2, as a result of 41 hours of practice, the student's level of word recognition and reading comprehension in the 4th grade text increased from frustrating (75%) to independent level (95%), and the oral reading speed per minute increased from 20 to 38 words. As the student's phonological awareness skills improved, it was observed that oral reading mistakes decreased from 58 to 11 words.

RESULTS, DISCUSSION AND RECOMMENDATIONS

G.A., a 4th grade student who had difficulty in reading, was able to read a text of 274 words at her own grade level in 13 minutes and 22 seconds before the study. While reading the text, she misread 58 words in total. Her word recognition and reading comprehension levels were at the frustrating level. By the end of 49 hours of practice including the pilot trials, she became able to read the same text in 7 minutes and 23 seconds. During reading, she misread 11 words. Her word recognition and reading comprehension levels increased to the independent level. The word repetition technique, word box strategy, dictation and sandpit exercises were effective in improving the word recognition level of this student with reading difficulties. Improvements in word recognition level contributed in turn to the improvement of the student's reading comprehension skills. In addition, thanks to the story mapping method used to develop comprehension skills, her reading comprehension level increased from the level of frustration to independent.

The common basic problem for students with reading difficulties is an inability to match the letter they see with the sound they hear, rather than comprehension (Koçer, 2012). Individuals who cannot develop letter-sound matching skills cannot read fluently. In a study with 30 1st grade students aged 78-90 months, Küçükünal and İlkir (2019) emphasized that sound awareness is effective in improving literacy skills in children with reading difficulties. In addition, it was found that babies who exhibit delayed speaking and have difficulties in comprehending speech sounds experience reading difficulties at elementary school. For this reason, it is crucial to detect students with reading difficulties at an early age.

A predominantly tactile student according to the Marmara Learning Styles Scale, G.A. was involved with the "word box strategy" and "sand pit activity". Successful results have been obtained in eliminating reading difficulties. Research also shows that activities based on learning styles help eliminate reading difficulties (Barber et al., 1998; Carbo, 1978; Carbo, 1984; Carbo et al., 1986; Carbo, 1987; Carbo, 1990; Carbo, 1992; Carbo, 1995; Carbo, 1998; Carbo, 2008; Carbo, 2013; Duhaney & Ewing, 1998; Hodgins & Wooliscroft, 1997; Oglesby & Suter, 1995; Sondra & O'Tuel, 1989; Synder, 1994).

With the word repetition technique and word box strategy used to overcome G.A.'s reading difficulties, her level of word recognition increased from "frustrating to independent level". The effectiveness of the word repetition technique and the word box strategy in eliminating reading difficulties is also supported by previous research (Aktepe & Akyol, 2015; Akyol & Kodan, 2016; Akyol & Sever, 2019; Ateş, 2013; Dündar & Akyol, 2014; Ekiz et al., 2012; Fidan & Akyol, 2011; Özdemir, 2013; Özkara, 2010; Sezgin & Akyol, 2015; Ulu & Akyol, 2016; Uysal & Akyol, 2019; Uzunkol, 2013; Yamaç, 2015; Yıldırım et al., 2015; Yılmaz, 2008; Yılmaz & Köksal, 2008). In his research, Akar (2017) recorded and used texts in digital media, and observed that the word recognition skills of students with reading difficulty improved. Similar results were found in the present study.

Reading comprehension skill is one of the most basic elements of reading (Cain, 2010; Stavonich, 1986; Yılmaz & Köksal, 2008). One of the methods used to develop reading comprehension skills is story mapping. In a study conducted with individuals with learning disabilities, it was concluded that using a story map is effective in improving reading comprehension skills (Boulineau et al., 2004). Previous research has shown that the story mapping method is effective in improving the reading comprehension skills of individuals with reading difficulties (Boulineau et al., 2004; Duman, 2006; Duman & Tekinarslan, 2007; Idol & Croll, 1987; Işıkoğan & Kargın, 2010; Yılmaz, 2008).

In order for teachers to be successful in eliminating reading difficulties, the support of schools, families, psychologists and reading specialists is needed. There is no reading specialist team in Turkey yet. It is necessary to train reading specialists, primarily from primary school teachers, by providing the legal infrastructure as soon as possible and support it with postgraduate education. Reading specialists can support the teaching of reading skills, elimination of reading difficulties, organization

of educational environments, and use of effective methods and techniques (Akyol & Yıldız, 2013; Uyar et al., 2011).

Limitations of the Study and Recommendations for Future Research

This research is limited to a 4th grader with reading difficulty, during a semester tactile activities prepared by the researcher according to the student's predominant learning preference, and texts in Turkish textbooks.

Longitudinal studies may be conducted in the future to address reading difficulty. Also, intervention into reading difficulty may also be studied at different stages of education in addition to elementary school.

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Ethical Statement: The research was designed with the action research method and “critical situation sampling” method was employed as the sampling method. The student with no diagnosed mental, auditory or visual insufficiency, but has many mistakes during oral reading and reading comprehension and perform at a lower than her peers in the exams participated in the study. For ethical reasons, the name of the student's school was kept confidential and the student was named by giving a code. A wet-signed permission document was obtained from the family of the student participating in the study, stating that she participated completely voluntarily. Also the permissions for the data collection tools used in the research were taken via e-mail.

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