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## Reading Difficulty and its Remediation: A Case Study

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**Abstract:** The aim of this study, in which one of the qualitative research approaches, the case study design, was used, was to remedy reading problems and develop reading skills in a fourth grade primary school student with sound, syllable and word recognition exercises. The study covers 38 lesson periods in the autumn term of the 2018-2019 academic year. For developing reading skills, the strategies of “prior listening to the paragraph”, “repetitive reading” and “word repetition” were used. For determining reading errors, the “Error Analysis Inventory” was used. Data were obtained by means of observation and document examination. In the study related to determining reading status, it was established that the student had made errors such as repetition, syllabication, omission, addition and failure to notice punctuation marks. Based on the data obtained, first of all, sound, syllable and word recognition exercises were conducted with the student, and then reading exercises were carried out with texts selected to suit the level of the student’s Turkish course books and story books. Analyses were performed by taking audio and video recordings of all exercises. As a result of the intervention, the student’s desire to read increased, he began to read out loud, he began to identify sounds that he previously did not recognise or confused, and improvements in his reading skill were observed.

**Keywords:** *Fluent reading, repetitive reading, reading difficulties, comprehension, reading skills.*

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### Introduction

Reading is a skill that is acquired by individuals through education and that develops over time. The timely acquisition of this skill has a positive effect both on an individual’s academic life and on his social life. Nowadays, reading is defined as a meaning building process in which prior knowledge is used, which is based on effective communication between the writer and reader, and which is carried out in line with a suitable method and goal in an orderly environment (Akyol, 2003). Effective reading must include principles of fluency, strategy, motivation, continuity and meaning building (Anderson, Hiebert, Scot, & Wilkinson, as cited in Akyol, 2003)

Effective acquisition of reading skill which is the basis of reaching the knowledge and learning enables individuals to develop socially and academically and adapt to their environment more easily. Reading difficulty is defined as having a lower reading success than expected compared to the age and learning potential of individuals and the changeability of student with cultural, lingual and educational experiences. (Akyol & Kayabasi Ketenoglu, 2018). Akyol (2013) emphasized that weak readers were unable to use supportive strategies when they could not comprehend the texts. They read purposelessly, had no faith that reading would do them any good, could neither realize inconsistencies nor use clues, had very low estimation skills and usually failed in tests. Bender (2012) states that the difference between the grades and reading skills of individuals with reading difficulties varies between a few months and five-six years. This difference is caused by both reading difficulties and personal differences of students.

In the report by the National Reading Panel (2000), five essential reading areas were specified. These are “phonemic awareness, phonics, vocabulary, reading comprehension strategies and reading fluency” (Therrien, 2004, p. 252). In order to carry out successful reading in these five specified areas, particular importance is given to correct training in phonemic awareness and phonics. Vocabulary training is also a prerequisite for correct word recognition, fluent reading and reading comprehension, but this is not sufficient on its own (Stanovich, 1991). The reader must both recognize a word correctly and read this word at a suitable speed (Bastug & Akyol, 2012). In order for students to fully

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acquire reading skill, this training must be conducted correctly, promptly and appropriately. If any one of the reading skills cannot be acquired at an adequate level, reading difficulty will result, and if the necessary precautions are not taken, students' academic and social lives will be negatively affected throughout their lives. According to Cain (2010), students with reading difficulty have the following characteristics:

- They do not enjoy reading or doing reading exercises.
- They are unwilling to read out loud.
- They cannot read fluently.
- Their reading skills develop very slowly.
- Their writing and comprehension competences are also weak.
- They experience problems in explaining what they have read.
- They cannot follow instructions.

To be able to carry out reading, the reader must first and foremost recognize the word. Word recognition gives the reader the opportunity to determine meaning by using his mental lexicon. In the process of giving meaning to words, prior knowledge is used. If the word recognition is incorrect or inadequate, the sentences, paragraphs and therefore the text cannot be understood (Akyol, 2011).

Word recognition is an important element in the process of reading. Some researchers stress that when word recognition, which is the prior condition of fluent reading is realized wrongly or insufficiently; the text being read will not be comprehended (Akyol, 2013; Karatay, 2007; National Reading Panel [NRP], 2000; Ozbay & Melanlioglu, 2008). Since weak readers concentrates on recognizing words, they are naturally unable to realize patterns in texts like listing, meaning and contradiction, cause and effect, problem and solution (Caldwell, 2008). Students with reading deficiencies are negatively influenced in terms of reading and think that reading is a waste of time. Thus, they display self-sabotaging behaviors. It is seen that children with reading difficulties frequently make errors while reading, such as; skipping and adding words, misreading, repeating, reversing and ignoring punctuations (Akyol & Kayabasi Ketenoglu, 2018; Rasinski, Padak, & Fawcett, 2010).

#### *Fluent Reading and Comprehension*

Rasinski (2003) defines reading fluency as the ability to read speedily, effortlessly and with a meaningful expression. Fluent readers can read easily, accurately and with suitable stress and intonation. They can recognize words automatically and can thus direct their attention to understanding the passage rather than to decoding the words. Akyol (2006) expresses fluent reading as reading carried out with attention to punctuation marks, stress and intonation, without backtracking or repetition, without syllabification or unnecessary pauses, with attention to units of meaning, as if one were speaking, and thus, conducting reading as if one were speaking is important in terms of enabling meaning building.

Intervention in reading fluency problems and attempts to solve these problems should be started from the first years of elementary education onwards. In this respect, it is essential that the fundamental reasons for difficulties experienced in reading by children are determined and that suitable strategies are used. Reading is to derive sense from the text. So, the difficulty in reading comprehension is rooted in the lack of deriving sense from the text. This problem can be solved only when the reader aims to use her current knowledge to understand the information provided in the text (Brassel & Rasinski, 2008).

Repetitive reading strategy is known as the best fluent reading strategy that improves word recognition, speed and accurate reading (Armbruster, Lehr, & Osborn 2010; Rasinski, 2009). "Repetitive Reading Method" was selected for removing participant's reading difficulties and enabling him to read fluently. In literature, Repetitive Reading Method is defined as reading a short and meaningful text independently and repeatedly until achieving fluent reading and then starting to read another text (Bender & Larkin, 2003; Samuels, 1997).

Being automatic in reading and gaining reading fluency skills of students are expected in the first grade of primary school. However, some students cannot reach to this targeted skill. The number of the students, who have reading disability in the process of second grade of primary school to eighth grade of secondary school, is too drastic to ignore (Uysal Kanik & Akyol, 2018). Reading the text fluently is one of the fundamental conditions for successful reading comprehension (Adams, 1990; Fuchs, Fuchs, Hosp & Jenkins, 2001), and it is possible to enhance reading comprehension skills by acquiring fluent reading skills (Basaran, 2013; Kim, Wagner & Foster, 2011; Stahl & Heubach, 2006; Therrien, 2004) and this skill assumes that the majority of reader attention can be intensified (La Berge & Samuels, 1974; Logan, 1997; National Reading Panel [NRP], 2000; Samuels, 1979).

There are several other studies that show a high and positive relationship between fluent reading and reading comprehension skills (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Paige & Magpuri-Lavell, 2014; Spear-Swerling, 2006; Wise et al., 2010). It might be stated that during reading process students' ability of comprehension depends on their fluent reading levels. Examinations in the literature show that the fluent reading and reading comprehension strategies contribute development of these skills (Baker & Boonkit, 2004; Guthrie, Homan, Klesius & Hite, 1993; Wigfield, Metsala & Cox, 1999).

*Importance of the Study*

Individuals who have developed reading skills, habits and culture are necessary to grow self-supporting, rogatory and contribute to both personal and society improvement. Acquisition of the reading skills starts with the first reading and writing education and continues increasingly throughout whole life of people. In order to achieve adequate level of reading, individuals should gain the fluent reading skill, which is one of the basic rudiments of reading (National Reading Panel Report [NRP], 2000; Uysal Kanik & Akyol, 2018). Studies showed that the students who have not achieved basic reading skills until the fourth grade have increased their reading gap with their skillful peers in the following years (Annie E. Casey Foundation, 2015; NRP, 2000).

Based on the above mentioned views and developments, this study is considered important regarding the proof of the effects of the academic working plan and activities, which was run by choosing the proper technics and methods and with the student who has reading fluency problems, on student's reading fluency and understanding skills. The primary goal of study was enhancing students' word recognition skills as the first step for reading to take place. When the first step is done, students would be able to spend a great portion of their mental performance to comprehend what they read. Some of the students are unfortunately incapable of using the reading strategies effectively. Reading disability is a concept that is continually discussed in different countries' educational circles and that leads to a great many problems in both students' academic and social lives. Therefore, this study is of great importance in that it gives information about both the problems faced in the process of reading and comprehension and the strategies used to eliminate these problems. In addition, it also has importance in practice in that it presents valid and reliable research to eliminate reading disabilities. It also provides alternative solutions for the students who are experiencing such problems and gives teachers new ideas to explore.

*Aim of This Study*

Within the framework of this study, it was planned to provide a suitable learning environment to the student who has reading difficulties and let him actively participate in the process and improve his reading and comprehension skills by the end of the active participation process. This research, concentrates on improving reading and reading comprehension skills of a student who has reading difficulty but is not mentally, physically, audibly and visually disabled. Major goal of the study is to remedy reading problems and develop reading skills and comprehension in a fourth grade primary school student with sound, syllable and word recognition exercises. In addition to mentioned exercises, the strategies of "Prior Listening to the Paragraph", "Repetitive Reading" and "Word Repetition" have been employed to increase reading fluency and comprehension.

**Methodology**

In this section, beginning of the study, research method, participant' characteristics, data collection tools were described. Before beginning the study with the student, the school principal, class teacher and his parents were informed, and the necessary permission was obtained to be able to make audio and video recordings during the study. Information about the study was first given to M. D. and his reading and comprehension levels were determined. The literature related to reading difficulty and special learning difficulties was reviewed, expert views were obtained, and a decision was made about the methods to be carried out and the study period.

The study began at the end of October 2018, and continued until the end of December. The activities with M. D. were carried out in the school's support education room. School's support education room is opened in the schools by the permission of the provincial directorate for national education with the purpose of studying one to one or small groups to help students. It is designed to work with the students who have different learning and reading difficulties. All the necessary equipment is provided by the school administration and classroom teachers taught and helped to students in these places. The study was generally conducted during the week on Mondays, Tuesdays, Wednesdays and Thursdays during the third lesson period. Throughout the study, meetings were frequently held with the school counsellor, the student's class teacher and his parents, and the opinions and suggestions obtained from them were effective in terms of evaluating the improvement shown by the student.

A 38-hour action plan for working with M. D. was prepared. Eighteen hours of the 38-hour study were allocated to detecting and recognizing sounds, and to syllable and word study. The remaining 20 hours were set aside for text reading, prior listening to paragraphs, repetitive reading and word repetition studies. During the study, the aim was for the student to recognize all the sounds, distinguish the sounds he confused, to articulate correctly, to combine syllables, to read words correctly and to increase his reading speed. In this study, which aimed to obtain multiple data from a single participant, the gathered data were valid only for M. D., who was the subject of the sample case study, and were confined to the personal experiences of M. D. and the people around him.

*Research Method*

In this study, the case study design was used. The case study is a research design by which one or more cases, events, individuals or programs are examined in depth and analyzed. Case studies are primarily a means of investigating what

has happened in a real environment, collecting and analyzing data in an orderly manner, and determining the results that emerge. The emergent results clearly explain why the event occurred in that way and the matters that future studies need to focus on in more detail (Creswell, 2013; Merriam, 1998). Since there was a single participant in the study, the holistic single case design, in which a single unit of analysis is examined, was used.

### *The Participant Selection Process*

In the school where the application of this study has been made, there were 11 classrooms and 11 teachers of these classrooms on the fourth grade level. Structured interviews were made with teachers (Appendix 1) in the school support room before the study to identify the students who have reading difficulties. After interviewing 11 teachers, it was determined that four students (each one in a different classroom) had a reading difficulty. Teachers of the four students who had reading difficulty articulated the common difficulties students had in the following;

- Mixing the letters “b, d, and p”.
- Recognizing the letter alone but confusing it within the word and unable to decode
- When reading omitting some words in the sentences
- Supplementing some of the words
- Reading syllable by syllable
- Skipping the line
- Subvocalization
- Unable to arrange the distance between book and eyes
- Improper sitting position
- Swinging when reading.

In addition to these problems, all four teachers said that students who have reading difficulty also have low motivation and academic success in all subjects. In general, students with reading difficulties come from families who are crowded, in poverty, have low educational level, and limited opportunity concerning educational equipment.

Students with reading difficulties do not have seeing and hearing problems. However, their grade levels are behind their peers and brothers and sisters of these students have reading difficulty. Teachers also stated that these students are reading very slow and making a lot of mistakes and because of this situation, fluent readers are mocking with these students in the classroom. This situation makes the students to become aggressive that prevents them from effective communication. During the interviews, all four teachers stated that individualized training programs would be effective to increase reading and academic success.

The subject, whose name has been hidden in accordance with research ethics and who is referred to as M.D. In the interview conducted with the class teacher, it was determined that M. D. was reluctant to read and felt uncomfortable during the reading activities carried out in class, for reasons such as reading incorrectly or continual interruptions by his classmates. Parents, classroom teacher, and guidance teacher stated that M. D. has low motivation towards reading, low academic success in almost all classes, not reading at home, and has some reading difficulties. Since M. D. was the one who had the lowest reading level and academic success among the four students, it was decided to study with M. D. Also, in choosing M. D. to work with his parents’ and teachers’ desire and their permission to record the training process was important.

### *Participant Characteristics*

M.D., is a fourth grade student attending a state school in the district of Selcuklu, Konya Province, in the 2018-2019 academic year. Following preliminary meetings with the class teacher and talks with school principal and school counsellor the decision was taken to begin the study with M.D., who was determined to have special learning difficulties. The main criteria for selecting this student were that his reading and comprehension levels were at the “anxiety” level according to the Error Analysis Inventory, and that he lagged behind the level of the class he attended.

M.D. is a 10-year-old male student with seven siblings, and is the youngest member of the household. His mother, who is a housewife, and his father, who is a driver, have a primary school level of education. The student has studied with the same class teacher for four years, and based on his reading difficulty, his success level in his other subjects also falls behind the level of the class he attends. That the student has no kind of mental or visual problem has been certified with a doctor’s report.

### *Data Collection Tools*

In this study, interview with teachers, Error Analysis Inventory, and prior listening to paragraphs, repetitive reading and word repetition techniques were the tools used to determine the student’s reading difficulties, comprehension level, and the developments within the teaching process.

We prepared interview questions to get the teachers’ ideas to determine the students who have reading difficulties. In the interviews we asked the teachers whether they have children with reading problems determined by the Guidance

Research Center. In addition, through interview questions (Appendix 1) we requested the teacher to provide information about the students' family and living conditions, whether they have a hearing, seeing or genetic problems, their academic success, attitudes towards reading, and classroom behaviors. We also asked the teachers whether they want individual training for the students.

At the beginning of the study, to determine the student's reading miscues and comprehension level, the "Error Analysis Inventory" developed by Ekwall and Shanker (1988) and adapted to Turkish by Akyol (2011), was used. Also inventory was used at the end of the study to find out the developments took place during the implementation process regarding reading miscues and comprehension levels. When the Error Analysis Inventory is used, three types of comprehension level are identified:

*Independent Level:* This expresses the child's ability to read and understand suitable material without needing the assistance of a teacher or other adult.

*Instructional Level:* This is the level at which the child can read and understand in the desired way with the assistance of a teacher or other adult.

*Anxiety Level:* This expresses a level at which the child understands very little of what he reads or makes a large number of reading errors.

Prior listening to paragraphs, repetitive reading and word repetition techniques and some activities such as syllable and word wheel, syllable and word cube, and reading short texts, etc. were used in the process of the study to eliminate reading miscues and increase the fluency so that comprehension level could be developed.

#### *Determining the Reading Miscues and Comprehension Levels*

In order to determine M.D's reading miscues and comprehension level, the text named "Sifa Niyetine" (For a Cure) from the fourth grade course book prepared by the National Education Ministry was chosen (Appendix 2). M.D's reading results concerning the number and type of reading errors are given in Table 1 below:

*Table 1. Results of M.D's Reading Assessment*

<b>Number of Words in Text</b>	130 Words	<b>Error Types and Numbers</b>	
<b>Number of Errors</b>	58	Words Skipped	5
<b>Number of Correct Words</b>	72	Additions	11
<b>Word Recognition Rate</b>	55%	Repetitions	2
<b>Number of Words Read per Minute</b>	20	Words Read Incorrectly	39
<b>Reading Level</b>	Anxiety Level	Lines Skipped	1

The number of M.D's errors in the 130-word text was 58 and the number of correctly read words was 72; the number of words he read per minute was 20. Therefore M. D.'s word recognition rate was  $72:130 = 55\%$ . Accordingly, M.D. was at the anxiety level regarding word recognition. In order to ascertain the student's comprehension level, 5 questions (Appendix 4), 2 of which were at a basic comprehension level and 3 of which were at an in-depth comprehension level, were asked from the text he was asked to read. Questions requiring in-depth understanding were scored 3, 2, 1, and 0 depending on answer status, while questions based on basic understanding were scored 2, 1, and 0, again depending on answer status. The comprehension percentage of the text read was obtained by dividing the score obtained by the score required to be obtained. The responses given were evaluated, and the student scored a total of 5 points, 2 from the first question, 0 from the second question, 2 from the third question, 0 from the fourth question and 1 from the fifth question. In fact, the student needed to obtain a total score of 13. Therefore, the student's success level was determined as  $5/13 = 0.38$  which was also anxiety level. During the data collection and analysis, technological tools such as a video camera and computer were used. In table 2, percentages of word recognition and comprehension concerning the reading levels are given.

*Table 2. Reading Levels and Percentages (Akyol, 2011)*

<b>Reading Levels</b>	<b>Word Recognition</b>	<b>Comprehension</b>
Independent Level	+99%	+90%
Instructional Level	+95%	+75%
Anxiety Level	-90%	-75%

Since the student's level for reading and comprehension in the assessment made on the fourth grade text was determined to be "anxiety level", he was asked to read texts from levels below the level he was taught at (3rd, 2nd and 1st grades, respectively). In the lower-grade assessments made, too, it was concluded that the student was at the

“anxiety” level, and with the aim of remedying the problems specified, activities were begun with texts and materials from the first grade.

Texts required M. D. to read chosen from the Turkish course books prepared by the Ministry of National Education. The understandability level of the texts and the sentence and word lengths in them were taken into account, while care was also taken to ensure that they were suitable for the class level. The selected reading passages were written on a computer and read to the student.

After the student’s reading errors and reading comprehension level were determined a 38-hour study program aimed at remedying M.D’s reading problems was specified and the elimination of his reading problems was targeted. With the aim of increasing the validity and reliability of the study, video recordings were made throughout the study. The errors made by the student were ascertained by watching the video recordings taken, and a field expert was asked to listen to these and offer his opinions.

By asking M.D. to read texts firstly from his own grade level, which was the 4th grade, and then texts from the 3rd, 2nd and 1st grades, it was determined that there were letters that the student recognized and did not recognize, and which he sometimes also confused. M.D. did not recognize the letters “k, b, d, f, v, p, y, r, h” and read them wrongly in words and phrases. He had difficulty when expressing as sounds letters that he recognized, and sometimes found it hard to combine syllables and form words. When reading a word within a phrase, he frequently confused the letters “b-d-p; y-g; and f-v”. The letters that the student did not recognize and confused in general are as shown in Table 3 below.

*Table 3: Letters Not Recognised and Confused by Student*

<b>Unrecognised Letters</b>	Bb	Dd	Pp	Gg	Vv	Yy	Kk	Rr	Ff
<b>Confused Letters</b>	b d p			y g k			f v		

When M.D. was asked to read out the letters of the alphabet one by one, he could not recognize the letters “b, d, p, g, v, y, k, r, f”, and it was determined that even though he recognized most of them when he read them out one by one, he confused them with each other or vocalized them differently within words and text. For example, he generally exchanged the letter “b” within a word for “d” or “p”; he could not fully articulate the letters “y” and “g” while reading and skipped them. Similarly, it was also determined that he mixed up the letters “f” and “v” with each other within a word, that he read out a letter in a word completely wrongly, or that he completed a word with a different letter.

Due to the problems he experienced when combining syllables, he would also read the whole word incorrectly. While reading, he made errors such as skipping syllables, repeating words, inability to syllabify and reading words incorrectly.

While M.D. was reading, he did not pay attention to punctuation marks, intonation or stress. He read in an arrhythmic way. While pronouncing words, he could not regulate his voice according to the meaning of the word, and while reading, he read by overemphasizing certain syllables or phrases, or with incorrect articulation. When consonants came together, he was unable to read them, he articulated words he found difficult internally, or else he vocalized them in a different way. While reading, he did not pay attention to the meaning of a word and sometimes traced words with his finger.

He dwelt upon certain words, he lowered his tone of voice because he could not recognize a word, and the word he read could not be completely understood. For example, since he did not recognize the sounds “d” and “g” in the word “dalgalanma”, he vocalized the word in a different way, and completed it by making it up in his mind. He resorted to making things up mentally in his own way especially with long phrases and words. He sometimes corrected himself while reading, or resorted to backtracking, repetition, skipping or addition, or else read incorrectly. While reading, he added syllables, sounds and sometimes words. For instance, he said “geliyormusum” instead of “geliyorum”, and read words incorrectly, such as “oraya” instead of “orada”. He read some words the wrong way round. For example, he read “ev” instead of “ve”. Albeit rarely, the student also skipped lines while reading.

He incorrectly read words containing the sounds “b, d” and “p” that he confused. For example, he would read the word “badana” as “dabana”, or would say meaningless words like “derbe” instead of “perde”. He also frequently made skipping-type errors. It was determined that when he did not know a word in a sentence, he would skip the entire word or its suffixes and move on to another word. For instance, he would continue by skipping the syllable “is” in the word “calisiyor”. He found it difficult to recognize some words in their entirety; while reading, he could not even infer them from the sentence context. With regard to spelling and form, he could also confuse similar words with each other. Whilst sometimes resorting to syllabification for certain words, he did not syllabify a word when it was shown on its own. Similarly, he recognized some letters when they were asked for on their own, but would articulate them differently within a word. Since he read incorrectly or deficiently while reading, he would miss the meaning. When a text was completed, he had difficulty in answering questions asked about the text.

### Remediation of Determined Reading Difficulties

Teaching activities with M. D. were conducted in School's support room. Each lesson was forty minutes and 18 hours of the 38-hour study was spent for teaching letters, syllables, and words that M. D. was unable to recognize. Based on the importance of word recognition for reading and comprehension, sound detection and recognition exercises related to the sounds that the student often confused or did not recognize (k, b, d, p, f, v, g, y, r and h), syllable exercises, word reading activities, and then mixed word and sentence reading activities were conducted.

First, the letter "b" was studied because he was confused the most with this letter. Activities related to letter "b" was conducted to feel and recognize it. Later, activities continued with syllables and words formation. Beginning of a lesson the letter "b" was introduced in lower and upper case positions. In the teaching process, moving simple to complex words including two and three syllables words including the letter "b" taught to M. D. and also he divided words into syllables. Colored cards with written syllables and words including the letter "b" was prepared to be read by M. D. to make more exercises. These exercises continued until M. D. read the syllables and words correctly including the letter "b". All other letters that M. D. had difficulty in reading and recognizing taught in the similar way.

Activities such as forming syllables from sounds for each letter, forming words from syllables, dividing words into syllables, finding words beginning with the syllable given, completing words with the missing syllable, forming sentences, and creating word lists were conducted (Figs. 1 and 2). From the beginning of the syllable and word activities onwards, the numbers of syllables and words were increased in parallel with the student's awareness levels.

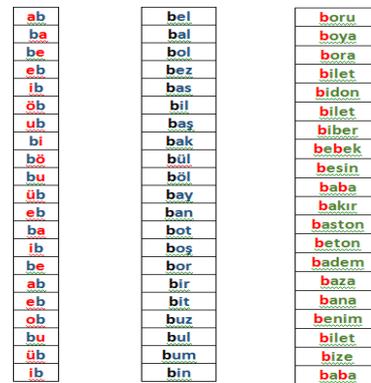
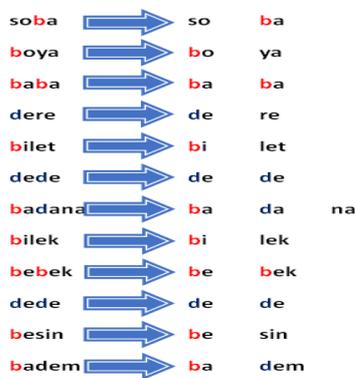


Fig. 1: Exercise for Dividing Words into Syllables

Fig. 2: Syllable and Word Scales

While the skill of word analysis, which is one of the basic components of reading skill, comprises the process of analyzing and articulating the letters of the language and combining the sounds, comprehension includes the stage of assigning meaning to the analyzed words (Hoover & Gough, 1990). Therefore, many exercises aimed at increasing the student's word analysis skill were included in the study such as the ones shown in Fig.3.



Fig. 3: Syllable and Word Cards

During the applications, syllable cards, syllable and word lists created by writing syllables and words one under the other, a word wheel comprising words formed from the sounds learnt, and syllable and word cubes were used (Figs. 4, 5 and 6). Reading activities were carried out by asking the student to form meaningful words with the mixed up syllables and letters written on the cards. During the study, one-to-one activities were conducted with the student, who was closely observed throughout the process, while the activities were audio and video recorded. In the study, sound, syllable and word exercises were performed, directed at enabling the student to perceive letters that he especially

found hard to recognize or confused (b, d and p; y with g; f with v; k with h), with the aim of reducing the number of errors that he made. For this purpose, separate study cards were prepared for each sound, the student was asked to read these, and sometimes exercises were repeated for the sounds that he learnt. Care was taken not to make the repeated exercises boring; different activities and games, such as the ones shown in Figs. 4, 5, 6 and 7, were included.



Fig. 4: Syllable and Word Cube



Fig. 5: Syllable and Word Wheel



Fig. 6: Word Cube



Fig. 7: Syllable and Word Box

Moreover, a syllable and word wheel game shown in Fig. 5 was played. In this game, on the syllable and word wheel, circular cards made up of different syllables and words were prepared, aimed at the letters the student had confused, and by placing a card prepared for a letter the student had learnt, the student was asked to spin the wheel. When the wheel stopped, the student was asked to correctly read the word indicated by the pointer.

A word cube game was played consisting of syllables and words that the student had learnt. In this game, the student threw the cube, which included different syllables and words on each face, and attempted to correctly read the syllable and word that appeared on the top face (Fig. 6). Moreover, a word-combining and sentence-forming activity was carried out, in which the student chose syllables and words from the word box containing syllables and words formed from the sounds he had learnt (Fig. 7).

During the syllable and word combining activities performed with the student, syllable and word scales, on which syllables and words were written one under the other, were used (Fig. 8), and the student was asked to read them one after the other and then in a different order. While the words were being formed, firstly, scales consisting of syllables and words made up of sounds that the researchers wished the student to perceive, and then scales consisting of these mixed with words formed from sounds the student had previously learnt, were prepared, and the student was asked to read them. Words that the student could not read were written in the pencil-shaped spaces in the table in Fig. 9 below, and he was sometimes asked to reread these.

ek	leke	keke
kel	kala	kalk
lek	eke	ka
lake	kelek	lak
aka	ke	elek
alaka	kek	ekle
ak	kale	kele
kai	akia	kaleli

Fig. 8: Syllable and Word Scales



Fig. 9: Wrongly Read Words

After all the activities related to the letters planned to be taught to the student had been completed, the researchers moved on to the next stage of the study plan, that of text reading activities. In these activities, reading out loud, reducing the number of incorrectly read words, correct articulation of words and increasing reading speed were aimed for. A period of 20 lesson hours was allocated to this stage of the study.

While the texts to be read by the student were being selected, priority was first given to texts containing sounds that he confused, and to those with a low number of words. Then, reading activities were conducted with texts chosen in mixed form from first grade Turkish books and story books. During the application, cards and activities including words found in the texts were prepared. With the aim of eliminating reading errors determined while the student was reading, such as skipping words, additions, deficient reading, or incorrect articulation, the decision was taken to carry out an intervention in which activities for prior listening to the paragraph, repetitive reading and word repetition would be used.

For this purpose, M.D. was informed about the reading process. Before beginning the reading activities, firstly, information was given about the seating arrangement and the student was spoken to about the aim of the reading. During the reading, the importance of the student's correct articulation of words, attention to punctuation marks, articulation of sentences with a suitable tone and attention to meaning were emphasized.

The chosen texts were first read aloud to the student. The student was then asked to read them. The reason for giving a sample reading to the student was for him to attract his attention to how the words should be read in the text he was to read and to create awareness for reading by paying attention to punctuation marks.

The strategy for prior listening to the paragraphs used while the texts were being read was for the researcher to read a section of the text out loud while the student listened in silence. Then the same section was read out loud by the student. When the student made an error during reading, the reading was continued by giving him corrective feedback. In texts in which the repetitive reading strategy was used, however, the student was asked to repeat it again and again until he read it correctly. In texts studied by using fluent reading strategies, when the student made an error while reading, attention was drawn to the error he made and sufficient time was given for him to correct it, and when he was unable to correct it he was given help to divide the word into syllables, thereby enabling him to read it correctly.

By supporting the student's reading behavior with words of praise (e.g., "well done", "great") when he read correctly, an attempt was made to stimulate his desire and courage for reading. With the aim of also developing the student's independent reading skill, he was also asked to read the studied texts on his own, and words that he was determined to have read incorrectly were studied separately. Words that M.D. could not read in the texts he was required to read were written on cards with the word repetition technique, and he was asked to read them again and again until he could read them correctly.

While the text reading activities were being conducted with M.D., another problem of the student was that he did not pay attention to the meaning of the words and that by failing to extract meaning from the flow of the sentence, he read incorrectly. With the aim of remedying this problem, first and foremost, an attempt was made to remove distracting stimulants, and by providing a calm and silent environment, to direct the student's interest towards the texts. Akylol (2013) stressed that motivating a child to read was one of the key factors in his learning to read and developing his reading. Therefore, the student was continually given information about the aim of reading.

Richek et al. (2002) states that in order to develop fluency, students must read easy books containing words that they know. Reading should begin with 10-minute periods, and then this period should gradually be increased to 20-25 minutes, since students who struggle cannot focus on the texts they read for a long time (Richek et al., 2002: 166). For this reason, when the texts to be read by the student in the study were being chosen, priority was given to texts containing few words and including sounds that the student confused (Figs. 10 and 11). Later, activities were carried out with texts containing gradually more and more words.



Fig. 10: Simple Text for Confused Sounds



Fig. 11: Short Text

In the study, conducted with texts containing few words and then with texts containing gradually more and more words, word scales were created from the texts, such as the one shown in Fig. 13 from the text read by the student shown in Fig. 12, and a word repetition exercise was carried out until the student could read all the words correctly. Following the word repetition exercise, the student was asked to read the same text with the repetitive reading technique.

**DÜNYA DÖNÜYÖR**

Bugün bir deney yaptık. Bir portakal aldık. Onu dünya olarak düşündük. Bir de ışık gerekliydi. Evet! İşte orada bir fener. O da güneş oldu. Artık deneyi yapabiliydik. Portakalı kendi etrafında döndürdük. Bir de ışık tuttuk. İşte deneyimiz gerçekleşti. Portakalın ışık gören tarafı aydınlık oldu. Işık görmeyen tarafı karanlık.

Fig. 12: Short Text

**"DÜNYA DÖNÜYÖR" KELİMELER**

deney	düşündük
portakal	etrafında
dünya	döndürdük
ışık	yapabiliydik
fener	döndürdük
taraf	yapabiliydik
gerçekleşti	aydınlık
karanlık	görmeyen
gören	orada
kendi	dönüyor

Fig. 13: Words Appearing in Text

### Results of the Study

In this section, the study results are given and evaluated in terms of their reading and comprehension dimensions, and the analysis and interpretation of the data obtained before the study and thereafter are presented in the form of explanations and tables.

Following the 38-hour study carried out with M.D., the student was asked to reread out loud the 4th grade-level text named "Sifa Niyetine" (For a Cure) which he had read at the beginning of the intervention. While M.D. was reading the 130-word text, it was observed that the number of errors he made was considerably lower than the number he had made prior to the study (Appendix 3). The results related to the assessment made at the end of the study are presented in Table 4.

Table 4: Results of M.D.'s Final Assessment

Number of Words in Text		Error Types and Numbers	
Number of Words in Text	130 Words	Words Skipped	0
Number of Errors	8	Additions	3
Number of Correct Words	122	Repetitions	1
Word Recognition Rate	93%	Words Read	4
Number of Words Read per Minute	32	Incorrectly	0
Reading Level	Instructional Level	Lines Skipped	0

In M.D.'s final assessment, it was determined that he made 8 errors in the 130-word text. He was able to complete the text in 5 minutes 26 seconds. The number of words read per minute was 32; moreover, his word recognition level was 93%, and it was determined that this level was equivalent to the "instructional" level. Therefore, it was determined that M.D.'s reading level, which had been at the "anxiety" level prior to the study, had reached the "instructional" level by the end of the 38-hour intervention.

In order to determine the student's comprehension level at the end of the study, 5 questions (Appendix 4), 2 based on basic comprehension and 3 based on in-depth comprehension, were asked about the text named "Sifa Niyetine" (For a Cure).

The answers given by the student after he had read the text were evaluated and M.D. was written in parentheses below the correct answers. He obtained a total of 10 points: 2 points from the first question, 2 from the second, 2 from the third, 2 from the fourth and 2 from the fifth. In fact, the student needed to obtain a total score of 13. Therefore, the student's success level was determined as  $10/13=0.77$  (77%). At the end of the intervention, the student's comprehension level was also determined to have risen to "instructional level". In the table 5 preliminary and final results are given in below.

Table 5. Results Related to Student's Preliminary and Final Assessment

4th Grade Text	Number of Words	Number of Errors	Number of Words Read per Minute	Word Recognition Rate	Comprehension Rate	Reading Level
"Sifa Niyetine" Preliminary results	130	58	20	55%	39%	Anxiety Level
"Sifa Niyetine" Final results	130	8	32	93%	76%	Instructional Level

As can be seen in Table 5, when the errors made by M.D., his word recognition level and reading level before the study and following the 38-hour intervention were evaluated, it was seen that the number of errors had greatly decreased, that he could comfortably read sounds that he had previously confused or failed to recognise, and that his text comprehension level had improved considerably along with his correct reading level. Moreover, whereas he could read only 20 words per minute while making a lot of errors before the study, it was determined that following the study his reading speed had also improved, so that he could now correctly read 32 words per minute.

### Discussion and Conclusion

In this study, an intervention lasting 38 lesson periods was carried out on a fourth grade student with reading difficulty, with the aim of remedying his reading problems. Prior to the intervention, the student was first of all asked to read a text consisting of 130 words from the fourth grade, which was his own grade level. Then, he was asked to read texts from the 3rd, 2nd and 1st grade levels, respectively, and it was observed that he was at the “anxiety” level for all texts.

It was determined that the reading errors frequently made by the student were errors such as skipping, addition, reading a word completely incorrectly, and confusing certain sounds with each other. It was established that these errors were due to carelessness, mixing sounds and deficiencies in word recognition. With the aim of eliminating these errors, the related literature was scanned and it was decided to give priority to familiarizing the student with sounds that he did not recognize, that he found it hard to recognize or that he generally mixed up, and to conducting syllable and word recognition activities. Akyol (2013) stressed that word recognition and differentiation skills were important for reading fluency, and that since readers whose word recognition skills are not developed are occupied with articulating words, they cannot allocate much time for comprehension. Therefore, a 38-lesson-hour study plan was implemented on the student; 18 lesson hours of the study plan were set aside for sound, syllable and word recognition exercises, and then the remaining part of the study was devoted to text-reading activities, beginning with simple texts that included sounds that the student confused and moving on to more difficult ones.

During the implementation of the text-reading exercises, the strategies of prior listening to the paragraph, and repetitive reading and word repetition until reading errors were eliminated, were utilized. As a result of the 38-hour study, it was seen that M.D., who had been very unwilling, who had not paid attention to punctuation marks, stress or intonation, and who had completed his reading with difficulty prior to the intervention, became very willing to read after the intervention, even though his reading speed could not reach the desired level, and he articulated words correctly and read the text with understanding and by paying attention to punctuation marks. Moreover, it was determined that M.D., who had made 58 errors in the 130-word text and whose reading and comprehension levels were both determined to be at the “anxiety” level prior to the intervention, made only 8 errors in the text after the intervention, that his word recognition rate had risen from 55% to 93%, and that therefore, his reading and comprehension levels had increased to “instructional level”.

The findings of this study reveal that when suitable methods and techniques are used and one-to-one activities are carried out for remedying reading problems of students with reading difficulties, these students’ reading skills can be improved. Moreover, it can be said that the sooner interventions are made for students with reading difficulties, the more effective these will be. The fact that the reading problems of M.D., on whom the study was carried out, has accompanied him as far as the fourth grade, led to the student’s loss of self-confidence, to alienation by his friends and to negative academic, psychological and social effects. Following the interviews conducted with the student’s class teacher and talks with school counsellor on completion of the study, it was determined that he participated in class, that he was willing to read and that his academic success had increased positively in parallel with the increase in his reading skill. In this case, it can be said that if intervention can be made in previous grades with students with problems like these, if the number of hours for individual study programs conducted with these students can be increased, and if conditions at home can be improved and parental support obtained, more successful results can be achieved. Several studies (Akyol & Ketenoglu Kayabasi, 2018; Akyol & Yildiz, 2010; Dag, 2010; Demir, 2015; Doguyurt & Doguyurt, 2016; Dundar & Akyol 2014; Kardas Isler & Sahin, 2016; Kaskaya, 2016; Kodan & Akyol, 2018; Sezgin & Akyol 2015; Uzunkol, 2013; Yilmaz, 2008; Yuksel, 2010) made in this area were examined, it seemed that the result of these researches in line with the results of this study.

If students don’t improve their own reading skills enough, this puts them in a difficult situation and causes that they fear to read out loud in class. The text-reading activities turn into a nightmare for these students. Increasing age, shame and psychology of humiliation among their friends caused the students to retire into their shells. The first bone to pick in these students who have reading disability is to convince them that they can beat this disability. The way to succeed this is to plan an education program with the ‘easy to difficult’ principle without forcing them (Uysal Kanik & Akyol, 2018).

There were some limitations of the study. Time allocation was one of them. Since the student had severe difficulties, 38-hour lesson was not enough to have the child reach the independent level of reading. Family support was another limitation of this study. Even though the family was volunteer to support, they did not have the skills to help the student because of their lack of educational skills and not having enough time to spend with their child.

### Suggestions

Based on these results, teachers and families can be informed about identification of students with reading difficulties and about early intervention for these students. Studies can be conducted aimed at identifying students like these beginning with the first grade of primary school. Moreover, reading experts can be trained and employed in schools with a view to providing support for teachers, to developing suitable methods, techniques and materials for students such as these, and to conducting studies on a professional level for remedying reading difficulties.

The results of this study and body of literature (National Reading Panel, 2000; Stanovich, 1991; Therrien, 2004), review showed that positive development was provided when one-to-one studies were made with the students who had reading difficulties. Based on time allocation and labor to student is private to him and he subjected to reading activities which proposed to solution to problems that he had. The important point that matters in here is that the result is became permanent in the conclusion of these studies and develop continuously. Therefore, educators should contact and communicate with student's family and teachers, and guide to them about what can be done in this process. Thus, student's diagnosis of reading and comprehension disability can be made on time and precautions could be taken to prevent those difficulties.

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**Appendix 1****Teacher Interview Form**

Dear Teachers

This interview form was prepared to become a basic for a research to determine primary school students' reading difficulties and remedying those difficulties. Your experiences and observations on the issue is important as a teacher. Truthfulness and sincerity of your answers are very important regarding the reliability of the research. Your answers will only be used for the scientific purposes of the research. We thank you in advance, for your sensitivity in filling the forms.

Prof. Dr. Hayati AKYOL  
Gazi University, Gazi Faculty of Education  
Department of Basic Education

Yasemin BOYACI ALTINAY  
Gazi University  
Ph. D. Student and Teacher

1. Gender:

Female       Male

2. The Last school that you have graduated from:

Teacher School    Education Institute    Bachelor's degree    Master    Ph. D.

3. Grade that you teach:

1                       2                       3                       4

4. Years of service in teaching:

1-5 years    6-10 years    11-15 years    16-20 years    21 years and more

5. In your class, do you have a student who was diagnosed as having special learning difficulty (reading) by the Guidance Research Center?

6. What are the most seen reading difficulties that you have observed in your student who has reading difficulties?

7. Could give information about your students who have reading difficulties and their families and living conditions

8. Do your students with reading difficulties have any seeing, hearing and genetic health problems?

9. Could you give information about academic success, attitude towards reading and classroom behaviors of your students with reading difficulties?

10. Do you agree with applying individual training program to your student? What are your ideas about the benefits of the individual training program?

## Appendix 2

## Text read by the student before the study

**SIFA NIYETINE**

Nasrettin Hoca, bir ara **hastalanır**. Doktor bir **muddet-perhiz yapmasını**, ağır ve acili yemekler **yememesini soyer**. İlaçlarını **verir**.

**Hoca**, doktorun **dedigini** birkaç gün **uygular**. Kendinde **iyileşme hissedir**. Cani acili **dölmali** yemekler ister.

Bir gün **Hoca'nin** karisi **dolma yapar**. Hoca'nin ısrarına **dayanamayarak** bir tanesini "Sifa niyetine" yedirir.

Karisi **baska bir yere gidince kızına yalvarır**. Kızı da bu **yalvarmalara dayanamaz**. Bir tane "Sifa niyetine" **dölmayı** da o **yedirir**. Kızın da isı **eikar**. Hoca'nin yanından ayrılır. **Hoca dolmanın tadına dayanamaz**. Bu sefer küçük **oğlunu kandirir**. "Sifa niyetine" bir **dölmayı** da onun **elinden** yer.

Az sonra, Hoca'da **sancılar** baslar. Acidan **kivranmaya** baslar. Karisini **cağırır**. Karisi, **Hoca'nin** bu ani **hastalanisi** karsısında **telaslanır**. **Kosarak doktoru çağırır**. Doktor, Hoca'yi **kivranır** halde **gorunce**:

- **Hocam, iyileştigini duymustum. Nedir bu halin?**

Hocam hem **kivranır**, hem de doktora soyle der:

- Ne **olacak** Doktor ; "Sifa niyetine" **oluyoruz**.

## Appendix 3

## Same text read by the student after the study

**SIFA NIYETINE**

Nasrettin Hoca, bir ara hastalanir. Doktor bir muddet perhiz yapmasini, **agir** ve acili yemekler yememesini soyleyir. Ilaclarini verir.

Hoca, doktorun dedigini bir kac gun uygular. Kendinde iyilesme hisseder. Cani acili **dolma** yemekler ister.

Bir gun Hoca'nin karisi **dolma** yapar. Hoca'nin izarina dayanamayarak bir tanesini "Sifa niyetine" yedirir.

Karisi baska bir yere gidince kizina yalvarir. Kizi da bu yalvarmalara dayanamaz. Bir tane "Sifa niyetine" dolmayi da o **yedirir**. Kizin da isi cikar. Hoca'nin yanindan ayrilir. Hoca dolmanin tadina dayanamaz. Bu sefer kucuk oglunu kandirir. "Sifa niyetine" bir **dolma** da onun elinden yer.

Az sonra, Hoca'da sancilar baslar. Acidan kivranmaya baslar. Karisini cagirir. Karisi, Hoca'nin bu ani hastalanisi karsisinda **telaslanir**. Kosarak doktoru cagirir. Doktor, Hoca'yi kivranir halde **gorunce**:

- Hocam, **iyilestigini** duymustum. Nedir bu halin?

Hocam hem kivranir, hem de doktora soyle der:

- Ne olacak Doktor ; "Sifa niyetine" oluyoruz.

## Appendix 4

### Comprehension questions

Question 1. Where did Nasreddin Hodja go when he was a sick?

Answer 1. Doctor

M.D.'s answer: Doctor

Question 2. What was the name of the food that Nasreddin's wife cooked?

Answer 2. Stuffing

M.D.'s answer: Stuffing

Question 3. What the doctor wants Nasreddin Hodja to do?

Answer 2. To make diet and avoiding from spicy food

M.D.'s answer: Avoiding from spicy food

Question 4. What was the cause for Nasreddin Hodja's becoming more sick?

Answer 4. Not doing what the doctor was saying and eating spicy food.

M.D.'s answer: Eating spicy food.

Questions 5. What decision Nasreddin Hodja took to eat?

Answer 5. He decided firstly to fool his wife and then his daughter to be able to eat.

M.D.'s answer: Nasreddin Hodja went to his wife, daughter and son to be able to eat.