

Reading and Writing Ability of Dyslexic Students Through Simultaneous Multisensory Teaching (SMT) Method

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ABSTRACT

The purpose of this study is to analyze the use of the Simultaneous Multisensory Teaching (SMT) method on improving reading and writing skills of dyslexic students. Students with dyslexia in addition to having difficulty in writing, also generally have difficulty in reading and mentioning a letter, word, and sentence, and often reverse in writing and mentioning letters. One of the methods recommended by the International Dyslexia Association (IDA) in improving reading and writing skills of dyslexic students is the Simultaneous Multisensory Teaching (SMT) method. The learning process goes through special stages to develop students' abilities by optimizing several senses in an integrated manner. The participants of this study comprised individual dyslexic students with the initials AMJ, who were Grade IV students at SDN 1 Pasirlangkap, Cikidang District, Sukabumi Regency. This research employed the qualitative descriptive design where interviews, observation, and documentation were the main data collection methods. Data analysis techniques consist of: 1) data reduction, 2) data presentation, and 3) drawing conclusions. The results indicated that the use of SMT method did gradually improve the dyslexic students' reading and writing abilities, initially at the level of recognition and pronunciation of the often-confused letters. Eventually, there was a great reduction in the errors made during the reading and writing of words and sentences. Based on these findings, it can be concluded that the use of the SMT method can improve the reading and writing skills of dyslexic students

Keywords: Reading, Writing, Dyslexia, Simultaneous Multisensory Teaching Method

INTRODUCTION

As professional educators, teachers are required to have four competencies, one of which is pedagogic competence. One of the important points in this competency is that teachers should be able to understand the characteristics of students by identifying the difficulties of elementary school age participants in five elementary/MI subjects [1]. Teachers need to understand the characteristics and needs of each student and not act discriminatory. The ability to understand the characteristics of students is intended so that teachers are able to condition what and how so that a student learns according to his characteristics, and one of the four points of understanding the characteristics of students is to understand basic abilities, namely abilities in terms of cognitive/intellectual [2].

In order to provide services proportionally to all students, a teacher must have the ability to deal with students with various abilities and shortcomings. Great teachers will involve students in assignments deeply by integrating material and providing

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opportunities for students to improve their assignments according to teacher suggestions [3] . One of the special handling carried out by elementary school teachers, namely the handling of students who have difficulty in reading. Learning to read is one of the big challenges faced by students during their development period, especially in the early phase of learning in elementary schools [4] . Reading is one of the main skills besides counting and writing. Reading is also a skill that must be possessed by all elementary school students because through reading students can learn a lot about various subjects. Kershner [5] , reading is an activity to learn, access, and process quickly the relationship between phonological symbols and understanding these symbols, so that if children experience difficulties, it will have an impact on the development of spoken and written language. Reading is a basic skill and at the same time is the parent of formal education. Elementary school students have two demands for ability in learning to read, namely the early stages of *learning to read* and *learning how to become a reader* at a later stage. Learning to read is the initial stage to be able to read as well as the ability to understand phonemes and graphemes, while learning how to be a reader is an advanced stage of understanding reading content [6] .

Based on this opinion , it can be said that reading is an ability and at the same time a skill that must be possessed by everyone, especially elementary school students. The importance of elementary school students having the ability to read has long been realized, especially with the implementation of the Calistung program for elementary school students, especially low-grade students. However, in reality, not all elementary school students have adequate reading skills. There are still elementary school students who have difficulty in reading and understanding reading which are categorized as *reading difficulties* , which can be categorized in the field of *psycholinguistic* studies . Difficulty in students in reading and writing is called *dyslexia* . Haddadian [7] , dyslexia is a basic reading disability that a student has which has an impact on writing ability. Dyslexic students have difficulty with phonology. Dyslexic students have anxiety, even 25% of students with dyslexia experience anxiety and face difficult situations [8] , [9] , and [10] .

Dyslexic students certainly have limitations in understanding the content of reading and in the end will also have difficulty in learning material in other subjects. For dyslexic students, reading and writing is something that is difficult to do , because it has several weaknesses, especially in recognizing letters, words and sentences . The process of combining letters, words, especially long sentences makes dyslexic students fall behind in learning, especially those related to reading. Students with dyslexia in addition to having difficulty understanding the components of words and sentences, generally also have difficulty writing letters, words, and sentences. Thus, dyslexic students will experience difficulties in participating in the learning process at school and consequently their learning achievement will be low.

The same thing happened to a student with the initials AMJ who is 10 years old and is a Class IV student at SDN 1 Pasirlangkap. When attending classes since grade 1, AMJ had difficulty in reading and writing. This difficulty he suffered resulted in his slowness to follow other lessons. The slow learning experienced by AMJ is due to a lack of reading comprehension. AMJ's reading ability is still very low compared to his classmates. While reading, AMJ was still spelling haltingly. Often mispronunciation and writing, especially

on certain letters. This is what causes AMJ to have difficulty in participating in other lessons/subjects.

To follow up on the teacher's duties as a student mentor, the teacher must look for wise and appropriate steps in dealing with students who experience dyslexia. One of the steps that can be taken by the teacher is through the selection of methods/techniques in guiding students who experience dyslexia so that these students gradually have the ability to read and write. One method that can be used in dealing with students with dyslexia is the *Simultaneous Multisensory Teaching* (SMT) method. SMT is a special learning method used for students with dyslexia. This method develops the ability of the senses continuously between sight, hearing, movement, and touch. The SMT method is a language education method to help students of all ages, who have difficulty in the structure of written language, relating to the relationship between sounds and symbols, as well as concepts and rules of written language. The aim is to teach reading, writing and spelling, with an emphasis on reading accuracy at an early stage, which is followed by a thorough understanding of written language and its structure.

Relevant research related to dyslexia was conducted by Komalasari [11], who proved that the Multisensory method allows associations between hearing, sight and touch to make it easier for the brain to work to recall letters. Meanwhile, Supena and Dewi [12], stated that the Multisensory method is a learning method that can develop the early reading ability of dyslexic students. Multisensory learning procedures are able to function all types of students' sensors, which involve tactile, visual, auditory and pronunciation functions so that students are actively and interactively involved. Furthermore, Zulfikar's research [13], [14] concluded that the Multisensory method was able to improve learning content well involving several visual, auditory, kinesthetic, and tactile modalities in the presence of clear instructions from the teacher.

MATERIAL AND METHODS

Methods

The research approach used is a qualitative approach with a descriptive method. In this study, the researcher acts as a *human instrument* (the researcher conducts his own research), the researcher as a teacher conducts research on students in the classroom, as well as an effort to guide and develop the reading and writing skills of students who have dyslexia. The subject/participant in this study was a single subject, namely a class IV student at SDN 1 Pasirlangkap, Cikidang District, Sukabumi Regency, who was 10 years old with the initials AMJ. AMJ is a student who has psycholinguistic function disorders, namely having difficulty reading and writing which is often called dyslexia. The study was conducted in approximately 6 months (1 semester) in the 2020/2021 academic year.

Instruments

The data in this study are the results of reading and writing students with the initials AMJ. This data is based on the results of observations and documentation of students' learning to read and write through the *Simultaneous Multisensory Teaching method*. Sources of data in this study were taken from three aspects, namely: learning situations, informants and

documents. The learning situation which is a social situation is the classroom environment where AMJ learns . The informant in this study was only one student, namely AMJ. As for the documents taken from the written language documentation of the research subjects/participants. Data collection techniques using interviews, observation, and documentation. Data analysis is qualitative , referring to the model of Milles & Huberman [15] . The data were checked using triangulation technique. Interviews were conducted by the teacher with AMJ's parents and from AMJ itself. The document used for data assessment/checking is the result of reading and writing from AMJ as the research subject . This study observes the behavior and activities of research subjects in the form of reading and writing results as well as the responses of research subjects in following the stages of research activities.

Procedures

Data collection activities were carried out in several stages: (1) analyzing the learning outcomes of research subjects related to reading and writing skills; (2) researchers prepare discourse , letter cards, word cards, and sentence cards; (3) approach the research subjects/participants, to ensure their condition; (4) perform the stages of using the SMT method; (5) evaluate the implementation of learning; (6) analyze the learning outcomes of participants step by step; and (7) analyze the results in general and conclude the research.

Data Analysis

implementation of data analysis in this study used the Milles and Huberman model, namely the analysis in the study was carried out interactively. In this study, researchers used data triangulation to verify the data used. As for the data analysis technique, using the Milles & Huberman Model, as shown in the following chart.

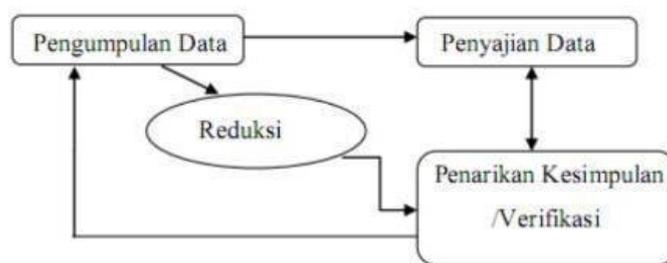


Figure 1. Milles & Huberman (2013) Data Analysis Model

The technical analysis of the data consists of three stages, namely: 1) data reduction (*Reduction*), rewriting the research data which is the result of observations, interviews, and documentation; 2) presenting data (data display), is an activity of presenting data from research results or learning outcomes from participants . The results of this study are presented in the form of a brief description of the nature of exposure (with text); and 3) drawing conclusions (*Verification*), the next step is to draw conclusions. The researcher's

activity at this stage is to draw conclusions from research results through explanations of data collection activities carried out through observation, interviews, and equipped with documentation .

RESULTS AND DISCUSSION

Early Reading and Writing Ability of Dyslexic Students

The ability to read and write dyslexic students is different from other students who do not have dyslexia. Dyslexic students have several weaknesses and difficulties in reading and writing. In Class IV SDN 1 Pasirlangkap there was one person who experienced this. The student's name is AMJ. During the AMJ study, he always had difficulties, because he had some difficulties in reading and writing. AMJ's assignments are always late compared to his friends, and his work is not optimal. The following describes the forms of spoken and written language of the research subject with the initials AMJ, based on the results of observations and documentation.

Read and Write in Reverse

Based on interviews and documentation of AMJ learning outcomes, there were several findings of deficiencies in terms of reading and writing. AMJ reading skills are very limited. In addition to reading still haltingly, AMJ has a weakness in reading, namely reading some letters upside down. For example, the letter b is read as d, and the letter d is read b. Likewise with the ability to write AMJ, there are some writing errors, namely writing the letters d and b in reverse. For example, AMJ's writing on several sentences given by the teacher. In the first sentence, "*Intan brings flowers in a pot*". The error occurs in the word "*carrying*" so that b is written backwards into d, and the word "*in*" the letter d is written backwards into b, and in the word "*pot*" the letter p is written q. In the second sentence, "*Mother bought durian this morning*". The error occurred in the word "*mother*" the letter b was written in reverse to d, the word "*buy*" the letter b was written d, the word "*durian*", d was written b. Overall the data generated , the letters that experienced many errors in writing were b, d, p, q, k, h, e, r and s.

Missing Letters

In addition to reading and writing in reverse, there are some errors in writing, namely the omission of letters. In the first sentence, "*Intan brings flowers in a pot*" , there are two mistakes". The word "*Intan*" becomes "*Itan*" and the word "*flower*" becomes "*buna*" , and the word "*carry*" becomes "*medawa*". In the second sentence "*I scrubbed the bathroom floor*" , there are two errors. The word "*rub*" becomes "*rub*". The word "*bath*" becomes "*mabi*". Missing words tend to be long words or words consisting of more than two syllables.

Adding Letters

Furthermore, the results of writing AMJ contained several errors, namely the addition of letters to some words. In the sentence, " *Mother is cutting carrots for vegetable soup* ". The word " *mother* " becomes " *mother* ". Partial addition of letters occurs at the end of words. In the sentence " *Mother cooked spinach and carrots* ". The word " *and* " becomes " *dany* ", the word " *carrot* " becomes " *carrot* ". In another sentence, it can be seen that there is an influence pronunciation on the occurrence of letter addition errors. For example the sentence, " *Ahmad helps Dad carry his bag* ". The word " *help* " becomes " *help* ", and the word " *tasnya* " becomes " *tasinya* " .

Substitution of Letters

In addition to some shortcomings in writing as described above, there are still shortcomings in subsequent writing, namely in the first sentence, " *Mother makes mung bean porridge* ", there is a replacement of letters, namely the word " *porridge* " to " *bubus* ", and the word " *green* " to " *hijo* ". " In addition, in the second sentence, " *Budi plays ball in the field* ", the word " *ball* " is written as " *bolo* ", and the word " *di* " becomes " *diy* ". The results of the analysis of research data, there are symptoms of weakness in language that appear in the research subject. The language weakness in question is writing letters in reverse, adding letters, omitting letters and replacing letters. Most of the writing errors are writing letters backwards, many of which occur among other errors. Recognizing letters in reverse is one of the characteristics of dyslexic students.

Efforts to Handle Dyslexic Students

Students with dyslexia need a different learning approach from students in general. They need to be taught the basic elements of language slowly and thoroughly. Between sound and writing must be placed together based on separate parts. They have to do a lot of practice to write by organizing the ability of hands, eyes, ears, and voice to be more sensitive to learning. *The International Dyslexia Association* (IDA) recommends learning programs for dyslexic students that cover the following abilities: phonemes, sounds represented by letters, syllables, word structure, sentences, and word meanings. One of the recommended methods for dyslexia is the *Simultaneous Multisensory Teaching* (SMT) method.

In an effort to improve the reading and writing skills of dyslexic students, namely AMJ students, researchers who are also teachers provide special guidance through the *Simultaneous Multisensory Teaching* (SMT) method. The SMT method has 20 steps in the learning process. These steps are: 1) alphabetically, students mention and observe the letters sequentially according to the alphabet, the aim is to develop the ability to recognize letters and find words in the dictionary according to the specified letters; 2) letters and keywords, the aim is to develop the ability to recognize letters associated with the sounds and movements of writing them; 3) phonemes, developing the ability to write *graphemes* (letters) based on spoken sounds; 4) repeating movements and palpation, students repeat movements and feel for letter shapes in the alphabet; 5) repeating concepts, students develop the ability to recall letters through letter cards; 6) emphasis on hearing, students develop the ability to distinguish the sounds of phonemes in sequence; 7) emphasis on sight,

students develop the ability to distinguish random letter shapes; 8) practice based on instructions; 9) recognizing words/writing: connecting letters, keywords, and sounds; associate objects with their names; repeating the word by mentioning the name of the object; connecting writing with object names; linking keywords to objects and writing down the name of the object; and repeat writing names through voice and keywords; 10) practice of beautiful writing / cursive, to develop the art of beautiful writing; 11) 1 minute rest to improve concentration, students can do some activities such as simple gymnastics to move some parts of the body; 12) guessing/mentioning words without pictures, for example prepositions, conjunctions, etc. that cannot be visualized with pictures; 13) read and pronounce words marked with red lines and colors; 14) reading words and sentences without meaning, the aim is to practice reciting the coding and division of syllables, and practice listening to his own hissing; 15) copying and dictation, the purpose of which is to improve the ability to copy texts and improve students' auditory memory sequentially; 16) phonology, to develop the ability to identify sounds in words; 17) spelling, to develop the ability to spell words sequentially; 18) pronounce a series of words, to develop the ability to articulate clearly; 19) oral/written expression, to develop communication skills, express ideas, accompanied by the use of punctuation marks; and 20) listening, to develop the skills of understanding messages through hearing.

The Ability to Read and Write Dyslexic Students through the Simultaneous Multisensory Teaching Method (SMT)

Based on the stages of the *Simultaneous Multisensory Teaching method* (SMT) described above, then the teacher/researcher carries out these steps in several groups of stages, and is carried out in a period of approximately 1 semester. The stages and results of learning to read and write AMJ students are as follows.

Stage 1

In this stage 1, AMJ students are given initial guidance through the SMT method. The steps in stage 1 are: 1) students are given a row of alphabetical letters to be observed for a while, then students mention the letters in sequence, the aim is to develop the ability to recognize letters and find words in the appropriate dictionary. specified letters; 2) students mention the letters and some key words, namely the characteristics of the letters, the aim is to develop the ability to recognize letters associated with the sounds and movements of writing them; 3) students recognize phonemes, namely developing the ability to write *graphemes* (letters) based on spoken sounds. The teacher mentions certain letters, then RA writes them down; 4) students are given the task of demonstrating movements in the air regarding the shape of the letters, and feeling the letters based on the direction of the written form; 5) students repeat steps 1 to 4 several times, this is done for several days to recognize, remember and understand the concept of letters alphabetically. The emphasis on repetition in stage 1 is mainly on the letters that are often wrong both in reading and writing, for example the letters b, d, p, q, m, n, etc.

At the beginning of this stage 1, AMJ was still wrong in mentioning and writing some letters, there were even some letters that he could not pronounce. Among the errors, namely: 1) mentioning b becomes d, m becomes n, h becomes n, y becomes g; 2) write b into d, n, so

m, l into i; and 3) demonstrating the technique of writing some letters that are still wrong. Stage 1 is carried out for approximately 1 week. After 1 week of carrying out phase 1, based on AMJ 's observations, there has been a slight change. There were some letters he already recognized, was able to pronounce and write them down. However, there are still some letters that are still mispronounced and confused with others. For example, several times still misspelling the letters b and d.

Stage 2

Stage 2 is a continuation of the guidance steps from stage 1. At the beginning of stage 2, the teacher keeps repeating the steps in stage 1 for several days. Next steps are taken, namely: 1) emphasis on hearing, students develop the ability to distinguish phoneme sounds in sequence. At this stage AMJ is guided to be more sensitive in hearing the pronunciation of phoneme sounds mentioned by the teacher; 7) emphasis on sight, students develop the ability to distinguish random letter shapes. After playing the sound of the phonemes and AMJ imitating them, then random letter shapes were shown using letter cards and through a *power point slide show* . AMJ mentions the letters displayed by the teacher; 8) practice based on instructions. At this stage AMJ was guided again to write the letters. Writing diwali letters by mentioning the sound of one of the letters, followed by showing the mentioned letters, then students write down the letters. the activity is carried out repeatedly; 9) the next step is to recognize words/writing: connecting letters, keywords, and sounds; associate objects with their names; repeating the word by mentioning the name of the object; connecting writing with object names; linking keywords to objects and writing down the name of the object; and repeat writing the name through voice and keywords. This activity was carried out repeatedly; 10) beautiful writing practice / cursive, to develop the art of beautiful writing. This activity begins by displaying one letter in cursive writing, then the word that contains the letter in question. Students are given the task of copying the letters and words in cursive writing . In this second stage, AMJ has gradually differentiated sounds, differentiated letters, wrote the letter d not to be confused with b, and was gradually able to write it in word form through dictation. Stage 2 is carried out continuously for approximately 3 weeks.

Stage 3

After the 2nd phase of guidance is complete, the teacher then guides the 3rd phase of the students. The steps of 3rd phase through the SMT method are: 1) students are invited to concentrate by providing motivation and *ice breaking* so that students are more motivated and have high concentration; 2) then students guess/mention words without pictures, for example prepositions, conjunctions, etc. which cannot be visualized with pictures, but are given directions or keywords so that students can mention them; 3) the next step, AMJ reads and recites the words marked with red lines and colors in a short discourse; 4) the next step students read words and sentences without meaning, the goal is to practice pronouncing coding and syllable division, and practice listening to your own hiss. The words and

sentences are shown by the teacher; and 5) as the final step in this stage 3, students are guided to copy and dictation, the aim is to improve the ability to copy texts and improve students' listening memory sequentially.

After going through stage 3, the ability to read and write AMJ has slightly changed. AMJ has been able to read and write letters which in the early stages were always interchanged including the letters: b, d, m, n, p, q. AMJ was able to write down the words that contained these letters, even though he paused for a moment to think and memorize the shape of the letters. Phase 3 is carried out for approximately 1 month. The teacher guides this stage 3 while continuing to use the steps in stages 1 and 2 repeatedly.

Stage 4

The final stage of the SMT method used by researchers in guiding dyslexic students is the fourth stage. Stage 4 is a stage based on the results of the previous stages. The stages in the SMT method are continuous stages and are interrelated with each other. The stages of the SMT method are interrelated with each other and are *circular in nature*, meaning that stages 1 to 4 are repeated and are an inseparable whole. The implementation of guidance for AMJ students at stage 4 is: 1) phonology, to develop the ability to identify sounds in words. In this step students are given the task of reciting the letters and words written by the teacher; 2) further spelling, to develop the ability to spell words sequentially. Students spell letter by letter in each word that was previously spoken; 3) pronounce a series of words, the goal is to develop the ability to articulate clearly. Students are given a sentence and then say it word for word, and mention the letters, especially the letters that have been often confused; 4) practice writing letters, words, and simple sentences by continuing to use punctuation marks, such as periods (.), commas (,) question marks (?), and exclamation points (!), to develop communication skills, express ideas, ideas, accompanied by the use of punctuation marks; and 5) listening, to develop the skills to understand the message through hearing. In this step, students are heard reading the short story text repeatedly, then students are asked to write letters, words and simple sentences that are remembered by students in the text/sentences spoken by the teacher. Stage 4 is carried out in approximately 3 weeks.

Discussion

After completing 4 stages of mentoring, gradually the ability to read and write AMJ has begun to change. The ability to recognize letters that are often confused has begun to be mastered, both in pronunciation while reading and writing. Similarly, reading and writing words and sentences, there have been changes compared to the initial observations. However, the ability to read and write AMJ is still not completely perfect, it requires the teacher's thoroughness and patience in guiding him. Most importantly, mentoring dyslexic students through the SMT method, must always be carried out continuously from stage 1 to stage 4.

Dyslexic students have different symptoms from each other. The only drawback they have in common is the ability to read and write which is very low considering their age, grade level, and intelligence. Every student has a tendency to dyslexia, and there are also

students who are not dyslexic but have experience with reading difficulties. Students with dyslexia should always be given motivation and various techniques/methods to improve their reading and writing skills [16] , [17], [18] . In addition, handling in the form of teacher guidance for dyslexic students is to apply the right method. Multisensory method is able to attract attention and increase students' interest and ability in reading and writing [19] , [20] , [21] . Parents and teachers certainly play a very important role in dealing with dyslexic students. These efforts started from identifying the characteristics and characteristics of dyslexic students, using several approaches, to learning methods and techniques used by teachers in the learning process in the classroom. This is used as an effort to help dyslexic students to be able to get out of their difficulties, especially with regard to reading and writing.

CONCLUSION

Based on the results and discussion on the ability to read and write dyslexic students through the *Simultaneous Multisensory Teaching method* (SMT) , there are several things that can be concluded as follows.

1. AMJ dyslexic students experienced deficiencies compared to other students in their class, resulting in obstacles and difficulties that these students had in reading and writing. Based on the results of observations and documentation, these deficiencies consist of four things, namely: (1) reading and writing certain letters are often reversed/interchanged; (2) there is an omission of phonemes when reading and writing a word; (3) there is an addition of letters when writing a word; and (4) there are letters that are replaced when writing a word.
2. One of the efforts in helping students with dyslexia is through the *Simultaneous Multisensory Teaching method* or abbreviated as SMT. The SMT method is a learning method that develops several human sensory tools to maximize hearing, sight, movement and touch in a systematic and comprehensive manner. The SMT method has 20 steps in its learning, which teachers can use to help students with dyslexia. These steps, in their implementation, are divided into 4 stages which are carried out continuously and are inseparable from each other.
3. The ability to read and write dyslexic students through the *Simultaneous Multisensory Teaching method* (SMT) has increased after approximately 6 months of mentoring. Gradually, students' reading and writing abilities began to change. The ability to recognize letters that are often confused has begun to be mastered, both in pronunciation while reading and writing. Similarly, reading and writing words and sentences, there have been changes compared to the initial observations

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