

Effect of Audio Tactile Vocabulary (ATV) Media on Reading Difficulties of Children with Specific Learning Disorder in Inclusive Elementary School

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Abstract: This research aims to know the effect of Audio Tactile Vocabulary (ATV) media on vocabulary reading ability in children with reading difficulties and with specific learning disorders in inclusive elementary schools—research using a quasi-experimental with quantitative approach. The design is One Group Pretest-Posttest Design—data collection techniques based on interviews, observation, and performance assessment. Data analysis used descriptive statistics. The test results show that the scope of substitution has decreased from 21 wrong vocabulary words to 8 vocabulary words in the scope of omission, and there has been a decrease from 47 wrong vocabulary words to 15 vocabulary words. In the scope of addition, there is also a decrease from 6 to 3 words, and the scope of the perfect shows an increase in vocabulary from 36 to 84.

Keywords: Influence of Audio Tactile Vocabulary (ATV) Media; learning media; vocabulary; reading difficulties.

INTRODUCTION

Reading ability is a basic ability that students at the elementary school level must possess because reading can open up other abilities. According to Tarigan (2019), reading is a process carried out by readers to obtain messages conveyed by the author through the media of words or written language. According to Tampubolon (1990), reading is one of the four main language skills and is a part or component of written communication. Reading is very important for students because it is the same as communication; if children cannot communicate in society, they will have difficulty socializing with the environment, becoming loner children. Reading is an ability that students must have because, according to Akbasli et al. (2016), there is a correlation between reading comprehension results and student success in class. All students, regardless of their reading abilities, need continued reading instruction to meet the growing and complex reading demands that are placed on them both in and outside of school (Caldwell & Leslie, 2003; Moje, 2007)

Learning to read is a main problem in children's education because it tremendously impacts children's future growth. Subini (2011) explains the impact of reading learning difficulties, including the following: 1) children's growth and development are inhibited. 2) The child's interaction with the environment is disrupted. 3) Children become frustrated. 4) Students who experience learning difficulties often accuse themselves of being stupid, slow, different, strange, and backward. 5) To cover up their deficiencies, Students become shy, inferior, tense, mischievous, aggressive, intrusive, or withdrawn. Several factors cause decreased interest in learning to read in children. Tidjan (2017) states that reading interest is influenced by two groups, namely the personal factor group and the institutional factor group. Personal factors are factors that come from within the child himself, including age, gender, intelligence, reading ability, attitude, and psychological needs, and institutional factors are factors that come from outside the individual himself, which include the availability of books, socioeconomic status, the influence of parents, peers, and teachers. The child, thus, can be considered as learning disabled if: (1) he has considerable difficulty in understanding or using spoken language, reading, writing, spelling, and arithmetic during

the developmental period (before 16 years) (Ali, 2016). A learning disability is a specific disorder affecting students' cognitive abilities (Naz, 2012). with adequate support and inclusive environments, children with SLDs can become successful multilingual language users (Kormos, 2017).

Jamaris (2014) explains that learning difficulties or learning disabilities are also referred to as learning disorders or learning difficulties, which make it difficult for the person concerned to carry out learning activities effectively. In the learning process, the teacher must know the characteristics of students with learning difficulties to get early prevention steps immediately. According to Jamaris (2014), students who experience learning difficulties have the following characteristics: 1) Show low learning outcomes; 2) Learning results that are not balanced with the efforts made by students; 3) Slow in carrying out or doing the given learning tasks and always lagging behind their friends in completing their assignments; 4) Showing an unnatural attitude, such as indifference, opposition, pretending, and negative attitude; 5) Showing poor behavior such as skipping class, coming late, and not wanting to do homework, often disturbing his friends inside and outside the classroom; and 6) Showing unnatural emotional symptoms in dealing with certain situations, for example, not feeling sad or regretting getting low grades.

According to Mercer (in Shodiq 1996), there are four groups of characteristics of reading difficulties, namely 1) reading habits, 2) word recognition errors, 3) comprehension errors, and 4) miscellaneous symptoms. One of the processes for improving reading skills is to improve letter skills to increase vocabulary and memory skills. Several aspects are developed in the language learning process, including vocabulary, syntax (grammar), semantics, and phonemes (sound units). One of the important language elements is vocabulary. This is in line with the opinion of Keraf (2009) that vocabulary is an element of language that has an important role in the development of language skills, which include speaking, listening, reading, and writing, which is a manifestation of the unity of feelings and thoughts that can be used in everyday life. A person's vocabulary is increasing and expanding according to age. The more mature a person is, the more things he knows (Keraf, 1986). Langenscheidt (2009) categorizes vocabulary according to its users into two parts, namely: 1) Aktiver Wortschatz ist alle Wörter, die jemand zum Sprechen benutzt. (Active vocabulary is all the words one uses to speak); and 2) Passive Wortschatz is all the words which everyone knows the meaning of (but does not use themselves).

Vocabulary mastery can help students communicate with the surrounding environment and help them learn because the more vocabulary students know, the more they will affect their reading ability. Langenscheidt (2009) also states, "Wortschatz ist alle Wörter einer Sprache oder Fachsprache." This means vocabulary is all the words of a language or languages of a particular region. A word is the smallest unit of a sentence. A word is a "symbol" in both oral and written form, which references something, be it an object, action, trait, or description, so we recognize the existence of nouns, verbs, adjectives, and adverbs (Zainurrahman, 2011). Dhieni (2014) explains that there are two ways that children can learn vocabulary: 1. Hearing words from parents, older children, playmates, television or radio, playgrounds, and shopping centers. 2. Children experience it themselves, such as children say objects, children eat them, touch them, smell them, and drink them. after understanding how to teach vocabulary and then teaching materials. Suyanto (2008) states that good teaching materials have the following characteristics: a) Grammar is very simple. b) The type and completeness of vocabulary must be given because there are almost no language lessons outside the classroom. c) Vocabulary is limited; therefore, pictures must accompany it. d) Students hardly hear English around them, so they need repeated pronunciation exercises. e) The vocabulary used is colloquial and simple for communication.

Improving vocabulary skills can be done through the learning process and in its implementation, ideally using learning media so that the message or material can be conveyed properly because the media is something that can be used to channel messages from the sender to the receiver so that it can stimulate students' thoughts, feelings, interests and attention in such a way that the learning process occurs (Sadiman, 2006). The word media comes from the Latin "medius," which means "middle," "intermediary," or "introduction." In Arabic, media is an intermediary or messenger from the sender to the message's recipient (Arsyad, 2013).

Sanaky (2009) states that there are several objectives of learning media as learning aids, including 1) simplifying the learning process in the classroom, 2) improving the efficiency of the learning process, 3) maintaining the relevance of the subject matter to the learning objectives, and 4) help the learner's concentration in the learning process (p.4). In addition to the explanation above, Kemp & Dayton (1985) also added about the use of media that positively impacts students, including 1) Lesson delivery becomes more standardized; 2) Learning can be interesting; 3) Learning becomes more interactive; 4) The length of lesson time can be shortened; 5) The quality of learning outcomes can be improved; 6) Learning can be provided anytime and anywhere; 7) Positive attitude of the learner; and 8) The role of the learner can change towards a more positive direction.

Meanwhile, Gagne (1970) states that media are various components in the student's environment that can stimulate him to learn. Good media selection in the vocabulary reading learning process can be done by adjusting the media selection to the circumstances and needs of students. According to Sudjana & Rivai (2001), several types of learning media can be used in the teaching process, among others: 1) Graphic media, 2) Three-dimensional media, 3) Projection media, and 4) Using the environment as a learning medium.

Musfiroh (2008) argues that by the time children are 5 years old, they have been able to collect approximately 3000 words. Words owned by preschool children include nouns, verbs, adjectives, and adverbs. Therefore, the easiest simple syllable pattern learning material for students to learn early is the consonant-vowel (CV) syllable pattern. The CV pattern vocabulary used in the media is the vocabulary of body members, namely eyes, teeth, feet, fingers, cheeks, and chin, and the vocabulary of surrounding objects, namely books, tables, clothes, hats, ties, and balls. This method must be interesting in order to motivate children to speak. Play is one of the enjoyable activities described as an option for children to learn. Playing Arisan Kata (word scramble) with pictures can help teachers teach children to read (Rosa, 2019).

Vocabulary mastery can be tested or assessed using indicators. The development of passive-receptive vocabulary mastery indicators in the ATV media vocabulary ability assessment is shown in the following abilities: (1) able to show the picture of the requested object; (2) able to show the requested picture on the two available pictures; (3) able to show the same picture as the example picture given; and (4) able to show the picture opposite to the requested picture. According to Asher (in Suyanto, 2007), "One method suitable for teaching vocabulary is learning that prioritizes direct activities related to physical activity and movement called the Total Physical Response Method." However, the media (ATV) is designed so children can come into direct contact with learning media to gain direct experience. An important resource for children with learning disabilities to flourish in the classroom is access to assistive technology. To prepare children to utilize assistive technology in the learning environment (Tony, 2019).

This study aims to help the reading skills of children with specific learning difficulties in primary school. This is because the results will be better if the intervention is early. The active-productive indicators are as follows to test or assess students' vocabulary skills using ATV media: (1) able to mention the picture of the requested object; (2) able to mention the word whose meaning or function is mentioned first; (3) able to mention the requested word with the opposite of the mentioned word; and (4) able to explain with a short sentence about the word related to the requested word.

METHOD

The type of research used is quasi-experimental research. According to Nazir (2014), the distinctive feature of quasi-experimental research compared to real experimental research is that it is impossible to control subjects strictly during the experiment. According to Creswell & Creswell (2017), an experiment tests cause-and-effect relationships in which the research randomly assigns subjects to groups. The research manipulates one or more independent variables and determines whether these manipulations cause an outcome.

The research design used is One-Group Pre-test-Post-test Design. According to Sugiyono (2013), this research design is carried out by looking for data before and after treatment. This is done to determine the difference in values before and after treatment.

The research subjects were determined using the purposive technique, which is a technique of determining subjects determined by the researcher based on Arikunto's (2010) considerations. Data collection regarding students' reading difficulties used observation, interview, and performance test techniques. Observation is done to focus attention on an object by involving all the senses to get data (Salim & Haidar, 2019). Interviews are conducted by asking questions and interviewees who provide answers (Moleong, 2007). and tests are conducted as a tool or procedure used to determine or measure something in an atmosphere in a manner and rules that have been determined Arikunto (2010). Tests determine students' vocabulary skills before and after using ATV media.

The data analysis used is descriptive statistics on average (mean). Descriptive average (mean) is a group explanation technique based on the average value of the group (Sugiyono, 2016). The average results were then compared and analyzed to determine the effect of ATV media on vocabulary reading ability.

FINDING AND DISCUSSION

Finding(s)

Description pre-test

Based on the research results conducting a pre-test of 11 students, each student said the words Meja (table), Mata (eye), Mulut (Mouth), Tas (bag), Kaki (foot), Tangan (hand), Buku (book), Baju (clothes), Gigi (teeth), and Mandi (bath). It is known that the results of learning to read vocabulary without Audio Tactile Vocabulary (ATV) media are as follows.

Table 1. Comparison of Pretest and Post-test Scores

No	Name	Pretest Scores	Posttest Scores
1	EV	64	84
2	DS	57	68
3	GL	50	66
4	PA	49	70
5	DN	56	80
6	KR	53	72
7	GB	45	60
8	DM	43	60
9	BN	55	75
10	RP	44	68
11	CI	54	77
Percentage		51.818	70.909

The comparison of scores between the pretest and post-test illustrates the results of the 11 subjects in the study. The scores obtained show the difference before the treatment and after the treatment. This can be seen in comparing individuals or the overall average comparison of subjects. Data related to vocabulary items that have errors in learning will be presented in the table below.

Table 2. Pre-test score type of error and correct research subject

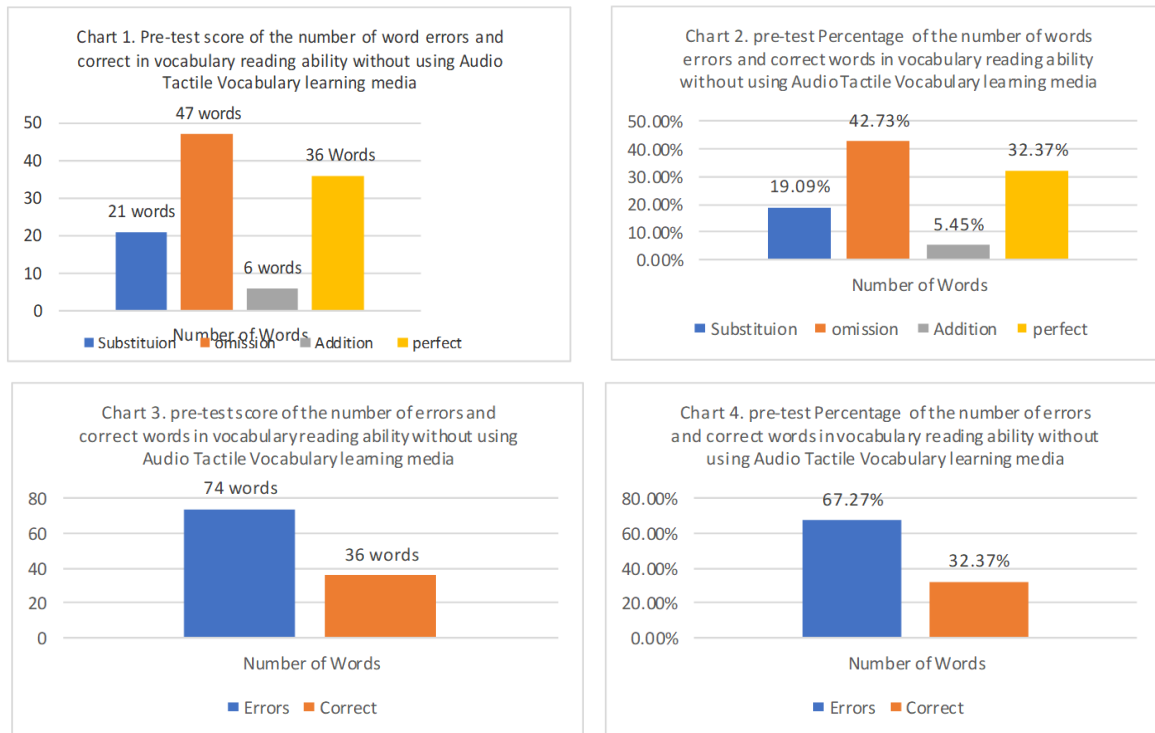
No	Name	Errors			Correct
		Substitution	Omission	Addition	Perfect
1	EV	1	5		4
2	DS	1	6		3
3	GL	6		2	2
4	PA		6		4
5	DN	2	6		2
6	KR	1		4	5
7	GB		6		4
8	DM	7	1		2
9	BN		7		3
10	RP		5		5
11	CI	3	5		2
Total		21	47	6	36
Percentage		19,09%	42,73%	5,45%	32,37%

Based on the results of the pre-test above, it can be concluded that 11 students experienced several barriers. As for the barriers in the scope of substitution, as many as 7 students with a total of 21 vocabulary with a percentage of 19.09%, while in the omission barrier, there were 9 students with a total of 47 vocabularies with a percentage of 42.73%, then in the addition barrier there were 2 students with a total of 6 vocabulary with a percentage of 5.45% and of the 11 students who each pronounced 10 words, there were 36 words that were pronounced correctly with a percentage of 32.27%.

Comparison between the types of errors (substitution, omission, and addition) and the correct words of the research subjects (perfect) then shows 11 students pronounced the wrong word with 74 vocabularies or in the form of a percentage of 67.27%, while for the perfect word pronounced by 11 students is 36 words with a percentage of 32.27%. The pre-test stage shows that the words spoken by 11 students are higher than those pronounced perfectly.

If it is seen by comparing the overall average and pre-test scores, the following.

Figure 1. Chart 1-4 Pre-test Score



Description post-test

Based on the research results by conducting a post-test on 11 students where each student said the words Meja (table), Mata (eye), Mulut (Mouth), Tas (bag), Kaki (foot), Tangan (hand), Buku (book), Baju (clothes), Gigi (teeth), and Mandi (bath). It is known that the results of learning to read vocabulary with Audio Tactile Vocabulary (ATV) media are as follows.

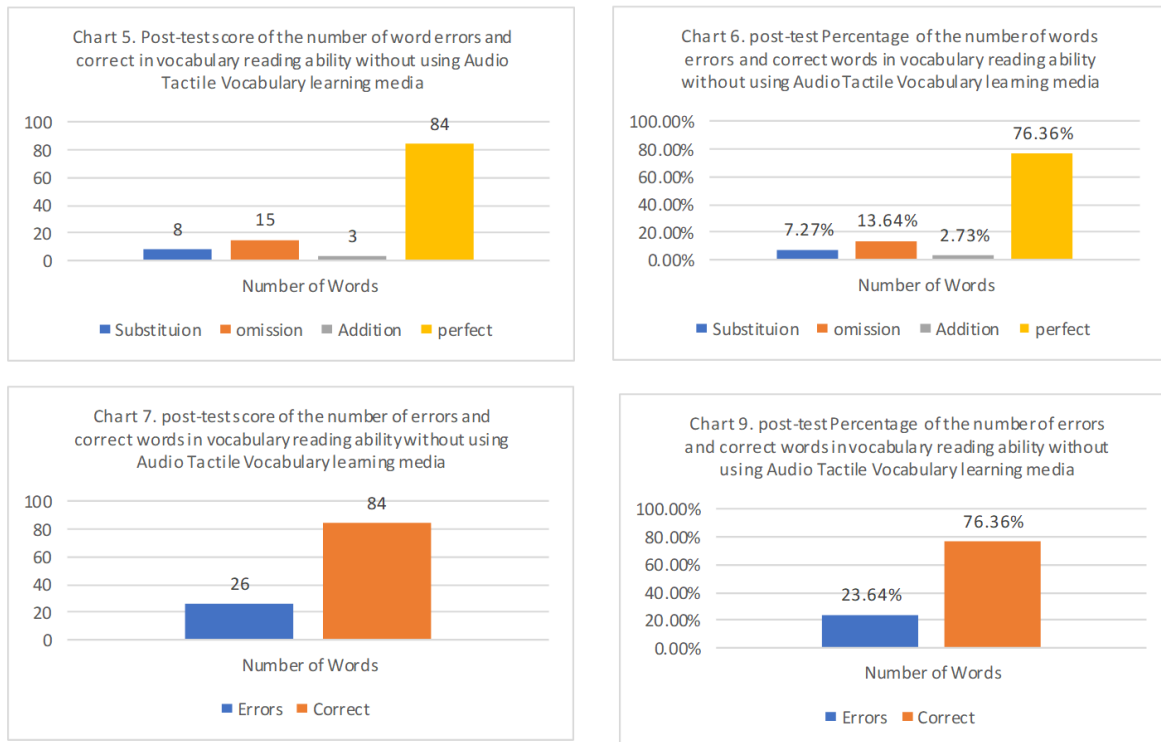
Table 3. Pre-test score type of error and correct research subject

No	Name	Errors			Correct
		Substitution	Omission	Addition	Perfect
1	EV		3		7
2	DS		2		8
3	GL	3		1	6
4	PA		1		9
5	DN	1	3		6
6	KR			2	8
7	GB		2		8
8	DM	4			6
9	BN		2		8
10	RP		2		8
11	CI				10
Total		8	15	3	84
Percentage		7,27%	13,64%	2,73%	76,36%

Based on the results of the post-test above, it can be concluded that 11 students experienced changes in barriers after being provided with Audio Tactile Vocabulary (ATV). In contrast, the test results show that in the scope of substitution, there are 4 students with a total of 8 vocabulary words with a percentage of 7.27%. At the same time, in omission barriers, there are 7 students with a total of 15 vocabulary words with a percentage of 13.64%, then, in addition, barriers there are 2 students with a total of 3 vocabulary words with a percentage of 2.73% and of the 11 students whom each said 10 words, there were 84 words pronounced correctly with a percentage of 76.36%.

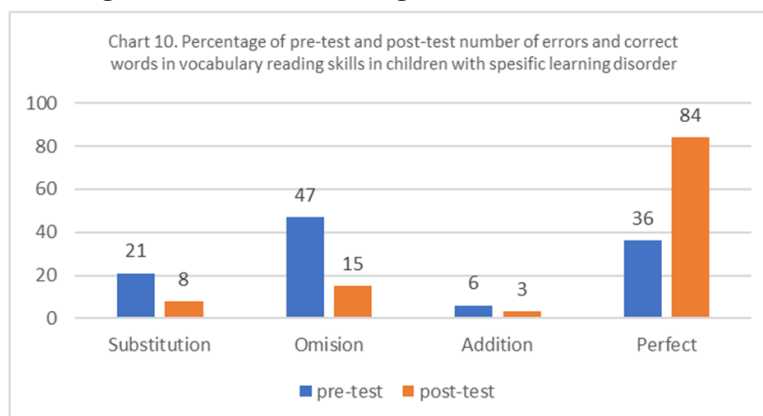
Comparison between the types of errors (substitution, omission, and addition) and the correct word (perfect) of the research subject then shows 11 students pronounced the wrong word with 26 vocabularies or in the form of a percentage of 23.64%, while for the perfect word pronounced by 11 students is 84 words with a percentage of 76.36%. The post-test stage shows that the word errors spoken by 11 students have decreased or are low compared to the words spoken perfectly. If it is seen by comparing the overall average and pre-test scores.

Figure 2. Chart 5-8 Post-test Score



Discussion(s)

The table below shows that the most common reading error is omissions. This barrier occurs when one of the letters in the vocabulary is mentioned incompletely, for example, when mentioning or writing "car" or "ca." The second most common is substitution or replacing one or more letters in a vocabulary, for example, mentioning "car" to "cor. The third most common addition is adding letters to a vocabulary, for example, when mentioning "car" to "care." More details can be seen in the graph below.

Figure 3. Chart 10 Percentage of Pre-Test and Post-test

Reading disabilities experience obstacles in their phonological processes, such as identifying letters, distinguishing letter sounds, and pronouncing, thereby affecting academic development factors, especially aspects of reading (Sushanty et al., 2024). Reading is the basic thing that children must have in academics. Naeemy & Hiroki (2024) students who experience severe challenges in academics. This study aims to help students who experience reading barriers so that they can help in learning. Anggraini & Yohanes (2024) stated that every person has the right to access educational services.

CONCLUSION

Based on the research results, it is known that using Audio Tactile Vocabulary (ATV) media affects vocabulary reading ability. Based on the test results, it can be seen that the scope of substitution has decreased from 21 incorrect vocabulary words initially to 8 vocabulary words. Then, there was a decrease in the scope of omission, from 47 wrong vocabulary to 15 vocabulary words. In the scope of addition, there was also a decrease, which was 6 words to 3 words, and the scope of perfection shows an increase in vocabulary, which was 36 to 84. This shows that Audio Tactile Vocabulary (ATV) media can reduce pronunciation errors and improve the perfect pronunciation of vocabulary words in children with specific learning disorders.

ACKNOWLEDGMENTS

Thanks to my parents, Drs. I Ketut Budiasa, M.Pd., Dra. Ni Ketut Sunti Udiani, I Made Sandria, S.Pd., M.Ag., and Ni Made Catri always provide support, motivation, and thanks to the inclusive elementary school teacher in Denpasar, Bali, who gave permission and helped the research process, and also to the Disability Innovation Center PUI Unesa, Universitas Negeri Surabaya which has provided support in writing this journal.

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