

## Application of VAKT Methods (Visual, Auditory, Kinesthetic, and Tactile) to Improve The Ability Reading for Mild Mental Retardation

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*Abstract.* Reading skills needed for mild mental retardation children, but due to the presence of obstacles in the level of intelligence, mild mental retardation children need quite long time to be able to achieve the ability to reading. The purpose of this study is to improve early reading skills (simple single words) in children with mild retardation using VAKT (Visual, Auditory, Kinesthetic and Tactile) methods. The type of research used is single case experiment design with the A-B-A design. In the Baseline A1 phase, carried out a total of 3 sessions without treatment, in the phase of Intrevention (B) is conducted as many as 6 sessions using VAKT method and assistance some media, as well as in the Post Intervention phase, carried out a total of 3 sessions i.e. capabilities of reading after being given the intervention. Subjects in this study are 3 of mild retardation children class III or IV Primary School Extraordinary (8-11 years) selected using purposive sampling technique. Intake of data using objective test read the words. Methods of data analysis is using simple descriptive statistical analysis. The results of the research shows that the VAKT methods can be used to improve the early reading in the mild retardation children.

*Keywords:* VAKT, early reading, mild retardation.

### Introduction

Education is an effort to prepare students through guidance, teaching and training activities for the role in the future. Education in Indonesia is divided into three, namely informal education, formal education and non-formal education. Informal education is education that comes from the family environment before the child starts their education at school. Formal education is education carried out within an official institution called school. While non-formal education is additional education outside of school.

Formal education not only applies to normal children but also to children who suffering physical, cognitive, psychological, social and emotional disorders that are currently known as children with special needs or ABK. ABK is a child who is different from normal children in terms of sensory abilities, mental development, physical, neuromuscular, social behavior, emotional and communication skills (Mangunsong, 2014).

Abnormalities make ABK need education and special services. Special education is needed so that children are able to develop knowledge, attitudes, skills and be able to socialize with the community and the surrounding environment. Modifications, learning methods and other services are needed to develop their potential to the fullest (Mangunsong, 2014).

One of the ABK is mild mental retardation. Children with mild mental retardation are children who have an intelligence level ranging from 55-70. Mild mentally retarded children include students who are able to be educated to read, write and count in a simple way. Mild mentally retarded children

who get the right education and guidance can become semi-skilled workers and earn income for themselves (Efendi, 2009).

One of the academic abilities that children with mild mental retardation must achieve is the ability to read. The ability to read for mentally retarded children is considered important because by reading, they can learn various fields of study taught at school. Reading also affects almost all life in the future (Taylor, 2009).

According to Abdurrahman (2009) reading is a complex activity that includes physical and mental, where physical activity includes eye movements and visual acuity, while mental activity includes memory and understanding. There are 5 stages of reading development, namely reading readiness, preliminary reading, speed reading skills, extensive reading and real reading. The reading readiness stage starts from the time the child is born until the reading lesson is given. The preliminary reading phase begins when the child enters class 1, this stage emphasizes the introduction of full letter and word symbols. The stage of fast reading skills generally occurs when the child enters grade 2 or 3, this stage emphasizes the understanding of the relationship of symbols and sounds. The broad reading phase generally occurs when the child enters grade 4 or 5, at this stage the child is fond of reading. While the actual reading stage generally occurs when children enter junior high school to adulthood, at this stage the child no longer learns to read but reads to learn (Abdurrahman, 2009).

With regard to reading, the ability to read mild mental retardation children is lower than that of normal children of his age (Apriyanto, 2013). Amin

(1995) explained that mentally retarded children between the ages of 7 to 12 years, their kecinganya age is equivalent to normal children aged between 5-9 years. At this level, mild mentally retarded children already feel ready enough to take part in physical, social and academic programs but not yet mature enough in reading. Mild mentally retarded children in reading often experience errors in reading words. Humaira (2012) said that one of the requirements in reading for mild mental retarded children is being able to speak and understand simple language, besides that the child must also be able to understand images, symbols and symbols. Santrock (2014) added that the child is said to be able to read if the child is able to identify the letters of the alphabet, write his name, learn to read words at certain signs, be able to pronounce letters into a word, be able to more smoothly read words into sentences, be able to get faster in acquiring new information from the text and able to understand written material from various perspectives.

Abdurrahman (2009) explains that mild mentally retarded children in reading are able to reach the stages of extensive reading skills, but mild mentally retarded children still have difficulties at the beginning of reading stages, where at the initial reading stage they are required to be able to recognize and read letter symbols and put together letters becomes a simple single word so that later they are able to read words and sentences correctly. This is in accordance with Mikasari's (2015) statement that the initial reading ability for mild mental retarded children is combining letters into a simple word sound containing 2 or 3 syllables such as the words "b-a-j-u", "s-a-t-u", "s-e-p-a-t-u" and etc.

There are several methods that can be used to improve reading skills for mild mentally retarded children, namely by glass analysis methods and multisensory or VAKT (Visual, Auditory, Kinesthetic and Tactile) methods that have been developed by Fernald and Orton-Gillingham. The method of glass analysis is a method of teaching by decoding the groups of letters in words. While the multisensory or VAKT method is a learning method that uses visual, auditory, tactile and kinesthetic modalities (Abdurrahman, 2009). The VAKT method is based on the assumption that children will learn well if the teaching material involves various modalities of sensory devices such as vision, hearing, touch and movement (Zulkifli, 2013).

As an alternative, researchers used the VAKT method to improve the ability to begin reading in mildly disabled children. The VAKT method that the researcher uses is the VAKT method that has been developed by Orton-Gillingham, where the first learning is directed at learning the various sounds of letters and integrating letters into a word. Children will use the technique of copying the form of letters one by one and each letter will be taught in its entirety. Furthermore, the letters are combined

into a simple single word form (Abdurrahman, 2009).

Based on Abdurrahman's (2009) expression, the advantages of the VAKT method are learning material presented with various sensory modalities such as visual (vision), auditory (hearing), kinesthetic (movement) and tactile (touching). In addition, in practice the VAKT method is carried out using concrete tools that represent the functions of each sensory modality, simple learning instructions, repeated and structured, so as to assist the child's learning process (Tutupoly, Siswati & Widodo, 2013).

There are several studies that have tested the effectiveness of the multisensory method, is the research conducted by Dev, et al. (2012) using the Orton-Gillingham approach through visual, auditory and kinesthetic (VAK) modalities to improve reading skills in grade 1 elementary school students who are in special class, where the results of his research are that grade 1 students of elementary school have increased in terms of reading for 2 years and are no longer be in special classes. Dev, Doyle, & Valente (2012) also added that if the application of the Orton-Gillingham approach is equipped with tactile modalities, it will be able to accelerate the reading ability of the 1st grade students. Other studies on multisensory methods have been carried out by Nourbakhsh, Mansor, Baba, & Madon (2013), where the result is a multisensory method that uses visual, auditory and kinesthetic (VAK) modalities that can improve reading ability for children with dyslexia, but the increase obtained is not optimal because there is no stimulant through tactile modality (touch).

Other studies have also been conducted by Obaid (2013), he explained that a multisensory or VAKT approach can improve learning skills in children who have learning difficulties. In his research, Obaid divided students into 2 groups, namely the control group and experimental group. Students from the experimental group were taught using the multisensory method, while students from the control group were taught using a simpler method. The end result of Obaid's research is that students who are taught using the multisensory method get higher learning outcomes than students in the control group.

VAKT method is considered appropriate to improve reading ability for mild mentally retarded children who experience learning difficulties reading because the VAKT method uses concrete media that represents the function of each sensory modality, has simple and structured instructions, is carried out repeatedly and in practice creates an atmosphere fun learning. In addition, through the VAKT method, teachers and parents are able to find out the learning styles that are appropriate and preferred by children and learning through various modalities will make children with mild mental retardation easier to learn to read early because the media and the way to apply this method is considered simple (Abdurrahman, 2009).

Based on the description above, the researcher is interested in knowing more deeply whether the VAKT method is effective for improving the initial reading ability in mild mental retardation children? The purpose of this study was to determine whether the VAKT method is effective in improving the initial reading ability in mild mental retardation children. The benefits of research that can be used as an effective teaching method which can then be applied by teachers, schools, parents and institutions of children with special needs in improving the ability of mentally disabled students to recognize and read letters, words and sentences. Also expected to provide additional material for the development of further research, especially in the educational psychology.

### **Methods**

This study uses a quantitative approach with the experimental design of a single case or single-case experimental design, which is a research design to evaluate the effect of a treatment with a single case. A single case can be a single subject ( $N = 1$ ) or a small group. The research design used was ABA design, where the design consisted of three phases, namely Baseline A1 before being given intervention, Treatment phase (B) with VAKT method (Visual, Auditory, Kinesthetic and Tactile), and Post-Intervention phase after no intervention (A2) (Latipun, 2015). Sunanto, Takeuchi & Nakata (2005) explained that the design of A-B-A shows a causal relationship between the dependent variable and the independent variable. The dependent variable in a single case study is known as the target behavior or target behavior. While the independent variable is known as intervention or treatment.

Selection of subjects in this study using purposive sampling technique, where the selection of samples in accordance with what is desired by the researcher (Latipun, 2015). In this study there were 3 subjects with the criteria determined by the researcher, namely the Extraordinary Elementary School students of Sumber Dharma Malang in grade 3 and 4, aged 8-11 years old, had low initial reading ability with the inability to recognize and read several letters and words, had IQ with a range of 55-70 and identified as mild mental retardation.

This study uses 2 variables, namely variable X or independent and variable Y or dependent. Independent variables are variables that influence or cause changes or the emergence of a dependent variable (Sugiyono, 2013).

The research data obtained from the research instrument is by using observation, where observations were made on January 20, 2018, February 9 and 26 February 28 2018 in each subject class. In this study, researchers used participant observation, where researchers were actively involved with the activity being observed and noted the behavior that emerged at that time (Border &

Abbott, 2002). Then the researcher recorded and made the observations as a reference in making test items that will be applied with the VAKT method through various media, such as colored word cards, embossed letters, puzzles and kinetic sand. The validity and reliability of the tool is measured through the results of visual analysis.

Implementation of the intervention, the researcher began the intervention with the VAKT method with the media of colored word cards, embossed letters, puzzles and kinetic sand. In this study there are 3 subjects who will be intervened, where the intervention is carried out one by one to the three subjects. The VACT method with various media was conducted in 12 meetings, 3 meetings for the A1 baseline phase, 6 meetings for the treatment phase (B) and 3 meetings for the post intervention phase. At the baseline stage A1, the meeting of 1 to 3 researchers measured the treatment targets in a natural state before being treated. The researcher provides an objective test in the form of giving questions reading simple words contained in colored word cards without using the VAKT method. At the treatment stage (B) the meeting of 1 to 6 researchers gave treatment with the VAKT method to improve the initial reading ability of the three subjects. The application of the VAKT method is carried out using colored word cards, letter puzzles and kinetic sand. Researchers invite subjects to learn to read letters and words with simple instructions and use various media and do it repeatedly until all three subjects are able and understand the concepts that have been taught. After each end of the intervention meeting is over, the subject is given an objective test. Objective tests are given in order to measure the success of the intervention that has just been carried out, where this objective test is in the form of a test reading the words that have been studied by the three subjects at the time of intervention without the help of researchers. Furthermore, in the post intervention phase of the meeting 1 to 3 researchers conducted an objective test in the form of giving questions in the form of simple words that must be read independently without being given treatment with the VAKT method.

After carrying out a series of interventions or treatment with the VAKT method, the researchers conducted data analysis. Researchers used comparative descriptive statistical techniques to process data quantitatively by comparing test results at each stage. In this study, researchers analyzed the data using simple description statistics, namely the visual inspection method, where the analysis was carried out by observing directly the data that has been displayed in the graph and drawing conclusions from the study.

### **Results**

Based on data analysis, the results of the study are as follows. The first table is a description of the characteristics of the research subject. Subjects

have been determined based on the criteria of the researcher, found that the characteristics of students who received treatment using the VAKT.

All three subjects have been identified as mild intellectual disabilities who have an IQ with a range of 55-70. The three subjects were class III and IV students at SDLB Sumber Dharma Malang. Based on the test of reading letters and simple words to find out the level of the ability to read the beginning of the subject it is known that the three subjects have a low initial reading ability.

### **Intervention Results of Subjects S, N and SL**

Based on the results of the intervention of the three subjects, it can be concluded that there was an increase in the ability to begin reading in the three subjects before being given treatment (baseline A1) and after being given treatment (post intervention) using the VAKT method. Based on the analysis from the graph above, it is known that the biggest increase from the baseline phase A1 to post intervention is on the subject SL, which is an increase of 8. In the second order, a large increase is in subject N, which is an increase of 6. While in the third, a considerable increase in subject S is an increase of 5.

Based on the results of the data described above, it can be concluded that the hypothesis proposed by the researcher can be accepted, namely the VAKT method can improve the initial reading ability in mild mental retardation children. This can be seen from the initial reading ability score of the three subjects after being given intervention or treatment through the VAKT method higher than the initial reading ability score before being given intervention.

### **Discussion**

Result this study is increase in early reading ability in children with mild disabilities. This can be shown by the increase in the score of the initial reading ability of the three subjects after being given intervention through the VAKT method in the intervention phase (B) and higher post-intervention compared to the baseline reading ability score in the baseline phase A1. This increase can be known based on graph analysis which shows the difference at the time before the intervention is given and after being given intervention.

The results of the study also showed that the VAKT method provided in the learning process of reading was able to improve the initial reading ability of the three subjects. SL subjects experienced the highest changes, where in the baseline phase A1 obtained a score of 1 and the post intervention phase obtained a score of 9, resulting in an increase of 8. A fairly high increase occurred in subjects N and S. In subject N, from the baseline phase A1 obtained score 4 and post intervention phase obtained a score of 10, resulting in an increase of 6. While in subject S, from the baseline phase A1 obtained a score of 3 and the

post intervention phase obtained a score of 8, resulting in an increase of 5.

Based on IQ scores, SL subjects had lower IQ scores than subjects S, but the highest changes were obtained by the subject SL. This can occur because at the time of intervention the subject of SL has better speech and language skills compared to subject S. Then, the subject of SL also has the ability to pay attention and higher social maturity compared to subject S. In addition, the subject of SL has an interest and higher motivation when compared with subject S who at the time of intervention tends to be passive and not yet able to focus on paying attention to instructions and often asking researchers. These differences can be a contributing factor to success in reading. This is in accordance with that expressed by Kirk, Kliebhan & Lerner (in Abdurrahman, 2009) that there are several factors that influence the success of reading children, namely mental ability, visual ability, listening ability, speech and language skills, thinking and caring skills, motoric development social and emotional maturity, as well as motivation and interest.

The use of the VAKT method provided during the intervention can be followed by the three subjects with active attention because of the availability of media and the arrangement of spaces that do not require children to sit in chairs, which makes the atmosphere more intimate, making children more free to move and making the learning atmosphere enjoyable. This is one of the factors that can lead to successful research in measuring variables, where according to Apriyanto (2013) one of the learning strategies needed by mentally retarded children is a fun and not too formal learning atmosphere.

Researchers also provide reinforcement in the form of positive reinforcement to the three subjects after they finish reading the words one by one they have written. Positive reinforcement that researchers give in the form of praise words, such as "good job", "you are smart, you are great" and accompanied by "highs". This is in accordance with that expressed by Johnson (in Myers, 1976) that the VAKT method aims to apply the principle of reinforcement (reinforcement) and this method ensures active attention, presenting material regularly and sequentially and strengthening, re-teaching and repeating until the word fully mastered by the child.

Dhempie (2006) explained that the VAKT method is effective for children with special needs who experience barriers to reading. The VAKT approach of the Orton-Gillingham and Fernald models is also based on a neuropsychological orientation, namely a number of materials and activities arranged based on the results of assessment of perception and processing of information in the brain. This approach emphasizes more on neuropsychological functions to assist in the development of remedial strategies, and one of

the approaches used in the remedial reading process is the VACT approach (Jubran, 2012).

The application of the VAKT method in the reading process is related to perception, where when learning learning material is presented visually, auditory, kinesthetic and tactile. These sense modalities are able to increase the sensitivity of the sensory tools and are able to strengthen the perception process, where later perceptions will channel stimuli that have been obtained from sensory modalities towards the cognition process and sharpen attention during the learning process. Attention in the process of perception makes individuals select the stimulus that has been given (Walgito, 2002). Atkinson (1997) adds that attention is influenced by internal factors such as one's hopes, motives and interests. This makes the child conduct a selection of stimuli that will be included in his memory and this is a reference in determining the learning style that is appropriate for children.

The results of the study have shown that there is an increase in the ability of preliminary reading in the three subjects, which also means that the VACT method is able to accelerate the reading process in children with mild disabilities. This is in accordance with what was expressed by Moustafa & Ghani (2017) that the VACT method is a method of learning to read which is presented with various sensory modalities such as the senses of sight, hearing, touch and movement and makes students able to see, hear or feel the writing they are studying so that they can speed up the reading process. In addition, the VAKT method also has a recall stage, in which children are given the opportunity to recall things that have been learned before (Abdurrahman, 2009). Tutupoly, Siswati & Widodo (2013) added that in practice the VAKT method was carried out using concrete media, learning instructions were simple, structured and carried out repeatedly so that they were able to help the child's learning process. This is also in accordance with what is needed by mild mentally retarded children in learning where mentally retarded children need learning strategies using concrete media, simple, structured and carried out repeatedly (Apriyanto, 2013).

The media in the VAKT method applied in this study is designed by providing colored word cards containing letters that have not been mastered by the three subjects, embossed letters, puzzles and kinetic sand. Children are interested in seeing, touching, touching and moving teaching aids, where teaching aids can represent and develop the functions of each sensory modality (Tutuppoly, Siswanti & Widodo, 2013). In practice, children are given treatment using media that represents the function of each sensory modality, namely in the sense of sight (visual) to see the letters and words printed on colored word cards, auditory senses to listen to the written pronunciation contained in a colored word card that has been read by the researcher, the sense of touch (tactile) to touch and

arrange words using embossed letters and puzzles and the movement (kinesthetic) to write words that have been learned on kinetic sand. This is consistent with the opinion of Adurrahman (2009) that children will easily learn if they use concrete learning media and can be explored by the child's senses.

Based on this statement it can be seen that the increase in the beginning of reading ability on the three subjects can occur because the subject is able to do the process of thinking about reading that is to recognize letters and combine letters into simple words which are then applied through the VAKT method with colored word card media, embossed , puzzle and kinetic sand. In addition, the VAKT method is considered to be able to improve the reading ability of the three subjects because in practice researchers are able to optimize almost all of the child's sensory modalities, meaning that if there are children who have a particular learning style or the child has a deficiency in one of the sensory devices, then there are other sensory devices that have the advantage of giving a sensor to the brain.

Increased reading ability in all three subjects after being given intervention using the VAKT method shows that special giving in the form of sensory instrument stimulation that uses real media, simple instructions and is repeated repeatedly to the child has an influence on their reading ability. This is in accordance with Santrock (2014) statement that there are several strategies that are able to improve the behavior of children that we expect, including (1) choosing an effective amplifier, (2) making timely and continuous reinforcement, (3) choose a good reinforcement schedule, (4) and use effective negative reinforcement

Other studies have succeeded in revealing that multisensory methods with visual, auditory, kinesthetic and tactile (VAKT) modalities are able to improve reading skills for children with special needs, as well as research conducted by Tafti & Abdulrahman (2014) that VAKT is able to help and improve spelling abilities for children who experience dysgraphia. Other studies have also been conducted by Moustafa & Ghani (2017), where the result is the VAKT method can improve the ability of mild mentally retarded children to recognize and read letters, this is indicated by differences in scores at the pre-test and post-test. From several studies that have been disclosed above, the multisensory approach with visual, auditory, kinesthetic and tactile (VAKT) modalities is better able to accelerate and improve reading skills in children with special needs optimally.

With various advantages that have been explained previously, this does not mean that this research does not have shortcomings. Various limitations also appear in this study especially in the schedule of research activities, where the time span of research is limited. Then, researchers also assume that there is a possibility that the three subjects have memorized the words tested. In

addition, this study has not used a control group, so there has been no comparison of results between groups given intervention with groups that were not given intervention (control group). But apart from all that it is important for researchers personally to prioritize time, research subjects, make more careful observations and consider these obstacles so that they can be avoided during the research.

### Conclusions

From the results of this study are expected to be able to be applied in extraordinary schools when they find mild mentally disabled students who have not been able to read and need to equip teachers with VAKT method application skills through concrete media which researchers say is quite concise and easy so that teachers can improve the ability to read the students. Then it is also very important for parents who have mild mentally retarded children to be able to apply this method with a variety of concrete media and with an intensity and a longer time so that it will provide results of improved reading skills more optimal in children. Furthermore, it is also important for other researchers to further develop this method more creatively through more interesting media and longer research times, use more subjects and use the control group as a comparison of research subjects so that the results of further research can add to the wealth of scientific discipline literacy psychology.

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