

Visual-Auditorial Stimulation Method to Improve Communication Skill to Children with Mental Retardation in Inclusion Kindergarten

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Abstract:- This study seeks to examine the efficacy of visual auditory stimulation as a means of improving communication abilities in young children with mental retardation. This study employs a single-subject experimental design, specifically a multiple baseline design across subjects. This study focuses on 11 children, comprising of 6 girls and 5 boys, who are between the ages of 5 and 6 and have been diagnosed with mental retardation. The research has its focus on early childhood development. Eleven children encounter obstacles to communicate. This study was conducted on kindergarten inclusion in Manado, Indonesia. The study revealed that utilizing oral language method can enhance communication abilities in young children with mental retardation. Communication proficiency is expected to improve during the intervention phase. Child B reached 80%, Child D reached 75%, Child E reached 85%, Child F reached 70%, G reached 85%, Child H reached 80%, Child I reached 85%, Child J reached 90%, and Child K reached 80% in exercise over the course of five months, whereas students A and C attained the targeted percentage of 90%. Once the child's becoming proficient in verbal communication during the intervention, the exercise was halted for a duration of two weeks. The child is tasked with performing an untrained task the following week. The study found that the eleven children retained their communication skills acquired during the training. The visual auditory stimulation method was effectively applied to eleven young children with intellectual disability using a single-subject design.

Keywords:- Visual Auditory Stimulation, Communicating, Early Childhood With Mental Retardation.

I. INTRODUCTION

Children with average intellect are able to speak earlier than those with below-average intelligence in early childhood. Children at the end of the eleventh and twelfth month were able to engage in conversation and remark meaningful syllables, imitating a preconceived syllable with the correct pronunciation (Tarmansyah, 1995). Children with below-average intellect acquire language comprehension and

vocabulary skills more slowly. One of the contributing factors is intellect, or intelligence that affects language and speech ability. Children with cognitive impairments struggle with verbal information reception and processing. The challenge of receiving and processing verbal information results in information blindness with its various characteristics, and this type of information has a significant impact on the development of a person's cognitive structure. During this phase of childhood development, communication plays a crucial function. Those with normal physiological, and socio-anatomical capacities are the only ones capable of using language-based communication skills. If these skills are lacking, the individual will not be able to communicate effectively. The presence of a language impairment disorder or communication disorder can be used as a health indicator, but the disorder itself must be viewed as a pathological condition that will affect an individual's life (Tarmansyah, 1995). Visual observation can be viewed as a stimulant that encourages the growth of motivation in an effort to decipher the message in greater detail; consequently, educational programs and services for children should be tailored to their requirements.

The results of field observations indicate that 5–6-year-old children with mental retardation in early childhood lack the ability to communicate effectively. The teacher has not implemented the visual-auditory stimulation method simultaneously in accordance with the characteristics of the child's ability. Teachers rely solely on distinct auditory stimulation strategies. To overcome children's learning barriers, educators should employ the most appropriate teaching methods. After observing this, we will try to implement visual-auditory stimulation techniques. Can this method effectively enhance the communication skills of young children with mental retardation?. The duration of this intervention was six months. After intervention and evaluation of the student's learning progress, the student is then equipped with communication skills according to the prepared program. The author chose early childhood education for children with mild mental retardation because they require special assistance. For them to be able to receive and process verbal information, they must possess the ability to communicate. The issue being investigated through this single subject experiment strategy is the utilization of visual-auditory

stimulation techniques to enhance communication skill to children who have mild mental retardation.

The problem of this study can be formulated as follows, based on the background of the issues raised: Does the method of visual-auditory stimulation enhance early childhood with mental retardation ability to communicate? The results of this study are anticipated to serve as a guide for examining the pattern of teaching in relation to children's requirements.

Heward and Orlansky suggest that a child with mental retardation is an incapacity person with very severe deficits in brain function, motor development, speech, language, communication, difficulty adjusting, visual functioning, and auditory processing, and the majority of them have troubles in their health both mental and physical needs require more attention (1984). Moreover, according to Kirk and Gallagher (1986:33), "mental retardation is a child with physical abnormalities, mental disorders, emotional problems, or a combination of these abnormalities." The issues that children face are extremely complex. Because of this, specialized services are needed to help them maximize their potential and adjust to their environment.

Hallahan and Kauffman categorized mentally retarded children into three classes, namely trainable mentally retarded for the lightweight, moderately severely handicapped, and profoundly handicapped categories. (1991: 82). While Santrock (2008: 66) classified mental retardation based on IQ (intelligence question) as follows: (1) mild mental retardation (IQ between 55 and 70), (2) moderate mental retardation (IQ between 40 and 55), (3) severe mental retardation (IQ between 25 and 39), and (4) profound mental retardation (IQ less than 25). In this study, the researcher examined children with mild mental retardation. Somantri suggests that a child with mild mental retardation can learn to read, write, and perform rudimentary arithmetic, and that the child with mental retardation appears physically normal (2005: 106–107). This means that a relatively young child with mental disabilities can be educated in reading, writing, and arithmetic and trained in daily life skills such as eating and drinking, cleaning, removing and putting on clothing, and applying makeup. These skills are not naturally inherited by a child with mental retardation; rather, they require continuous and repetitive guidance and training due to the child's low intellect, resulting in learning difficulties.

Early childhood education, as defined by the National Association for the Education of Young Children (NAEYC), is "an organized, systematic, and developmentally appropriate program of formal instruction for children from birth through eight years old." These programs may be offered on a part-time or full-time basis by community-based organizations or by schools. Childcare, family custody, private and public preschool, kindergarten, and elementary school are all examples of such systems (Bredenkamp, 1992: 1). According to the research done on science education in higher education in

2011, Santoso recommends starting in early infancy, between the ages of 0 and 8 years old (2011: 1). According to Santoso, this is the best time to establish one's own beliefs and character in the areas of faith, morality, ethics, knowledge (of the mind, heart, body, and sense of taste), self-control, and tolerance. According to Rosadi, the golden era of human development is between the prenatal period to the age of six. As stated by Asmani (2009: 39), this golden age is characterized by the increasing number and function of nerve cells and will operate optimally when there is a synergy effort(2009:39). Asmani further stated that while the brain and body undergo significant change during the golden age, they are also extremely vulnerable. In light of the fact that each child is unique, this golden age is crucial for the future intellectual, emotional, and social development of children. According to Siskandar, the first two years of a child's life are a "golden period" in which the child's physical, motor, intellectual, emotional, linguistic, and social development progresses very quickly, and this is directly related to the child's physical and health conditions (2003: 22). Asmani (2009: 24) suggests that brain studies indicate that children's intellect reaches 50% at age 4, 80% at age 8, and the remaining 20% approximately at age 8 and beyond. Thus, if the new education begins at the age of 7 or in elementary school, environmental stimulation of brain function that has grown by 80% will be delayed in its development. Children with less functional minds are not only less intelligent, but their brain potential may not be maximized to its fullest potential.

The visual-auditory stimulation method combines visual and auditory stimulation techniques. In this visual-auditory stimulation method, a client with a communication disorder observes a model of correct communication behavior using visual and auditory modalities, and then attempts to communicate as the model demonstrates (Tarmansyah, 1995). A child with mental retardation has challenge comprehending speech because many utterances are not articulated distinctly through the lips. The child must recognize the shape of the speech when hearing one of the sounds. The child's jaw can tell which series of noises the teacher is speaking by analyzing the shape of the lips. There are several speech organs that the eyes cannot see in the sound of speech, including: (1) the location of the tongue, velum, and sound membrane cannot be seen; and (2) a tiny change in the oral muscles could alters the sound. Small differences, when we say words such as nails and hammers, (3) there is a sound of the language produced by the sound membrane with the same lip movement, such as the difference between b and p. The difference between m and b is the result of the velum's movement. Velum and sound membranes are invisible. For the purpose of training young children with mental retardation, the spoken language method was implemented. The use of both methodologies is adapted to the abilities of the child. What is intended is that children will be able to communicate through oral language in accordance with the potential that exists in early childhood with mental retardation. This study seeks to determine the

implementation of auditory and visual stimulation methods in an effort to improve early childhood with mental retardation's communication skills.

II. METHOD

This study aims to determine the use of visual-auditory stimulation methods to enhance the communication skills of young children with mental retardation. The inclusion kindergarten in Manado is the site of the five-month-long research. This investigation focuses on 11 young children with mental retardation between the ages of 5 and 6 years old..

This study utilizes a single-subject design, specifically a design with dual baselines between subjects. In addition to the design of a single subject sample covering only one or more subjects, Borg and Goll (2007: 234) state that this design fits perfectly with the extraordinary school situation involving a small number of students with varying degrees of disability and is compatible with behavior modification techniques. This research uses the design between subjects. Tawney and Gest explain that in the multi-subject double design, the researcher employs an intervention on multiple subjects with the same learning history, which will display the behavior targets with the same frequency and other conditions. Multiple designs can be compared to the AB design series, where A is the other condition and B is the intervention (1984: 255). The AB design series is a time series analysis that can evaluate behavioral changes from the next stage to the intervention stage for each response, individual, or situation, depending on the design chosen (Barlow and Hersen, 1984: 299).

Goll and Borg proposed a single case experiment design with A-B, where A is the symbol of baseline data and B is for treatment data (2007: 432). C is a follow-up, meaning that it is done after the intervention but gives the students the opportunity to do their own work with teacher supervision. Sukmadinata points out that the simplest single object experiment design is the A-B design with the following design form:

A	B	C
Baseline	Intervention	Follow Up

(session-day)

Table 1: A-B design of a single subject experiment A-B

In the baseline represented by the letter A, there is no intervention. Observation continues until the data become stable. After the data has stabilized, it is then processed. The treatment's effect is continuously monitored until the activity is stable, at which point it is designated by the letter B. Documentation, interviews, and observation are examples of data collection processes. Communication abilities are categorized separately by two observers. There are communications exercises four times per week. Class teachers

have not received systematic training in the use of spoken language methods; however, after being instructed and provided with samples during the research preparation phase, they are able to comprehend and implement them. The order conditions are baseline, intervention, and behavior maintenance. The remaining data is collected four times consecutively. During this step, During this step, the child asked individually to say the word, comprehend its meaning in lip language, and wait for respond within 5 seconds. If the child can perform the task accurately, mark it with a plus sign (+) and move on to the next task. If the child responds or is silent for five seconds, record (-). During the activity, the instructor gives no hints to the student. During the subsequent step, intervention, and follow-up, the latent response of the communication exercise is five seconds. After the child reaches the desired criteria, the exercise is suspended for three days, and on the fourth day, the child continue to performs the task. If the child cannot complete the assignment, repeat the error until the desired criteria are met. After the data becomes stable, intervene for five months until the stable data indicates that the child can perform the expected task. The exercise was then halted for two weeks, and the following week, the child's ability to communicate using spoken language was assessed to find out if the child still able to communicate using spoken language.

The measurement of baseline data is done only four times in a row until the obtained data is stable. After the baseline data is stable, interventions are held for 4 weekly meetings that are held for 6 months of training until the desired results are obtained or the targeted and final criteria are followed up. The data on communication ability that can be done by children during 4 meetings, as the baseline, describes the baseline condition and the result of intervention and follow up. Then performed a visual analysis. Sunanto, Takeuchi, and Nakata (2005) suggested visual chart analysis, including changes in the level of trend stability. Visual analysis under conditions that include 1) length of condition, 2) direction trend estimation, 3) stability tendency, 4) data track, 5) stability level and range, and 6) change level. Further, Sunanto, Takeuchi, and Nakata (2005) determined stability in this case using the criterion stability of 15%. The calculation is: highest score x criterion stability = range of stability. Determining trend line - highest value x criterion 0.15; Determining the mean (mean level) = number of frequencies under one condition: the number of sessions in the condition; Define the limit = mean level + trend line boundary; define the lower limit = mean level - trend line boundary; Trend stability = number of data points within the boundaries of the trend line. The level of reliability of research in the design of a single subject is a required component. This procedure will define and report inter-observer reliability, which is usually measured by comparing the assessment results of two independent observers. Observations were made at the next stage, the intervention stage, and the generalization stage, i.e., twice in the other stage, each of the fourth sessions at the intervention stage, and once in the later stages.

III. RESULTS AND DISCUSSION

The effectiveness of visual-auditory stimulation methods to increase the ability to communicate is demonstrated by the fact that before the child's basic exercise (the basic data),

children are unable to communicate orally, because the eleven children can only communicate 20% to 40%. The child's data communication ability during four meetings (baseline), data characterizing the child's initial condition (baseline), and the outcome of the intervention are depicted in Fig 1.

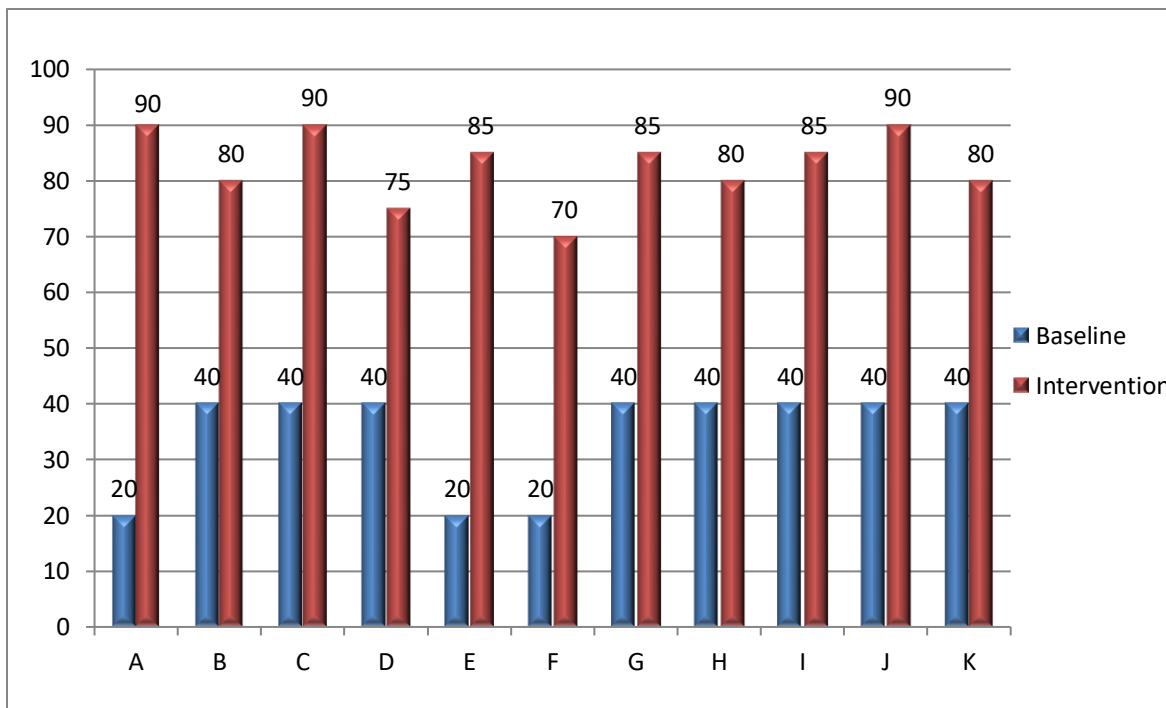


FIG 1: INTERVENTION GRAPH

Based on Fig1 it can be explained that the results of the study indicate that before the exercise or the eleventh baseline data, the child had not been able to communicate properly. That means the subjects A, E, and F are only able to communicate 20% of the time. Subjects B, C, D, G, H, I, J, and K are only 40%.

Children's communication skills can be improved through the implementation of visual-auditory stimulation methods, according to intervention data on communication skills. In five months, Child B reaches 80%, Child D reaches 75%, Child E reaches 85%, Child F reaches 70%, Child G reaches 85%, Child H reaches 80%, Child I reaches 85%, Child J reaches 90%, and Child K reaches 80%. There are four sessions per week. Children A and C attain 90% after six months of practice. After the eleven children achieve the desired requirements, the exercise task is repeated without intervention. The exercise is repeated after two weeks, and it turns out that all children achieve the same results with the intervention. In other words, the hypothesis that the application of visual-auditory stimulation methods can enhance the communication skills to the children with mental retardation in early childhood has been verified.

The findings of this study indicate that communication exercises incorporating visual-auditory stimulation methods can enhance children's communication skills. Appropriate, systematic, and professional application of methods and techniques for addressing communication issues. Because combining visual and auditory stimulation techniques is extremely effective for treating communication disorders. Tarmansyah (1995) describes a method of stimulation based on the observation of an integrated stimulation through which a person's sensory modality can be utilized to correct the concept of poor communication behavior. Providing stimulation through the various sensory modalities is one method for developing children's observational skills. The students will receive the correct input, which will then be compared to the concept it represents (the concept of improper communication behavior). In addition, Tarmansyah argued that when the correct input is stronger in both intensity and frequency, the concept of incorrect communication behavior will shift into correct communication behavior. In this regard, Papalia and Old (2008) found that in the first year of school-age children (5–6 years old), children's language appears to develop very rapidly, notably in terms of the addition of vocabulary and the discovery of commonly used words in the surrounding community. However, language development is significantly delayed for children who face cognitive development obstacles. Communication limitations necessitate

special management and training. Literature (2011) indicates a close relationship between the development of children's speech and cognitive development. Children who have been able to speak are already capable of visualizing the objects they see. If cognitive impairment is present, then the image will not be formed.

IV. CONCLUSION

Based on the findings of the research, it can be stated that the use of visual-auditory stimulation methods can increase children's communication abilities. During the intervention phase, the ability to communicate tend to be improve. After the child is able to communicate verbally, the exercise is stopped for two weeks. The following week, the child was asked to perform the task without exercise, and the results showed that eleven of the subjects were still able to communicate based on the knowledge acquired during the intervention. In other words, the application of visual-auditory stimulation method to the design of a single subject was successful to the eleven children with mental retardation.

Based on the conclusion of the presented research results, some recommendations can be made to (1) the early childhood educators and (2) the next researcher. In an effort to enhance children's communication skills, teachers are expected to implement visual-auditory stimulation in a more systematic and organized manner. (2) The results of this study must be replicated on children with mental retardation who share the same characteristics in different locations in order to demonstrate the generalizability of the visual-auditory stimulation method for enhancing their communication skills.

REFERENCES

- [1]. Asmani, Jamal Ma'mur. 2009. *Manajemen Strategi Pendidikan Anak Usia Dini*. Jogjakarta: Diva Press.
- [2]. Borg, W.R. & Gall, M.D. 2007. *Educational Research: An Introduction*. New York: Longman, Inc.,
- [3]. Barlow, D.H. & Hersen, M. 1984. *Single Case Experimental Designs*. New York: Pergamon.
- [4]. Bredekamp, Sue. 1992. *Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8*. NAEYC: Washington.
- [5]. Heward, William L. dan Orlansky, Michael D. 1984. *Exceptional Children, Second Edition*. Columbus : Charles Merrill Publishing Company.
- [6]. Hallahan, Daniel P. Kauffman, James M. 1991. *Exceptional Children Introduction to Special Education. Fifth Edition*. Printed in the United States of America: Prentice-Hall International, Inc.
- [7]. Kirk A., Samuel & Gallagher, J. James. 1986. *Educating Exceptional Children*, Boston: Houghton Mifflin Company.
- [8]. Soemantri, H.J.T. Sutjihati. 2005. *Psikologi Anak Luar Biasa*, Bandung: Refika Aditama.
- [9]. Santrock, John W. 2008. *Educational Psychology. Edisi Kedua*. Terjemahan, Triwibowo, B.S. Jakarta: Kencana Persada Medua Group.
- [10]. Santoso, Soegeng, "Konsep Pendidikan Anak Usia Dini Menurut Pendirinya", Jakarta, 2011.
- [11]. Sunanto, Juang. Takeuchi, Koji. Nakata, Hideo. 2005. *Pengantar Penelitian Dengan Subyek Tunggal. Center for Research on International Cooperation in Educational Development (CRICED)*: University of Tsukuba.
- [12]. Sukmadinata, Nana Syaodih. 2009. *Metode penelitian Pendidikan*. Bandung: Remaja Rosdakarya.
- [13]. Sastra, Gusti. 2011. *Neurolinguistik: Suatu Pengantar*. Bandung: Alfabeta.
- [14]. Siskandar. 2003. *Biarkan Anak Mengekspresikan Dirinya*. Departemen Pendidikan Nasional. Direktorat Pendidikan Anak Usia Dini. Direktorat Jenderal Pendidikan Luar Sekolah dan Pemuda. Jakarta.
- [15]. Papalia, Diane E., Old; Sally Wendkos and Feldman, Ruth D. 2008. *Human Development, 8th edition*, New York: The Mc Graw Hill Companies Inc.
- [16]. Tawney J.W. & Gest D.L. 1984. *Single Subject Research in Special Education*. Columbus, OH: Charles E. Merrill Publishing Company.
- [17]. Tarmassyah. 1985. *Gangguan Komunikasi*. Departemen Pendidikan dan Kebudayaan Direktorat Jenderal Pendidikan Tinggi Proyek Pendidikan Tenaga Guru, Jakarta.