

The Effect of Multisensory Methods of Early Childhood's Fine Motor Development

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Abstract-This research aims to testing the effect of the Multisensory methods on fine motor of early childhood's. The study used a quantitative approach with a quasi-experiment design with a non-equivalent group design. Sampling was carried out with a random sampling technique that selected 122 children aged 5-6 years each divided into experimental groups and control groups. Data analysis using non-parametric statistics with Kruskal Wallis's test. The results showed that a significant value of $0.000 < \text{sig} < 0.05$ meant that there was an effect on the multisensory methods of fine motor development in children aged 5-6 years.

Keywords-*multisensory methods, fine motor development, childhood.*

I. INTRODUCTION

Early childhood developments included six aspects of religious and moral values, physical-motor, cognitive, language, social-emotional, and artistic; It is listed in the Ministry of National Education Regulation Number 137 year 2014 on national standards for Early childhood education [1].

The developmental aspect that can be stimulated in early childhood is the physical development of the motor. According to Musfiroh, the physical development of the motor is an important aspect of development in early childhood life [8]. Physical-motor is divided into 2 i.e. crude motor and fine motor. According to Gallahue, in fine motor activities are more dominant using limited movements in certain parts of the body that require precision such as cutting, chopping, sewing, and writing [9]. According to Sujiono, fine motor is a movement that uses only parts of small muscles, such as using the hand fingers and proper wrist movements [10]. Therefore, the movement in fine motor does not require energy, but it requires careful coordination of eyes and limbs.

In Permendikbud Number 137 year 2014 on National Standard of Early childhood Education Stated the level of

development achievement of children aged 5-6 years on fine motor ability is to mimic the form [1]. Activities that stimulate the fine motor development at the time of kindergartens are activities to mimic the form of letters using stationery. According to Suyanto early writing activities include children try writing techniques by mimicking curves and lines forming letters, imitating writings or letters known, writing their own names, writing a few short words [11]. According to Susanto, there are five stages of writing at the kindergarten age, the stages of the strike through, linear repetition stage, randomized writing stage, writing stage name, and short sentence writing stage [12]. Thus, the emergence of child's interest in writing begins with Scribble, then the child attempts to write letters, and then mimics writing his own name, and imitating words or writings. According to Thaiss (in Dhieni, 2015) when in the delivery of information a child is given the opportunity to be able to discuss, write it down, then describe it, and then manipulate the information provided will be understandable and well remembered [13]. Can be drawn understanding that fine motor development at the age of kindergartens is to mimic a typeface or write letters using stationery.

The Multisensory method is a learning that has the basis of the assumption that the subject matter presented involving various modalities will help the child to be able to learn well and optimally. The modalities involved include vision (visual), hearing (auditory), kinesthetic, and feel (tactile), or often also known as VAKT [14]. The Multisensory method was developed by Fernald in 1943 whose activities use the various modalities of sensory instruments namely visual, auditory, kinesthetic, and tactile which is often also known as VAKT. This method uses the selected reading material of the words spoken by the child, and each word is taught in full. This method is believed when applied to normal children, so the Multisensory method can help to stimulate the development of the child's fine motor in mimicking the typeface.

The implementation of multi-sensory method is as follows:

1. The teacher introduces the media board flannel. The board contains letters made of flannel, then pasted onto the board. The letters that are affixed contain the words that the child often hear. (e.g. "baju"). Then the teacher read aloud and clearly the word "baju", "Ba-ju", "B-A-J-U" then the child imitating the spoken word teacher.
2. The teacher invites the child to follow the letter pattern using the index finger. The teacher asks the child to see the word and say its sound. The child will practice the sense of the feel, and the movement because of the textured flannel letters are made of flannel.
3. The teacher gave an example of writing letters with markers on the board. The teacher mentions the letter name and demonstrates, the teacher explains how to write it
4. The child is invited to make a letter using the index finger with the help of sand media, then the child can analyze the shape of the letter based on its memory.
5. The last activity is to write with the pencil to mimic the letters that have been taught on a sheet of paper. The teacher gave help to the child who is still unable to write, giving the dots on the paper, so that the child follows the pattern.

The results of the study conducted by Labat showed that the results of a significant increase in the percentage of children who use learning with visual approach, Visuo-haptic (touching letters with fingers), and Visuo-graphomotor [15]. Later, Lisnawati's research showed that the multisensory method gave rise to positive atmospheres to appeal to children and encourage parental involvement in literacy activities [16]. As well, the research on Ade's shows the results that the multisensory method enhances the ability of early literacy in kindergarten [17].

Based on the explanation above, it is necessary to study for improvement of previous research related to fine motor development for group B children in kindergarten using multi-sensory method. While the principle in the Multisensory method has several advantages in learning activities recognize literacy and mimic the form of letters.

II. IDENTIFICATION, RESEARCH AND COLLECT IDEA

This research uses the quasi experiment with non-equivalent control group design. There are 2 experimental groups and 2 control groups. The experimental group was given the learning treatment of the multisensory method, while the control group was given learning according to the teacher's method without using the Multisensory method. Measurement of observations conducted before and after learning using the rating scale calculation 1-4. Scale Rating is a scale used to collect raw data in the form of numbers that are then interpreted in a qualitative sense [18]. The scale rating used refers to the following table 1:

Table1.Research Instrumen Assessment [19]

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Score	Description
1	Undeveloped
2	Start Growing
3	Evolving as Expected
4	Excellent Growth

The following observation grids are as follows:

Table 2.Fine Motor Capability Observation Grid

Child's Development Assessment Level	Indicator	Instrument
Emulate the shape	The ability mimic letter shape	1. Mimicking letters with index fingers.
		2. Emulate letters with stationery.
		3. Can mimic composing a word with stationery.

III. RESULT AND FINDINGS

Based on the test results normality with Kolmogorov-Smirnov is smaller than the level of 0.05 significance. As such, the data is declared non-distribution normal and cannot be continued with parametric testing, in lieu of the use of the Nonparametric test with Kruskal Wallis [19].

Table 3.Results of Fine Motor Capability with Kruskal Wallis's Test

Test Statistics ^{a,b}	
Post Test Fine Motor Capability	
Chi-Square	27.879
df	1
Asymp. Sig.	0.000

a. Kruskal Wallis's Test
b. Grouping Variable: Treatment

According to table 3, the results of Chi-Square were obtained at 27.879 while the P-value value indicated by the asymp value.

A Significance of 0.000 is that it explains that the P-value is < from the critical limit of 0.05, so H_0 is rejected and H_1 is accepted. It can be concluded that there is influence of the multisensory methods of fine motor ability of kindergarten children aged 5-6 years.

This research is in accordance with Susanto's opinion [3], there is a close relationship between the letters by impersonating them, when the child shows his activity in impersonating a pattern letter then recite it, then the ability in know it will increase. It is also in line with the research conducted by the British Audio-Visual Association (in the Age, 2011) suggests that information obtained by one through Visual senses (visually) as much as 75%, 13% through auditory, 6% through touch, , and 6% through the senses of smell and tongue [20]. So using multisensory method can stimulate the function of the child's senses to obtain information, so that language learning (literacy) and fine motor (imitating the shape of the letters) will develop well.

IV. CONCLUSIONS

Based on data analysis and discussion, it concluded that the multisensory method affects the development of fine motor children aged 5-6 years.

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