

Lego Media for Developing Fine Motor Skills of 4-5 Years Old Early Childhood at Ra (Islamic Kindergarten) Nurul Fata Sukahaji

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Abstract: Children's motor skills are basic skills that must be developed early, especially fine motor skills. Fine motor skills are essential skills that must be mastered because they will support other developments. Fine motor skills development for early childhood should be taught through engaging in additional exercises. One is providing Lego media to stimulate fine motor skills development. Children must be attracted to fun media in their instructive cycle. Hence, this research objective was to determine how developing fine motor skills using Lego media improves fine motor skills. This research used a quantitative experimental approach. The research population consisted of all students of RA Nurul Fata, totaling 36 children. The data collection techniques included interviews, observation, documentation, and checklists. The research results using the t-test on SPSS showed a significant effect on fine motor skills development after being given Lego media to children aged 4-6 at RA Nurul Fata.

Keywords: *Fine motor skills, Lego Media, Early childhood*

Introduction

Growth and development are two things that become concerns in early childhood education. Children's growth and development can increase significantly if teachers and parents always provide positive stimulation in all aspects of children's physical development and growth. Growth means a change in aspects of the body, such as; weight, height, arm size, head size, and others. Meanwhile, development is the change in mentality by going through stages that start with simple and complex abilities, for example, the abilities to think, behave, and to simple speech. Motor skill development in children is continuous between each child's physical and intellectual conditions. Several things play a role in children's motor development, including environmental factors, parenting patterns, and providing nutrition for children. Motor movement activities carried out by children influence nerve maturity. At five years old, the nerves mature and stimulate various motor movements. In gross motor muscles, its function will control movements in gross motor skills, such as jumping, kneeling, running, and walking; these movements develop rapidly. It is in contrast to the muscles that control various fine motor skill activities, such as using their fingers in arranging Legos, cutting, shaping, holding pencils, and so on (Siti Makhmudah, 2020).

Therefore, parents and teachers should be observant in assessing and stimulating children's motor skills so that the basis for developing children's fine motor skills in learning is not how intelligent a person is but in what and how a person can perform abilities. According to Sumantri, as quoted by Maimunah Hasan, fine motor skills are the organization of the use of a group of small muscles such as the fingers and hands that often require accuracy and coordination with the hands and skills that include the use of tools to work on an object (Hasan, 2009).

According to the regulation of the Minister of Education and Culture of the Republic of Indonesia No. 1337 of 2004, there are several aspects of the development of children 5-6 years old. One of them is fine motor skills. The following is the level of achievement of the development of children aged 5-6 years old, namely; drawing according to ideas, imitating shapes, exploring with various media and activities, using writing utensils and eating utensils correctly, cutting according to patterns, pasting pictures correctly, imitating simple paper folding (5-6) folds, expressing oneself through drawing movements detail (137, 2014). Yudha M Saputra and Rudyanto (2005: 118) explain that fine motor skills are children's ability to carry out activities using fine (small) muscles such as writing, squeezing, grasping, drawing, arranging blocks, and inserting marbles (Arina Restian, 2017).

Montessori in Hainstok (1999) says that this early childhood stage is a period that is easily shaken (sensitive periods). At this time, children at an early age must follow their wishes because they are easily receptive to stimuli in their environment. Besides, during this period, children are in a maturation phase,

such as physical and psychological functions, so children will be more ready to respond. The response will realize the tasks of development that are expected to appear in daily behavior patterns. Thus, it is crucial in the early childhood learning process to use media.

States that children can enjoy creating and experimenting with blocks/lego media in arranging blocks. They learn how to line up blocks/legos, stack blocks/legos, balance smaller blocks/legos onto bigger blocks, and arrange blocks in unique ways (Kartini, 2018).

In this research, researchers used the APE type of Lego media. This media is a game that can be disassembled and reassembled, while the function of the game is that children can recognize constructive models and children will be able to understand an aspect of engineering (Hidayat, 2007). Each child can make and build according to their mind through the various shapes of Lego. Furthermore, the Lego APEs that have been built can be dismantled again to reassemble them as they want. Lego is a game that builds skills and stimulates children's creativity through experimentation in playing with children. They will find that designing something new and different can lead to satisfaction (Hurlock, 2005).

Some experts above state that the Lego APE game is a toy that is arranged and processed from plastic material. This APE media is shaped like a tooth on the side and is rectangular so that it will be straightforward. This type of APE is a game that can be disassembled and reassembled. Furthermore, the function of the game is that children can recognize constructive models, and children will be able to understand an aspect of engineering (Hidayat, 2007).

Several research were found by researchers, including the research conducted by Halimah (2019) with the title "Efforts to Improve Fine Motor Skills through Plagiarizing Picture Media Games at TPQ An-Nur Tomang, West Jakarta", which provide significant results that there was a significant effect of fine motor skill levels on students at TPQ An-Nur Tomang, West Jakarta, aged 5-6 years old, after being given the Picture Media Tracing Game. However, there was no previous research that researched the effect of using Lego media on the fine motor skill development of children aged 4-6 years old. Hence, based on observations made by researchers at RA Nurul Fata, the fine motor skills of children aged 4-6 years have not developed well. It can be seen when writing, the child still looked imprecise, stiff, and untrained. Their eye and hand movements were not well coordinated. They had a lack of interest in writing activities and a lack of harmony between hand and eye movements. Therefore, researchers were interested in taking the research title " Lego Media For Developing Fine Motor Skills Of 4-5 Years Old Early Childhood At RA Nurul Fata Sukahaji Tegal Waru" .

Method

In this method, the researchers used quantitative methods, which emphasized objective phenomena and were studied quantitatively. To

maximize objectivity activities with the research model, the researchers used numbers, processed data statistically, and structured and controlled experiments (Bahruddin, 2014). This research used quantitative experimental methods with the Quasi-Experimental Design using the Nonequivalent Control Group Design. In this design, there was a pre-test before and after treatment, so the comparison between before and after treatment was seen. This research consisted of two variables, namely the independent and the dependent variables. Furthermore, the researchers researched two classes: the control and experimental classes.

Sources of research data consisted of secondary data and primary data. Primary data was created by researchers to solve the problems they researched. The researchers collected the data from the first source or the research object. Meanwhile, according to Umar (2013), secondary data is data that has been collected and then processed further and presented in the form of diagrams or tables, both by data collectors and other parties. The secondary data sources were journals, articles, literature, and websites, and used treatment records and documentation under the research being conducted.

Data collection techniques in this research used observation techniques, interviews, documentation, and checklist sheets. Observation activities were conducted to observe fine motor skills in implementing Lego game activities. Meanwhile, interviews were conducted to determine how teachers develop fine motor skills, as well as documentation as reinforcement and field notes using an assessment checklist to determine how far the child's development has been achieved. In this research, the instrument used was a score obtained from the observation process on the statement column that was under the level of achievement of the child's development.

In research, the instrument used must be valid and reliable. Valid is an instrument that can measure what should be measured. Meanwhile, reliability is an instrument used to measure and produce the same data several times (Sugiyono 2010). The data analysis technique was carried out by comparing the results of the pre-test and post-test in the experimental and control classes using the t-test.

Result and Discussion

The location chosen for this research was Nurul Fata Kindergarten, Tegalwaru Sub-district, Purwakarta Regency, West Java. Based on the results of initial reflection and preliminary studies before using Lego media, researchers found the phenomenon of children's fine motor development and the problems teachers and students faced. According to Purnamasari (2018), the problems faced by students arose not only because of student learning difficulties but also because of low student motivation and monotonous media and learning methods/strategies. It was also found that the child's difficulties in accepting

the lessons delivered by the teacher with the monotonous method/strategy, so the development of children's fine motor skills was not maximally achieved.

Pre-Test Data Analysis. In this pre-test data analysis technique, researchers used the SPSS (Statistical Package for Social Sciences) version 25 program to calculate these data (Sugiyono, 2010). The results of the pre-test data analysis for the experimental and control groups were as follows: first, the Pre-Test Data Normality Test. The analysis of the normality test aimed to determine the results of the pre-test data for the experimental and control groups, whether they were normally distributed or not. In calculating this normality test, researchers used the SPSS version 25 program. The results of the normality test analysis can be seen in Table 1. The normality test was carried out to determine the normality of the data distribution. The normality test of the research data used the Kolmogorov Smirnov test (Raharjo, 2014). The criteria for testing the normality of the data was that if the probability value was more significant than $\alpha = 0.05$, then the data were normally distributed (Winarsunu, 2006; Raharjo, 2014). The calculation results of the normality test with the help of SPSS (Statistical Package for Social Sciences) are shown in Table 1. The calculation results using SPSS version 25 software indicated that the normality test for the experimental and control classes was 0.146.

The normality test results were more significant than 0.05, so they were normally distributed (Winarsunu, 2006; Raharjo, 2014). The second was the Pre-Test Data Homogeneity Test. The following analysis was to employ a homogeneity test to determine the population's variance and whether the data had the same or different variances. The consistency of the data distribution with variance or not was seen from the magnitude of the sig value generated from the pre-test data analysis using the SPSS version 25 program. If the sig. value was > 0.05 , the data was variable/homogeneous. Conversely, if the sig. value was < 0.05 , then the data was not varied/not homogeneous (Winarsunu, 2006; Sugiyono, 2010; and Raharjo, 2014). Furthermore, see Table 2. The data shows a significance value of $0.063 > 0.05$, so the result was homogeneous. Third, t-test for Pre-Test Experiment and Control Classes. Based on the results of the analysis of normality and homogeneity tests, it was found that the pre-test data were normally distributed and homogeneous. Thus, in calculating this hypothesis test, parametric calculation analysis was used, with a confidence level of 0.05. If the sig. value (2-tailed) was < 0.05 , then H_0 was rejected, and H_a was accepted.

As previously mentioned, this research objective was to develop fine motor skills for children aged 4-6 years by playing the Lego. This Lego game activity was carried out by arranging various forms to produce works in the form of simple buildings that are applied in class. Lego game activities are additional activities after the core learning activities. Every hand movement

when playing with Lego aimed to train the movement of the fingers of the child's hands, such as movements that involved small muscles that coordinate between the eyes and hands at the stage of the fine motor nerves. We could train and develop them by providing a game of arranged blocks, puzzles, activities to enter objects according to shape, making lines, and so on.

In this research, the researchers used two classes: the experimental and control classes. From the beginning of the learning of the experimental and control classes, it can be seen that it was different. The pre-test score of the experimental class was 4.455, and the control class was 2.695. Then, students were given a post-test at the end of learning to see how far the development of the child's kinesthetic intelligence was. The test data was tested using SPSS so that the result from the experimental class was 6.052 and the control class was 2.944.

Based on the calculations using SPSS Type 25.0 via paired sample t-test, the experimental class t-test value obtained was -8.617 with a $df = 34$. The value of the t-table at $t=0.05$ was 1.691 with a significant value $(P) = 0.000 < \alpha = 0.05$. Thus, the $t\text{-count} > t\text{-table}$ value meant that H_0 was rejected and H_1 was accepted. Meanwhile, the control class calculation: the t-test value obtained was - 5.966 with $df = 24$. The value of t-table at $t=0.05$ was 1.711 with a significant value $(P) = 0.000 < \alpha = 0.05$. Then, the value of $t\text{-count} < t\text{-table}$ meant that H_0 was accepted and H_1 was rejected.

The achievement of scores between the experimental and control classes was very different. The experimental class was higher than the control class. The t-count of the experimental class was -8.617, and the control class was - 5.996. Based on these data, it could be concluded that the experimental class has developed compared to the control class.

Conclusion

Based on the results of research that has been carried out at RA Nurul Fata, Sukahaji Village, and what has been presented in the previous chapter, it could be concluded that: The fine motor skills of children aged 4-6 have not yet developed. These results were obtained from initial observations made by researchers. In addition, to strengthen the data, a pre-test was carried out with the results of 4.455 for the experimental class and 2.6955 for the control class. Lego media was proven influential as a learning medium that could improve the fine motor development of children aged 4-6. It could be seen from the significant increase after the treatment (treatment in learning), which was seen in the experimental and control classes' post-test results. The post-test result of the experimental class was 127.29, and the control class was 10-7.80. This research implied that learning using Lego media positively affected children's fine motor skills in teaching and learning activities. Learning with Lego media

also positively contributed to developing and improving fine motor development for children aged 4-6 at Nurul Fata Kindergarten, Sukahaji, Tegalwaru, Purwakarta. Based on the results of calculations using SPSS Type 25.0 via paired sample t-test, it was found that the experimental class t-test value was -8.617, and the control class t-test value was -5.147. Furthermore, based on the t-count and t-table with a df-value of 34, which was 3.47 with a significant value (P) $0.000 < \alpha = 0.05$. The calculation results had no effect because the t-count was less than the t-table. However, if it was seen from Sig. (2-tailed) on the independent sample test, the value was 0.000. It can be interpreted that the research or treatment given could affect or have a significant effect because the value was less than 0.05 .

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