Studies in Philosophy of Science and Education
Homepage: https://scie-journal.com/index.php/SiPoSE
Email: sipose@scie-journal.com

p-ISSN: 2722-3523; e-ISSN: 2721-9267
SiPoSE, Vol. 4, No. 1, March 2023
Page: 17-21

The Effects of Playing Playdough on the Ability to Recognize Geometric Shapes in Kindergarten

***T Ardianti[1], B Purwoko[2], U A Izzati[3]**
[1]Department of Basic Education, Faculty of Science Education, State University of Surabaya, Indonesia
[2]Department of Guidance and Counseling, Faculty of Science Education, State University of Surabaya, Indonesia
[3]Department of Psychology, Faculty of Science Education, State University of Surabaya, Indonesia

Article Info

Article history:

Received January 20, 2023
Revised March 17, 2023
Accepted March 17, 2023
Available Online March 31, 2023

Keywords:

Playing
Playdough
Fine motor

ABSTRACT

The ability to recognize geometric shapes is still lacking, such as children who have not been able to classify objects based on shape, color, and color pattern. This study uses a quantitative approach with a quasi-experimental design. The experimental design used was a nonequivalent control group design with 32 children as research subjects carried out at RA Ashyubbani Changing. this study used parametric statistical data analysis techniques using the ANOVA test. The conclusions of this study indicate that there is an effect of playing with plasticine on the ability to recognize geometric shapes in group A Kindergarten. The results showed a correlation coefficient 0.526 with a significance level of 0.006 which is less than 5%; this shows that there is an effect of playing with plasticine on the ability to recognize geometric shapes in group A kindergarten children. Playdough activities can improve children's abilities to recognize geometric shapes both in grouping objects based on shape, color, and color pattern.

https://doi.org/10.46 627 / sipose

INTRODUCTION

Early Childhood Education (PAUD) is level education before level education base Which is Wrong something effort coaching Which addressed for children from born until with age of six years done through stimulation education for help growth and development physical as well as spiritual. At the early childhood education level, several aspects must be developed maximum according to the Government Regulation of Education and Culture Number 146 concerning Curriculum 2013 PAUD, among others: Development mark religion and morals, development of physique motor, development of cognitive, development language, social emotional development and art development. All these developments are integrated so that if there is one development that does not optimal so can affect the development of another. Kindergarten education is an education that facilitates the process of growth and development child age early.

Therefore, early childhood education done in kindergarten must stimulate aspects development child. At age, 4-5 years is something period where a child wants to try various matters. Giving stimulation is needed by children because this period is a period Where children capable accept various matters given by person mature people Which There is in around them. A period like this is the golden age, a period in which children are growing rapidly and can absorb whatever is in their environment. Giving stimulation Which appropriate will make it easy for children to record various things in the brain using various senses. Lots of stimulation can be developed to stimulate a child.

The problems that arise when researchers make observations are learning in park children still using patterns provision of learning that is very theoretical and less varied. Often activities

learning is done only through the lecture method and working on questions followed by giving assignments to do at home. It can make a child's boredom and motivation to learn to be reduced. Fact which there is in park child group A in group 2 subdistrict replaces shows lots child which capable serve level rote which good to the material received, but in reality the child does not understand it. Part most children are unable to make the connection between what is learned and how knowledge or material knowledge will be used or exploited.

Which activity given by the teacher limited coloring, tracing, and calistung so ability child was still not yet capable know shape geometry, pointing, and mentioning objects which shaped geometry, classify objects according to geometric shapes. This is proof that children need an understanding of simple concepts that relate to surrounding objects including shape, type, and size, as a provision to solve problems, while the achievement of children according to permendikbud number 146 of 2014, achievement standards child development (sttpa) aged 4-5 years in the scope of development cognitive child can classify object based on function, form or color or size, the child can classify objects into the same or group which kind or group which in pairs with 2 variations.

Triharso (2013) states in building draft geometry child age early can start from identify shapes, investigating buildings, and isolating common figures such as squares, circles, and triangles. Introducing shape-form geometry in child age early very influential for level furthermore. Tarigan (2015) states learning knowledge from geometry at child age early means a child will study mathematics. When study mathematics in manner no direct child will think in a manner systematic with put structure hierarchy from draft-higher concept and will be formed based on the concept that has been obtained on experience previously. Improving children's ability to recognize geometric shapes certainly requires the right way or method.

One of the learning methods that can be used by the teacher is the playing method. Play playdough. According to Ardini (2018), playing is an activity carried out with or without tools that can produce understanding or give information, give pleasure or develop imagination in children. The more precise meaning is every activity is carried out for the pleasure it causes, without considering the result will get. Play playdough according to Suryameng (2016) is an activity to play with dough flour of various types of colors which used. Playdough can be formed into various types of shapes such as animals, plants, fruit, places, and other objects. Through playing with playdough children can play with shapes, colors, and textures, train agility, and flexibility of the fingers, and train coordination between eyes and hands.

The reason researchers use activity playing playdough in this research namely 1) activity by playing playdough is fun learning for children, 2) activities play playdough is a fun play activity for children, 3) activity play creation playdough capable practice cognitive bases like know form geometry with use playdough, group playdough based on shape, 4) able to develop fine motor skills and children's creativity.

Previous research by Sutapa (2018) stated the results of a study declared that game playdough and puzzles influencing significantly to ability fine motor and intelligence mathematical logic know geometry on a child because they can practice focusing and coordination eyes and hand child. Research by Setiawati (2022) declared that games playdough can improve children's creativity in making geometric shapes in preschool rangkasbitung.

The purpose of this research is to find out whether playing with playdough can improve children's ability to recognize geometric shapes. Recognize shapes by grouping objects based on shape, color, and color pattern.

RESEARCH METHOD

Research design is a plan and procedure study which covers all decisions starting from assumption which is wide until the method is the most detailed regarding the process of data collection and analysis (Creswell & Creswell, 2017). Type study this uses an approach quantitative. Study this using the experimental method. According to Sugiyono (2013) experimental method can be interpreted that is a research method used to find something the effect of certain treatments on others under controlled conditions. Research design in this study

use design study quasi-experimental with type nonequivalent control group design. The research used in the study aims to determine the effect play playdough to ability know form geometry.

The population in this study were 9 institutions. The technique for determining the sample used technique simple random sampling, simple technique random sampling is taking a sample that gives equal opportunity to all existing members in a population to be sampled (Siregar, 2013). According to Sari et al. (2018) variable study is construct in something study quantitative which own mark certain in where mark is analyzed statistically. In study this, variable bound is ability know form geometry while the independent variable is the play dough activity.

The data collection method in this study uses observation. Observation is something technique for collecting data done with a method of observing behavior that can be a certain event (Sari et al., 2018). Instrument study this uses guidelines observation, indicator ability know form geometry that is pointing and mention geometrically shaped objects and classify objects accordingly geometric shape. Test hypothesis used in study this is with the use t-test sample in pairs. According to Sari et al. (2018) paired sample t-test is a hypothesis test formula that compares the data from the whole subject study which get a two-time measurement variable bound. T-test sample pairing can be done in experiments that use one group or two research groups. The research procedure uses 3 stages, namely the preparation stage, the implementation stage, and the evaluation stage.

RESULTS AND DISCUSSION

Study This carried out in kindergarten group A in Cluster II District Replace Gresik Regency. Location geographic deep kindergarten study this are in the area rural. The research location performed at RA Asy Syubanni as group experiment with a total of 32 children. Data from the results study ability know form geometry obtained through observations that have been prepared by researchers. Instrument ability to know form geometry is measured with 3 indicators, which in each indicator there is 1 item that will be rated with an average score. Indicator first, classify objects based on shape, and grain the includes: 1) grouping based on shape. While on the indicators second, classify form based on color with items of the statement as follows: 1) grouping based on color. Indicator third with grain as follows: 1) sort based on pattern color.

Table 1. Grouping results of the ability to recognize geometric shapes

Group		Information	Number of children
Experiment	*Pretest*	Below average	14 children
		Above average	18 children
	Posttest	Below average	9 children
		Above average	23 children

Based on the results research, proved that in the experimental group, there was an increase. This can be seen in the increase in the number of children who showed an increase in the ability to recognize geometric shapes which was very good at the end of the observation. In the experimental group, the average value of the ability to recognize shapes increased child a big 10.93. Can concluded that the results that have been obtained in this observation indicate an increase in the ability to recognize shapes and geometry in children. The results obtained in the experimental group at the Pretest were 14 children who scored below average and 18 children scored above average while in the Posttest results, 9 children who scored below average and 23 children who scored below average. This shows that the ability of the posttest know Geometry shapes in the experimental group increased by 91.17%

Researchers proved is activity play playdough effect abilities known from geometry, then an anova test was carried out. In matter, this is the data being analyzed in the posttest control group. Based on ANOVA test results obtained a mark of 0.526 with a level significance (sig) of 0.006 which means not enough of 0.05 (5%). Based on matter they stated that H_a is accepted, which means that "there is influence activity play playdough to ability know form geometry kindergarten group A children. Playdough play activities are activities that introduce children

to ways to get to know geometric shapes by playing with making geometric shapes from playdough, children will learn various shapes and imitate shapes using playdough that children have made from materials around them so that children have experienced fun one to remember as well grow creativity child.

Play playdough is activities that provide knowledge and experience directly to children and stimulate children to act actively. Triharso (2013) stated that developing and building geometric concepts in early childhood begins with identifying shapes, investigating buildings and separating circular, rectangular, and triangular objects. The results of the Group A children's research are in line with previous studies carried out by Sutapa (2018) who stated play playdough creates a way for children to interact directly with objects and allows children to use their five senses to get facts that are used to solve the problems they face as well as an increase in mathematical logical abilities of 50 group B children at Tunas Melati Kindergarten in Sleman Regency, Special Region of Yogyakarta through activities play playdough and puzzles.

Fischer et al. (2020) stated in his research that fine motor skills in moving the fingers in early childhood can help children improve cognitive abilities in terms of counting. In this study the researchers used a method of counting on the fingers during posttest activities that is, children sort objects based on color patterns. The red color is given the number one, the green color is given the number two, and the yellow color is given the number three. The use of numbers will make it easier for children to sort objects based on color patterns. When the child will sort the color pattern, the child first uses his finger to count the pattern color next.

Based on statement, then the application of play dough activities in kindergarten group A children at RA Asy Syubanni Menganti and RA Al Azhar Menganti is very useful, especially in improving children's ability to recognize geometric shapes. It can be concluded that play activities Playdough is an activity that greatly influences the ability to recognize geometric shapes in group A children.

CONCLUSION

There is an influence play playdough to ability child know form geometry in Group A kindergarten children in cluster II, Menganti Gresik District. This is evidenced by the average pretest value in the experimental group, which is 3.84 and after being given treatment or treatment, the posttest average value is obtained. of 10.93. Based on the testing hypothesis by using the ANOVA test on the ability to recognize geometric shapes a value of 0.526 is obtained with a significance level sig. of 0.006 which means less than 0.05 (5%). Based on this it is stated that Ha is accepted, which means that there is an influence of playdough playing activities on the ability to recognize geometric shapes of Group A Kindergarten children in Cluster II, Menganti Gresik District. Ability know form geometry on child age early can be given with stimulation using media or learning methods one of them with apply play playdough which following characteristics and aspect early childhood development. The ability to recognize the concept of geometry through play playdough is related tight to ability child to know the shape and the size of an object.

ACKNOWLEDGEMENTS

The authors thank the RA Asy Syubbani School, Changing District, Gresik Regency, which has provided encouragement and support and allowed researchers to conduct research. The researchers hope that this research can add insights to improve learning and can improve children's abilities to recognize geometric shapes.

REFERENCES

Ardini, P. P. (2018). *Bermain dan permainan anak usia dini (Sebuah kajian teori dan praktik)*. Adjie Media Nusantara.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Fischer, U., Suggate, S. P., & Stoeger, H. (2020). The implicit contribution of fine motor skills to

mathematical insight in early childhood. *Frontiers in Psychology*, *11*, 1143.

Sari, Y. K., Sukartiningsih, W., & Jannah, M. (2018). The effect of geometric puzzle game towards children's recognition of geometric shapes and fine motor. *Proceedings of the 2nd International Conference on Education Innovation (ICEI 2018),* 340-342. *https://doi.org/10.2991/icei-18.2018.75*

Setiawati, E. (2022). The effect of playdough games on children's creativity in early childhood education. *Gagasan Pendidikan Indonesia, 3*(1). https://doi.org/10.30870/gpi.v3i1.15122

Siregar, S. (2013). *Statistik parametrik untuk penelitian kuantitatif dilengkapi dengan perhitungan manual dan aplikasi SPSS versi 17*. Bumi Aksara.

Sugiyono. (2013). *Metode penelitian kuantitatif, kualitatif dan R&D*. Alfabeta.

Suryameng. (2016). Peningkatan keterampilan motorik halus kelompok A melalui bermain playdough. *JPPM (Jurnal Pendidikan dan Pemberdayaan Masyarakat), 3*(2), 197-206. https://doi.org/10.21831/jppm.v3i2.10031

Sutapa, P., Prasetyo, Y., Arjuna, F., & Prihatanta, H. (2018). Differences of influence of playing playdough and puzzles on fine motorcycle skills and logical- mathematical intelligence in early childhood. *Proceedings of the 2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018) and 1st Conference on Interdisciplinary Approach in Sports (CoIS 2018),* 171-174. Atlantis press. https://doi.org/10.2991/yishpess-cois-18.2018.44

Tarigan, D. (2015). Pembelajaran discovery matematika di sekolah dasar. *Jurnal Pengabdian Kepada Masyarakat, 21*(79), 9-16.

Triharso, A. (2013). *Permainan kreatif & edukatif untuk anak usia dini* [Creative and educational games for early childhood] . CV Andi Offset.

Author(s):

*Tantri Ardianti (Corresponding Author)
Department of Basic Education, Faculty of Science Education,
State University of Surabaya,
Jl. Lidah Wetan Unesa Campus, Surabaya 60213, Indonesia
Email: tantri.19042@mhs.unesa.ac.id

Budi Purwoko
Department of Guidance and Counseling, Faculty of Science Education,
State University of Surabaya,
Jl. Lidah Wetan Unesa Campus, Surabaya 60213, Indonesia
Email: budipurwoko@unesa.ac.id

Umi Anugerah Izzati
Department of Psychology, Faculty of Science Education,
Surabaya State University,
Jl. Lidah Wetan Unesa Campus, Surabaya 60213, Indonesia
Email: umianugerah@unesa.ac.id