

THE EFFECT OF TRADITIONAL KITE GAMES ON EARLY CHILDHOOD MATHEMATICS DEVELOPMENT

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Abstract

Mathematikal development objects which tend to be abstract require an appropriate learning approach to be applied to young children whose cognitive development stage is still at the concrete operational stage. Based on this explanation, teaching mathematical concepts requires concrete objects and something that students can imagine so that the learning process is more optimal. Basically, the learning activities and learning outcomes of early childhood at RA Diponegoro 203 Gunungwetan, Jatilawang sub-district, Banyumas are still very low. To overcome this problem, mathematics learning is implemented through traditional kite media/games in order to increase student learning activities. The aim of the research is to determine the effect of kite games on the cognitive development of young children. The hypothesis put forward is that there is an influence of the kite on the cognitive development of early childhood. The data collection method uses primary and secondary methods with qualitative and quantitative data analysis. The research object was 23 children. The results of this research are important as a new study determine the cognitive development of early childhood

Keywords: Kite game, mathematical development of early childhood

INTRODUCTION

Mathematics is one of the disciplines that can improve the ability to think and argue, contribute to solving problems in daily life and in the world of work, and provide support in the development of science and technology. History with (Rusefendi - 1991) reveals that problem-solving is a very important ability, not only in the process of learning mathematics, but also necessary in daily life. Risdiyanti & Prahmana said that the essence of mathematics in every human activity should be related to human life. For example, the teacher introduced the concept of flat building as one of the materials that is closely related to daily life. Many of us find items around us that have a shape that resembles or even the same as a flat building, such as doors that are in the shape of a rectangle, plates that are in the shape of a circle, kites that are trapezoidal, triangular and so on. This kind of learning method will certainly make flat building materials more interesting and easy to understand for students. To apply the mathematics learning method in early childhood, one of them can be developed by associating cultural elements or traditional games or local wisdom that contain elements and values from education, culture, local personality and national character. So that its use as a learning medium is able to motivate students in learning mathematics. The use of local culture as mathematics learning is also very effective in improving children's cognitive abilities.

Mathematics is essentially a subject that is closely related to daily life. The purpose of learning mathematics is to learn the basic concepts of mathematics well so that students can develop and apply it to solving problems in daily life. Ruseffendi, 1991 revealed that problem solving is A very important ability, not only in the implementation of the mathematics learning process, but also necessary in daily life.¹

However, in general, mathematics learning is still conventional, namely lectures and questions and answers. So learning is still centered on the teacher (*teacher orianthed*), children tend to be passive and even play alone during learning as a result of the lack of active contribution of students in the learning process. If this happens, there will be no increase in mathematics learning activities and student learning outcomes are not as expected. Based on initial observations made at RA Diponegoro 203 Gunungwetan, Jatilawang Banyumas District, data was obtained that the level of children's mastery of mathematics subject matter was still low. This is based on the results of enrichment carried out by teachers through the activity of writing numbers, counting the number of objects, out of 23 children who were able to answer correctly, only 10 children.

To overcome these problems, teachers make improvements in the learning process, including by creating fun learning situations, encouraging activities, both by students themselves and with other students, and providing opportunities for students to find mathematical ideas and concepts in their own way, or with games that can stimulate children's interest in learning, of course, below teacher guidance. One of the children's development is basically related to the cognitive actions that have been taken, play is very important in development, this is because children are part of human beings who are always growing and

¹ Ruseffendi, 1991

developing. The quality of children's development in the future is greatly influenced by the stimulation obtained from an early age, one of the stimuli that can be seen is the type of children's play and the nature of the game itself can make students interested so that they are able to grow new ideas according to their imagination.

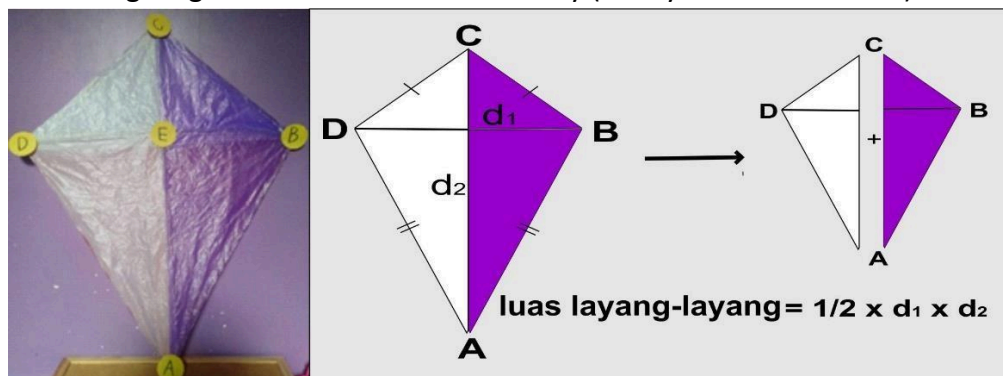
METHOD

The type of research used is this research method is class action (PTK). According to Hobri (3) PTK is an investigation or study to improve learning by making improvements or changes and studying the consequences in a systematic and planned manner. Arikanto, et al. also said that PTK is a type of research that describes the process and results, which conducts research in the classroom to improve the quality of learning. A population is a collection of all elements that are similar but distinguishable from each other (J. Supranto, 1994:15). The population in this case is all students of class B RA Diponegoro 203 Gunungwetan which totals 23 students, while the sample is part of the population (J. Supranto, 1994:15) this sample to meet the eligibility criteria is taken 100 percent of the total class B students of RA Diponegoro Gunungwetan which totals 23 students. The sampling was 100 percent because the total population was less than 100 students. There are two sources of data for this research, namely primary data sources and secondary data sources.

RESULTS AND DISCUSSION

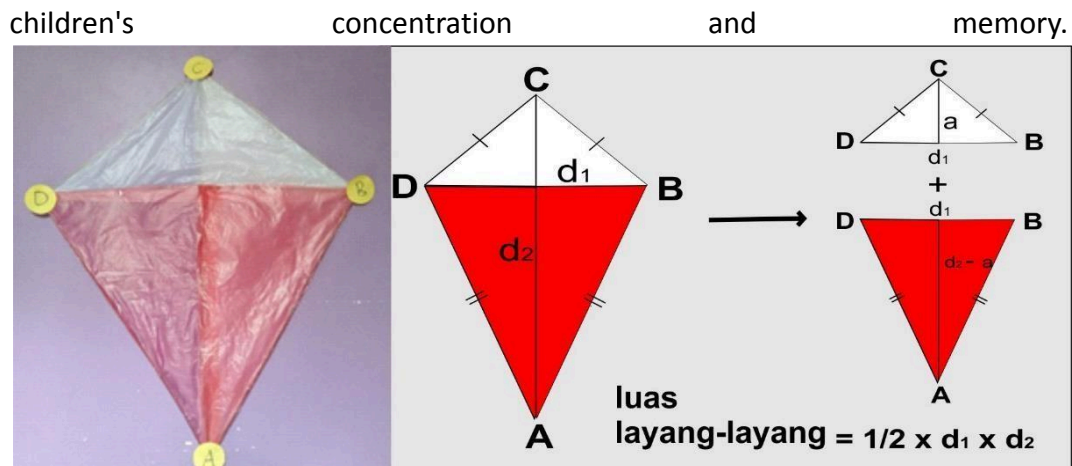
After conducting this research, that kite flying can develop mathematical aspects including:

1. Improve counting and counting skills: The kite game involves a rope used to tie a kite, This can help children develop counting and counting skills, measuring length and shortness in a fun way (Rahayu Kurniasih. 2021).



2. Practice logical and strategic thinking skills: In kite games, children need to plan the right steps to fly a kite by following the direction of the wind. This can train children's logical and strategic thinking skills. (Dina Fydarliani, 2021: 214 – 2923).

1. Improve concentration and memory: Children need to focus and remember the steps that have been done in the kite game. This can help improve



1. Based on the illustration in Figure 4 above, the kite area formula can be obtained as follows.
2. Kite building area = $L \triangle BCD + L \triangle ABD$
3. $= (\frac{1}{2} \times d_1 \times a) + (\frac{1}{2} \times d_1 \times (d_2 - a))$
4. $= \frac{1}{2} \times d_1 (a + (d_2 - a))$
5. $= \frac{1}{2} \times d_1 \times d_2$
6. $= \frac{1}{2} \times (\text{diagonal 1}) \times (\text{diagonal 2})$
7. So it can be concluded that the formula for the area of a kite flat building = $\frac{1}{2} \times (\text{diagonal 1}) \times (\text{diagonal 2})$

2. Develop social skills: Kite games are often played with friends, some are in control of the kite and hold the kite when flying the kite, so it can help children develop social skills such as cooperation, sharing, and respecting the rules of the game.

3. Encourage artistic creativity and imagination: Children can use kites for colorful paper to create interesting patterns or designs. This can encourage children's artistic creativity and imagination. Based on the results of the research, the traditional game of kites has mathematical elements presented on the kite skeleton. In the process of making kites=kites, estimates are needed related to the materials used such as how many bamboo blades are needed, how wide the plastic is used, and how long the thread is needed to fly the kite. Thus, the process of making kites can be used by educators in learning evaluation activities by providing contextual questions related to the process of making kites. In accordance with Freudenthal's opinion, 1991 that real phenomena in students' lives can be used as a source of mathematics learning, so that students can relate these phenomena to the concept of learning mathematics.²

In addition to having mathematical elements, indirectly

Kite games can also form characters. The character of students that can be developed through kite games is:

² Martyanti and4,2018

1. The value of cooperation, in the kite game, the value of cooperation can be seen in the flight process. Each has its own task, some are in charge of holding kites, and some are in charge of pulling kite threads so that kites can fly high. The value of cooperation in traditional games has a positive impact and plays a role in character formation.
2. The value of Never Giving Up, in playing kites can be seen in the flight process. They try hard and never give up to pull the thread so that the kite can fly high. Therefore, the kite game is directly able to instill the value of never giving up in students.
3. The Value of Skill, It can be seen that when playing a kite, not everyone can fly a kite well, so in a kite game it requires its own skills and techniques so that the kite can fly high.

The value of creativity and independence :d the process of making kites where children are invited to make their own kites according to their respective creations and creativity. Students' ideas can be expressed in making ornaments or choosing kite colors.

CONCLUSION

Based on the above explanation, in general, traditional games. Kites contain values and mathematical concepts, and can be used as a fun learning medium. Kite games have mathematical elements, so they can be used as a medium for learning mathematics, especially in kite flat building materials. In addition, it can also instill character values in students. Indirectly, children are also taught to love and preserve traditional game culture.

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