The Effectiveness of Adaptation Media Congklak Games Materials The Understanding OF The Concept of Numbers 1-10 of Children Aged 4-5 Years

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Abstract: This study aims to determine the effectiveness of the use of media adapted from the congklak games in the introduction of number symbols from 1-10 in children after 4-5 years in Karang Malang ABA Kindergarten Yogyakarta. This type of research is a quasi-experimental research. Subjects in this study all of students in class A group at Karang Malang ABA kindergarten as many as 2 classes. Data collection techniques in this study using structured observation obtained by Paired Sample t Test with a significance level of 0.000 <0.05 (sig. <0.05). These results indicate that the media adaptation of congklak games for children aged 4-5 years can stimulate children's cognitive understanding, especially in recognizing the symbol numbers 1-10.

Keywords: congklak board media, understanding the concept of number symbols 1-10, children aged 4-5 years

1. Introduction

The thinking about the number concept we think about for the first time is math. Mathematics is one type of knowledge that humans need in carrying out their daily lives. For example when going to the market we need to choose and calculate the number of items that we will buy. Knowledge of mathematics can actually be introduced to children from an early age both in the learning process in class or when learning at home with parents, and indirectly we can also introduce them to numbers, addition, division and subtraction.

Learning is a reciprocal relationship that occurs among the teacher and students along with the elements that exist in it so that there is a behavioral changing for students due to the learning process. Learning process in an educational system is a unity which is intact and cannot be separated with other learning components such as, the students themselves, the learning facility as well as the goals and results to be achieved.

In the current of globalization era, the development of science and technology rapidly. Teachers are expected to be motivated to make or develop a relevant media or teaching material by paying attention to those around us. The introduction of learning is not necessarily with technology to demand progress, but using simple and traditional games can also be done like playing congklak. Congklak is a traditional game performed by two people using congklak boards and 98 congklak seeds [1]. The game congklak has developmental aspects in children, namely psychomotor (training fine motor skills, emotional (training patience and accuracy), cognitive (training in analyzing and strategizing), social (establishing social contact with playmates), and training in sportsmanship [2].

In early childhood education, especially in the introduction of number symbols can be done considering that children will continue their education to a higher level, then the child should be introduced to the basic numbers from 1-10 at the age of 4-5 years, why is it limited to 1-10 considering the Ministry of National Education (2007) regulations regarding the principles of preliminary counting must be carried out in stages and adapted to the child's age development level. Hamzah & Nurdin (2011) states that a lesson can be said to be effective if the learning process has been planned to generate the learning process. Effectiveness is an effort that
is used to achieve predetermined goals, as needed, and appropriate for the available facilities and time provided to get maximum results [3].

Given the age of the child, it will be easier to provide learning with things they like and at the same time introduce children to traditional games that have been shifted by the increasingly sophisticated technology. It is better to introduce the concept of numbers to children through games that are adapted from congklak and teach what is true and slowly instill a sense of love for the game of the people themselves.

The purpose of this study was to determine the effectiveness of the use of media adapted from the game congklak for children aged 4-5 years in introducing symbols of numbers in early childhood.

2. Method

This type of study is a quasi-experimental research because not all variables that appear and experimental conditions can be strictly regulated and controlled. The research subjects here are all students in group A aged 4-5 years at ABA Karang Malang Kindergarten, Sleman, Yogyakarta.

The independent variable in this study is the media of congklak adaptation and the dependent variable is the understanding of the symbol of numbers by students. Because there is no control class and there is only an experimental class, all students get treatment because they use the same subject in determining the results. The research design can be seen in table 1 below.

<table>
<thead>
<tr>
<th>Class</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Y1 Y2 X1 Y3 Y4 X2 Y5 Y6 X3</td>
</tr>
<tr>
<td>B</td>
<td>Y1 Y2 X1 Y3 Y4 X2 Y5 Y6 X3</td>
</tr>
</tbody>
</table>

Table 1. Research design

Data collection techniques used are non-test techniques to measure the effectiveness of students in the classroom. Before the treatment is given to students who will be the target of the study, the instrument has been validated by experts in their field and carried out the pre-observation stage before testing the students, and making repeated observations. Data analysis was conducted to test the hypothesis of this study.

Analysis of the data used in this study is Paired Sample t Test using SPSS 20 program. This test aims to see the difference from the first treatment to the end.

3. Result

Learning outcomes of students is a behavior change that includes cognitive, affective and psychomotor aspects [4]. Learning outcomes obtained by students will be used as a reference to see the achievement of the planned learning goals. From the learning outcomes obtained by students too, the teacher can provide an evaluation of the methods used during learning, so that the teacher can correct errors that occur during the learning process.

Media adaptation game congklak is a simple learning facility to support the activities of teachers and students in the classroom. Facilities in the media adaptation game congklak provide convenience for teachers in providing material and tasks to students. With the congklak game adapting media, students can also increase students' knowledge about the material being taught and measure the extent of their ability and understanding of the material taught through the figures on the media board. This media can also be used as an additional reference that is used in addition to teaching students about numbers as well as traditional games.

Based on the research that has been done, then get the pretest and posttest scores on student activities such as table 2.

<table>
<thead>
<tr>
<th>Table 2. pretest postest</th>
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<tbody>
<tr>
<td>Paired Samples Statistics</td>
</tr>
<tr>
<td>Mean</td>
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<tr>
<td>pretest</td>
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<td>posttest</td>
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<tr>
<td>Paired Samples Correlations</td>
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<tr>
<td>N</td>
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<tr>
<td>pretest &amp; posttest</td>
</tr>
</tbody>
</table>

The average group pre-test score of the experimental class A class is 25.22, while for the test post class the experimental class is 31.00. It can be seen that the posttest value has increased from the pre-test value using congklak board media, with a significance level of 0.000 <0.05 (sig. <0.05).
4. **Discussion**

Based on the hypothesis test conducted, it is known that the Asymp value, Sig. (2-tailed) which is 0,000 <\( p \), that is 0,000 <0.05. So it can be concluded that there is a difference between learning using the media adaptation game Congklak and learning commonly used by teachers. This is in line with the research conducted by [5] that learning using traditional learning media can improve students' numeracy skills, with a significance level of 0.000 <0.05.

Based on the results of the study, the differences in the learning outcomes of students are influenced by the use of media adaptation game that adjusts to the child's age with the things he likes and is packed with interesting and slightly different from the original, combined with attractive colors, numeric drawings, and media boards. Because the combination causes students to become more interested in learning.

5. **Conclusion**

Based on the research that has been done, it can be concluded that using learning media adaptation game congklak can streamline the learning outcomes of students aged 4-5 years on the introduction of number symbols. Based on this, the media adaptation game congklak can be used as an additional media that can be played by students outside of school hours to increase students' insight into the material taught at school.

**References**


