**The Use of Block Media in Children Aged 4-5 Years is Increasing Skills for Recognizing Numbers and Simple Additions**Juniaty [✉], Sri Linawati

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Abstract

Learning media is very important to use in delivering learning material. Children age 4-5 years are in the Preoperational period, where children begin to think abstractly, but not logically, therefore children need learning media to understand abstract concepts such as numbers in mathematics. Blocks are one of the learning media available in schools, but not many teachers have used blocks media optimally, even though blocks can be used in mathematics learning. In the first semester, the understanding of numerical recognition and simple addition skills of K1 children in XYZ school were low. The researcher used blocks as the learning media in an effort to improve numerical recognition skills and simple addition. The research method used in the "Classroom Action Research" is the Kemmis and Taggart model. The purpose of this study was to improve the ability to recognize numbers and simple addition of children 4-5 years, using blocks media in their learning. The Classroom Action Research conducted with three cycles showed an increase in numerical recognition skills from pre-cycle with a percentage of 61.45%, increasing to 89.76% in cycle III. Simple addition skills were known at the pre-cycle of 64.58%, increasing to 86.68% in cycle III. From the research conducted, the researcher found that blocks media can improve the skills of recognizing numbers and simple addition of children age 4-5 years.

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INTRODUCTION

The researcher found a problem in the ability to recognize numbers and simple addition in K1, XYZ school, and it was reinforced by the pre-cycle tests conducted by researchers and class teachers. The pre-cycle test of the ability to recognize the number of K1 children was conducted on Friday, January 18th, 2019 in the classroom, the researcher with 2 class teachers, the result of which was an average percentage of grade grades of 61.45%, included in the UD (Undeveloped). Pre-cycle test for simple addition of kindergarten children A was conducted on Monday, January 21st, 2019 in the hall, with 3 class teachers (include researcher), the result of which the average class skills in simple addition 1-10 was 64.58%, entered in the UD (Undeveloped) category. Based on the background above there are problems that can be identified, namely; the average ability to recognize numbers 1-20 and simple addition 1-10 of K1 children is still low / less (below 70%), also the teachers lack the use of appropriate learning media.

In delivering learning material, learning media are needed, so that children can easily capture learning material from the teacher. The selection and use of appropriate learning media will greatly support children in learning. Many recent studies have shown the influence of the media on the development of cognition (Yaumi, 2018: 12). Some of the benefits of using learning media for students, including; children can be more excited and passionate about learning, because they can interact directly, learning to show their understanding by using media blocks. With learning media can clarify information or learning material from the teacher, especially for children in the Pre-operational stage, as well as equalizing perceptions and experiences among students (Wardaya and Sumartini, 2017: 49).

Sarama and Clement's opinion, 2009 written in the research of Reid and Andrews said that children aged four and a half years can count up to 20 even more accurately (Reid and Andrews, 2016: 4). Therefore, the variable

recognizes the number in children aged four to five years in this study using the numbers one to twenty. Murray & Mayer, 1988 said that children's understanding of the concept of numbers is built by repetition, especially during the early pre-school year (Henniger, 2009: 393).

The definition of addition according to the Department for children, schools and families (2009: 26), namely: Addition is when counting two groups, with a question, 'How much do we have together?' Overall the keywords to use in the teaching of simple addition. Cross et al., 2009: 32 explains the meaning of addition in his Mathematics Learning in Early Childhood are: Addition is linking the amount before after the combination to connect the sum in parts and totals, or to say exactly how the two numbers compare. From the meaning of the summation above it can be concluded that the simple addition is the addition of small numbers before (... + 4) or after (2 + ...), associated with the total value (2 + 4 = 6).

The teacher chooses the block media used in the game, in an effort to improve children's skills in recognizing numbers 1-20 and a simple addition of 1-10. Early childhood learning should be done with thematic and holistic games (Wardaya and Sumartini, 2017: 101). Seeing the importance of recognizing the concepts of symbol numbers and simple addition for children aged 4-5 years, it is necessary to find appropriate and fun learning media for children.

RESEARCH METHOD

Researchers used a class action research model Kemmis and Mc.Taagart, which was carried out in three cycles. The subjects in this study were kindergarten children in XYZ school in Central Jakarta. At the time of the study, the observer collected data using an assessment sheet based on the rubric that was made, interviews with students, observers and collaborators, field notes and documentation. Researchers validate by triangulation, namely by examining the truth of hypotheses, analysis from researchers and partners.

There are four stages in one cycle in classroom action research with Kemmis and Mc.Taagart's model, namely Planning (Plan), where the researcher compiles a questioning strategy or learning activity in what way to apply, the second is Actions (Act), which the researcher proposes questions that encourage students to say or do what they already understand, the third Observation (Observe), where observations are made by recording students' questions and answers and the fourth is Reflection (Reflect), where reflection is useful to see the results of actions what is done, and see what things need to be improved, so that it can be a reference for planning (plan) in the next cycle (Wiriaatmadja, 2009: 66-67).

The research will be conducted in Kindergarten 1, XYZ school, located in Central Jakarta. The time of the research is 1 semester, in the second semester of the 2018-2019 school year. The research subjects who studied were K1 students, at XYZ school, with 12 students in one class, consisting of 4 girls and 8 boys. Data sources came from students, teachers, and partners. (Kunandar 2013: 123). Data collection instruments are tests, observations, and discussions (Kunandar, 2013: 126, 186). Data collection techniques used in this study are test and observation. The research instrument used in the observation is an observation sheet that is about indicators using media blocks to improve the skills for recognizing numbers and simple addition. The researcher use 1. checklist (Syafitri et al., 2018: 199), 2. documentation / photos. Photos which are used in the form are photographs taken in the teaching and learning process (Syafitri et al., 2018: 199) and 3. discussions between teachers and partners which are carried out to reflect the results of the classroom action research cycle by analyzing checklists on the rubric/sheet of observations that have been made and looking at other documentation (Kunandar 2013: 126, 186).

The indicators used to measure how children recognize number 1-20 (Anwar, 2017: 207-210); are children able to identify numbers 1-20, children able to mention numbers 1-20, children able to find numbers 1-20. The

indicators are used in the cognitive domain: memorizing, with keywords; recognizing, mentioning and rediscovering. The indicators of simple addition 1-10 skills are; First, children can apply the concept of the simple addition of the 'result unknown'. Second, children can apply the concept of simple addition 'change unknown', and the third, children can apply the concept of simple addition 'start unknown'. Indicators that are used in the cognitive domain is applying concept with keywords applying in the simple addition .

The stages used in analyzing data are; 1) make the indicators in the rubric as a reference for assessment, 2) fill the score 1-4 on the score sheet, 3) calculate the average and write a conclusion about the development of student skills with a scale of 1-4, 5) write conclusions about the development of student skills in 1-4 scale and 5) calculating the average percentage of students' material assignments on a scale of 1-4. (Kunandar, 2013: 264).

RESULTS AND DISCUSSION

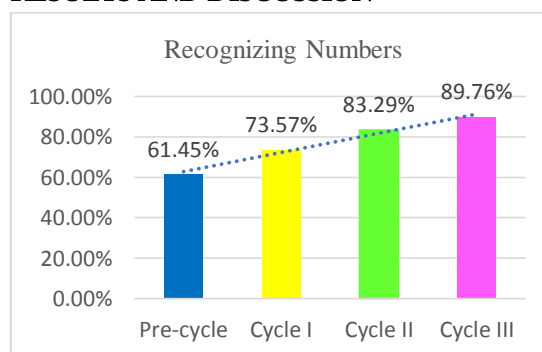


Figure 1. Skills Assessment to Know Figures 1-20 Pre-cycle, Cycle I, Cycle II and Cycle III.

Figure 1 proofs the development of skills in recognizing numbers 1-20 children of K1, starting from Pre-Cycle, Cycle 1, Cycle II and Cycle III. Whereas in Figure 2 can be seen the development of simple addition skills 1-10 children of K1, starting from Pre-Cycle, Cycle I, Cycle II and Cycle III, where both developments are described below. Pre cycle description of the skills to recognize K1 children performed on Monday, January 21st, 2019 in the classroom, the researcher with 2 class

teachers. In the Pre-cycle, the average of K1 class in recognizing the numbers 1-20 is only 61.45%, this is said to be lacking, because it is still below 70%, while the pre-cycle results of simple addition skills 1-10 indicate the average percentage children 64.58%, included in the UD criteria (Undeveloped). From these results, the researcher decided to conduct classroom action research using the block as a media of learning.

Description of the first cycle of classroom action research, the skills to recognize numbers with an average percentage of class abilities of 73.57% are included in the criteria included in the SD (Still Developing) criteria, the results of the simple summation ability study of Cycle I amounted to 72.57%, included in the SD (Still Developing), therefore researchers continued their research in cycle II.

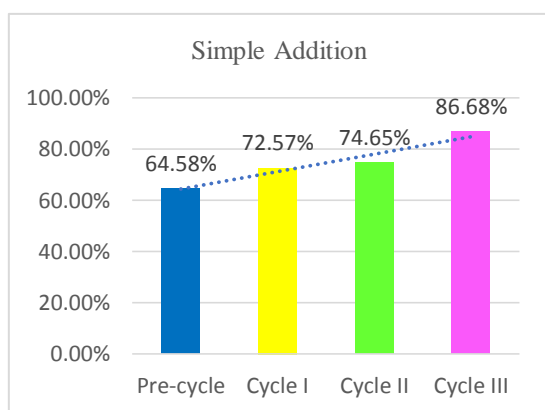


Figure 2. Percentage of Simple Addition Skills Ratings 1-10 Pre-cycle, Cycle I, Cycle II and Cycle III

Cycle II aims to improve the skills to recognize numbers was performed on Monday, April 15th, 2019, in the school hall. The results of the second cycle research is the average of K1 scores in recognizing the number 1-20 is 83.29%, can be categorized as DAE (Develop as Expected) while the average results of the class in simple addition 1-10 was 74.65%, can be categorized as SD (Still Developing). The target of children's development to be achieved by researcher is DAE (Develop as Expected) with a percentage of 80% - 89%, this target has not been achieved in Cycle II, so the researcher continued their research in Cycle III.

Description of the Cycle III classroom action research conducted on Tuesday, April 23rd, 2019, in the school hall. The result of cycle III gets the average percentage of skills to recognize the number 1-20 increased to 89.76%, therefore, the percentage of children's skills in simple addition 1-10 in Cycle III include in the criteria of VWD (Very Well Developed), with the percentage 86.68%.

CONCLUSION

Learning using block media can improve the skills of recognizing numbers 1-20 and can improve simple addition skills 1-10 in children aged 4-5 years. It can be concluded that the choice of media in learning in the classroom and the ability to integrate it with games influences the success of the teacher in delivering learning material to children aged 4-5 years.

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