IMPROVEMENT ABILITY TO KNOWING NUMBER CONCEPTS THROUGH INTERACTIVE VIDEO MEDIA FOR CHILDREN AGED 5-6 YEARS IN PUBLIC KINDERGARTEN PEMBINA 1 PALEMBANG

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Abstract

This study aims to improve the ability to knowing number concepts through interactive video media for children aged 5-6 years in Public Kindergarten Pembina 1 Palembang. The method used is a classroom action research method developed by Kemmis and Taggart. The action is carried out in two cycles. Each cycle consists of stages of planning, action, observation, and reflection. Data collection techniques are observation, documentation, and tests. The subject of this study consisted of 20 students aged 5-6 years. Research data analysis was obtained based on increasing the ability to recognize the concept of student numbers from pre-action to cycle II. There are a number of students who get a score with minimum criteria of developing according to expectations (BSH) in the pre cycle of 5 students (25%), the first cycle as many as 9 students (45%), and in the second cycle as many as 16 students (80%). This is evidenced by the achievement of indicators by students in sorting numbers 1-20 and calculating the number of numbers, so that an increase of 35% occurs. The results show that the use of interactive video media can improve the ability to recognize the concept of student numbers.

INTRODUCTION

Learning mathematics is very important for human life, because mathematics is influenced by the socio-cultural context. Without realizing it, activities that are usually done every day are closely related to mathematics. Learning mathematics to students must go through the stages, cannot be taught at once. Therefore, mathematics learning needs to be applied early which can be started from the introduction of the number concept such as sorting the numbers up to counting the sums that correspond to the level of achievement or characteristics of students. However, many students experience difficulties in learning the mathematical concepts. One of them, because mathematics has an abstract nature, while according to Piaget states that children aged 5-6 years are included in the preoperational stage (Tabany, 2015: 31). At this stage, students use symbolic abilities, egocentric thinking, and are central (centered). Therefore, it is necessary to use mathematics learning media that can attract students' attention to learn it.

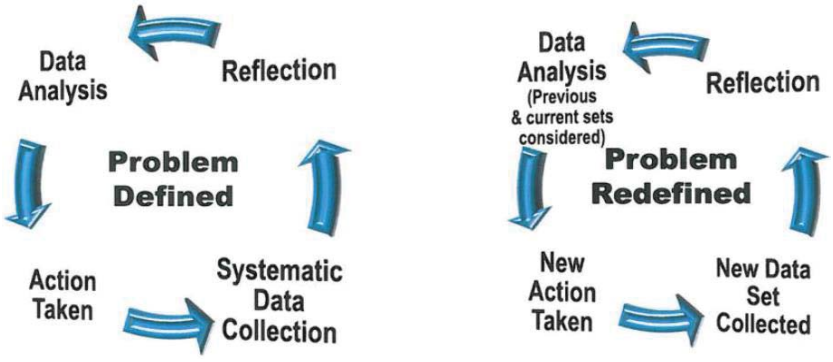
Media is closely related to the teaching and learning process in schools. Educators must be good at choosing and using the media so that they can cover many aspects of development. Good learning media must fulfill several conditions, namely learning media must increase learner motivation, the use of media has the purpose of providing motivation to learners, and the media must also stimulate learners to remember what they have learned in addition to providing new stimuli (Khuzaini & Santosa, 2016:

88). Educators also need to integrate learning media with emerging technologies. This integration aims to improve the quality of education in order to face global challenges and the progress of the times in the milenial era. Educators can utilize technology in the form of interactive video media in introducing the concept of numbers to students. Based on relevant research conducted by Wilis, Weiser, and Kirkwood (2014: 140) states that technology can be used to encourage children to engage in learning activities and support the development of children aged 3-6 years. Educators must be good at choosing learning media that can develop cognitive, physical-motoric, language, social-emotional, religious, and moral aspects of students.

The observation results that the researchers found showed that the teacher had not maximally utilized the learning media. Teachers tend to use boring media in mathematics learning. Students are less facilitated with media that can support the learning process. Schools have computer facilities, but are not used optimally. In fact, students are very enthusiastic when learning using these facilities. Almost most students do not know the concept of numbers, from 20 students there are only 5 students who can recognize the concept of numbers correctly. Students do not know the concept of numbers related to sort numbers 1-20 and calculate the number of numbers. Based on these problems, an effort is needed to improve the ability to recognize number concepts through interactive video media for children aged 5-6 years in Public Kindergarten Pembina 1 Palembang.

METHOD

This study uses action research methods. Kemmis and McTaggart stated that, action research deliberate, solution-oriented investigation that is group or personally owned and conducted (1988). It is characterized by spiralling cycles of problem identification, systematic data, collection, reflection, analysis, data driven action taken, and finally problem redefinition.



Picture 1. Kemmis and McTaggart model

Action research is a process in which participants examine their own educational practice systematically and carefully, using the techniques of research (Ferrance, 2000: 1). This method is participatory and collaborative. The qualitative approach describes the events carried out in the study, so that they get a complete picture and explanation in the implementation of action research. The implementation of the action can be said to be

successful if it reaches the expected target of students who get the minimum success criteria to develop according to expectations (BSH) with a percentage of 75%. Data collection techniques are observation, documentation, and tests. This research instrument is intended to determine the ability to recognize the concept of numbers in children aged 5-6 years. Data sources come from 20 students aged 5-6 years in Public Kindergarten Pembina 1 Palembang.

Table 1. Score observation category

Category	Score
Develop very well (BSB)	4
Developing according to expectation (BSH)	3
Start developing (MB)	2
Undeveloped (BB)	1

RESULTS AND DISCUSSION

The results of the study after learning activities recognize the concept of numbers given action through the use of interactive video media, there is an increase in the ability to recognize the number concept gradually from pre cycle to cycle I and from cycle I to cycle II. Based on the results of observations in the pre cycle, there were only 5 students from 20 students or equal to the percentage of 25% of students who got a score with a minimum criteria developing according to expectations (BSH) on the ability to recognize the concept of numbers.

Furthermore, researchers and collaborators develop strategies to use interactive video media in learning to recognize the concept of numbers. Giving action in the first cycle lasts for 3 meetings. During 3 meetings, students learn the concept of numbers through the use of interactive videos. The results obtained in the first cycle there are an increase in scores on students as many as 9 students from 20 students or equal to a percentage of 45% of students who get a score with a minimum criteria developing according to expectations (BSH) on the ability to recognize the concept of numbers after getting action in the form of video media use interactive. Increased scores on students due to the use of instructional media in the form of interactive video media that can be attract the attention and enthusiasm of students in learning the concept of numbers. Students really pay attention to the teacher who is explaining the concept of numbers.

In the first cycle, students have not achieved the expected score of 75%, so it is necessary to have a second cycle to improve cycle I which shows that this action research has not reached the completeness score. This is because the teacher only uses 1 laptop in introducing the concept of numbers to students, so there are some students who do not get the opportunity to use a laptop directly. Researchers and collaborators also experience problems when using interactive video media in class, because less prepared the right strategy steps for students.

Picture 1. Teacher teaching a number concept for students

In cycle II, researchers and collaborators added 3 laptops in the classroom, so the total laptop used was 4 laptops. Researchers and collaborators also prepare more strategic steps derived from Lev Vygotsky's theory of scaffolding. Vygotsky believed that the most fruitful experience in a child's education is his or her collaboration with more skilled partners. He asserted that the more experienced partner provides help in the way of an intellectual scaffold, which allows the less experienced learner to accomplish more complex tasks than may be possible alone (Meggitt, 2006: 158). Scaffolding is usually conceptualized in terms of informational or coordinative supportive behaviors that one or more person engages in for the benefit of another, usually an infant or child. The function that these supportive behaviors serve, however, is generally left at a fairly intuitive level of understanding, without much of an explicit model. According Bickhard, the intuition is basically that scaffolding by others allows the child to accomplish tasks that he or she might otherwise be unable to accomplish (Winegar & Valsiner, 1992: 33). Adults provide assistance in the early stages of student development and reduce assistance and provide opportunities for students to take on increasingly large responsibilities, after students are able to do it independently.

Picture 2. Some students waiting to use laptop

Scaffolding is a series of directives, guidance, support, motivation, and / or instructions given by parents, teachers, and others who are around students to do a task so students can complete their own tasks. Lev Vygotsky described this process as working within the child's zone of proximal development. When working within the child's zone, the adult takes into account the current dynamic state of a child's developmental capacity and then facilities that process by offering the necessary supports so that the child can achieve success. Vygotsky believed that "the only 'good learning' is that which is in advance of development", such that learning must precede development. Other more static models of learning only for what a child has already mastered and do not view learning as preceding a child's development (Justice & Sofka, 2010: 144). Scaffolding has particular features:

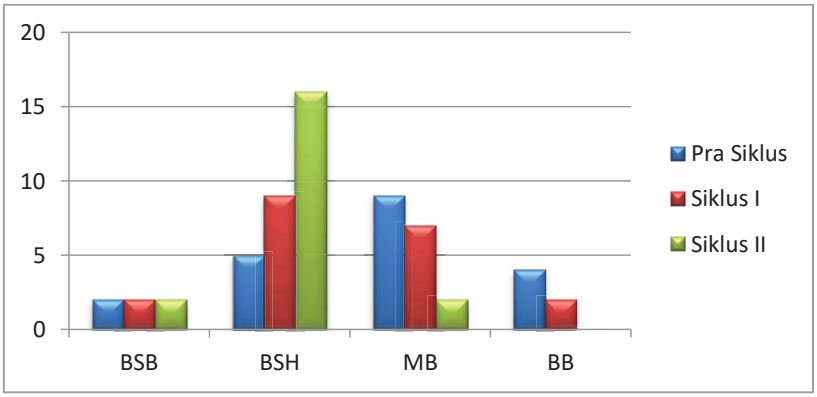
Table 2. Features of scaffolding

Features	Activities
Recruitment	The teacher's first task is to engage the interest of the student and to encourage him or her to tackle the requirements of the task.
Reduction of degrees of freedom	The teacher has to simplify the task by reducing the number of actions required to reach a solution. The student needs to be able to see whether or not he or she achieved a fit with the task requirements.
Direction maintenance	The teacher needs to maintain the student's motivation. At first, the student will be looking to the adult for encouragement; eventually, problem-solving should become interesting in its own right.
Marking critical features	The teacher highlights features of the task that are relevant; this provides information about any inconsistencies between what the student has constructed and what he or she would perceive as a correct construction.
Demonstration	Modelling solutions to the task involves completion of a task or explanation of a solution already partly constructed by the student. The aim is that the student will imitate this in an improved form.

The results obtained in cycle II are there is an increase in scores on students as many as 16 students from 20 students or equal to the percentage of 80% of students who get a score with a minimum criteria developing according to expectations (BSH) on the ability to recognize the concept of numbers. Increased scores on students due to the process of use instructional media in the form of interactive videos used scaffolding. In this cycle, students have passed the score expected by researchers and collaborators by 75%, so this research can be said to be successful.

Picture 3. Teachers use some laptops for students

The results from data collected during the pre-action activities, cycle I, and cycle II can be concluded that the ability to recognize the number concepts of children aged 5-6 years in Public Kindergarten Pembina 1 Palembang increases after using interactive video media as evidenced by an increase in percentage in each aspect, namely ability to sort numbers 1-20 and calculate the number of numbers reaching 25% in the pre cycle, then 45% in the first cycle, and the last 80% in the second cycle.



Picture 4. Result of research

CONCLUSION

Based on the results of the study it can be concluded that through interactive video media can improve the ability to recognize the concept of numbers in children aged 5-6 years in Public Kindergarten Pembina 1 Palembang. The results of the analysis show that there is a significant increase in scores in cycle I and cycle II. There are a number of students who get a score with minimum criteria developing according to expectations (BSH) in the first cycle as many as 9 students (45%) while in the second cycle there are 16 students (80%). This is evidenced by the achievement of an indicator of the ability to recognize the number concept which consists of the ability to sort numbers 1-20 and calculate the number of numbers.

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