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MATH LEARNING THROUGH ETHNOMATHEMATIC APPROACH AS EFFORT TO INCREASE THE QUALITY OF STUDENT LEARNING OF PRIMARY SCHOOL

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Abstract

Ethnomathematics approach was one form of learning approach based on the existing culture in the environment. The ethnomathematics referred to in this study was the use of Javanese size units applied to the unit material of length and weight. By using this ethnomathematics approach, students were expected to better understand the learning materials quickly, this was because they are used to hear or even use it in everyday life. The purpose of this study was to improve the quality of primary school students' learning, especially in mathematics subjects. This research was a classroom action research conducted with two cycles. Each cycle consists of planning, implementation, observation, and reflection. Data collection method used in this research was the method of documentation and test. The result of this research was by using the approach of ethnomathematics, the ability of students to learn faster and more precisely so that the effect on the students' learning result is increasing.

Keyword: Ethnomathematics, Math Learning, Primary School

INTRODUCTION

Increasing Human Resources (HR) is one form of development objectives in Indonesia. This increase in human resources is closely related to education. Through education, people will learn and learn many things, both through formal education, nonformal, and informal. Elementary School (SD) is one of the formal education at the low level. The grade level in elementary school can be divided into two, namely low and high class.

The low class consists of classes one, two, and three, while the high class consists of classes four, five, and six (Supandi, 1992: 44). Vulnerable age of elementary school children is 6 to 12 years, so the age of low-grade elementary school children is 6 to 9 years. This age is a short but very important time for a person's life. Therefore, at this time all the abilities that children have to be encouraged so that will develop optimally.

Education and culture are two things that have strong bonds. Both support each other and complement each other. It can be said if the cultured person is an educated person, and vice versa. Education and culture have a very important role in nurturing the values of the nation that impact on the formation of characters based on the noble cultural values.

The 2013 curriculum at elementary level (SD) learning materials is no longer partially taught but is taught integratively thematically. In addition, almost all learning materials are linked to the existing culture in the country. In the learning process, especially integrative thematic, all forms of objects can be used as learning resources. Examples of cultures that can be used are the local culture of the Java-based unit of measure. The unit of measure on the Javanese count is used as part of the mathematical learning, especially on the unit length and weight. Where from the utilization of the unit of measure, students are asked to measure some objects using the unit of measure of Java. The unit of measure in question is the unit of length kilan, a unit area of the box, and units of crooked area.

When local cultures, mathematics, and education are combined like such long unit learning, the mixing is often called ethnomathematics (Walle, 2008: 104).

Ethnomathematics is a mathematical practice practiced by cultural groups such as urban and rural communities, labor groups, children of certain age groups, other societies (D'Ambrioso in Budiarto, 2015: 2). For example, the results of ethnomathematics studies of Liphka and AndrewIrkhe (2009) that examine the concept of geometry in the culture of Yup'ik Dora in Alaska.

Culture used in this study is a local culture that is commonly used in the environment of learners. Because it is common, then this ethnomathematics approach tends to be more acceptable to learners than using other theoretical approaches. For example in the use of units of 'kilan', kilan is a form of long size using one hand that is opened wide-width.

METHODOLOGY

This research uses Classroom Action Research (PTK) which focuses on the classroom situation or called Classroom Action Research. This classroom action research will be carried out in a participative collaborative way, ie research by collaborating collaboratively between teacher and researcher. The process of action undertaken in this research has strived for the problems that occur can be resolved, as well as to improve the quality of learning.

The subjects of this study are the students of grade V of elementary school. The object of this classroom action research is the application of mathematics learning through the approach of ethnomathematics as an effort to improve the quality of learning of elementary school students. This research is carried out with four stages of planning, implementation, observation (observation), and reflection.

In this research, data collection method used is; (1) The method of observation, is a complex process, a process composed of various biological and psychological processes. Observation method is used to collect data by conducting direct observation on the activities of learners in the implementation process using video media; (2) test methods, a set of stimuli (stimuli) that get answers that can be used as a basis for determining the score of numbers. This test method is used to determine student learning outcomes before and after applying treatment; (3) documentation method, which is looking for data about things or variables such as notes, books, transcripts, magazine newspaper, inscriptions, meeting minutes, leggers, agenda and so on. This method is used to obtain data about the ins and outs of learning both before and during research conducted such as syllabus, RPP, and the list of student names.

The data obtained from the research through data collection methods and then processed with descriptive analysis to describe the state of improvement achievement of success indicators of each cycle and to describe the success of learning mathematics subjects. The data in the form of numbers are processed quantitatively and presented in the form of numbers. The instrument used in this study in accordance with data collection methods, for observational methods of researchers using the observation sheet, and for the test method the researcher uses the problem.

RESULT AND DISCUSSION

Pre Cycle Results

At this stage, the researcher first performs the initial observation with the aim of knowing the results of learning mathematics students. Researchers observed learning activities undertaken by teachers. From the results of observation can be in the know that the teaching-learning activities have not used the approach of ethnomathematics, learning using lecture and question and answer method. Of the 18 students, there were 11 students who had not reached the established KKM score of 75, so from the initial data can be said that the improvement of the quality of learning has not been successful. Based on the above data, it is necessary to take action, one of them by using ethnomathematics approach. Determination of learning mastery based on

success indicator, that is reaching value 75,0 as minimum learning mastery limit and average class is 72,2.

Results of Cycle I

Cycle I is implemented for 2 x 35 minutes or 1 meeting. The planning of the action of the cycle I is done by teacher and researcher by discussing to make the action plan and learning scenario that will be used in the implementation of action cycle I. After that done the implementation of the action. The actions taken in the classroom are tailored to the lesson plans prepared in the lesson plan. From the implementation of the cycle, I obtained data on student learning outcomes that experienced complete learning as many as 12 children from 18 children (66.67%) with average class 76.3. In cycle I already seen students start enthusiastically follow the learning because in the learning activities of students using the approach of ethnomathematics, but there are still some students who are still not interested in studying. Based on the results, only 66.67% of students complete the study, so it needs to be done Cycle II.

Results Cycle II

The results in cycle I have not met the indicators of achievement so that it is continued in cycle II. Cycle II is the result of reflection from cycle I, that is done improvement in learning stage to be better. Learning outcomes obtained in the second cycle of students who achieve the scores of 16 students with a percentage of 88.89% and the average class is 85.1. From the result of cycle II, the achievement indicator has been reached so that it does not need to be continued in cycle III. After Cycle I and Cycle II are done, the comparison of the percentage of learning result completeness in each cycle is as follows.

Table 1 - Comparison of Exhaustiveness Learning in Pre-Cycle, Cycle I, Cycle II

	Pre Cycle	Cycle I	Cycle II
Percentage of mastery	38,89%	66,67%	88,89%
Average grade	72,2	76,3	85,1

Table 1 shows that there is an increase in learning outcomes from pre-cycle, the cycle I and cycle II. This can be seen in the increasing percentage of learning mastery. Ethnomathematics is a form of integration between learning mathematics and culture. Culture used in this study is a local culture that is commonly used in the environment of learners. Because it is common, then this ethnomathematics approach tends to be more acceptable to learners than using other theoretical approaches. For example in the use of units of 'kilan', kilan is a form of long size using one hand that is opened wide-width. This unit is commonly used in everyday life and is a local culture. Thus, the results obtained in this study are consistent with hypotheses based on theoretical framework.

CONCLUSION

From the results of research that has been carried out concluded that the application of ethnomathematics approach in learning mathematics has increased in learning outcomes so that the quality of learning is also increased. Learning activities are fun and meaningful, the interaction between teachers and students or students with students becomes more active. Students are very happy with the approach used, and the continuous learning development is done by the students. Improved learning outcomes can be seen from the increase in the percentage of mastery as well as the average class. The percentage of completeness in the precycle was 38.89% and in the first cycle increased by 27.78% to 66.67%.

Percentage of completeness from cycle I to cycle II also increased by 22.22% to 88.89%. In addition to the percentage of mastery that has increased, the average class also increased in each cycle. The average class in the pre-cycle of 72.2 increased by 4.1 to 76.3. While in cycle II average of 85.1. The average class from cycle I to cycle II increased by 8.8.

SUGGESTION

Based on these results, researchers suggest the application of mathematics learning through ethnomathematics approach to be a reference in developing innovative and creative learning, more active and motivated educators to implementation other learning approaches in accordance with learning objectives. In addition, students who act as the successor of this nation will not forget the local culture that has been grounded from before they were born so it is indispensable learning based on the local culture that its use is tailored to the purpose of learning.

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