



LITERATURE STUDY ON ELEMENTARY ETHNOMATHEMATICS FOR MATHEMATICAL LITERACY

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ABSTRACT

This scientific work aims to collect literature related to ethnomathematics models in elementary schools to provide mathematical literacy which is expected to be a learning reference for educators/teachers and students in improving students' mathematics learning outcomes which are managed from various kinds of information, such as: books, journals, articles, other scientific works. In this study, 5 (five) published journals were taken so that the data or theory presented was sufficiently strong and clear. The method used in this scientific work is library research where library research is used to collect various data sources or theories that support the formation of this scientific work.

INTRODUCTION

In the midst of developments in educational technology, the current education curriculum has attempted to process education so that it is closer and more flexible for educators and students. Therefore, the government recommends cultural involvement in learning in schools with the aim that students become a generation with character, able to support and preserve culture as the basis of national character. The importance of instilling cultural values in each individual should be nurtured from an early age, so that everyone can better understand, interpret, appreciate and realize the importance of cultural values in every life activity. The transmission of cultural values has surrounded daily life starting from life in the family environment, in education and of course in society. Culture describes the characteristics of a nation, and Indonesia is a country rich in

culture. Cultural practices that have blended into everyday life allow immersion in mathematical concepts and provide the view that everyone can develop a special way of understanding and solving mathematical problems which is called ethnomathematics. According to Barton in Fajriah (2018) Ethnomatematics is a program that aims to learn how students can understand, articulate, process, and finally use mathematical ideas, concepts, and practices that can solve problems related to their daily activities. Cultural practices that have blended into everyday life allow immersion in mathematical concepts and provide the view that everyone can develop a special way of understanding and solving mathematical problems which is called ethnomathematics.

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The aim of ethnomathematics is to recognize that there are different ways of doing mathematics taking into account the academic mathematical knowledge developed by different sectors of society and taking into account the different modes in which different cultures negotiate their mathematical practices (how to classify, calculate, measure, design building or tools, playing and others) Fajriah in D'Ambrosio (2001). Ethnomatematics raises cultural wisdom so that it can motivate students in learning mathematics. In learning mathematics, there are several abilities that affect student achievement. Among these mathematical abilities is the ability of mathematical literacy Mathematical literacy is the knowledge to know and apply basic mathematics every day (Ojose, 2011). the basic abilities of mathematical literacy are described as follows: (1) Communication means using skills in solving both written and oral problems; (2) mathematizing means interpreting mathematical solutions or mathematical models that are changed from real-world contexts through interpretation; (3) Representation presents a situation with the activity of selecting, interpreting, translating, and using various forms of representation of an object and a mathematical situation; (4) Reasoning and giving reasons (reasoning and argument) are mathematical abilities born from one's ability to think through reasoning accompanied by reasons; (5) Devising strategies for solving

problems is the ability to solve problems using mathematical knowledge by choosing or using various strategies; (6) The use of operational and symbolic language, formal language, and technical language (using symbolic, formal, and technical language and operations) is the ability to understand, interpret, manipulate, and give meaning to the use of symbolic expressions in the context of mathematics through the use of operations and language. symbols, formal language, and technical language; (7) The use of mathematical tools (using mathematical tools) is the use of skills in solving mathematical problems through the use of mathematical tools such as calculators, measuring instruments / rulers and so on (Abidin et al., 2017).

With this description, the researcher is encouraged to conduct further discussions related to the study of literature on Ethnomatematics for elementary school students' mathematical literacy based on journals from previous studies. Thus, it is hoped that this discussion can provide broad knowledge and insight related to Ethnomathematics as literacy in mathematics learning for Elementary School Students.

METHOD

This research uses a type/research approach in the form of Library Research. Literature study is a study that is used to collect information and data with the help of various kinds of materials in the library such as documents, books, magazines, historical stories, and so on (Mardalis, 1999:45). Literature study is a theoretical study, references and other scientific literature related to culture, values and norms that develop in the social situation under study (Sugiyono, 2012: 14) In other words, literature study also means studying various reference books and the results of previous research that of a kind that is useful for obtaining a theoretical basis for the problem to be studied

RESULTS AND DISCUSSION

The author searches for research journals that are relevant to the research title related to Entnomatematics. There were found quite a lot of

relevant research results, namely approximately 25 studies from various references. Then selected based on the criteria with the final results remaining 5 studies. This is because the five journals have met the criteria of the authors, namely: 1) in accordance with the elements to be studied, namely ethnomathematics research for the elementary school level, 2) References used for at least the last 10 years, 3) Using refined standard language. By fulfilling these four indicators, the authors describe the research based on the title, objectives, and research results as follows:

Research with the title "Ethnomatematics-Based Mathematical Learning Video Media in the Content of Flat Shape Introduction Material", 2022 research year. This research aims to create ethnomatematics-based mathematics learning videos on the content of material introduction to flat shapes and its effect on learning outcomes for first grade elementary school students. The research results obtained were material expert testing of 95.83%, learning design expert testing of 100%, learning media expert testing of 98.33%, individual trials of 90.90%, small group trials of 92.16% , the large group trial was 90.81%, and the results of the effectiveness test showed that the pre-test had an average score of 70 with moderate qualifications and the post-test had an average score of 85 with high qualifications. So, Ethnomatematics-based mathematics instructional video media in the introduction of flat shapes is suitable for use in learning and can improve student learning outcomes. The implication of this research is that students can learn mathematics using ethnomatematics based learning videos to increase motivation and carry out meaningful learning activities.

Research with the title "Ethnomatematics in Mathematics Learning at the Elementary Level" research year 2020. The aim of research with ethnomatematics is expected to stimulate students' reasoning in solving math problems at the elementary school level. From the results of the discussion, it was found that 100% of the students at SDN 101917 Aras Kabu who experienced ethnomatematics learning experienced an increase in mathematical reasoning abilities.

Research with the title "Development of Ethnomatematics-Based Petako Media on

Building Materials for Class V Elementary Schools" 2021 research year. This study aims to: (1) Describe the process of developing ethnomatematics-based Petako media in class V Elementary School material (2) Determine the feasibility of ethnomatematics-based Petako media in class V Elementary School material. This development research obtained material validation results with a percentage of 91%, while media validation results obtained a percentage of 87%. At the product trial stage using a questionnaire given to fifth grade elementary school students, they obtained a percentage of 90%. So it can be concluded that ethnomatematics-based Petako media is very suitable for use in learning.

Research entitled "Exploration of the Ethnomatematics of Games in Elementary School Students in South Sinjai" in the 2019 research year. The aim of the research was to explore the ethnomatematics of games in Elementary School students in South Sinjai. The results of the study found that students' traditional games contained mathematical elements including geometric shapes, number recognition, sets, the concept of distance, probability and integer operations. This allows students to learn from the fun everyday world, as well as according to the socio-cultural life in Sinjai, especially South Sinjai

Research with the title "Implementation of Ethnomatematics in Mathematics Learning at the Elementary School Education Level" in the 2012 research year. The aim of the research is to describe the implementation of the mathematics learning process in which the material is lifted from local cultural values that are mathematical in nature or called ethnomatematics. The results of the study show that in the process of learning mathematics, teachers in grades IV, V, VI have used ethnomatematics in teaching mathematics, even though in preparing lesson plans it does not appear that ethnomatematics is contained in the lesson plans made. The application of ethnomatematics as a means to motivate, stimulate students, overcome boredom and give new nuances to learning mathematics.

From the information above, it can be seen that there are several references to ethnomatematics research which are considered to be a reference in the use of ethnomatematics to increase elementary school students'

mathematical literacy which is then expected to be able to improve the quality of student learning, especially elementary school students in this case.

CONCLUSION

Referring to the five journals described above, it can be concluded that by applying Ethnomatematics to learning mathematics will be a reference for increasing students' mathematical literacy in improving students' mathematics learning outcomes. Therefore, with the existence of ethnomathematics it is hoped that it can provide innovative and varied solutions and strategies for each educator in undergoing the process of learning mathematics so that the objectives of the learning are carried out, specially in improving students' learning outcomes in mathematics in class.

For further research, they can provide or design new solutions in the form of new learning models that have not been implemented or if they have been implemented, they are still not widely used by schools or educators/teachers when teaching in class. This aims to see the ability of educators / teachers in teaching and of course will improve student learning outcomes in class, especially in learning mathematics.

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