

Ethnomathematics Exploration of Traditional Games Played by Primary School Students in West Sumatra

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EXECUTIVE SUMMARY

This research aims to explore ethnomathematics in two traditional games, cak bur and batu sigagok, played by students at a public elementary school, Nagari Tiku Utara, Tanjung Mutiara District, Agam Regency, West Sumatra Province, Indonesia. This study uses an ethnography approach to explore ethnomathematics in games and their connection to mathematics topics in elementary school. The data were collected

through observing students playing the games as well as interviewing a teacher and four students. The results of the study revealed that students have sufficient knowledge regarding game tools and rules. There are different ethnomathematics aspects in the games, including counting, geometry, and probability. Meanwhile, mathematical concepts in the games related to elementary school mathematics include reading numbers, addition and subtraction of whole numbers, multiplication, flat figures, comparison, and probability. These ethnomathematics aspects in the traditional games of the Minangkabau tribe have the potential to be used to support students' mathematical concepts in elementary school.

INTRODUCTION

Indonesia consists of hundreds of islands, each with a different culture, causing Indonesia to be quite culturally diverse. This cultural diversity cannot be separated from mathematics; mathematics and culture cannot be avoided in everyday life because culture is a complete and comprehensive unity in society, while mathematics is knowledge humans use to solve everyday problems (Astuti & Nurmitasari, 2021). Thus, bridging culture and mathematics is essential in recognizing the different ways of thinking that can lead to varying forms of mathematics (Anriana et al., 2023).

Ethnomathematics, which studies the relationship between culture and mathematics (D'Ambrosio, 1985), helps explain how different cultural groups apply mathematical concepts in informal ways. For example, traditional trading practices in markets, organizing measurement systems in agriculture by Indigenous people, and traditional games played by children are concrete forms of informal learning that contain elements of ethnomathematics (Rosa & Orey, 2016). Therefore, ethnomathematics is relevant to the context of informal learning.

There are efforts to express mathematical ideas from social culture, as well as the application of mathematics in solving problems in an informal context (Fendrik et al., 2020). Ethnomathematics results from social development and cultural processes, originating from various societies and cultural contributions, forming the basis of understanding mathematics in educational settings (Albanese & Perales, 2015). Concerning informal learning, ethnomathematics plays a vital role because it allows mathematics teaching to be based on cultural practices known to students. This suggests that mathematics can be taught through informal activities, such as traditional games or everyday activities which contain mathematical patterns, without explicitly mentioning that it is a formal mathematics lesson (D'Ambrosio, 2001).

The scope of ethnomathematics consists of all cultural groups (non-mathematicians), objects (everyday activities and objects created by humans), ethnomathematics studies (behavior and knowledge of cultural groups), and focus of study (facilitating

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