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DEVELOPMENT OF AN INTERACTIVE ETHNOMATHEMATICS-BASED FLIPBOOK TO ENHANCE STUDENTS' MATHEMATICAL CREATIVE THINKING SKILLS

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Abstract

Learning mathematics in the twenty-first century emphasizes the development of creative thinking skills as part of higher-order thinking skills. However, elementary students' mathematical creative thinking ability, particularly in the topic of three-dimensional geometry, has not yet developed optimally due to the abstract nature of the concepts and the limited use of contextual and interactive learning media. Therefore, this study aims to develop and examine the effectiveness of a digital flipbook based on ethnomathematics of traditional Indonesian musical instruments in improving students' mathematical creative thinking ability. The research employed a research and development (R&D) approach using the Borg and Gall model, followed by a one-group pretest–posttest pre-experimental design. The research subjects consisted of 24 fifth-grade elementary school students. The research instruments included expert validation sheets for content and media, a mathematical creative thinking test based on indicators of fluency, flexibility, originality, and elaboration, as well as a student response questionnaire. The data were analyzed using validity,

reliability, normality, and homogeneity tests, as well as N-gain calculations. The results showed that the developed flipbook met the criteria of validity and effectiveness in improving students' mathematical creative thinking ability, with an average N-gain value of 0.63 (moderate category), and received positive responses from students. These findings indicate that the integration of ethnomathematics and interactive digital media supports active and meaningful geometry learning that aligns with twenty-first-century skill demands. Future studies are recommended to employ a comparative experimental design and involve a larger sample.

Keyword:
Digital Flipbook, Ethnomathematics, Elementary Students, Three-Dimensional Geometry