



## Development of a Digital Teaching Module Based on Meaningful Learning and Betawi Cultural Ethnomathematics to Improve Elementary School Students' Geometry Skills

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### Abstract

This study aims to develop a digital teaching module based on meaningful learning and Betawi cultural ethnomathematics to improve elementary school students' geometry skills. The research method used was Research and Development (R&D) with the ADDIE (Analyze, Design, Development, Implementation, Evaluation) model. Participants in this study were 24 sixth-grade students of SD Negeri Kuningan Barat 01. Data collection techniques used were observation, interviews, and questionnaires. Material experts, media experts, and language experts conducted product validity testing. Product effectiveness testing was conducted through pre-tests and post-tests, which were then analyzed using N-Gain calculations to determine the improvements. Based on the research conducted: (1) The results of the analysis show that students' understanding of the concept of geometry is still low and the teaching module used has not been linked to local culture and the students' environment; (2) The design of the digital teaching module utilizes the concept of local wisdom of the Betawi tribe which is divided into three main parts, namely the general information component, the core component, and the attachment; (3) The development of the digital teaching module was carried out by utilizing the Google Sites and Canva applications. The validation results of material experts I, II, and III obtained 95%, 77.50%, and 95% percentages with a very appropriate category. Media experts I, II, and III obtained 98.75%, 92.50%, and 97.50% respectively, in a very appropriate category. The validation results of language experts I, II, and III obtained a percentage of 95.00%, 91.67%, and 96.67% respectively, in a very appropriate category. (4) The implementation of the digital teaching module was carried out in class. The effectiveness of using digital teaching modules was measured using pre-test and post-test questions showing an increase in the average value from 52.29 to 85.42, analyzed using the N-Gain formula, the score (g) was 0.71 with a percentage of 71% with a high effectiveness





category; (5) Evaluation of digital teaching modules shows that this module is visually attractive, contextual, and interactive, making it easier for students to understand the material and fostering a love for local culture. Digital illustrations help students understand abstract concepts, especially in geometry. However, this module has limitations in delivering in-depth material, requires stable internet access, and has less efficient navigation on the Google Sites platform, so that this module can be developed on other platforms such as WordPress.

**Keywords:** digital teaching module; meaningful learning; betawi cultural ethnomathematics; geometry skills; elementary school

