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Development of Interactive Learning Media Based on GeoGebra on the Topic of Relations and Functions in the Context of Wetland Culture

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This study aims to develop an interactive learning media based on GeoGebra and JavaScript for the topic of relations and functions, incorporating the cultural context of wetland environments, including traditional foods, regional songs, and other local cultural elements. The development process followed the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. Product evaluation was carried out through validity testing by media and content experts, as well as practicality and effectiveness testing. The results showed that the developed media was valid in terms of both content and technical aspects. The media was also considered practical, based on teacher and student questionnaire responses indicating a very good category. The effectiveness test using the Paired Sample t-test yielded a p-value of < 0.05, indicating a significant difference between pretest and posttest scores. A Cohen's d value of 3.53 indicated a very large effect size, with a statistical power of 1, demonstrating strong statistical reliability. Therefore, the developed interactive learning media is considered appropriate and effective for use in contextual mathematics learning on the topic of relations and functions.

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