

ABSTRACT

Hayatul Kasturi: Development of Augmented Reality-Based Learning Media Integrated with Acehese Culture to Facilitate Students' Mathematical Understanding Skills in Junior High School. **Mathematics Education Study Program, FKIP, Malikussaleh University, 2026.**

This research is motivated by the suboptimal utilization of technology-based learning media in schools. Teachers have not yet implemented Augmented Reality (AR)-based learning media and teachers still rarely integrate ethnomathematics into the learning process. The results of interviews and media needs questionnaires indicate that learning is still dominated by verbal explanations, including in linking mathematical concepts with local culture. This study aims to determine the level of validity, practicality, and effectiveness of Augmented Reality-based learning media integrated with Acehese culture in facilitating students' mathematical understanding abilities. The study used the Research and Development (R&D) method with the ADDIE development model which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. The study was conducted in the odd semester of the 2026/2027 academic year at the UPTD SMP Negeri 1 Gandapura. Research data were collected through interviews, questionnaires, and mathematical understanding ability tests. The instruments used included interview guidelines, media needs analysis questionnaires, validation sheets from media experts and material experts, student response questionnaires, and mathematical understanding ability tests. The research subjects consisted of two media experts, two material experts, small group trial students, and large group trial students. The small group trial involved 6 students of grade IX-2, while the large group trial involved 25 students of grade IX-1. The results of the study showed that the developed learning media obtained an average validation value of 87.98% from media experts and 82.14% from material experts, so both were included in the very valid category. The results of the student response questionnaire in the small group trial reached 90.09% with a very practical category and in the large group 84.17%, which indicates that the media is in the practical category. Meanwhile, the results of the students' mathematical comprehension ability test obtained an average of 88% so that the media was declared very effective. Thus, the learning media based on Augmented Reality integrated with Acehese culture meets the criteria of very valid, very practical, and very effective so that it is suitable for use in mathematics learning in junior high schools.

Keyword: Augmented Reality, Acehese Culture, Mathematical Understanding, Learning Media, Research and Development.