ABSTRAK

Yohanna Stella Evangelina, 2024. Pengembangan Game Edukasi Berbasis Android dengan Pendekatan Etnomatematika pada Materi Transformasi Geometri untuk Siswa Kelas 9A SMP Marganingsih. Program Studi Pendidikan Matematika, Jurusan Pendidikan dan Ilmu Pengetahuan Alam, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Sanata Dharma.

Perkembangan ilmu pengetahuan dan teknologi (IPTEK) memberikan dampak signifikan pada sektor pendidikan. Selain memberikan keuntungan seperti memberikan kemudahan dalam mengakses sumber daya edukatif, kemajuan IPTEK juga menyebabkan menurunnya motivasi belajar dan terancamnya kelestarian warisan budaya. SMP Marganingsih di Kota Muntilan menghadapi tantangan dalam pembelajaran matematika, khususnya transformasi geometri, dan membutuhkan pendekatan inovatif yang mengintegrasikan etnomatematika dan teknologi dalam pembelajaran. Tujuan penelitian ini adalah untuk mengetahui langkah-langkah pengembangan serta menilai pelaksanaan dan hasil uji coba terbatas dari game edukasi ini. Penelitian menggunakan model pengembangan ADDIE. Pada tahap *analyze*, peneliti melakukan analisis kebutuhan pengembangan game edukasi dan analisis capaian serta tujuan pembelajaran materi terkait. Tahap *design* berfokus pada perencanaan pengembangan : desain alur permainan, pemetaan level, pembuatan kisi-kisi instrumen, dan perencanaan implementasi. Tahap *development* berfokus pada pengembangan game edukasi, uji coba awal dan validasi, serta revisi produk. Selanjutnya, tahap implementation berfokus pada pelaksanaan uji coba terbatas dan pengambilan data untuk dianalisis. Terakhir, tahap evaluation berfokus pada evaluasi hasil uji coba terbatas, untuk menjawab pertanyaan penelitian. Hasil uji coba terbatas yang dilakukan kepada 5 orang siswa kelas 9A, menunjukkan bahwa game edukasi yang dikembangkan berhasil memperkenalkan budaya lokal candi Borobudur dengan baik dan memberi dampak positif pada motivasi belajar siswa, dengan indeks motivasi belajar sebesar 87.55% (kategori sangat baik). Meskipun demikian, beberapa kekurangan pada game edukasi masih perlu diperbaiki agar dapat meningkatkan kualitasnya sehingga game layak digunakan secara luas.

Kata kunci: Etnomatematika, game edukasi, pengembangan

ABSTRACT

Yohanna Stella Evangelina, 2024. Development of Android-Based Educational Games with an Ethnomathematics Approach on Geometric Transformation Material for Grade 9A Students of Marganingsih Junior High School. Mathematics Education Study Program, Department of Education and Natural Sciences, Faculty of Teacher Training and Education, Sanata Dharma University.

The development of science and technology (science and technology) has a significant impact on the education sector. In addition to providing benefits such as providing easy access to educational resources, advances in science and technology have also led to decreased motivation to learn and threatened the preservation of cultural heritage. Marganingsih Junior High School in Muntilan City faces challenges in learning mathematics, especially geometry transformation, and needs an innovative approach that integrates ethnomathematics and technology in learning. The purpose of this study was to determine the development steps and assess the implementation and results of the limited trial of this educational game. The research used the ADDIE development model. At the analyze stage, researchers analyzed the needs of educational game development and analyzed the achievements and learning objectives of related materials. The design stage focuses on development planning: game flow design, level mapping, making instrument grids, and implementation planning. The development stage focuses on the development of educational games, initial trials and validation, and product revision. Furthermore, the implementation stage focuses on conducting limited trials and collecting data for analysis. Finally, the evaluation stage focuses on evaluating the results of the limited trial, to answer the research questions. The results of the limited trial conducted on 5 students of class 9A, showed that the educational game developed successfully introduced the local culture of Borobudur temple well and had a positive impact on student learning motivation, with a learning motivation index of 87.55% (very good category). However, some shortcomings in the educational game still need to be improved in order to improve its quality so that the game is suitable for widespread use.

Keywords: Development, educational game, ethnomathematics