

ABSTRAK

Transformasi digital di bidang pendidikan mendorong pemanfaatan teknologi inovatif seperti *Augmented Reality (AR)* untuk meningkatkan kualitas pembelajaran, khususnya pada jenjang Pendidikan Anak Usia Dini (PAUD). Penelitian ini bertujuan mengembangkan aplikasi pembelajaran berbasis AR yang interaktif dan ramah anak, mencakup materi pengenalan pengenalan dasar, serta permainan edukatif yang menarik dan adaptif terhadap karakteristik peserta didik usia dini. Metode pengembangan yang digunakan adalah *Extreme Programming (XP)*, yang terdiri dari tahapan perencanaan, desain, pengkodean, dan pengujian. Pengumpulan data dilakukan melalui wawancara dengan guru PAUD serta studi pustaka. Evaluasi aplikasi dilakukan melalui uji fungsional dan penyebaran kuisioner kepada guru dan orang tua murid. Hasil penelitian menunjukkan bahwa aplikasi berjalan dengan baik secara teknis dan mendapat tanggapan positif. Hasil kuisioner menunjukkan skor kemudahan penggunaan sebesar 82,5%, efektivitas fitur pembelajaran 80,8%, dan daya tarik visual-audio sebesar 79,2%. Guru juga menyatakan bahwa aplikasi ini memperkaya metode pembelajaran mereka serta meningkatkan keterlibatan anak dalam proses belajar. Kesimpulannya, aplikasi AR ini berhasil mendukung transformasi digital pembelajaran di PAUD dengan menyajikan media yang interaktif, edukatif, dan sesuai dengan kebutuhan anak. Peneliti selanjutnya disarankan peningkatan kualitas permainan edukatif, dan mengembangkan aplikasi untuk versi desktop.

Kata Kunci: Augmented Reality, Pendidikan Anak Usia Dini, Aplikasi Pembelajaran, Transformasi Digital, Extreme Programming

ABSTRACT

Digital transformation in education encourages the use of innovative technologies such as Augmented Reality (AR) to improve the quality of learning, especially in Early Childhood Education. This study aims to develop an interactive and child-friendly AR-based learning application that covers basic introductory material and engaging and adaptive educational games tailored to the characteristics of early childhood learners. The development method used is Extreme Programming (XP), which consists of planning, design, coding, and testing stages. Data collection was conducted through interviews with PAUD teachers and literature reviews. The application was evaluated through functional testing and the distribution of questionnaires to teachers and parents. The research results indicate that the application functions well technically and has received positive feedback. The questionnaire results showed a usability score of 82.5%, learning feature effectiveness of 80.8%, and visual-audio appeal of 79.2%. Teachers also stated that the application enriched their teaching methods and increased children's engagement in the learning process. In conclusion, this AR application successfully supports the digital transformation of learning in early childhood education by providing interactive, educational media that is tailored to children's needs. Further research is recommended to improve the quality of educational games and develop a desktop version of the application.

Keywords: Augmented Reality, Early Childhood Education, Learning Application, Digital Transformation, Extreme Programming