ABSTRAK

PERANCANGAN MEDIA PEMBELAJARAN UNTUK MATA PELAJARAN IPA MATERI SISTEM PENCERNAAN MANUSIA BERBASIS AUGMENTED REALITY KELAS V DI SD NEGERI 4 PALEMBANG

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Materi sistem pencernaan manusia pada mata pelajaran IPA memiliki konsep yang bersifat abstrak sehingga sulit dipahami hanya melalui buku teks dan Lembar Kerja Siswa (LKS). Kondisi ini menyebabkan proses pembelajaran di kelas V SD Negeri 4 Palembang kurang didukung oleh visualisasi yang interaktif. Penelitian ini bertujuan untuk merancang media pembelajaran berbasis Augmented Reality (AR) yang dapat memvisualisasikan struktur dan fungsi organ sistem pencernaan manusia, sekaligus mengukur tingkat efektivitasnya dalam meningkatkan pemahaman siswa. Metode penelitian yang digunakan adalah Research and Development (R&D) dengan pendekatan kuantitatif. Pengembangan aplikasi dilakukan menggunakan model Multimedia Development Life Cycle (MDLC) melalui enam tahapan, yaitu Concept, Design, Material Collecting, Assembly, Testing, dan Distribution, dengan memanfaatkan Unity dan Vuforia Engine. Subjek penelitian adalah seluruh siswa kelas V SD Negeri 4 Palembang yang berjumlah 85 siswa dari tiga kelas (VA, VB, dan VC) yang ditentukan melalui teknik total sampling. Data dikumpulkan melalui wawancara, dokumentasi, dan studi literatur, serta instrumen pre-test dan post-test, kemudian dianalisis menggunakan metode Normalize Gain (N-Gain). Hasil penelitian menghasilkan aplikasi Android bernama "Mengenal Sistem Pencernaan Manusia" yang seluruh fungsinya berjalan sesuai skenario berdasarkan pengujian Blackbox Testing. Hasil perhitungan N-Gain menunjukkan peningkatan pemahaman siswa kelas VA sebesar 91,16% (kategori tinggi), kelas VB sebesar 56,08% (kategori sedang), dan kelas VC sebesar 95,03% (kategori tinggi). Dengan demikian, media pembelajaran berbasis Augmented Reality ini terbukti efektif dan layak digunakan sebagai alternatif solusi pembelajaran materi sistem pencernaan manusia dibandingkan metode konvensional.

Kata kunci: *Augmented Reality, media pembelajaran, sistem pencernaan manusia, Multimedia Development Life Cycle, Normalize Gain*

ABSTRACT

DESIGN OF A LEARNING MEDIUM FOR SCIENCE (IPA) SUBJECT ON THE HUMAN DIGESTIVE SYSTEM BASED ON AUGMENTED REALITY FOR GRADE V STUDENTS AT SD NEGERI 4 PALEMBANG

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The human digestive system topic in the Science (IPA) subject involves abstract concepts that are difficult to understand through textbooks and student worksheets alone. This condition caused the learning process in grade V at SD Negeri 4 Palembang to lack interactive visual support. This study aims to design an Augmented Reality (AR)-based learning medium capable of visualizing the structure and functions of human digestive organs, while also measuring its effectiveness in improving student understanding. The research method applied was Research and Development (R&D) with a quantitative approach. The application was developed using the Multimedia Development Life Cycle (MDLC) model through six stages, namely Concept, Design, Material Collecting, Assembly, Testing, and Distribution, utilizing Unity and the Vuforia Engine. The research subjects consisted of 85 fifth-grade students from three classes (VA, VB, and VC) at SD Negeri 4 Palembang, determined through the total sampling technique. Data were collected through interviews, documentation, and literature study, along with pre-test and post-test instruments, then analyzed using the Normalize Gain (N-Gain) method. The study produced an Android application named "Mengenal Sistem Pencernaan Manusia" (Learning the Human Digestive System), whose functions all operated as expected based on Blackbox Testing. The N-Gain calculation results showed an improvement in student understanding of 91.16% (high category) for class VA, 56.08% (medium category) for class VB, and 95.03% (high category) for class VC. These findings indicate that the Augmented Reality-based learning medium is effective and suitable as an alternative learning solution for the human digestive system topic compared to conventional methods.

Keywords: *Augmented Reality, learning media, human digestive system, Multimedia Development Life Cycle, Normalize Gain*