

ABSTRAK

Muhammad Azri Hadiansyah Lubis, NIM 5213151023 (2026). Pengembangan Media Pembelajaran *Game* Edukasi *Turn-based Quiz* Untuk Mendukung *Independent Learning* Pada Mata Pelajaran Informatika di Kelas X MP SMKS Imelda Medan.

Penelitian ini bertujuan mengembangkan aplikasi *game* edukasi *turn-based quiz* berbasis Android pada materi Analisis Data Fase E untuk mengatasi rendahnya motivasi dan pemahaman siswa akibat keterbatasan media pembelajaran konvensional. Menggunakan metode *Research and Development* (R&D) dengan memadukan model MANTAP dan *Waterfall*, produk ini dibuat menggunakan *software* RPG Maker MV. Subjek penelitian adalah 31 siswa kelas X MP 2 SMK Swasta Imelda Medan, dengan pengumpulan data yang melibatkan angket, wawancara, lembar validasi ahli, serta tes efektivitas (*pre-test* dan *post-test*). Hasil pengujian menunjukkan bahwa aplikasi ini sangat memenuhi syarat kelayakan fungsional dengan tingkat keberhasilan uji *Blackbox* 100%. Penilaian kelayakan dari ahli media memperoleh rata-rata 3,983 (Layak), ahli materi 4,325 (Sangat Layak), dan akseptabilitas oleh siswa mencapai 4,24 (Sangat Layak). Selain itu, uji efektivitas menghasilkan skor *N-gain* sebesar 0,589 (Medium) yang membuktikan bahwa *game* edukasi ini efektif meningkatkan pemahaman kognitif sekaligus mampu memfasilitasi kemandirian belajar siswa.

Kata Kunci: *Game* Edukasi, *Turn-based Quiz*, *Independent Learning*, Informatika, Analisis Data.

ABSTRACT

Muhammad Azri Hadiansyah Lubis, NIM 5213151023 (2026). Development of Turn-Based Quiz Educational Game Learning Media to Support Independent Learning in Informatics in Class X MP SMKS Imelda Medan.

This study aimed to develop an Android-based, turn-based quiz educational game covering the "Data Analysis" topic (Phase E) to address low student motivation and comprehension resulting from the limitations of conventional learning media. Employing the Research and Development (R&D) method—integrating the MANTAP and Waterfall models the product was created using RPG Maker MV software. The research subjects were 31 students from class X MP 2 at SMK Swasta Imelda Medan; data collection involved questionnaires, interviews, expert validation sheets, and effectiveness tests (pre-test and post-test). Testing results demonstrated that the application fully met functional feasibility requirements, achieving a 100% success rate in Black-box testing. Feasibility assessments yielded average scores of 3.983 (Feasible) from media experts and 4.325 (Highly Feasible) from subject matter experts, while student acceptance reached 4.24 (Highly Feasible). Furthermore, the effectiveness test produced an N-gain score of 0,589 (Medium), proving that the educational game is effective in enhancing cognitive understanding and fostering student learning independence.

Keywords: *Educational Game, Turn-based Quiz, Independent Learning, Informatics, Data Analysis.*