

ABSTRAK

Rizky Abimayu Utama Tanjung : *Pengembangan Game Edukasi Berbasis Roblox Untuk Meningkatkan Hasil Belajar Ditinjau dari Literasi Membaca Siswa pada Mata Pelajaran TIK di SMA Swasta Imelda Medan. Skripsi. Fakultas Teknik Medan. 2026.*

Penelitian ini dilatarbelakangi oleh rendahnya ketuntasan hasil belajar kognitif siswa pada materi Algoritma dan Pemrograman yang hanya mencapai 40%, yang disebabkan oleh keterbatasan fasilitas pembelajaran dan rendahnya literasi membaca teks prosedural. Penelitian ini bertujuan untuk mengembangkan media game edukasi 3D *The Algo-Verse: Chronicles of Logic* berbasis Roblox serta menguji keunggulannya ditinjau dari tingkat literasi membaca siswa.

Metode penelitian yang digunakan adalah *Research and Development* (R&D) dengan model *Multimedia Development Life Cycle* (MDLC). Pengujian efektivitas media menggunakan desain kuasi-eksperimen faktorial 2×2 yang melibatkan siswa kelas XI SMA Swasta Imelda Medan sebagai populasi penelitian. Sampel penelitian terdiri atas kelompok eksperimen yang menggunakan media game edukasi dan kelompok kontrol yang menggunakan metode pembelajaran konvensional, dengan pengelompokan berdasarkan tingkat literasi membaca siswa. Data dianalisis menggunakan N-Gain dan *Two-Way ANOVA* untuk mengetahui peningkatan hasil belajar serta pengaruh media dan literasi membaca terhadap hasil belajar.

Hasil penelitian menunjukkan bahwa media game edukasi yang dikembangkan sangat layak digunakan berdasarkan validasi ahli media dengan skor 4,76, ahli materi sebesar 4,75, dan uji akseptabilitas pengguna akhir sebesar 4,09. Peningkatan hasil belajar pada kelompok yang menggunakan media game lebih tinggi dengan rata-rata N-Gain sebesar 0,56 (kategori sedang), dibandingkan kelompok konvensional sebesar 0,24 (kategori rendah). Hasil *Two-Way ANOVA* menunjukkan bahwa penggunaan media game berpengaruh signifikan terhadap hasil belajar (Sig. 0,000) dengan kontribusi pengaruh sebesar 65,3%. Sementara itu, tidak terdapat interaksi yang signifikan antara media pembelajaran dan tingkat literasi membaca (Sig. 0,887), yang menunjukkan bahwa *The Algo-Verse* dapat digunakan secara inklusif oleh siswa dengan tingkat literasi membaca yang berbeda.

Kata Kunci: Game Edukasi, Roblox, Algoritma, Hasil Belajar, Literasi Membaca.

ABSTRACT

Rizky Abimayu Utama Tanjung: *Development of a Roblox-Based Educational Game to Improve Learning Outcomes in Terms of Students' Reading Literacy in Information and Communication Technology Subjects at SMA Swasta Imelda Medan*. Thesis. Faculty of Engineering, Medan. 2026.

This research was motivated by the low achievement of students' cognitive learning outcomes in the Algorithm and Programming material, with only 40% of students achieving the minimum mastery criteria. This condition was attributed to limited learning facilities and students' low reading literacy of procedural texts. This study aimed to develop a 3D educational game, *The Algo-Verse: Chronicles of Logic*, based on Roblox and to examine its effectiveness in terms of students' reading literacy levels.

The research employed the *Research and Development* (R&D) method using the *Multimedia Development Life Cycle* (MDLC) model. The effectiveness test used a 2×2 factorial quasi-experimental design involving Grade XI students of Imelda Private Senior High School Medan as the research population. The sample consisted of an experimental group that used the educational game and a control group that used conventional learning methods, with students categorized according to their reading literacy levels. The data were analyzed using N-Gain and *Two-Way ANOVA* to determine the improvement in learning outcomes and the effects of the learning media and reading literacy on students' learning outcomes.

The results showed that the developed educational game was highly feasible for implementation, based on validation scores of 4.76 from media experts, 4.75 from subject matter experts, and 4.09 from the end-user acceptability test. The improvement in learning outcomes of students who used the educational game was higher, with an average N-Gain score of 0.56 (moderate category), compared to 0.24 (low category) for the conventional learning group. The *Two-Way ANOVA* results indicated that the use of the educational game had a significant effect on learning outcomes (Sig. 0.000), with an effect contribution of 65.3%. Meanwhile, there was no significant interaction between learning media and reading literacy levels (Sig. 0.887), indicating that *The Algo-Verse* can be used inclusively by students with different levels of reading literacy.

Keywords: Educational Game, Roblox, Algorithms, Learning Outcomes, Reading Literacy.