

ABSTRAK

Metode *Game Development Life Cycle* (GDLC) diterapkan dalam penelitian ini untuk mengembangkan *game* edukasi pengenalan perangkat keras komputer sebagai media pembelajaran interaktif bagi siswa kelas VIII SMP Negeri 2 Pekuncen. Pengembangan *game* dilakukan menggunakan *Unity Engine* dengan bahasa pemrograman C#. Tahapan pengembangan meliputi inisialisasi, pra-produksi, produksi, pengujian, *beta*, dan rilis. *Game* dirancang untuk membantu siswa memahami materi perangkat keras komputer melalui media pembelajaran berbasis permainan yang lebih menarik dan mudah dipahami. *Game* edukasi yang dikembangkan menyediakan beberapa fitur utama, seperti menu materi perangkat keras komputer, simulasi perakitan komputer, dan permainan edukatif berbasis tantangan. Simulasi perakitan menerapkan mekanisme *drag and drop* sehingga pemain dapat memasang komponen komputer sesuai posisi yang benar. Berdasarkan hasil pengujian, seluruh fitur pada *game* dapat berjalan dengan baik sesuai rancangan dan mampu memberikan pengalaman belajar yang lebih interaktif serta meningkatkan ketertarikan siswa dalam mempelajari perangkat keras komputer. Hasil penelitian menunjukkan bahwa penerapan metode GDLC pada pengembangan *game* edukasi dapat membantu menciptakan proses pembelajaran yang lebih efektif, interaktif, dan menyenangkan. Media pembelajaran berbasis *game* ini juga mampu meningkatkan minat belajar siswa dalam memahami materi perangkat keras komputer.

Kata kunci: *game* edukasi, GDLC, *Unity Engine*, perangkat keras komputer, media pembelajaran.

ABSTRACT

The Game Development Life Cycle (GDLC) method was applied in this research to develop an educational game introducing computer hardware as an interactive learning medium for eighth-grade students of SMP Negeri 2 Pekuncen. The game was developed using Unity Engine with the C# programming language. The development process consisted of initiation, pre-production, production, testing, beta, and release stages. The game was designed to help students understand computer hardware material through a more engaging and interactive game-based learning approach. The developed educational game provides several main features, including computer hardware learning materials, computer assembly simulations, and challenge-based educational gameplay. The assembly simulation applies a drag-and-drop mechanism that allows players to place computer components in the correct position. Based on the testing results, all game features functioned properly according to the design and were able to provide a more interactive learning experience while increasing students' interest in learning computer hardware material. The results of this research indicate that the implementation of the GDLC method in educational game development can support a more effective, interactive, and enjoyable learning process. The game-based learning media was also able to improve students' interest in understanding computer hardware material.

Keywords: educational game, GDLC, Unity Engine, computer hardware, learning media.