ABSTRAK

Laksamana Nur Ramadhan Al-Amin Sembiring Meliala : Pengembangan Media Pembelajaran Perakitan Komputer Berbasis *"Augmented Reality"* Di SMK Negeri 14 Medan.

Penelitian bertujuan untuk: (1) merancang dan mengembangkan media pembelajaran perakitan komputer berbasis *Augmented Reality*; (2) mengetahui kelayakan media pembelajaran perakitan komputer berbasis *Augmented Reality*; (3) mengetahui keefektifan media pembelajaran perakitan komputer berbasis *Augmented Reality*.

Penelitian ini merupakan jenis pengembangan. Model pengembangan yang digunakan adalah pengembangan perangkat lunak *waterfall* yang terdiri dari empat tahap yaitu (1) analisis, (2) desain, (3) pengkodean dan uji coba sistem, dan (4) pengintegrasian sistem dan uji validasi. Penelitian ini dilakukan di kelas X Teknik Komputer Jaringan SMK Negeri 14 Medan. Tahap pengujian kelayakan produk dilakukan oleh dua ahli materi dan dua ahli media. Selain itu dilakukan pengujian respon pada pengguna yaitu siswa. Teknik analisis data menggunakan instrumen angket serta untuk menguji efektifitas media dilakukan *pre-test* dan *post-test* dan hasilnya akan dihitung dengan menggunakan rumus *N-gain*.

Hasil Penelitian ini adalah: (1) Hasil pengembangan media pembelajaran berupa aplikasi Android media pembelajaran perakitan komputer berbasis *Augmented Reality* yang terdiri dari tujuh komponen utama, yaitu 3D AR, AR Video, KI/KD, materi pembelajaran, quis berbentuk soal pilihan berganda, petunjuk, dan informasi pengembang; (2) Hasil pengujian *black box* testing menunjukkan semua fungsi pada aplikasi media pembelajaran AR perakitan komputer berfungsi tanpa adanya error, dan hasil uji kelayakan oleh 2 ahli media mendapatkan skor 4.21, ahli materi 4.62 dan hasil responded pengguna 4.60 ; (3) berdasarkan hasil uji *pre-test* dan *post-test* dari 32 siswa didapatkan skor N-*gain* 84,14 masuk dalam kategori "Efektif".

Kata Kunci : Media Pembelajaran, Perakitan Komputer, *Augmented Reality*

ABSTRACT

Laksamana Nur Ramadhan Al-Amin Sembiring Meliala: Development of Augmented Reality-Based Learning Media for Computer Assembly at SMK Negeri 14 Medan.

The research aims to: (1) design and develop learning media for computer assembly based on Augmented Reality; (2) determine the feasibility of learning media for computer assembly based on Augmented Reality; (3) determine the effectiveness of Augmented Reality-based learning media for computer assembly.

This research is a type of development. The development model used is waterfall software development which consists of four stages, namely (1) analysis, (2) design, (3) coding and system testing, and (4) system integration and validation testing. This research was conducted in class X Computer Network Engineering at SMK Negeri 14 Medan. The product feasibility testing phase was carried out by two material experts and two media experts. In addition, the response test was carried out on users, namely students. The data analysis technique uses a questionnaire instrument and to test the effectiveness of the media, pre-test and post-test are carried out and the results will be calculated using the N-gain formula.

The results of this study are: (1) The results of the development of learning media in the form of an Android application for learning media for computer assembly based on Augmented Reality which consists of seven main components, namely 3D AR, AR Video, KI/KD, learning materials, quizzes in the form of multiple choice questions, instructions , and developer information; (2) The results of the black box testing show that all functions in the computer assembly AR learning media application function without any errors, and the results of the feasibility test by 2 media experts get a score of 4.21, material expert 4.62 and user response results 4.60; (3) based on the results of the pre-test and post-test of 32 students, the N-gain score of 84.14 was in the "Effective" category.

Keywords: Learning Media, Computer Assembly, Augmented Reality