

## ABSTRAK

**Theodora Helena Hutagalung: “Pengembangan Multimedia Pembelajaran Interaktif Berbasis *Problem Based Learning* Pada Kompetensi Keahlian Rekayasa Perangkat Lunak SMK” Tesis. Program Pascasarjana Universitas Negeri Medan. 2021.**

Penelitian pengembangan ini bertujuan menghasilkan produk berupa multimedia pembelajaran interaktif berbasis problem based learning yang layak dan efektif untuk peserta didik kompetensi keahlian rekayasa perangkat lunak SMK. Produk dikembangkan dengan pendekatan Research and Development (R&D) dengan mengadaptasi model Borg and Gall. Penelitian dilakukan dalam skala terbatas, pada penelitian ini dilakukan tujuh dari sepuluh tahapan pengembangan Borg and Gall, yang diakhiri dengan uji keefektifan produk. Pengembangan dibagi dalam lima tahapan: tahapan penelitian pendahuluan, tahap perancangan, tahap pengembangan produk, tahap reviu dan uji coba produk, serta uji keefektifan. Data dikumpulkan melalui instrumen validasi para ahli dan instrumen akseptansi media oleh peserta didik serta instrumen hasil belajar peserta didik. 1) Hasil penilaian/validasi kelayakan produk oleh para ahli media, desain pembelajaran, dan materi/konten menunjukkan rata-rata persentase kelayakan adalah 87,47 sementara hasil penilaian/akseptansi multimedia oleh responden (peserta didik) pada uji coba perorangan dan kelompok rata-rata persentase kelayakannya sebesar 86,75%. Kesimpulannya multimedia pembelajaran yang dikembangkan berada pada kriteria “sangat layak”. 2) Hasil uji keefektifan multimedia pembelajaran menunjukkan penggunaan multimedia pembelajaran interaktif berbasis Problem Based Learning memiliki pengaruh yang signifikan terhadap hasil belajar siswa yang dibelajarkan menggunakan media tersebut. Hal ini disimpulkan dari hasil pengolahan data penelitian diperoleh  $t_{hitung} = 3,701$  dengan  $t_{tabel} = 1,679$  pada taraf signifikan  $\alpha=0,05$ . Karena  $t_{hitung} > t_{tabel}$  artinya artinya multimedia pembelajaran interaktif yang dikembangkan mampu meningkatkan hasil belajar Kelompok Kompetensi Rekayasa Perangkat Lunak SMK khususnya dalam mata pelajaran Pemrograman Dasar.

**Kata kunci** : multimedia pembelajaran interaktif, pembelajaran berbasis masalah, rekayasa perangkat lunak,

## ABSTRACT

**Theodora Helena Hutagalung: “Development of Interactive Learning Multimedia Based on Problem Based Learning on Software Engineering Skills Competencies of SMK” Thesis. Postgraduate Program State University of Medan. 2021.**

*This development research aims to produce a product in the form of interactive learning multimedia based on problem-based learning that is feasible and effective for students of software engineering skill competence in vocational high school. The research was conducted on a limited scale, in this study seven of the ten stages of development of Borg and Gall were carried out, which ended with a product effectiveness test. Development is divided into five stages: the preliminary research stage, the design stage, the product development stage, the review stage and product testing, and effectiveness testing. The data were collected through expert validation instruments and media acceptance instruments by students as well as instruments for student learning outcomes. 1) The results of the assessment / validation of product feasibility by media, learning design, and material / content experts show that the average percentage of eligibility is 87.47 while the results of the assessment / acceptance of multimedia by respondents (students) in individual and in groups trials have the average percentage of eligibility by 86.5%. In conclusion, the developed learning multimedia is in the "very feasible" criteria. 2) The results of the multimedia learning effectiveness test show the use of interactive multimedia learning based on Problem Based Learning has a significant effect on the learning outcomes of students who are taught using the media. This can be concluded from the results of research data processing in which  $t_{count} = 3.701$  with  $t_{table} = 1.679$  at the significant level  $\alpha = 0.05$ . Because  $t_{count} > t_{table}$  means that the interactive learning multimedia that is developed is able to improve the learning outcomes of the SMK Software Engineering Competency Group, especially in Basic Programming subjects.*

**Keywords:** *interactive learning multimedia, problem-based learning, software engineering*

