ABSTRAK

Christian Arapenta Ginting. NIM 5163311005: *Pengembangan Modul SketchUp Pada Mata Pelajaran Gambar Teknik Bangunan Kelas X DPIB Di SMK Negeri 2 Binjai*. **Skripsi. Fakultas Teknik – Universitas Negeri Medan. 2021.**

Penelitian ini bertujuan untuk: (1) Menghasilkan modul sebagai bahan ajar Gambar Teknik Bangunan Dengan Aplikasi *SketchUp* Siswa kelas X DPIB di SMK Negeri 2 Binjai, (2) Mengetahui kelayakan modul *SketchUp* sebagai bahan ajar Gambar Teknik Bangunan siswa kelas X DPIB di SMK Negeri 2 Binjai, (3) Mengetahui respon peserta didik terhadap modul *SketchUp* sebagai bahan ajar mata pelajaran gambar teknik bangunan.

Penelitian ini menggunakan metode penelitian pengembangan model *Research and Development* yang dimodifikasi oleh Sugiyono meliputi tahapan potensi dan masalah, pengumpulan data, desain produk, validasi produk, revisi desain, dan revisi produk.Instrumen yang digunakan berupa angket. Angket digunakan untuk menguji kelayakan modul melaui validasi ahli materi, ahli media, dan ahli bahasa. Penilaian modul juga dilakukan oleh pengguna (siswa).

Berdasarkan hasil penelitian diketahui bahwa modul *SketchUp* sebagai bahan ajar pada mata pelajaran Gambar Teknik Bangunan mengacu pada kurikulum 2013 yang terdiri dari 6 bab materi pelajaran. Hasil penguji kelayakan oleh ahli materi memperoleh skor persentase sebanyak 81,88% dengan kategori baik, hasil pengujian kelayakan ahli media memperoleh skor persentase sebanyak 83% dengan kategori baik, dan hasil pengujian kelayakan oleh ahli bahasa memperoleh skor persentase sebanyak 78% dengan kategori baik. Kemudian modul *SketchUp* sebagai bahan ajar di uji coba melalui 2 tahap yaitu uji coba kelompok kecil dengan melibatkan 15 siswa, dan uji coba lapangan dengan melibatkan 30 siswa. Berdasarkan respon siwa pada 2 tahap uji coba. Adapun hasil uji coba kelompok kecil memperoleh skor persentase sebanyak 87,64% dengan kategori sangat baik, dan hasil uji coba lapangan memperoleh skor persentase sebanyak 88,35% dengan kategori sangat baik. Hasil penelitian menunjukkan bahwa modul *SketchUp* sebagai bahan ajar Gambar Teknik bangunan layak digunakan siswa kelas X DPIB di SMK Negeri 2 Binjai.

Kata Kunci : Pengembangan Modul, Bahan Ajar, Gambar Teknik Bangunan, dan *SketchUp*

ABSTRACT

Christian Arapenta Ginting. NIM 5163311005: Development of the *SketchUp* Module for Engineering Drawing Subject Class X DPIB at SMK Negeri 2 Binjai. Thesis. Faculty of Engineering – Medan State University. 2021.

This study aims to: (1) Produce modules as teaching materials for Building Engineering Drawings with the *SketchUp* Application for X DPIB class X students at SMK Negeri 2 Binjai, (2) Determine the feasibility of the *SketchUp* module as teaching materials for Building Engineering Drawings for X DPIB class X students at SMK Negeri 2 Binjai, (3) Knowing the response of students to the *SketchUp* module as a teaching material for building engineering drawing subjects.

This study uses a research and development research and development model modified by Sugiyono which includes stages of potential and problems, data collection, product design, product validation, design revision, and product revision. The instrument used is a questionnaire. Questionnaires are used to test the feasibility of the module through the validation of material experts, media experts, and linguists. Module assessment is also carried out by users (students).

Based on the results of the research, it is known that the *SketchUp* module as a teaching material in the subject of Building Engineering Drawing refers to the 2013 curriculum which consists of 6 chapters of subject matter. The results of the feasibility test by material experts obtained a percentage score of 81.88% in the good category, the results of the media expert feasibility test obtained a percentage score of 83% in the good category, and the results of the feasibility test by linguists obtained a percentage score of 78% in the good category. Then the *SketchUp* module as a teaching material was tested through 2 stages, namely small group trials involving 15 students, and field trials involving 30 students. Based on the students' responses in 2 stages of the trial. The results of the small group trial obtained a percentage score of 87.64% in the very good category, and the results of the field trial obtained a percentage score of 88.35% in the very good category. The results showed that the *SketchUp* module as a building engineering drawing teaching material was suitable for use by class X DPIB students at SMK Negeri 2 Binjai.

Keywords: Module Development, Teaching Materials, Building Engineering Drawings, and *SketchUp*