

ABSTRAK

Harnanda, Nim. 5203322002 (2024). Pengembangan *E-Modul* Interaktif Menggunakan Model Pembelajaran *Problem Based Learning* (PBL) Pada Mata Pelajaran Pemeliharaan Mesin Sepeda Motor di Kelas XI SMK N 4 Medan.

Penelitian ini bertujuan untuk mengetahui 1) proses pembuatan E-modul Interaktif menggunakan Model Pembelajaran PBL (*Problem Based Learning*) Pada Mata Pelajaran Pemeliharaan Mesin Sepeda Motor di kelas XI SMK Negeri 4 Medan. 2) kelayakan *e-modul* Interaktif menggunakan Model Pembelajaran PBL (*Problem Based Learning*) Pada Mata Pelajaran Pemeliharaan Mesin Sepeda Motor di kelas XI SMK Negeri 4 Medan. 3) keefektifan *e-modul* Interaktif menggunakan Model Pembelajaran PBL (*Problem Based Learning*) Pada Mata Pelajaran Pemeliharaan Mesin Sepeda Motor di kelas XI SMK Negeri 4 Medan.

Metode penelitian yang digunakan adalah model penelitian dan pengembangan (*Research and Development*). Subjek dalam penelitian ini adalah siswa kelas XI Teknik dan Bisnis Sepeda Motor (TBSM) SMK Negeri 4 Medan yang berjumlah 26 orang siswa. Teknik pengumpulan data dilakukan melalui observasi, wawancara, angket dan tes. Pengembangan media diperoleh dari uji *one to one* berjumlah 6 orang siswa, kelompok kecil berjumlah 15 orang siswa dan kelompok besar berjumlah 26 orang siswa. Uji kelayakan dilakukan validasi oleh ahli media, ahli desain dan ahli materi yang dimana ahli media terdiri dari satu orang dosen Teknik Mesin Unimed, ahli desain terdiri dari satu orang dosen Teknik Mesin Unimed dan untuk ahli materi terdiri dari satu guru Teknik dan Bisnis Sepeda Motor di SMK N 4 Medan.

Hasil Pengembangan *e-modul* interaktif menunjukkan bahwa hasil ahli media dengan rata rata 4 atau 100%, validasi ahli desain dengan rata-rata 3.65 atau 91.25%, validasi ahli materi dengan rata rata 3.69 atau 92.25% sehingga media sangat layak untuk di uji coba. Respon guru terhadap media 3.69 atau 92.25% dan respon siswa 90.75%. Sehingga di dapat, Ketuntasan klasikal siswa mencapai 88.46% termasuk ke dalam kategori efektif. Sehingga penelitian pengembangan *e-modul* interaktif dengan menggunakan model pembelajaran *problem based learning* (PBL) pada mata pelajaran pemeliharaan mesin sepeda motor di kelas XI SMK N 4 medan dinyatakan, valid, layak dan efektif.

Kata Kunci: Pengembangan, *e-modul*, PBL, ADDIE, *Canva*

ABSTRACT

Harnanda, Nim. 5203322002 (2024). Development of Interactive E-Modules Using Problem Based Learning (PBL) Learning Model in Motorcycle Engine Maintenance Subject in Class XI of SMK N 4 Medan.

This study aims to determine 1) the process of making Interactive E-modules using the PBL (Problem Based Learning) Learning Model in Motorcycle Engine Maintenance Subject in class XI of SMK Negeri 4 Medan. 2) the feasibility of Interactive e-modules using the PBL (Problem Based Learning) Learning Model in Motorcycle Engine Maintenance Subject in class XI of SMK Negeri 4 Medan. 3) the effectiveness of Interactive e-modules using the PBL (Problem Based Learning) Learning Model in Motorcycle Engine Maintenance Subject in class XI of SMK Negeri 4 Medan.

The research method used is the research and development model. The subjects in this study were 26 students of class XI Motorcycle Engineering and Business (TBSM) of SMK Negeri 4 Medan. Data collection techniques were carried out through observation, interviews, questionnaires and test. Media development was obtained from one-to-one tests totaling 6 students, small groups totaling 15 students and large groups totaling 26 students. The feasibility test was validated by media experts, design experts and material experts where the media expert consisted of one lecturer of Mechanical Engineering Unimed, the design expert consisted of one lecturer of Mechanical Engineering Unimed and for the material expert consisted of one teacher of Motorcycle Engineering and Business at SMK N 4 Medan.

The results of the development of interactive e-modules showed that the results of media experts with an average of 4 or 100%, validation of design experts with an average of 3.65 or 91.25%, validation of material experts with an average of 3.69 or 92.25% so that the media was very feasible to be tested. The teacher's response to the media was 3.69 or 92.25% and the student's response was 90.75%. So that it was obtained, the classical completeness of students reached 88.46% included in the effective category. So that the research on the development of interactive e-modules using the problem based learning (PBL) learning model on motorcycle engine maintenance subjects in class XI of SMK N 4 Medan is stated to be valid, feasible and effective.

Keywords: *Development, e-modules, PBL, ADDIE, Canva*