ABSTRAK

Nina Karina Br Sembiring, NIM 4173121034 (2022), Pengembangan *E-modul* Pembelajaran Fisika Berbasis *Problem Solving* Berbantuan *Sigil Software* pada Materi Gerak Lurus di SMA Swasta PAB 8 SAENTIS.

Penelitian pengembangan ini bertujuan untuk menghasilkan *e-modul* fisika berbasis *problem solving* pada materi gerak lurus yang layak untuk diterapkan dalam proses pembelajaran fisika di sekolah, mengetahui respon peserta didik dan hasil belajar peserta didik setelah menggunakan *e-modul* yang dikembangkan. Subjek dalam penelitian ini adalah siswa kelas X MIA 1 di SMA Swasta PAB 8 Saentis yang berjumlah 20 orang siswa. Jenis penelitian ini merupakan penelitian pengembangan atau *Research and Development* (R&D) menggunakan model 4-D. Instrumen yang digunakan dalam penelitian ini terdiri dari angket validasi ahli materi, ahli media, angket penilaian guru, angket respon peserta didik, dan instrumen tes untuk mengetahui hasil belajar peserta didik terhadap *e-modul* pembelajaran fisika berbasis *problem solving.* Teknik analisis data yang digunakan dalam penelitian ini adalah kuantitatif. Dari hasil analisis data diperoleh validasi ahli materi sebesar 87,1% termasuk dalam kategori baik dengan kriteria sangat layak digunakan dan ahli media sebesar 78,8% termasuk dalam kategori baik dengan kriteria layak digunakan, penilaian guru fisika sebesar 86,82% dalam kategori baik atau sangat layak digunakan. Respon peserta didik setelah mengunakan *e-modul* sebesar 86,7% termasuk dalam kategori sangat baik atau sangat praktis digunakan. Sedangkan pada hasil tes peserta didik dilakukan pretes dan postes sehingga didapatkan nilai N-*gain* sebesar 0,66 termasuk kategori cukup efektif. Dan dapat disimpulkan pengembangan *e-modul* pembelajaran fisika berbasis *problem solving* berbantuan *sigil software* pada materi gerak lurus di SMA Swasta PAB 8 Saentis dinyatakan valid atau layak, praktis digunakan dan cukup efektif dalam proses pembelajaran.

Kata Kunci : *E-modul*, Penelitian dan Pengembangan *(R&D)*, 4-D, Pemecahan Masalah

ABSTRACK

Nina Karina Br Sembiring, NIM 4173121034 (2022), Development of Problem Solving Based Physics Learning E-modules Assisted By Sigil Software On Straight Motion Material at PAB 8 SAENTIS

This development research aims to produce problem solving-based physics e-modules on straight motion material that are feasible to be applied in the physics learning process at school, to find out student responses and student learning outcomes after using the developed e-module. The subjects in this study were students of class X MIA 1 at PAB 8 Saentis Private High School, totaling 20 students. This type of research is research and development (R&D) using a 4-D model. The instruments used in this study consisted of a material expert validation questionnaire, media experts, teacher assessment questionnaires, student response questionnaires, and test instruments to determine student learning outcomes towards problem solving-based physics learning e-modules. The data analysis technique used in this research is quantitative. From the results of data analysis, it was obtained that 87.1% of material expert validation was included in the good category with very suitable criteria for use and 78.8% of media experts included in the good category with appropriate criteria for use, the assessment of physics teachers was 86.82% in good category. or very suitable for use. The response of students after using the e-module was 86,7% included in the very good or very practical category to use. Meanwhile, the students' test results were carried out pretest and posttest so that an N-gain value of 0.66 was obtained which was categorized as quite effective. And it can be concluded that the development of problem solving-based physics learning e-modules assisted by sigil software on straight motion material at PAB 8 Saentis Private High School is declared valid or feasible, practical to use and quite effective in the learning process.

Keywords : *E-module, Development Research (R&D), 4D Model, Problem Solving.*