ABSTRAK

Sabrianto Hutabarat, NIM: 4171121031. Pengembangan *E-Modul* Berbasis *Problem Based Learning* Pada Materi Fluida Statis Kelas XI di SMA Swasta HKBP Sibolga. Skripsi, Jurusan Fisika Program Studi Pendidikan Fisika, Fakultas MIPA Universitas Negeri Medan 2023.

Penelitian ini bertujuan mengetahui hasil produk *E-modul* berbasis *problem based learning* pada materi fluida statis kelas XI SMA Swasta HKBP Sibolga, Untuk mengetahui hasil uji kelayakan *e-modul* berbasis *problem based learning* menurut ahli materi dan ahli pembelajaran, dan Untuk mengetahui tingkat keefektivan e-modul berbasis *problem based learning* untuk meningkatkan hasil belajar siswa pada materi fluida statis kelas XI SMA Swasta HKBP Sibolga.

Penelitian ini dilaksanakan di SMA Swasta HKBP Sibolga berlokasi di Jalan Mayjend Siswomiharjo, Kota Baringin, Kota Sibolga, Sumatera Utara. Subjek dalam penelitian ini adalah guru bidang studi fisika, siswa di sekolah SMA Swasta HKBP Sibolga yang berjumlah sebanyak 1 orang guru dan 31 siswa, validator ahli materi dan ahli pembelajaran sebanyak 1 orang validator ahli materi dan 1 orang ahli pembelajaran. Teknik yang digunakan dalam pengumpulan data adalah dokumentasi dan angket/kuesioner.

Penelitian dari data yang telah diperoleh bahwa tingkat validitas dari perangkat pembelajaran yang dikembangankan uji validitasnya oleh dua dosen dan di peroleh rata-rata berkriteria sangat valid, ahli materi dengan rata-rata keseluruhan aspek 85% dan untuk ahli pembelajaran berada pada rata-rata 84%. Dari data yang telah diperoleh dengan rata-rata seluruh aspek yang diuji kelayakannya pada *e-modul*, maka dapat disimpulkan dengan data, yaitu uji kelayakan guru, dari aspek keseluruhan aspek, berada pada rata-rata 84%, rata-rata ini berada pada kategori kualitatif sangat layak dan Tingkat keefektifan dapat dilihat berdasarkan hasil rata-rata tes belajar siswa sebanyak 76,93%. Tingkat keefektifan pengembangan *e-modul* fisika berbasis *problem based learning* pada materi fluida statis termasuk kategori tinggi.

Kata kunci: *e-modul* berbasis *problem based learning*, fluida statis.

ABSTRACT

Sabrianto Hutabarat, NIM: 4171121031. Development of Problem-Based Learning E-Modules on Class XI Static Fluid Material at HKBP Sibolga Private High School. Thesis, Department of Physics, Physics Education Study Program, Faculty of Mathematics and Natural Sciences, State University of Medan 2023.

This study aims to determine the results of problem-based learning-based E-module products on static fluid material for class XI HKBP Sibolga Private High School, to determine the results of problem-based learning e-module feasibility tests according to material experts and learning experts, and to determine the level of effectiveness of e-modules problem-based learning-based module to improve student learning outcomes on static fluid material for class XI HKBP Sibolga Private High School.

This research was conducted at HKBP Sibolga Private High School located on Jalan Mayjend Siswomiharjo, Baringin City, Sibolga City, North Sumatra. The subjects in this study were physics teachers, students at HKBP Sibolga Private High School, a total of 1 teacher and 31 students, material expert validators and learning experts as many as 1 material expert validator and 1 learning expert. The techniques used in data collection are documentation and questionnaires.

Research from the data that has been obtained shows that the level of validity of the learning tools that were developed tested for validity by two lecturers and obtained an average of very valid criteria, subject matter experts with an average overall aspect of 85% and learning experts at an average of 84%. . From the data that has been obtained by an average of all aspects tested for eligibility in the e-module, it can be concluded with the data, namely the teacher feasibility test, from all aspects, is at an average of 84%, this average is in the category qualitatively very feasible and the level of effectiveness can be seen based on the average student learning test results of 76.93%. The level of effectiveness in the development of problem-based learning physics e-modules on static fluid material is in the high category.

Keywords: problem-based learning e-module, static fluid.