

## ABSTRAK

**Ningsih, Tri Ayuni, NIM 4203121066 (2020). Pengembangan Multimedia Pembelajaran Berbasis *Science, Technology, Engineering and Mathematics* (STEM) Materi Fluida Statis Kelas XI SMA.**

Penelitian ini bertujuan untuk mengembangkan multimedia pembelajaran berbasis STEM (*Science, Technology, Engineering, and Mathematics*) pada materi fluida statis dan menganalisis kelayakan multimedia ditinjau dari tingkat kelayakan, kepraktisan dan keefektifan multimedia pembelajaran. Jenis penelitian yang digunakan yaitu *Research and Development* (Penelitian dan pengembangan) yang mengacu pada model ADDIE. Teknik pengumpulan data berupa angket kelayakan dan respon siswa, serta hasil belajar berupa *pre-test* dan *post-test*. Penelitian ini dilakukan melalui tahapan analisis, desain, pengembangan, implementasi dan evaluasi. Subjek penelitian ini meliputi dua dosen fisika sebagai validator, serta siswa kelas XI MIA 3 dan XI MIA I SMA Swasta Imelda Medan. Berdasarkan penilaian tingkat kelayakan diperoleh validitas ahli materi 86,15% dengan kriteria sangat layak sedangkan validitas ahli media diperoleh sebesar 86% dengan kriteria sangat layak. Tingkat kepraktisan multimedia memperoleh persentase sebesar 85,66% pada uji coba kelompok kecil dan 89,40% pada uji coba kelompok besar dengan kategori sangat praktis. Tingkat keefektifan multimedia diperoleh N-gain sebesar 0,68 yang menunjukkan terdapat peningkatan dari hasil belajar siswa yang dilihat dari hasil *pre-test* dan *post-test*. Tingkat keefektifan multimedia pembelajaran berbasis STEM masuk dalam kategori sedang. Dengan demikian, multimedia pembelajaran berbasis STEM pada materi fluida statis dinyatakan layak, praktis dan efektif.

**Kata kunci :** Fluida statis, Multimedia, STEM

## ABSTRACT

**Ningsih, Tri Ayuni, NIM 4203121066 (2020).** *Development of Science, Technology, Engineering and Mathematic (STEM) Bases Learning Multimedia Static Fluid Material for Class XI SMA.*

This research was aimed to develop learning multimedia based STEM (Science, Technology, Engineering and Mathematics) on statistic fluid subject and analyze the feasibility of learning multimedia in terms of the level of feasibility, practicality and effectiveness of multimedia. The type of reasearch used is reasearch and development (R&D) with ADDIE model. Data collection techniques are in the form of feasibility questionnaires, student responses, and learning outcomes test in the form of pre-test and post test. This reasearch conducted through the stages of analysis, design, implementation, and evaluation. The subjects of this study include two physics lecturers as validators, and class of XI MIA 3 and XI MIA 1 SMA Swasta Imelda Medan. Based on feasibility assesment, the validity of material experts is 86,15% with a very feasible criteria, while the validity of media experts is 86% with very feasible criteria. The level of practicality of multimedia obtained an average percentage of 85,66% in the small group trial and 89,40% in the large group trial with a very practical category. Meanwhile, the effectiveness level of multimedia obtained N-gain of 0,68 which shows that there is increase in student learning outcomes seen from the pre-test and post-test results. The level of effectiveness of STEM-based physics learning multimedia on the static fluid material is declared feasible, practical, and effective,

**Keywords :** Multimedia, STEM, Static Fluid.

