ABSTRAK

Uswatun Hasanah. Pengembangan Alat Peraga Dalam Memahami Konsep Besaran Fisika Termodinamika Menggunakan Mesin Stirlig di SMA. Program Pascasarjana, Universitas Negeri Medan, 2019.

Penelitian ini bertujuan untuk menganalisis kelayakan, keefektifan dan kepraktisan alat peraga mesin stirling pada materi termodinamika. Penelitian ini merupakan penelitian menggunakan desain ADDIE yang memiliki tahapan analisis (*analysis*), desain (*desig*n), pengembangan (*development*), dan evaluasi (*evalution*). Penelitian ini dilaksanakan di MAN 1 Medan dengan sampel 40 siswa. Hasil dari penelitian menghasilkan kelayakan alat peraga berdasarkan validasi ahli media dengan persentase nilai 91,11% dan hasil validasi ahli materi mendapat persentase nilai 91,66% dengan kategori sangat layak. Hasil uji efektivitas menunjukkan bahwa alat peraga mesin stirling efektif untuk digunakan dalam proses pembelajaran klasikal dengan persentase nilai 90% dengan kategori sangat efektif siswa tuntas dalam pembelajaran menggunakan mesin stirling. Kepraktisan alat peraga mesin stirling kategori sangat praktis dari respon siswa memperolehan persentase nilai 91,12%.

Kata kunci : Pengembangan, mesin stirling, materi termodinamika

ABSTRACT

Uswatun Hasanah. Development of Teaching Aids in Understanding the Magnitude Concepts of Thermodynamic Physics Using Stirlig Machines in High Schools. Postgraduate Program, Medan State University, 2019.

This research was to analyze the validity, effectiveness and practicality of the stirling engine teaching aids on thermodynamic material. This research model uses ADDIE which has analysis stages (*analysis*),the design stages (*design*), the development stages (*development*), and the evaluation stages (*evaluation*). This research was conducted at MAN 1 Medan with a sample of 40 students. The results of the study resulted in the feasibility of teaching aids based on the validation of media experts with a percentage value of 91.11% and the results of the validation of the material experts got a percentage of values 91.66% with a very good category. The results of the effectiveness test showed that the stirling engine props were effective for use in the classical learning process with a percentage value of 90% with a very effective category of students completing learning in using a stirling engine. The practicality of the stirling engine teaching aids in the excellent category of student responses gained a percentage of 91.12%.

Keywords: *Development, stirling engine, thermodynamic material*