

ABSTRACT

Development of Electronic Modules Based on Group Investigation Assisted by Tracker Application on Momentum and Impulse Physics Topic in Senior High School

Fitri Yusmak

Module as one type of teaching materials that can help students achieve learning goals in accordance with their respective speed and increase students' understanding of the concept of physics. The learning model in curriculum 2013 is student centered that guides students to gain direct experience on the problem solving process. Appropriate learning to respond to the needs of learners in developing collaborative learning skills through group work based on the experience of each learner is a model of group investigation. One of new innovations in science provided by technological advances is in understanding the concept of analyzing the video using the tracker application. This research was aimed to develop a group-based electronic investigation module assisted tracker application on the material momentum and impulse valid, practical and effective.

The type of this research was research and development using 4D model that has four stages consists of define, design, develop, and disseminate. The type of data were the validity, practicality, and effectiveness of electronic modules. the instrumen of this research consisted of analysis, validation, practicality, test sheet, attitude observation and skill observation sheet. data were analyzed using descriptive percentages.

The results showed that the Based electronic module of group investigation in tracker application with valid category (0.86), very practical according to the teachers (81.29%), practical according to the students (75.43%), and effective in enhancing the competence of learners includes competency of knowledge (89%), the competence of attitude (85.2%), and competence of skills (81%).

ABSTRAK

Pengembangan Modul Elektronik Berbasis Group Investigation Berbantuan Aplikasi Tracker Pada Materi Momentum dan Impuls Pembelajaran Fisika SMA

Fitri Yusmak

Modul sebagai salah satu jenis bahan ajar yang dapat membantu peserta didik mencapai tujuan pembelajaran sesuai dengan kecepatannya masing-masing dan menambah pemahaman peserta didik terhadap konsep Fisika. Model pembelajaran kurikulum 2013 bersifat *student center* yang menuntut peserta didik untuk memperoleh pengalaman langsung pada proses pemecahan masalah. Pembelajaran yang sesuai untuk merespon kebutuhan peserta didik dalam mengembangkan kemampuan belajar kolaborasi melalui kerja kelompok berdasarkan pengalaman masing-masing peserta didik adalah model *group investigation*. Kemajuan teknologi memberikan inovasi baru terhadap ilmu pengetahuan salah satunya dalam pemahaman konsep yaitu menganalisis video menggunakan aplikasi *tracker*. Penelitian ini bertujuan untuk mengembangkan modul elektronik berbasis *group investigation* berbantuan aplikasi *tracker* pada materi momentum dan impuls yang valid, praktis dan efektif.

Jenis penelitian adalah *research and development* dengan model 4D yang memiliki empat tahap yaitu *define, design, develop, dan disseminate*. Jenis data adalah validitas, praktikalitas, dan efektivitas modul elektronik. Instrumen penelitian terdiri dari lembar analisis berupa angket, lembar validasi, lembar praktikalitas, lembar tes, lembar observasi sikap, dan lembar observasi keterampilan. Teknik analisis data menggunakan deskriptif persentase.

Hasil penelitian menunjukkan bahwa modul elektronik berbasis *group investigation* berbantuan aplikasi *tracker* berkategori valid (0,86), sangat praktis menurut guru (81,29%), praktis menurut peserta didik (75,43%), dan efektivitas dalam meningkatkan kompetensi peserta didik meliputi kompetensi pengetahuan (89%), kompetensi sikap (85,2%), dan kompetensi keterampilan (81%).