

DEVELOPMENT OF SCIENTIFIC APPROACH BASED ON INSTRUMENTS NON TEST TO MAPPING PHYSICS LEARNING OUTCOMES OF STUDENT SENIOR HIGH SCHOOL

by Mundilarto and Suparwoto

ABSTRACT

RESEARCH SUMMARY

Students need to be trained to develop the skills in solving real problems that exist in the environment. Activities that involve mental processes, among other things: observation, classification, measurement, prediction, description, and inference. Scientific approach can be used as a learning approach to physics which gives emphasis on student involvement in the learning process both mentally and physically. This approach can be applied ranging from elementary, junior high to high school as a means to develop core competencies that include spiritual attitudes, social attitudes, knowledge, and skills of students in solving problems ranging from the very simple to the more complex. Scientific approach helps students develop critical thinking skills, develop an awareness of the complexity of the real world and understand the interrelationships of learning materials in school and everyday life.

Product development methods used in this research is the research and development approach. Subject of research is the students in physics classes at four high schools in Yogyakarta. This study was designed to be implemented through the following stages: The first phase, a preliminary study of the needs analysis, analysis Characteristic of students, curriculum analysis through the identification of basic competence, and indicators, as well as concepts of physics that matches the scientific approach, as well as the stage of preliminary design of products and limited validation. The second phase, the development consists of several stages of the field validation good group discussion forum with the relevant institutions, teachers, and students. At this stage also limited testing at four high schools. The third stage is the wider application or implementation that tested the effectiveness of non-test-based scientific instrument approach in four high school or a real class.

The target of this research are: (1) Produce the form of a guide instrument development non-test-based scientific approach, which consists of a description of assessment instruments non-test and device learning that includes: syllabus, lesson plans, worksheets, and instrument ratings core competencies, (2) Implementing instrument non-test-based scientific approach of the development of schools, (3) Disseminating assessment instruments non-test-based scientific approach, the result of the development of the teachers of physics through community service (PPM), and (4) Produce scientific articles published via seminars or publication of research results and through national or international scientific journals.

Key words: non-test instruments, scientific approach, physics, senior high school

Kata Kunci: *non-test instruments, scientific approach, physics, senior high school*