DEVELOPMENT OF INTERACTIVE DIALOGUE BASED ON SOCIOSCIENTIFIC ISSUES WEB-ASSISTED AS A FORMATIVE ASSESSMENT TO IMPROVE PHYSICS PROBLEM SOLVING SKILLS

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ABSTRACT

Energy is a cross-cutting concept that should be studied thoroughly integrated with other scientific disciplines such as social sciences, economics, politics and development sustainable. This integrated learning is important so that students can create decisions about problems in accordance with scientific knowledge. A number research reports that the use of socioscientific-issues in learning contexts can significantly improve understanding of concepts and problem solving skills.
Although previous research has developed several relevant test instruments for measuring energy-related problem-solving skills, unfortunately related test instruments socioscientific-issues-based problem solving abilities as a formative assessment with interactive dialogue format is still very minimal. This research is intended to fill this gap.
The objectives of this research are: (1) to determine the form/construction of physics formative assessment instruments which was developed to measure the problem solving skills of high school students, (2) determine the feasibility of physics assessment instruments developed to measure skills solving problems of high school students, and (3) knowing the characteristics of solving skills problems experienced by respondents using the developed physics assessment instrument.
The research design used in this research is development research Wilson modifications and Oriondo and Antonio models. In general, the steps usedto develop an instrument are (1) the test design stage which consists of: determination test objectives, determining the competencies being tested, determining the material being tested, preparing the grid
tests, writing items, validating items, improving items and assembling tests, as well as preparing guidelinesscoring; (2) test trials consisting of: determining test subjects, carrying out trials, and analysis of test result data, and (3) test assembly.
The output targets to be achieved in this research are (1) scientific publications which include one article submitted to the national journal Sinta 2 (JIPI) and one proceeding at the seminarScopus indexed international (ICRIEMS), and (2) Intellectual Property Rights on test instruments.

Kata Kunci: *formative assessment, problem solving skills, interactive dialogue, socioscientific issues*