Development of Adaptive Formative Assessment Instruments Using Edpuzzle to Support Physics Blended Learning

by Supahar, Irvany Nurita Pebriana, Edi Istiyono

ABSTRACT

Mechanics is a vital topic in physics. Unfortunately, there are still many students who have difficulty understanding this concept. learning this understanding must be immediately detected, monitored, and addressed so as not to interfere with the next physics learning process. However, monitoring the progress of student understanding through adaptive formative assessment on the topic of mechanics and which can be used boldly is still minimal. This study was intended to (1) develop an adaptive formative assessment instrument for the topic of mechanics, and (2) determine its feasibility.
The research design used in this research is development research
the Wilson modification and the Oriondo and Antonio models. Broadly speaking, the steps are
used to develop the instrument are (1) the test design stage which consists of:
multiple test objectives, paid for tested content, paid for tested material,
preparing test grids, writing items, validating items, repairing items and assembling tests, as well
preparation of scoring guidelines; (2) test trials consisting of: determination of test subjects,
trial implementation, and data analysis of trial results, and (3) assembly test. Data collection was carried out in the following steps: 1) assessing the quality of formative assessment instruments using the Edpuzzle platform and supporting instruments in the form of lesson plans and legibility questionnaires by being assessed by validators, 2) taking limited trial data in the form of legibility tests on formative assessment instruments using platforms Edpuzzle by students.
The data obtained from the research were then analyzed using a quantitative descriptive method. The feasibility of the assessment instrument was analyzed using a Likert scale. The score obtained from the validator expert will be taken for the average value. As for the analysis of students' responses to the Edpuzzle assessment instrument, response data were obtained from the readability test questionnaire at the limited trial stage (readability test). The score obtained is the sum of the scores for each statement item. Then for the analysis of the Edpuzzle assessment instrument, a validity test was carried out using the Aiken's V formula to calculate the content validity coefficient, the reliability test used the KR-20 method formula, as well as item analysts namely: discriminatory power, index of difficulty, and effectiveness of the detractor.
The objectives of this research are (1) scientific publications which include one article in an international journal Scopus indexed Q3 and two proceedings at an international seminar indexed Scopus, (2) Intellectual Property Rights on formative assessment instruments, (3) products on formative assessment instruments, and (4) a book with an ISBN regarding the format of the results of the developed adaptive assessment instrument

Kata Kunci: *formative assessment, adaptive, blended learning*