ABSTRACT

Elsariya Br Ginting, IDN 4203141034 (2024). Development of HOTS-Based Biology Summative Test Instrument at Odd Semester of Class XI MIA in SMAN 2 Medan.

This research aims to determine the feasibility level of HOTS-based biology summative test instruments for class XI MIA according to material experts and evaluation experts and also to produce a qualified test instruments in the aspects of validity, reliability, difficulty index, discriminating index, and distractor function. This research and development (R&D) refer to the ADDIE model, including the stages of analysis, design, development, implementation, and evaluation. The test instrument was tested through expert validation and three times trial involving 34 students in the first trial, 90 students in the second trial, and 165 students in the third trial. The research results showed that the HOTS-based biology summative test instrument was declared very feasible by material experts and evaluation experts. The average assessment of all validation aspects by material experts is 100% valid, while based on evaluation experts is 88% valid. Three times trial of multiple-choice question showed that: (1) there is increased trend of validity (respectively 85%; 95%; 100%). (2) there is increased trend of reliability (respectively 0.72; 0.75; 0.77) in the high category. (3) the difficulty index is dominated by medium levels and nearly approached the balanced proportion. (4) the discriminating index are dominated by items in the good category. (5) the distractors are functioning well, as proven by the dominance of items in the very good category. Three times trial of essay question showed that: (1) there is increased trend of validity (respectively 80%; 100%; 100%. (2) there is decreased trend of reliability (respectively 0.71; 0.71; 0.64) in the enough category. (3) the difficulty index is dominated by medium levels but it was still far from the balanced proportion. (4) the discriminating index are dominated by items in the good category. Based on several feasibility tests, it can be concluded that the HOTS-based biology summative test instrument that was developed is feasible to be used as an evaluation instrument.

Keywords: biology summative test, HOTS, test instrument