

DEVELOPING OF GAME BASED ASSESSMENT INSTRUMENT TO MEASURE THE UNDERSTANDING OF PHYSICS SUBJECT AND THE MOTIVATION IN LEARNING FOR SENIOR HIGH SCHOOL STUDENTS

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ABSTRACT

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This research aims to 1) produces instruments of media-based assessment of the game tic tac toe who is qualified to measure mastery of material physics impulse, momentum, and collisions, 2) describe the mastery of material physics impulse, momentum, and collision on the high school learners, 3) describe the learning motivation of students in high school.

Design research is the research development of modification of Wilson and model Oriondo and Antonio. The validity of the content with expert judgement by expert assessment of physics, physics education, and expert practitioners. The validity of the content using the V-Aiken and empirical validity using the program politomus Quest 1 PL. Instrument tested are limited to 249 learners and tested extensively at 264 learners from 5 high school in Sleman Regency. Data collection for the control of material physics Impulse, Momentum and collisions are obtained from the results of the score students in working on the problems of the game tic tac toe. Analytical techniques descriptive data are executed qualitative and quantitative.

The results showed that: 1) has produced various media-based assessment instruments tic tac toe who is qualified to measure mastery of material physics and achievement motivation in learning senior high school students, so it seems the overall the construction of the following: a) the instrument that was developed has been qualified with expert content validity judgement b) items reserved in good criteria, indices of difficulty is at the range-up to 0.61 0.64, c) the instruments of assessment-based media a game of tic tac toe enough reliability (reliability coefficient of 0.58); 2) mastery of material physics impulse, momentum and collision of the learners in the broad categories of field trials are 51% and 49% higher category; 3) achievement motivation of learning physics learners on extensive field trials category low 5%, while 34%, 58% and higher.

Kata Kunci: instrument assessment, development, media game tic tac toe, momentum and impulse of the collision, the mastery of the material, and the motivation of learning