

## ABSTRACT

**Hari Otta Sinaga , 41612121007 (2022). The Development of Higher Order Thinking Skills (HOTS) Test Instruments for Work and Energy in Senior High School**

The research aims to develop the objective physics instrument test based Higher Order Thinking skills (HOTS) for work and energy that already meet the qualification in aspects of validity, reliability, distinguishing power, difficulty level, and effectiveness of distractors. The type of research that is used in research is Research and Development (R & D), the Borg & Gall models which consists of 7 stages, namely : 1) Research and information collecting, 2) Planning, 3) Development preliminary of products, 4) Preliminary field testing, 5) main product revision, 6) Main Field Test, and 7) Main product revision. Subject of research is student class X in SMA Swasta St. Lusia Sei Rotan and student class X in SMA N 2 Percut Sei Tuan who totaled 10 people on the preliminary field testing and 50 people on the main field test in student class X in SMA Swasta St.Lusia Sei Rotan and SMA N 2 Percut Sei Tuan. The method of research that is used is interviews, tests, questionnaires, and documentation. Instrument tests were developed consists on grating and discussion about testing, manual processing and instrument tests, sheets for my responsen, key answers and guidelines for scoring. Test the validity of which is used is a test of the validity of the content . Results of the study showed that the validation of the contents by expet judgment is valid with the average value is 87.6 and has been getting evidence empirically through validation construction item test with the average value is 3.9 (  $t_{\text{calculate}} > t_{\text{table}}$  ,  $t_{\text{table}} = 2.01$ ), the reliability of item test is 0.87 with high category (  $r \geq 0,70$  ), the distinguishing power have the average value is 0.45 with a category well, the average difficulty level is rather difficult with the range value is 0.2-0.73, and the effectiveness of distractors were function, so that instrument test decent used to measure higher order thinking skills of student.

**Words key:** Higher Order Thinking Skills, Instruments Test, Work and Energy