FOUR TIER TEST DEVELOPMENT IN A VIRTUALIZATION STATIC FLUID TEST USING RASCH MODEL ANALYSIS TO SUPPORT LEARNING DURING THE COVID-19 PANDEMIC

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ABSTRACT

Assessment is one of the stages at the end of a learning process. The online-based learning process during the Covid-19 pandemic has made changes in the world of education, one of which is the assessment process. However, the majority of teachers have difficulty in carrying out online-based assessments during this pandemic. Based on these problems, this study aims to produce an educational product in the form of a Four Tier Test in a Virtualization Static Fluid Test, which is suitable for being used as a test instrument and effectively determining student misconceptions. The method used in this study is research and development with a 4D model. This research produces an educational product in the form of a Four Tier Test in a Virtualization Static Fluid Test. The items developed were 20 items. The results of expert validation gave an average score of 88.13%, with very good criteria. The CVR value for each item is 1, while the CVI value is 1 with very good criteria. The results of the validation of education practitioners gave an average score of 89.58% with very good criteria. The results of the Rasch Model analysis show that the test instrument is accepted and can measure what should be measured, the reliability of all items has good criteria, all items are valid and divided into three levels of difficulty, and each item is not biased towards gender differences. The results of the analysis of students' misconceptions showed that only 4.68% understood the whole concept, 23.42% of students understood some of it, 68.95% experienced misconceptions, and 12.95% of students did not understand the concept at all. This research concludes that an educational product in the form of a Four Tier Test in a Virtualization Static Fluid Test has been produced, which is feasible to use as a test instrument and effectively determines students' misconceptions. Then, the Four Tier Test instrument in a Virtualization Static Fluid Test that has been developed has moderate effectiveness.

Keywords: *Four Tier Test, Virtualization Static Fluid Test, Rasch Model*