

Computer-Based Diagnostic Assessment to Measure Junior High School Students' Readiness to Participate AKM and PISA with Automatic Feedback

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ABSTRACT

Abstract. One of the problems in education in Indonesia is the low score of PISA among 15-year-old students, so the Ministry of Education and Culture issues an AKM policy that refers to language literacy and numeracy competencies. This study aims to develop a Computer-based Diagnostic assessment to measure the student's readiness to participate in AKM and PISA. The study used a Research and Development (R & D) model with 4-D (Four D) stages which have been modified based on the needs of the field during the study. This model consisted of four main stages, namely define (limitation), design, develop, and disseminate. Preliminary research was conducted by depth-analyzing the AKM material and science material in the science curriculum of junior high school, identifying science materials or concepts that developed as AKM and PISA assessment instruments, designing instrument models and Computer-based Diagnostic assessments, implementation or empirical tests, validation, and first revision. And it ended with the dissemination stage through international seminars, attended by students, teachers, lecturers, and observers of science education. The conclusion of the study shows that the developmental research of a 4-D model is effectively used in developing computer-based diagnostic assessment products to measure the student's readiness of junior high school to participate in AKM and PISA with automatic feedback. In detail, the conclusion of this research is that application of a computer-based diagnostic assessment is formed to measure the student's readiness of junior high school to participate in AKM and PISA with valid automatic feedback based on the Aiken formula and appropriate, according to science education experts from the aspect of content, construct, and language. The results of the empirical test of the application of computer-based diagnostic assessment are used to measure the student's readiness of junior high school to participate in AKM and PISA with automatic feedback stating that all items fit the Rasch model. And, the results of a limited-scale test for the student's readiness to participate in AKM and PISA showed that SMP N 4 Pakem obtained 67.92% readiness in the average category, while SMP N 1 Tempel obtained 48.75% readiness in the below average category.

Kata Kunci: *Computer-Based Diagnostic Assessment, AKM, and PISA*