ABSTRAK

Aninda Suhaila, NIM 4202121004 (2024), Pengembangan *Three-Tier Multiple Choice Diagnostik Test* untuk Mengetahui Tingkat Miskonsepsi Siswa SMA/MA Pada Materi Suhu dan Kalor.

Miskonsepsi merupakan kekeliruan penerapan atau pemahaman konsep fisika yang terjadi pada peserta didik. Hasil observasi terhadap pembelajaran fisika di MAN Binjai menyatakan penilaian dilakukan hanya berbentuk tes *one tier multiple* choice dan tes essai. Penelitian ini bertujuan untuk mengetahui kelayakan dan kefektifan instrumen *three-tier multiple choice diagnostik test* sehingga dapat mengetahui tingkat miskonsepsi siswa pada materi suhu dan kalor. Penelitian ini dilaksanakan di MAN Binjai dengan menggunakan sistem *random sampling*. Subjek penelitian ini menggunakan 30 peserta didik kelas XII MIA 1. Metode penelitian menggunakan jenis penelitian R&D dengan model pengembangan 4D untuk mengembangkan 15 butir soal. Hasil analisis data menyatakan bahwa instrumen telah layak berdasar hasil validasi ahli. Instrumen yang dikembangkan telah efektif berdasar hasil uji validitas, reliablitas, daya beda, dan tingkat kesukaran. Uji validitas statistik menunjukkan 11 soal valid, hasil uji reliabilitas menyatakan instrumen telah reliabel. Uji daya beda menunjukkan 12 soal memiliki daya beda yang baik dan 2 soal memiliki daya beda yang buruk. Analisis tingkat kesukaran menghasilkan 10 soal kategori mudah, 4 soal kategori sedang, dan 1 soal kategori sulit. Berdasarkan hasil yang diperoleh, instrumen tes *three-tier multiple choice diagnostik test* yang dikembangkan dapat digunakan untuk mengetahui tingkat miskonsepsi yang dialami siswa pada materi suhu dan kalor.

Kata kunci : Pengembangan, *Three-Tier, Diagnostik Test,* Validasi, Instrumen Tes

ABSTRACT

Aninda Suhaila, NIM 4202121004 (2024), Development of a Three-Tier Multiple Choice Diagnostic Test to determine the level of misconceptions of SMA/MA students regarding temperature and heat.

Misconceptions are errors in the application or understanding of physics concepts that occur in students. The results of observations of physics learning at MAN Binjai stated that the assessment was carried out only in the form of one tier multiple choice tests and essay tests. This research aims to determine the feasibility and effectiveness of the three-tier multiple choice diagnostic test instrument so that it can determine the level of student misconceptions regarding temperature and heat material. This research was carried out at MAN Binjai using a random sampling system. The subjects of this research were 30 students from class XII MIA 1. The research method used R&D research with a 4D development model to develop 15 questions. The results of data analysis stated that the instrument was appropriate based on the results of expert validation. The instrument developed has been effective based on the results of validity, reliability, distinguishability and level of difficulty tests. The statistical validity test showed that 11 questions were valid, the results of the reliability test stated that the instrument was reliable. The differentiating power test showed that 12 questions had good differentiating power and 2 questions had poor differentiating power. Analysis of the level of difficulty resulted in 10 questions in the easy category, 4 questions in the medium category, and 1 question in the difficult category. Based on the results obtained, the developed three-tier multiple choice diagnostic test instrument can be used to determine the level of misconceptions experienced by students regarding temperature and heat material.

Keywords: Development, Three-Tier, Diagnostic Test, Validation, Test Instrument