ABSTRAK

Rizkina Hakiki, NIM 4192431016 (2023), Pengembangan Instrumen Tes Diagnostik *Five-Tier* Multiple Choice untuk Mengukur Miskonsepsi Siswa pada Materi Asam Basa

Penelitian ini bertujuan untuk mengukur miskonsepsi siswa dengan menggunakan instrument test diagnostic *five-tier* pada materi asam basa. Penelitian ini diujikan di SMA Negeri 11 Medan pada tahun ajaran 2022/2023. Jenis penelitian menggunakan metode *Research and Development* (R&D) dengan menggunakan model ADDIE. Populasi dalam penelitian seluaruh siswa kelas XI IPA SMA Negeri 11 Medan. Sampel penelitian adalah kelas XI IPA 2. Pengambilan sampel dengan menggunakan teknik random sampling. Dalam penelitian ini, data dikumpulkan melalui wawancara, kuesioner, dan instrumen tes. Tahap penelitian dimulai dari analisis (pengumpulan data), desain dan perancangan produk, pengembangan (skala kecil), implementasi (skala luas) dan evaluasi (interpretasi miskonsepsi siswa) dengan menggunakan instrumen tes diagnostik *five-tier*. Instrumen tes diagnostic *five-tier* yang diujicobakan sebanyak 15 soal. Rata-rata miskonsepsi siswa XI IPA 2 SMA Negeri 11 Medan yang di dapat pada materi asam-basa yaitu sebesar 22% yang artinya tingkat miskonsepsi siswa masih tergolong kategori rendah. Miskonsepsi konsep teori asam basa sebesar 6,88%, konsep kekuatan asam dan basa sebesar 23,75 %, tetatan ionisasi asam basa sebesar 25%, konsep derajat keasaman dan kebasaan memiliki tingkat miskonsepsi terbesar di kalangan siswa yaitu 34,17% dan miskonsepsi indikator asam basa sebesar 25,83%. Hasil analisis angket respon siswa terhadap instrumen tes diagnostik *five-tier* yang telah dikerjakan menunjukkan respon dengan rata-rata 84,63% baik.

Kata Kunci : Tes diagnostik *five-tier*, miskonsepsi, asam-basa

ABSTRACK

Rizkina Hakiki, NIM 4192431016 (2023), Development of a Five-Tier Multiple Choice Diagnostic Test Instrument to Measure Students' Misconceptions on Acid-Base Material

This research aims to measure students' misconceptions by using a five-tier diagnostic test instrument on acid-base material. This research was tested at SMA Negeri 11 Medan in the 2022/2023 academic year. This type of research uses the Research and Development (R&D) method using the ADDIE model. The population in the study were all students in class XI Science at SMA Negeri 11 Medan. The research sample was class XI IPA 2. Samples were taken using random sampling techniques. In this research, data was collected through interviews, questionnaires and test instruments. The research stage starts from analysis (data collection), product design and planning, development (small scale), implementation (wide scale) and evaluation (interpretation of student misconceptions) using a five-tier diagnostic test instrument. The five-tier diagnostic test instrument that was tested consisted of 15 questions. The average misconception that students of XI IPA 2 SMA Negeri 11 Medan got on acid-base material was 22%, which means that the level of students' misconceptions is still in the low category. Misconceptions about the concept of acid-base theory were 6.88%, the concept of acid and base strength was 23.75%, acid-base ionization order was 25%, the concept of degrees of acidity and basicity had the largest level of misconception among students, namely 34.17% and indicator misconceptions acid base of 25.83%. The results of the questionnaire analysis of student responses to the five-tier diagnostic test instrument that had been carried out showed a response with an average of 84.63% good.

Keywords: Five-tier diagnostic test, misconceptions, acid-base