ABSTRAK

Alfi Rizkina Lubis. NIM. 8196141002. Pengembangan Instrument Asessment Higher Order Thinking Skill (HOTS) Untuk Mengukur Kemampuan Berpikir Tingkat Tinggi Pada Materi Hidrolisis Garam. Tesis. Medan: Program Studi Pendidikan Kimia, Pascasarjana Universitas Negeri Medan, 2021.

Penelitian ini bertujuan untuk mengetahui hasil analisis kebutuhan instrumen asesmen, kelayakan instrumen asesmen, tingkat kemampuan berpikir tingkat tinggi peserta didik yang diukur menggunakan instrumen asesmen *Higher Order Thinking Skills* (HOTS) dan untuk mengetahui bagaimana respon peserta didik terhadap instrumen asesmen *Higher Order Thinking Skills* (HOTS). Subjek uji coba penelitian sebanyak 15 peserta didik. Produk ini diimplementasikan pada 25 siswa Kelas XI MAN 2 Deli Serdang. Desain uji coba terdiri dari uji validasi isi oleh para ahli dan dianalisis dengan formula Aiken's. Data dari hasil percobaan dianalisis dengan *Rasch* model. Hasil penelitian menunjukkan bahwa (1) Berdasarkan hasil analisis kebutuhan ditemukan bahwa peserta didik memiliki kemampuan berpikir yang beragam dan peserta didik juga belum terbiasa untuk menyelesaikan soal-soal HOTS pada level C4-C6 serta menganalisis indikator pengukuran pada materi Hidrolisis Garam (2) Instrumen asesmen yang telah dikembangkan yaitu instrumen soal berbentuk pilihan ganda sebanyak 40 soal, berdasarkan hasil uji coba memiliki kategori layak untuk digunakan. Instrumen asesmen memenuhi validitas isi oleh *expert judgement* yang dianalisis dengan indeks *V Aiken's* sebesar 0.90 yang artinya semua item soal valid. Hasil analisis dengan *Rasch model* yaitu validitas empiris memperoleh 23 *item fit*, realibilitas tes sebesar 0.67 dengan kategori cukup, tingkat kesukaran butir soal dalam kategori kesukaran sedang, pengecoh (57.5%) berfungsi dengan baik. Sehingga diperoleh 23 soal HOTS yang layak digunakan; (3) Berdasarkan hasil uji implementasi, tingkat kemampuan berpikir tingkat tinggi peserta didik pada materi Hidrolisis Garam dikategorikan di bawah kemampuan rata-rata dengan nilai *logit* -2.24 sampai -0.09 atau kurang dari 0; (4) Hasil analisis respon peserta didik terhadap instrumen HOTS yang dikembangkan, diperoleh 78.90% peserta didik tidak dapat dengan mudah menjawab butir soal yang ada pada instrumen HOTS. Secara keseluruhan peserta didik memberikan respon positif terhadap instrumen soal HOTS dengan rata-rata respon positif peserta didik adalah 61.21% dan rata-rata respon negatif peserta didik adalah 38.78%. Dengan demikian, kesimpulan dari penelitian pengembangan ini adalah telah dihasilkan instrumen asesmen HOTS yang sesuai dengan kriteria kelayakan.

Kata Kunci: HOTS, rasch model, model 4-D, Hidrolisis Garam.

ABSTRACT

Alfi Rizkina Lubis. NIM. 8196141002. Development of a Higher Order Thinking Skill (HOTS) Assessment Instrument to Measure Higher Order Thinking Ability in Salt Hydrolysis Material. Thesis. Medan: Chemistry Education Study Program, Postgraduate Medan State University, 2021.

This study aims to determine the results of the analysis of the needs of the assessment instrument, the feasibility of the assessment instrument, the level of students' higher order thinking skills measured using the Higher Order Thinking Skills (HOTS) assessment instrument and to find out how the students respond to the Higher Order Thinking Skills assessment instrument (HOTS). The subjects of the research trial were 15 students. This product was implemented on 25 students of Class XI MAN 2 Deli Serdang. The trial design consisted of content validation tests by experts and analyzed by Aiken's formula. Data from the experimental results were analyzed using the Rasch model. The results showed that (1) Based on the results of the needs analysis it was found that students had diverse thinking abilities and students were also not accustomed to solving HOTS questions at the C4-C6 level and analyzing measurement indicators on the Salt Hydrolysis material (2) Assessment instruments that has been developed, namely the multiple-choice question instrument as many as 40 questions, based on the results of the trial it has a feasible category to use. The assessment instrument meets content validity by expert judgment which is analyzed with Aiken's V index of 0.90, which means that all items are valid. The results of the analysis using the Rasch model, namely empirical validity, obtained 23 fit items, test reliability was 0.67 with sufficient category, item difficulty level was in the moderate difficulty category, distractors (57.5%) functioned well. So that 23 HOTS questions are obtained that are suitable for use; (3) Based on the results of the implementation test, the level of high-order thinking skills of students on Salt Hydrolysis material is categorized below the average ability with a logit value of -2.24 to -0.09 or less than 0; (4) The results of the analysis of student responses to the developed HOTS instrument, obtained 78.90% of students cannot easily answer the questions on the HOTS instrument. Overall, students gave a positive response to the HOTS question instrument with the average positive response of students being 61.21% and the average negative response of students being 38.78%. Thus, the conclusion of this development research is that a HOTS assessment instrument has been produced that is in accordance with the eligibility criteria.
Keywords: HOTS, Rasch model, 4-D model, Salt Hydrolysis.