

## ABSTRAK

Penelitian ini bertujuan untuk mengembangkan instrumen penilaian yang layak digunakan untuk mengukur kemampuan berpikir tingkat tinggi kimia materi asam-basa. Jenis penelitian yang digunakan *Research and Development* (R&D) dan pengembangan dengan model 4-D, yaitu meliputi *define, design, develop, disseminate*. Produk awal divalidasi oleh *expert judgment*, dinilai kelayakan oleh guru kimia, serta uji coba. Penelitian ini melibatkan 200 peserta didik kelas XII IPA SMAN Bireuen. Teknik pengumpulan data menggunakan wawancara, angket serta tes. Instrumen pengumpulan data yaitu, pedoman wawancara, lembar validasi butir soal, lembar kelayakan serta pilihan ganda dengan alasan terbuka. Hasil penelitian diketahui bahwa penilaian validasi materi memperoleh nilai rata-rata sebesar 47,5 ( $\bar{X} > 46,194$ ) dengan kategori sangat baik, penilaian kelayakan memperoleh nilai rata-rata sebesar 72,5 ( $\bar{X} > 67,188$ ) dengan kategori sangat baik. Butir tes uji coba sebanyak 30 butir soal dianalisis berdasarkan validitas, reliabilitas, tingkat kesukaran, daya pembeda serta uji distraktor. Oleh karena itu, dapat disimpulkan bahwa instrumen penilaian layak digunakan untuk mengukur kemampuan berpikir tingkat tinggi kimia materi asam-basa.

Kata Kunci: *asam-basa, instrumen, kimia, HOTS, penilaian*.

## ABSTRACT

This study aims to develop an appropriate assessment instrument used to measure higher order thinking skills in acid-base chemistry. The type of research used is *Research and Development* (R&D) and development with a 4-D model, which includes *define, design, develop, disseminate*. The initial product was validated by *expert judgment*, assessed for feasibility by a chemistry teacher, and tested. This study involved 200 students of class XII IPA SMAN Bireuen. Data collection techniques using interviews, questionnaires and tests. The data collection instruments were interview guidelines, item validation sheets, feasibility sheets and multiple choice with open reasons. The results showed that the material validation assessment obtained an average value of 47.5 ( $> 46,194$ ) in the very good category, the feasibility assessment obtained an average value of 72.5 ( $> 67,188$ ) in the very good category. The test items of 30 test items were analyzed based on validity, reliability, level of difficulty, discriminatory power and distractor test. Therefore, it can be concluded that the assessment instrument is suitable to be used to measure the high-order thinking ability of acid-base chemistry.

Keywords: *acid-base, instruments, chemistry, HOTS, assessment*.