

ABSTRAK

Penelitian ini dilakukan untuk mengembangkan tes pilihan ganda berbasis penalaran dengan *framework* TIMSS 2015 pada topik termokimia yang valid dan reliabel. Metode yang digunakan adalah pengembangan dan validasi. Instrumen tes yang dihasilkan kemudian dilakukan uji validitas oleh tujuh orang validator ahli yaitu empat orang dosen kimia dan tiga orang guru kimia SMA yang berpengalaman. Responden dalam penelitian ini berjumlah 161 siswa di SMA Negeri 1 Lembang dan tiga orang guru Kimia untuk di wawancara. Produk penelitian ini adalah tes kimia berupa tes pilihan ganda berbasis penalaran yang merujuk pada *framework* TIMSS 2015 yang valid dan reliabel. Hasil validasi dianalisis menggunakan CVR (*Content Validity Ratio*) dengan nilai *CVI* sebesar 0,949 dan reliabilitas dianalisis menggunakan SPSS 23 dengan menentukan koefisien *Cronbach Alpha* dan diperoleh nilai 0,955. Hasil penelitian menunjukkan bahwa semua butir soal dinyatakan valid dan reliabilitasnya dapat diterima. Hasil wawancara memberikan penguatan terhadap instrumen tes yang dikembangkan bahwa instrumen tes layak digunakan untuk dijadikan tes sumatif kimia dan sebagai tes ujian akhir sekolah.

Kata-kata kunci : Pengembangan, validasi, tes pilihan ganda, *framework* TIMSS 2015

ABSTRACT

This study was carried out to develop a valid and reliable reasoning-based multiple choice test based on the TIMSS 2015 framework on thermochemical topic. Development method was applied to develop the test instrument, which is in the form of reasoning-based multiple-choice test based on the TIMSS 2015 framework. Then, the developed test instrument was validated by seven experts, namely four chemistry lecturers and three senior high school experienced chemistry teachers. This study involved 161 students of SMA N 1 Lembang and three chemistry teachers as the participants. The teachers were interviewed. The product of this study is a valid and reliable chemistry test instrument which is in the form of reasoning-based multiple-choice test based on the TIMSS 2015 framework. The result of validation test was analyzed by using CVR (Content Validity Ration) and the obtained CVI value is 0,949. The reliability was analyzed by using SPSS 23. The reliability index value was calculated by determine *Cronbach Alpha* coefficient and the value obtained was 0,955. The result of this study shows that all the test items are valid and the reliability can be accepted. The data obtained through the interview provide reinforcement that the developed test instrument is feasible to use in both summative chemistry tests and school final examinations.

Key words: Development, Validation, Multiple-choice test, TIMSS 2015 framework.