ABSTRAK

BESTRICA KURNIA SARI. Pengembangan Tes Objektif Berbasis PISA Materi Gelombang Bunyi di SMA. Tesis. Medan: Program Pascasarjana Universitas Negeri Medan, Januari 2021.

Penelitian ini bertujuan untuk mengembangkan instrumen tes objektif berbasis PISA materi gelombang bunyi di SMA sesuai standar kualifikasi tes yang baik ditinjau dari validitas, reliabilitas, daya beda, taraf kesukaran, dan efektivitas pengecoh. Penelitian ini menggunakan jenis penelitian dan pengembangan (*Research & Development*) menggunakan desain ADDIE dengan tahapan analisis (*analysis*), desain (*desig*n), pengembangan (*development*), dan evaluasi (*evalution*). Tahap analisis diperoleh hasil minimnya variasi dalam assesmen dan siswa masih kurang memperoleh soal fisika berbasis PISA terutama pada materi gelombang bunyi. Materi soal fisika yang dikembangkan meliputi besaran pada gelombang bunyi, refleksi dan refraksi, resonansi, intensitas bunyi, dan efek doppler. Tahap desain diperoleh hasil 45 butir soal berdasarkan kompetensi literasi sains PISA yang diklasifikasikan ke dalam tiga standar kompetensi, yaitu: menjelaskan fenomena ilmiah; mengevaluasi dan mendesain penelitian ilmiah; menginterpretasikan data dan bukti ilmiah. Tahap pengembangan diperoleh 44 butir soal dalam kategori sangat valid dengan persentase 90 % berdasarkan validasi isi oleh 5 ahli, baik dari segi materi, konstruk, dan bahasa. Hasil dari tahap implementasi dan evaluasi menunjukkan bahwa dari 45 butir soal yang dikembangkan, 38 butir soal telah memenuhi kriteria kualitas tes yang baik, berdasarkan uji validitas, reliabilitas, daya beda, taraf kesukaran, dan efektivitas pengecoh pada uji coba kelompok kecil maupun uji coba kelompok besar.

Kata kunci : Tes objektif, PISA, Gelombang bunyi

ABSTRACT

BESTRICA KURNIA SARI. Development of PISA-Based Test Instruments with Objective Type Questions for Sound Wave Material in High School. Thesis. Medan: Postgraduate School of Medan State University, January 2021.

This study aims to develop PISA-based test instruments with objective type questions for sound wave material in high school in accordance with good test qualification standards reviewed from validity, reliability, different power, difficulty level, and effectiveness of the distractor. This research uses research and development using ADDIE design with analysis, design, development, and evaluation. The analysis stage obtained the results of the lack of variation in assessment and students still lack pisa-based physics problems, especially in sound wave material. The physics material developed includes the magnitude of sound waves, reflection and refractive, resonance, sound intensity, and doppler effects. On the design stage obtained the results of 45 questions based on PISA science literacy competencies classified into three competency standards, namely: explaining scientific phenomena, evaluating and designing scientific research, interpret scientific data and evidence. The development stage obtained 44 question items in a very valid category with a percentage of 90% based on validation of content by 5 experts, both in terms of material, construction, and language. The results of the implementation and evaluation stage showed that of the 45 questions developed, 38 questions had met the criteria for good test quality, based on validity, reliability, different power, difficulty level, and effectiveness of the distractor in small test group and large test group.

Keywords: Objective tests, PISA, Sound waves