

ABSTRACT

Shefty Yuliani Siregar, IDN. 4211121006 (2025). The Development Of Problem Solving Test With Cultural Context Using The Quizizz Application On Temperature And Heat Material At Sma Negeri 7 Medan

This study aims to develop a physics problem-solving skills test instrument based on the Batak cultural context on temperature and heat material by applying the 4D development model (Define, Design, Develop, and Disseminate). The research subjects were 36 students of class XII M.T. Haryono Senior High School 7 Medan. The development process was carried out through four main stages, namely defining the needs and characteristics of students, designing the instrument based on Polya indicators, expert validation, and limited and extensive trials. The test instrument is in the form of six descriptive questions that require students to solve problems according to Polya's steps: understanding the problem, planning a solution, implementing the plan, and reviewing the results. The results of expert validation on three aspects, namely material, construction, and language, showed an average validity of 86.43% with a very valid category. The results of empirical tests showed that all test items were valid and reliable, with a reliability value of 0.933 for the small group test and 0.853 for the large group test, both of which are in the very high category. Analysis of problem-solving abilities showed that students were in the good to very good category, with the indicator of understanding the problem obtaining the highest percentage. Furthermore, student responses to the instrument reached 96.5% in the small group and 81.32% in the large group, categorized as very good. Overall, the developed test instrument is suitable for use as a Higher Order Thinking Skills (HOTS)-based evaluation tool that integrates local cultural values. This instrument also supports contextual physics learning and aligns with the spirit of the Independent Curriculum.

Keywords : Physics Problem-Solving Skills, Batak Cultural Context, 4D Development Model.

ABSTRAK

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Penelitian ini bertujuan untuk mengembangkan instrumen tes keterampilan pemecahan masalah fisika berbasis konteks budaya Batak pada materi suhu dan kalor dengan menerapkan model pengembangan 4D (Define, Design, Develop, dan Disseminate). Subjek penelitian adalah 36 peserta didik kelas XII M.T. Haryono SMA Negeri 7 Medan. Proses pengembangan dilakukan melalui empat tahapan utama, yaitu pendefinisian kebutuhan dan karakteristik peserta didik, perancangan instrumen berdasarkan indikator Polya, validasi oleh ahli, serta uji coba terbatas dan uji coba luas. Instrumen tes berbentuk enam soal uraian yang menuntut peserta didik menyelesaikan masalah sesuai langkah-langkah Polya, yaitu memahami masalah, merencanakan penyelesaian, melaksanakan rencana, dan meninjau kembali hasil. Hasil validasi ahli pada tiga aspek, yaitu materi, konstruksi, dan bahasa, menunjukkan rata-rata validitas sebesar 86,43% dengan kategori sangat valid. Hasil uji empiris menunjukkan bahwa seluruh butir soal valid dan reliabel, dengan nilai reliabilitas sebesar 0,933 pada uji kelompok kecil dan 0,853 pada uji kelompok besar, keduanya termasuk kategori sangat tinggi. Analisis kemampuan pemecahan masalah menunjukkan bahwa peserta didik berada pada kategori baik hingga sangat baik, dengan indikator memahami masalah memperoleh persentase tertinggi. Selanjutnya, respons peserta didik terhadap instrumen mencapai 96,5% pada kelompok kecil dan 81,32% pada kelompok besar, yang termasuk kategori sangat baik. Secara keseluruhan, instrumen tes yang dikembangkan layak digunakan sebagai alat evaluasi berbasis Higher Order Thinking Skills (HOTS) yang mengintegrasikan nilai-nilai budaya lokal. Instrumen ini juga mendukung pembelajaran fisika kontekstual dan sejalan dengan semangat Kurikulum Merdeka.

Kata Kunci : Keterampilan Pemecahan Masalah Fisika, Konteks Budaya Batak, Model Pengembangan 4D.

