

ABSTRAK

Ditya Lufita, NIM 4181121011 (2022). Pengembangan Instrumen Tes Berbasis *Problem Solving* Pada Materi Suhu dan Kalor Fisika SMA.

Permasalahan peserta didik mengenai kemampuan dalam menyelesaikan soal-soal kontekstual, pemecahan masalah, dan mengerjakan soal-soal berpikir tingkat tinggi perlu adanya solusi yaitu dengan mengembangkan instrumen tes. Penelitian pengembangan instrumen tes berbasis *problem solving* pada materi suhu dan kalor yang telah dilakukan bertujuan untuk mengetahui kelayakan instrumen tes dilihat dari validitas, reliabilitas, daya pembeda dan tingkat kesukaran. Jenis penelitian adalah *research and development* (R&D) dengan model ADDIE yaitu *Analysis* (menganalisis), *Design* (perancangan), *Development* (pengembangan), *Implementation* (penerapan) dan *Evaluation* (evaluasi). Penelitian dilakukan di SMA Islam Al Ulum Terpadu Medan dengan subjek penelitian yaitu XII MIA 1 dan XII MIA 2 dengan jumlah keseluruhan yaitu 50 siswa, untuk kelompok kecil berjumlah 15 siswa dan 35 siswa kelompok besar. Instrumen tes disusun dalam bentuk uraian mengacu pada indikator soal dan aspek *problem solving*. Hasil penelitian dari validitas isi menyatakan bahwa 15 soal yang dikembangkan berada dalam kategori sangat layak. Hasil uji kelompok kecil dari 15 soal diperoleh 10 soal valid dengan nilai reliabilitas sebesar 0,89 kategori tinggi. Hasil tingkat kesukaran butir soal dengan persentase 67% kategori sedang dan 33% kategori mudah. Hasil daya pembeda butir soal dengan persentase 7% baik sekali, 40% kategori baik, 33% kategori cukup baik, dan 20% kategori jelek. Hasil uji kelompok besar diperoleh 10 soal dalam kategori valid dan nilai reliabilitas sebesar 0,93 dengan katagori reliabilitas tinggi. Tingkat kesukaran butir soal dengan persentase 80% kategori sedang, 20% kategori sukar. Daya beda butir soal dengan persentase 50% kategori baik, 30% kategori cukup baik dan 20% kategori jelek. Kesimpulan dari keseluruhan hasil pengujian bahwa instrumen tes berbasis *problem solving* dengan jumlah 10 butir soal layak digunakan.

Kata Kunci : Pengembangan, Instrumen Tes, *Problem Solving*.

ABSTRACT

Ditya Lufita, NIM 4181121011 (2022). *Development of Test Instruments Based on Problem Solving on High School Physics Temperature and Heat Materials.*

Students' problems regarding the ability to solve contextual questions, problem solving, and working on higher-order thinking questions need a solution, namely by developing test instruments. Research on the development of problem solving-based test instruments on temperature and heat material that has been carried out aims to determine the feasibility of test instruments in terms of validity, reliability, discriminatory power and level of difficulty. The type of research is research and development (R&D) with the ADDIE model namely Analysis (analyzing), Design (design), Development (development), Implementation (implementation) and Evaluation (evaluation). The research was conducted at Al Ulum Terpadu Islamic High School Medan with research subjects namely XII MIA 1 and XII MIA 2 with a total of 50 students, for small groups there were 15 students and 35 students for large groups. The test instrument is arranged in the form of a description referring to the question indicators and problem solving aspects. The results of the research on content validity stated that the 15 questions developed were in the very feasible category. The results of the small group test of 15 questions obtained 10 valid questions with a reliability value of 0.89 in the high category. The results of the item difficulty level with a percentage of 67% in the medium category and 33% in the easy category. The results of the differentiating power of the items with a percentage of 7% are very good, 40% are in the good category, 33% pretty good category, and 20% bad category. The results of the large group test obtained 10 questions in the valid category and a reliability value of 0.93 in the high reliability category. The difficulty level of the items with a percentage of 80% is in the medium category, 20% is in the difficult category. Different power of items with a percentage of 50% good category, 30% good enough category and 20% bad category. The conclusion from the overall test results is that the problem solving-based test instrument with a total of 10 items is feasible to use. 30% category is quite good and 20% category is bad. The conclusion from the overall test results is that the problem solving-based test instrument with a total of 10 items is feasible to use. 30% category is quite good and 20% category is bad. The conclusion from the overall test results is that the problem solving-based test instrument with a total of 10 items is feasible to use.

Keywords: *Development, Test Instruments, Problem Solving.*