

ABSTRAK

Cindy Mailanda, NIM 4202121013 (2024). Pengembangan Instrumen Penilaian Kinerja untuk Mengukur Keterampilan Proses Sains Siswa Kelas XI pada Materi Fluida Dinamis di SMA Negeri 1 Kualuh Hulu

Evaluasi pemahaman siswa terhadap keterampilan proses sains memerlukan sistem penilaian yang sesuai untuk menilai keterampilan siswa. Saat ini, instrumen penilaian kinerja yang digunakan pada pembelajaran fisika di sekolah belum sepenuhnya memadai untuk menilai kinerja siswa dalam pembelajaran sains. Guru hanya fokus pada penilaian aspek kognitif tanpa memperhatikan aspek psikomotorik siswa. Oleh karena itu, diperlukan instrumen penilaian yang sesuai untuk mengevaluasi aspek keterampilan siswa yang berorientasi pada keterampilan proses sains. Penelitian ini bertujuan untuk mengembangkan, menguji kelayakan dan kepraktisan instrumen penilaian kinerja untuk mengukur keterampilan proses sains siswa materi fluida dinamis. Metode penelitian yang digunakan adalah *Research and Development* (R&D) dengan mengadaptasi model pengembangan 4-D (*Define, Design, Develop, Disseminate*) serta pengembangan instrumen *non-test*. Instrumen penilaian kinerja dikembangkan berdasarkan indikator keterampilan proses sains: mengamati (observasi), mengelompokkan (klasifikasi), menafsirkan (interpretasi), meramalkan (prediksi), mengajukan pertanyaan, merumuskan hipotesis, merencanakan percobaan, menggunakan alat/bahan, menerapkan konsep, dan berkomunikasi. Instrumen disusun dalam tiga penilaian, yaitu penilaian dalam LKS, saat praktikum dan laporan praktikum. Penelitian dilakukan di SMA Negeri 1 Kualuh Hulu dengan melibatkan 30 siswa kelas XI IPA 2. Hasil penelitian menunjukkan bahwa instrumen penilaian kinerja memperoleh rata-rata skor validasi sebesar 96%, yang dikategorikan sangat valid. Nilai reliabilitas instrumen penilaian dalam LKS adalah 0,879, penilaian saat praktikum adalah 0,833, dan laporan praktikum 0,823 menunjukkan bahwa instrumen memiliki tingkat reliabilitas yang tinggi. Keterampilan proses sains siswa memperoleh rata-rata persentase sebesar 75% kategori baik. Instrumen penilaian kinerja mendapat persentase respon guru sebesar 93% kategori sangat praktis. Dapat disimpulkan bahwa instrumen penilaian kinerja yang dikembangkan memenuhi kategori valid, reliabel dan praktis.

Kata kunci: penilaian kinerja, keterampilan proses sains, fluida dinamis

ABSTRACT

Cindy Mailanda, NIM 4202121013 (2024). Development of Performance Assessment Instruments for Measuring Process Science Skills of Class XI Students on Dynamic Fluid Materials at 1st State High School in Kualuh Hulu

Evaluation of students' understanding of science process skills requires an appropriate assessment system to assess students' skills. Currently, the performance assessment instruments used in physics learning in schools are not fully adequate to assess student performance in science learning. Teachers only focus on assessing cognitive aspects without attention to the psychomotor aspects of students. Therefore, appropriate assessment instruments are needed to evaluate aspects of students' skills oriented towards science process skills. This study aims to develop, test the feasibility and practicality of performance assessment instruments to measure students' science process skills in dynamic fluid materials. The research method used is Research and Development (R&D) by adapting the 4-D development model (Define, Design, Develop, Disseminate) and the development of non-test instruments. Performance assessment instruments are developed based on the skills indicators of the science process: observing (observation), grouping (classification), interpreting (interpretation), forecasting (prediction), asking questions, formulating hypotheses, planning experiments, using tools/materials, applying concepts, and communicating. The instrument is arranged in three assessments, namely the assessment in the student's worksheet, during the experiments and the report experiments. The research was conducted at SMA Negeri 1 Kualuh Hulu involving 30 students in grade XI Science 2. The results of the study showed that the performance assessment instrument obtained an average validation score of 96%, which was categorized as very valid. The reliability value of the assessment instrument in the student worksheet was 0.879, the assessment during the practicum was 0.833, and the practicum report was 0.823 indicating that the instrument had a high level of reliability. Students' science process skills obtained an average percentage of 75% in the good category. The performance assessment instrument received a teacher response percentage of 93% in the very practical category. It can be concluded that the performance assessment instruments developed the categories of valid, reliable and practical.

Keywords: performance assessment, science process skills, dynamic fluids