



The Validity of Electronic Learning Materials Optical Instruments Based on Authentic Learning to Train Students' Problem Solving Skills

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Abstract: *Problem-solving skills are needed in solving various problems both academically and authentically. However, from the results of field studies, students' problem-solving skills are still relatively low. The authentic learning approach has received much scientific support to overcome this kind of problem. However, authentic learning-based teaching materials have not been widely developed, especially for high school physics learning. The specific purpose of this research is to describe the validity of the developed electronic teaching materials. This study uses the research design and development of the ASSURE model. Electronic teaching material validation data was obtained using a validation sheet. Validation is based on expert validation consisting of 1 practitioner and two academics. Validation data is expressed by the average value of the total score for each aspect of the assessment, and the calculation results are adjusted to the validity criteria. The results showed that: the validity of electronic teaching materials was categorized as valid with an average score of 3.90. It was concluded that authentic learning-based electronic teaching materials were declared valid and could be used as a stage for class trials on optical instrument materials.*

Keywords: *authentic learning, electronic teaching materials, problem solving skills, optical instruments, validity*

Validitas Materi Ajar Elektronik Alat Optik Berbasis *Authentic Learning* untuk Melatih Keterampilan Pemecahan Masalah Siswa

Abstrak: Keterampilan pemecahan masalah sangat diperlukan dalam menyelesaikan berbagai masalah baik akademik maupun otentik. Namun, dari hasil studi lapangan yang dilakukan, keterampilan pemecahan masalah siswa masih tergolong rendah. Pendekatan *authentic learning* telah mendapatkan banyak dukungan ilmiah untuk mengatasi masalah serupa ini. Akan tetapi, materi ajar berbasis *authentic learning*, khususnya untuk pembelajaran fisika SMA, masih belum banyak dikembangkan. Tujuan khusus dari penelitian ini adalah untuk mendeskripsikan validitas materi ajar elektronik yang dikembangkan. Penelitian ini menggunakan desain penelitian dan pengembangan model ASSURE. Data validasi materi ajar elektronik diperoleh menggunakan lembar validasi. Validasi yang dilakukan berdasarkan validasi expert yang terdiri dari 1 orang praktisi dan 2 orang akademisi. Data validasi dinyatakan dengan nilai rata-rata skor total untuk setiap aspek penilaian dan hasil perhitungan disesuaikan dengan kriteria validitas. Hasil penelitian menunjukkan bahwa: validitas materi ajar elektronik berkategori valid dengan skor rata-rata 3,90. Disimpulkan bahwa materi ajar elektronik berbasis *authentic learning* dinyatakan valid, dan dapat digunakan tahap untuk uji coba kelas pada materi alat optik.

Kata kunci: alat optik, *authentic learning*, keterampilan pemecahan masalah, materi ajar elektronik, validitas