

**PENGEMBANGAN E-MODUL INTERAKTIF BERBASIS *PROJECT
BASED LEARNING* UNTUK MENINGKATKAN LITERASI SAINS
SISWA DALAM MATA PELAJARAN IPAS DI SD NEGERI 3 PAKISAN**

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ABSTRAK

Rendahnya literasi sains siswa dalam pembelajaran IPAS disebabkan oleh penggunaan bahan ajar yang kurang interaktif serta proses pembelajaran yang belum sepenuhnya berpusat pada siswa. Kondisi ini menuntut pengembangan bahan ajar digital yang inovatif dan mampu melibatkan siswa secara aktif dalam proses pembelajaran. Penelitian ini bertujuan untuk mengembangkan e-modul interaktif berbasis *Project Based Learning* serta mengkaji kelayakan dan efektivitasnya dalam meningkatkan literasi sains siswa pada mata pelajaran IPAS. Penelitian ini menggunakan model pengembangan ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Subjek penelitian adalah 19 siswa kelas IV sekolah dasar. Metode pengumpulan data menggunakan kuesioner dan tes literasi sains. Teknik analisis data dilakukan secara deskriptif kuantitatif dan kualitatif. Hasil penelitian menunjukkan bahwa e-modul interaktif berbasis *Project Based Learning* dinyatakan sangat layak berdasarkan hasil validasi ahli serta memperoleh respon positif dari siswa. Penggunaan e-modul ini juga terbukti efektif dalam meningkatkan literasi sains siswa. Implikasi penelitian ini menunjukkan bahwa e-modul interaktif berbasis *Project Based Learning* dapat digunakan sebagai alternatif bahan ajar digital untuk mendukung pembelajaran IPAS yang bermakna dan berpusat pada siswa.

Kata kunci: e-modul interaktif, *Project Based Learning*, literasi sains, IPAS.

DEVELOPMENT OF A PROJECT-BASED LEARNING INTERACTIVE E-MODULE TO IMPROVE STUDENTS' SCIENTIFIC LITERACY IN IPAS SUBJECT AT SD NEGERI 3 PAKISAN

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ABSTRACT

The low level of students' scientific literacy in science learning is caused by the use of less interactive teaching materials and learning processes that are not fully student-centered. This condition requires the development of innovative digital teaching materials that can actively engage students in the learning process. This study aims to develop an interactive e-module based on Project Based Learning and to examine its feasibility and effectiveness in improving students' scientific literacy in science subjects. This study employed the ADDIE development model which consists of the stages of analysis, design, development, implementation, and evaluation. The research subjects were 19 fourth-grade elementary school students. The data collection methods and instruments included questionnaires and science literacy test items. Data were analyzed using descriptive quantitative and qualitative techniques. The results showed that the interactive e-module based on Project Based Learning was categorized as very feasible based on expert validation results and received positive responses from students. The use of this e-module was also proven effective in improving students' scientific literacy. The implication of this study is that the interactive e-module based on Project Based Learning can be used as an alternative digital teaching material to support meaningful and student-centered science learning.

Keywords: *interactive e-module, Project Based Learning, scientific literacy, science learning.*