

PENGEMBANGAN E-BOOK FISIKA ANDROID BERBASIS KEARIFAN LOKAL JAWA TENGAH UNTUK MENINGKATKAN KEMAMPUAN PEMECAHAN MASALAH, BERPIKIR KREATIF, KOMUNIKASI ILMIAH DAN KETERAMPILAN PROSES SAINS PESERTA DIDIK SMA

by Prof. Dr. Mundilarto, M.Pd., Dr. Drs. Supahar, M.Si., Prof. Dr. Jumadi, M.Pd., Nita Mei Sulastriningsih, Yeni Ristya Wardani

ABSTRACT

This research aims to describe: (1) the feasibility of the physics e-book based on local wisdom, and (2) reveal the effectiveness of the physics e-book in improving problem solving skills, creative thinking skill, scientific communication skills, science processing skill of high school students. The local wisdom used in this research is a *nekeran* traditional game that applied to momentum-impulse subject and bamboo flute instrument that applied to sound wave subject. This research uses the 4-D model that consists of *define, design, develop, and disseminate*. The research was done by pretest-posttest control group design. The subjects in this research consisted of 34 students of science X grade and 30 students of science XI grade as trial subject, 500 students of science XI grade from several high schools in Klaten involve in empiric testing, as for field testing subject are 100 students of SMA N 3 Klaten science X grade and 90 students of SMA N 1 Cawas science XI grade in the academic year 2018/2019. The research instrument consisted of a questionnaire, student response questionnaire on e-book products, problem solving skills test, creative thinking test, scientific communication test, and science processing skill observation sheet. Data analysis techniques used to test the feasibility of the product is the raw scale. The analysis technique to test the effectiveness of the product to enhance problem solving skills, creative thinking skill, scientific communication, and science processing skill of high school students is the generalized linear model on the partial eta squared value. The results of this research show that: (1) the physics e-book based on local wisdom is feasible for use in high school physics learning, which is in a very good category according to the judgment of experts, practicion, and peer reviewers; (2) the physics e-book is effective to be used in physics learning as proven by eta score value of problem solving skills (88%), creative thinking skill (85%), scientific communication skill (81%) and science processing skill (81%).

Kata Kunci: e-book physics, local wisdom, problem solving skills, creative thinking skill, scientific communication skills, and science processing skill