PENGEMBANGAN BAHAN AJAR IPA TERPADU TEMA AIR MINUM TERINTEGRASI STEM MENGGUNAKAN METODE 4S TMD BERORIENTASI LITERASI TEKNOLOGI SISWA

TESIS

Diajukan untuk Memenuhi Sebagian dari Syarat Memperoleh Gelar Magister Pendidikan Program Studi Pendidikan Ilmu Pengetahuan Alam (IPA)

Oleh :

BUNGA MARDIYYA

1707513

PROGRAM STUDI PENDIDIKAN ILMU PENGETAHUAN ALAM

SEKOLAH PASCASARJANA

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Oleh

Bunga Mardiyya

S.Pd Universitas Pendidikan Indonesia, 2016

Sebuah Tesis yang diajukan untuk memenuhi sebagian dari syarat untuk memperoleh gelar Magister Pendidikan (M.Pd) Program Studi Pendidikan Ilmu Pengetahuan Alam Pada Sekolah Pascasarjana Universitas Pendidikan Indonesia

HALAMAN PENGESAHAN TESIS

PENGEMBANGAN BAHAN AJAR IPA TERPADU PADA TEMA AIR MINUM TERINTEGRASI STEM MENGGUNAKAN METODE 4S TMD BERORIENTASI LITERASI TEKNOLOGI SISWA

oleh:

Bunga Mardiyya
NIM. 1707513

telah disetujui dan disahkan oleh:

Dosen Pembimbing I

Dr.Paed. H. Sjaeful Anwar
NIP.19620820 198703 1 002

Dosen Pembimbing II

Dr. Didi Teguh Chandra, M.Si
NIP.19591013 198403 1 001

Mengetahui,
Ketua Program Studi Sekolah Pasca Sarjana Pendidikan IPA

Dr. H. Riandi, M.Si
NIP.19630501 198803 1 002

PENGEMBANGAN BAHAN AJAR IPA TERPADU TERINTEGRASI STEM TEMA AIR MINUM MENGGUNAKAN METODE 4S TMD BERORIENTASI LITERASI TEKNOLOGI

Bunga Mardiyya NIM 1707513, Sjaeful Anwar, Didi Teguh Chandra
Program Studi Pendidikan Ilmu Pengetahuan Alam, Sekolah Pascasarjana Universitas Pendidikan Indonesia

ABSTRAK

Penelitian ini bertujuan untuk mengembangkan bahan ajar IPA terpadu terintegrasi STEM tema air minum menggunakan metode *Four Steps Teaching Material Development* (4S TMD) berorientasi literasi teknologi mengetahui kelayakan dan keterpahaman bahan ajar IPA yang dihasilkan. Penelitian ini menggunakan metode penelitian *Developmental Research (DR)* yang terdiri dari tahapan *Design, Develop* dan *Evaluation.* Bahan ajar ini menggunakan model keterpaduan dari Robin Fogarty yaitu model keterpaduan tipe *webbed*. Intrumen penelitian yang digunakan dalam penelitian ini yaitu rubrik validasi tahap seleksi, rubrik validasi tahap strukturisasi, rubrik validasi tahap karakterisasi, rubrik tahap reduksi didaktik, rubrik keterpahaman dan angket kelayakan bahan ajar. Uji kelayakan bahan ajar diujikan pada 6 orang dosen dan guru mata pelajaran IPA, kimia, dan biologi. Uji karakterisasi bahan ajar dilakukan pada 81 orang siswa kelas IX. Berdasarkan hasil uji kelayakan bahan ajar dapat disimpulkan bahwa kelayakan bahan ajar yang dikembangkan pada komponen kelayakan isi mencapai 83 % dengan kategori baik, komponen kelayakan kebahasaan mencapai 77 % dengan kategori sangat baik, komponen kelayakan penyajian mencapai 75 % dengan kategori baik dan komponen kelayakan kegrafikan mencapai 92 % dengan kategori sangat baik. Hasil rata – rata keterpahaman bahan ajar sebesar 72 % dengan kategori tingkat keterpahaman tinggi.

Kata Kunci : Bahan Ajar IPA, Air Minum, 4S TMD, STEM, Literasi Teknologi, *Developmental Research*

WATER THEME SCIENCE TEACHING MATERIAL DEVELOPMENT INTEGRATIED WITH STEM USING 4S TMD METHOD ORIENTED TOWARDS STUDENT TECHNOLOGY LITERACY

Bunga Mardiyya NIM 1707513, Sjaeful Anwar, Didi Tegus Chandra
Department of Science Education, School of Postgraduate Studies, Universitas Pendidikan Indonesia

ABSTRACT

This study aims to develop science teaching materials integratied with STEM on dringking water theme using the Four Steps Teaching Material Development (4S TMD) methodoriented technology literacy and find out the feasibility and understanding of the science materials produced. This study uses the Developmental Research (DR) research method which consists of stages of Design, Develop and Evaluation. This teaching material uses the integration model of Robin Fogarty, namely the webbed type integration model. The research instruments used in this study were the validation rubric of the selection stage, the validation rubric of the structuring stage, the validation rubric of the characterization stage, the didactic reduction stage rubric, the understanding rubric and the feasibility questionnaire of teaching materials. The feasibility test of teaching materials was tested on 6 teaching material lecturers at the FPMIPA University of Indonesia and science teacher. The characterization test of teaching materials was carried out on 81 grade IX students. Based on the results of the feasibility test of teaching materials, it can be concluded that the feasibility of teaching materials developed in the content feasibility component reaches 83% with a fairly good category, language feasibility component reaching 77% with the category is very good, the component of feasibility of presentation reaches 75% with good category and the component of graphic feasibility reaches 92% with a very good category. Obtained an average understanding of teaching materials of 72% with a high level of understanding category.

Keywords: Science Teaching Materials, 4S TMD, technology literacy, STEM, Developmental Research

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LAMPIRAN

Lampiran 1. Tahap Seleksi 1a

Lampiran 2. Tahap Seleksi 1b

Lampiran 3. Tahap Seleksi 1c

Lampiran 4. Reduksi Didaktik

Lampiran 5. Validasi Bahan Ajar

Lampiran 6. Karakterisasi Bahan Ajar

Lampiran 7. Instrumen Uji Keterpahaman melalui daring

Lampiran 8. Hasil Uji Kelayakan Bahan Ajar

Lampiran 9. Hasil Uji Keterpahaman

Lampiran 10. Surat Penelitian