

ABSTRACT

Firda Weri, 2021 “ Development of Integrated Natural Science Student Book With The Theme Sense of Sight and Optical Devices Using Connected Model For Integrated 21st Century Learning” Thesis. Master of Physics Education, Faculty of Mathematics and Natural Sciences of Universitas Negeri Padang.

The 2013 curriculum formed of government efforts to improve the quality of education in Indonesia in accordance with the demands of the 21st century. Through the 2013 curriculum science learning carried out in an integrated manner rather than partially between physics, biology, and chemistry. But the fact is that in the field of natural science learning it has not been done in an integrated manner but it is still separate between physics, biology and chemistry. The results of the needs analysis indicate that student teaching materials or books have not been presented in an integrated form with themes and have not yet integrated skills in facing 21st century challenges. The purpose of this research was to develop an Integrated Natural Science Student Book with The Theme Sense of Sight and Optical Devices Using Connected Model for Integrated 21st Century Learning that is valid, practical, and effective.

This type of research was development research using the Plomp model which consists of the initial investigation, prototype or development, and assessment stages. The test was conducted at SMPN 13 Kerinci. Data in this research were data of front end analysis, validity, practicality, and effectiveness. The research instrument consisted of questionnaires, analysis sheet, validation sheet, practicality sheet, assessment and observation sheets of the 21st century skills, and questions. Preliminary research data, validity, practicality, and effectiveness for 21st century skills were analyzed with descriptive statistics. Validity data also analyzed using the aiken's V formula, while the knowledge data was also analyzed using N-Gain formula.

The results of preliminary research indicate the need for the development of integrated science student book with the theme sense of sight and optical devices using connected model for integrated 21st century learning. Furthermore, this research has resulted in an integrated science student book with the theme sense of sight and optical devices using connected model for integrated 21st century learning with valid, practical, and effective criteria.

Keyword : Student Book, Integrated Natural Science, Connected Type, and 21st Century Learning.

ABSTRAK

Firda Weri, 2021 “Pengembangan Buku Siswa IPA Terpadu dengan Tema Indera Penglihatan dan Alat Optik Menggunakan Tipe *Connected* Terintegrasi Pembelajaran Abad 21”. Tesis. Program Studi Magister Pendidikan Fisika Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Negeri Padang.

Kurikulum 2013 merupakan salah satu wujud usaha pemerintah dalam meningkatkan mutu pendidikan di Indonesia yang sesuai dengan tuntutan abad 21. Melalui kurikulum 2013 pembelajaran IPA dilaksanakan secara terpadu bukan parsial antara fisika, biologi, dan kimia. Namun faktanya dilapangan pembelajaran IPA belum dilakukan secara terpadu masih terpisah antara fisika, biologi dan kimia. Hasil analisis kebutuhan menunjukkan bahwa bahan ajar atau buku siswa belum disajikan dalam bentuk terpadu dengan tema dan belum mengintegrasikan keterampilan-keterampilan dalam menghadapi tantangan abad 21. Tujuan penelitian ini adalah untuk mengembangkan sebuah buku siswa IPA Terpadu dengan Tema Indera Penglihatan dan Alat Optik Menggunakan Tipe *Connected* Terintegrasi Pembelajaran Abad 21 yang valid, praktis, dan efektif.

Jenis penelitian ini adalah penelitian pengembangan dengan menggunakan model *Plomp* yang terdiri dari tahap investigasi awal, prototipe atau pengembangan, dan penilaian. Ujicoba dilakukan di SMPN 13 Kerinci. Data dalam penelitian ini adalah data analisis awal akhir, data validasi, data praktikalitas, dan data efektivitas. Instrumen penelitian terdiri dari angket, lembar analisis, lembar validasi, lembar praktikalitas, lembar penilaian dan observasi keterampilan abad 21, dan soal. Data penelitian pendahuluan, validitas, praktikalitas, serta efektivitas untuk keterampilan abad 21 dianalisis dengan statistik deskriptif. Data validitas juga dianalisis menggunakan formula aiken's V, sedangkan nilai pengetahuan dianalisis menggunakan formula *N-Gain*.

Hasil dari analisis awal menunjukkan perlunya pengembangan buku siswa IPA Terpadu dengan tema indera penglihatan dan alat optik menggunakan tipe *connected* terintegrasi pembelajaran abad 21. Selanjutnya, penelitian ini telah menghasilkan buku siswa IPA Terpadu dengan tema indera penglihatan dan alat optik menggunakan tipe *connected* terintegrasi pembelajaran abad 21 dengan kriteria valid, praktis, dan efektif.

Kata Kunci : Buku Siswa, IPA Terpadu, Tipe *Connected*, dan Pembelajaran Abad 21