

## ABSTRAK

Diana Fitri. NIM 8216142002. Pengembangan Buku Elektronik Interaktif Berbasis *Project Based Learning* Untuk Memotivasi dan Meningkatkan Hasil Belajar Siswa Pada Materi Kimia Kelas XI SMA Semester Genap. Tesis: Program Pasca Sarjana Universitas Negeri Medan, 2023.

Penelitian ini bertujuan untuk mengetahui (1) hasil analisis kebutuhan dan analisis kelayakan buku ajar kimia SMA yang digunakan disekolah dalam rangka mengembangkan Buku Elektronik Interaktif Berbasis *Project Based Learning* yang dikembangkan sesuai standar BSNP dan PjBL, (2) tingkat kelayakan Buku Elektronik Interaktif Berbasis *Project Based Learning*, (3) hasil belajar siswa setelah menggunakan Buku Elektronik Interaktif Berbasis *Project Based Learning*, (4) peningkatan hasil belajar siswa, (5) tingkat motivasi belajar siswa, (6) keterampilan kinerja siswa pada saat mengerjakan proyek, dan (7) respon siswa terhadap penggunaan Buku Elektronik Interaktif Berbasis *Project Based Learning* yang dikembangkan. Metode penelitian yang digunakan yaitu metode penelitian dan pengembangan (R&D) dengan model ADDIE. Penelitian ini dilaksanakan di SMA Negeri 2 Siabu. Populasi penelitian terdiri dari seluruh siswa kelas XI dengan sampel penelitian adalah kelas XI MIPA 1. Instrument penelitian terdiri dari Angket analisis kebutuhan, angket kelayakan BSNP dan PjBL yang telah dimodifikasi, instrument tes hasil belajar berupa soal pilihan berganda dianalisis dengan uji *one sample t-test* dengan menggunakan taraf signifikansi 5% ( $\alpha = 0,05$ ), angket motivasi belajar siswa, lembar observasi keterampilan kinerja siswa dan angket respon siswa terhadap penggunaan Buku Elektronik Interaktif Berbasis *Project Based Learning*. Hasil analisis kebutuhan dan analisis kelayakan buku ajar kimia SMA adalah dengan menambahkan proyek-proyek pada buku dan menyusun buku sesuai sintaks *project based learning*, membuat buku elektronik seinteraktif mungkin serta beberapa perbaikan yang sesuai dengan hasil analisis. Tingkat kelayakan Buku Elektronik Interaktif Berbasis *Project Based Learning* yang dikembangkan diperoleh rata-rata nilai 4,41 oleh ahli materi dengan kategori sangat layak tanpa perlu direvisi dan 4,81 oleh ahli media dengan kategori sangat layak tanpa perlu direvisi. Hasil belajar kimia siswa lebih tinggi dari KKM menggunakan uji *One Sample T-Test* dimana diperoleh nilai sig.  $0,001 < 0,05$  dan  $t_{hitung} > t_{tabel}$  ( $7,074 > 1,714$ ) pada proses pembelajaran menggunakan Buku Elektronik Interaktif Berbasis *Project Based Learning*. Peningkatan hasil belajar siswa sebesar 0,72 dengan kategori tinggi. Motivasi belajar siswa mendapat nilai rata-rata angket motivasi sebesar 85,2% dengan kategori sangat termotivasi. Keterampilan kinerja siswa pada saat pembuatan proyek mendapat nilai rata-rata 85,1% dengan kategori sangat baik. Peserta didik memberikan respon sangat baik terhadap Buku Elektronik Interaktif Berbasis *Project Based Learning* yang dikembangkan sebesar 85,7% maka Buku Elektronik Interaktif Berbasis *Project Based Learning* yang dikembangkan dapat digunakan sebagai penunjang pelaksanaan pembelajaran kimia di sekolah.

Kata Kunci: Buku Elektronik Interaktif, *Project Based Learning*, hasil belajar, motivasi belajar siswa, keterampilan kinerja, respon siswa

## ABSTRACT

Diana Fitri. NIM 8216142002. Development of Project-Based Learning Interactive Electronic Books to Motivate and Improve Student Learning Outcomes in Chemistry Class XI SMA Semester Even. Thesis: Postgraduate Program, Medan State University, 2023.

This study aims to determine (1) the results of the needs analysis and feasibility analysis of high school chemistry textbooks used in schools in order to develop Project Based Learning-Based Interactive Electronic Books developed according to BSNP and PjBL standards, (2) the feasibility level of Project-Based Interactive Electronic Books Learning, (3) student learning outcomes after using Project Based Learning Interactive Electronic Books, (4) improving student learning outcomes, (5) student learning motivation levels, (6) student performance skills when working on projects, and (7) responses students towards the use of the developed Interactive Electronic Books Based on Project Based Learning. The research method used is the research and development (R&D) method with the ADDIE model. This research was conducted at SMA Negeri 2 Siabu. The research population consisted of all students of class XI with the research sample being class XI MIPA 1. The research instrument consisted of a needs analysis questionnaire, modified BSNP and PjBL feasibility questionnaires, learning achievement test instruments in the form of multiple choice questions analyzed by one sample t-test by using a significance level of 5% ( $\alpha = 0.05$ ), student learning motivation questionnaires, student performance skill observation sheets and student response questionnaires on the use of Project Based Learning Interactive Electronic Books. The results of the needs analysis and feasibility analysis of high school chemistry textbooks are by adding projects to the book and compiling the book according to the project based learning syntax, making the electronic book as interactive as possible and making several improvements according to the results of the analysis. The feasibility level of the Project Based Learning-Based Interactive Electronic Book that was developed obtained an average score of 4.41 by material experts in the very feasible category without needing to be revised and 4.81 by media experts in the very feasible category without needing to be revised. Students' chemistry learning outcomes were higher than KKM using the One Sample T-Test where the sig.  $0.001 < 0.05$  and  $t_{count} > t_{table}$  ( $7.074 > 1.714$ ) in the learning process using Project Based Learning Interactive Electronic Books. Increased student learning outcomes of 0.72 in the high category. Students' learning motivation got an average motivational questionnaire score of 85.2% in the highly motivated category. Students' performance skills at the time of making the project got an average score of 85.1% in the very good category. Students gave a very good response to the Project Based Learning-Based Interactive Electronic Book which was developed by 85.7%, so the developed Project Based Learning-Based Interactive Electronic Book can be used as a support for the implementation of chemistry learning in schools.

Keywords: Interactive Electronic Books, Project Based Learning, Learning Outcomes, Student Motivation, Performance Skills, Student Responses.