

ABSTRAK

Ester Hartina Ria Sinaga : **Pengembangan Sumber Belajar Berbasis Proyek Untuk Meningkatkan Kemampuan Berpikir Tingkat Tinggi Pada Pembelajaran Isolasi Dan Pemurnian Senyawa Alkaloid** . Tesis. Medan: Program Studi Pendidikan Kimia, Pascasarjana Universitas Negeri Medan, 2023.

Penelitian ini bertujuan untuk mengembangkan sumber belajar berbasis proyek untuk membangun keterampilan berpikir tingkat tinggi yang dapat meningkatkan hasil belajar mahasiswa, serta melihat respon mahasiswa terhadap sumber belajar berbasis proyek dalam pembelajaran isolasi dan pemurnian senyawa alkaloid. Penelitian ini menggunakan pendekatan *Research and Development (R&D)* dengan menggunakan model pengembangan *ADDIE (Analysis, Design, Development, Implementasi, and Evaluation)*. Sampel penelitian ini berjumlah 25 orang mahasiswa Universitas Negeri Medan prodi kimia, dengan menggunakan teknik analisis data berupa observasi langsung, wawancara, angket dan tes hasil belajar, yang dianalisis menggunakan analisis data statistik deskriptif dan statistik inferensial yaitu uji *t-one sampel*. Hasil penelitian menunjukkan bahwa hasil analisis kebutuhan bahwa sumber belajar yang digunakan mahasiswa berdasarkan kriteria BSNP diperoleh rata – rata sebesar 2,89 dinyatakan cukup layak namun sumber belajar masih membutuhkan perbaikan agar lebih inovatif. Sumber belajar berbasis proyek hasil pengembangan telah valid (layak) digunakan berdasarkan Badan Standar Nasional Pendidikan (BSNP) dengan perolehan rata – rata keseluruhan sebesar 3,62 dalam skala 4,00. Peningkatan hasil belajar mahasiswa setelah menggunakan sumber belajar berbasis proyek telah mencapai kriteria *N-Gain* tinggi dengan perolehan nilai sebesar 0,73 dan kemampuan berpikir tingkat tinggi mahasiswa yang berdasarkan penilaian proposal proyek ($M=83,15\pm 1,71$) dan laporan proyek ($M=86,57\pm 1,74$) dalam kategori sangat baik. Respon mahasiswa terhadap penggunaan sumber belajar berbasis proyek pada materi isolasi dan pemurnian senyawa alkaloid sangat baik dengan rata- rata presentasi jawaban mahasiswa sebesar 87,3%.

Kata Kunci : *Sumber belajar, Pembelajaran Berbasis Proyek, Kemampuan berpikir Tingkat Tinggi, Isolasi dan Pemurnian senyawa Alkaloid*

ABSTRAK

Ester Hartina Ria Sinaga : **Development of Project-Based Learning Resources to Improve Higher Order Thinking Skills in Learning the Isolation and Purification of Alkaloid Compounds**, Thesis. Medan: Chemistry Education Study Program State University Postgraduate, 2023.

This study aims to develop learning resource-based projects to build higher order thinking skills that can improve student learning outcomes, as well as to look at student responses to learning resource-based projects in learning isolation and purification of alkaloid compounds. This study uses a Research and Development (R&D) approach using the ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation). The sample of this research was 25 students of Medan State University majoring in chemistry, using data analysis techniques in the form of direct observation, interviews, questionnaires and learning achievement tests, which were analyzed using descriptive statistical data analysis and inferential statistics, namely the t-one sample test. The results showed that the results of the needs analysis showed that the learning resources used by students based on the BSNP criteria obtained an average of 2.89 which was stated to be quite feasible but the learning resources still needed improvement to make them more innovative. Project-based learning resources resulting from the development are valid (appropriate) to use based on the National Education Standards Agency (BSNP) with an overall average acquisition of 3.62 on a scale of 4.00. Increasing student learning outcomes after using project-based learning resources has achieved high N-Gain criteria with a score of 0.73 and students' high-level thinking skills based on project proposal assessment ($M=83.15 \pm 1.71$) and project reports ($M = 86.57 \pm 1.74$) in the very good category. Student responses to the use of project-based learning resources on isolation materials and purification of alkaloid compounds were very good with an average presentation of student answers of 87.3%.

Keyword : *Learning resources, Project-based learning, Higher Order Thinking Skills, Isolation and Purification of Alkaloid Compounds*