

ABSTRAK

Meilin Simalango, NIM 4193331026 (2023), Inovasi Sumber Belajar Berbasis Proyek Untuk Membangun Keterampilan Berpikir Kritis Mahasiswa Pada Pengajaran Dasar Kromatografi

Penelitian ini merupakan penelitian Research and Development (R&D) yang bertujuan untuk mengembangkan sumber belajar inovatif berbasis proyek berupa E-LKM pada pokok bahasan Kromatografi sehingga dapat diketahui efektifitas untuk meningkatkan kemampuan berpikir kritis dan hasil belajar mahasiswa. Penelitian ini menggunakan alur pengembangan model ADDIE dengan 3 siklus tahap implementasi. Hasil pengembangan menunjukkan E-LKM berbasis proyek memiliki rata-rata total kelayakan standar BSNP = 3,85 dengan kriteria sangat layak dan skor N-gain = 0,72 persentase 72 % bahwa unjuk kerja E-LKM berbasis proyek berefektivitas tinggi. Uji coba di lapangan, siklus I (perancangan proyek) diperoleh $M1 = 86,5$, siklus II (pelaksanaan proyek) diperoleh $M2 = 90,5$, dan siklus III (pelaporan proyek) diperoleh $M3 = 93,03$. Sehingga tampak bahwa terjadi peningkatan rata-rata skor $M4 > M3 > M1$ yang menunjukkan terdapat peningkatan kemampuan mahasiswa pada proses pengajaran Kromatografi. Berdasarkan hasil pretest dan post-test diperoleh dari kelas eksperimen dan kontrol, Pretes $X_{kontrol} = 45,28$ dan Posttest $X_{kontrol} = 66,28$ dan Pretes $X_{eksp} = 58,28$ dan Posttest $X_{eksp} = 86,61$, sehingga hasil uji hipotesis menunjukkan $|T_{hitung}| > T_{tabel}$ yang berarti bahwa H_0 ditolak dan H_a diterima, artinya terdapat perbedaan antara hasil belajar mahasiswa sebelum dan sesudah dibelajarkan dengan sumber belajar inovatif berbasis proyek hasil pengembangan. Berdasarkan hasil perhitungan terhadap korelasi antara kemampuan berpikir kritis dengan hasil belajar mahasiswa diperoleh $r_{xy \text{ hitung}} = 0,823$ dengan $r_{xy \text{ tabel}} = 0,468$ sehingga $r_{xy \text{ hitung}} > r_{xy \text{ tabel}}$, H_0 ditolak, H_a diterima dengan tingkat korelasi positif. dengan kesimpulan ada korelasi antara kemampuan berpikir kritis dengan hasil belajar mahasiswa yang dibelajarkan dengan sumber belajar berbasis proyek pada pengajaran kromatografi.

Kata Kunci: Sumber Belajar Inovatif, E-LKM, PjBL, Kemampuan Berpikir Kritis, Kromatografi.

ABSTRACT

Meilin Simalango, NIM 4193331026 (2023), Project-Based Learning Resource Innovation to Enhance Students' Critical Thinking Skills in Chromatography Fundamentals.

This research is a Research and Development (R&D) study aimed at developing an innovative project-based learning resource in the form of E-LKM (Electronic Learning Module) on the subject of Chromatography. The objective is to determine its effectiveness in improving students' critical thinking skills and learning outcomes. The research follows the ADDIE development model with three implementation cycles. The development results indicate that the project-based E-LKM has an average total feasibility score of $BSNP = 3.85$, categorized as very feasible, and an N-gain score of 0.72, representing a 72% effectiveness in the performance of the project-based E-LKM. Field trials in three cycles, namely Cycle I (project design) with $M1 = 86.5$, Cycle II (project implementation) with $M2 = 90.5$, and Cycle III (project reporting) with $M3 = 93.03$, show a consistent increase in average scores $M4 > M3 > M1$, indicating an improvement in students' abilities during the Chromatography teaching process. Based on pretest and post-test results from the experimental and control groups, where $Pretest X_{control} = 45.28$ and $Posttest X_{control} = 66.28$, and $Pretest X_{exp} = 58.28$ and $Posttest X_{exp} = 86.61$, the hypothesis test results indicate $|T_{calculated}| > T_{table}$, meaning that H_0 is rejected, and H_a is accepted. This implies a significant difference in students' learning outcomes before and after being taught with the innovative project-based learning resource. Calculations of the correlation between critical thinking skills and students' learning outcomes yield $r_{xy \text{ calculated}} = 0.823$, with $r_{xy \text{ table}} = 0.468$. As $r_{xy \text{ calculated}} > r_{xy \text{ table}}$, H_0 is rejected, and H_a is accepted with a positive correlation level. In conclusion, there is a correlation between critical thinking skills and students' learning outcomes when taught with a project-based learning resource in Chromatography teaching.

Keywords: Innovative Learning Resources, E-LKM, PjBL (Project-Based Learning), Critical Thinking Skills, Chromatography.