

ABSTRAK

Melanie Putri Harahap. Pengembangan Penuntun Praktikum Biologi Berbasis Masalah Terintegrasi *Digital Learning* Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Kelas XI Semester Genap. Tesis. Medan: Program Pascasarjana Universitas Negeri Medan, 2023.

Tujuan penelitian ini untuk mengembangkan penuntun praktikum biologi terintegrasi *digital learning* dan meningkatkan kemampuan berpikir kritis siswa. Penelitian dengan model ADDIE (analisis, desain, pengembangan, implementasi dan evaluasi), yang telah dinilai selama proses validasi untuk mendapatkan kelayakan materi, desain pembelajaran, dan desain *layout* dengan menggunakan angket sebagai instrumen pengumpulan data. Populasi dalam penelitian ini adalah siswa kelas XI MAN Tebing Tinggi. Berdasarkan hasil Validasi ahli materi menunjukkan persentase sebesar 97,11%. Hasil validasi ahli desain pembelajaran menunjukkan persentase sebesar 96,83%. Hasil validasi ahli desain *layout* menunjukkan persentase sebesar 96,66%. Hasil uji perorangan menunjukkan persentase sebesar 89,58%. Dari uji coba kelompok kecil siswa menunjukkan persentase sebesar 86,33%. Hasil penilaian uji coba kelompok besar menunjukkan persentase sebesar 87,11%. Hasil validasi menunjukkan bahwa seluruh aspek penilaian berkategori sangat baik. Artinya penuntun praktikum layak untuk diimplementasikan pada saat pembelajaran berdasarkan hasil validasi. Tahapan selanjutnya adalah tahap implementasi untuk melihat peningkatan penuntun praktikum pembelajaran terhadap keterampilan berpikir kritis siswa. Berdasarkan nilai probabilitas (p) dimana $p > 0,05$, nilai $p = 0,418$ diperoleh untuk sistem pernapasan, nilai $p = 0,728$ untuk sistem ekskresi dan nilai $p = 0,547$ untuk sistem koordinasi pada taraf signifikansi 0,05, berarti H_a diterima dan H_0 ditolak. Hasil uji *n-gain* di kelas eksperimen dalam kategori tinggi dan di kelas kontrol dalam kategori sedang. Dapat disimpulkan bahwa terdapat peningkatan kemampuan berpikir kritis siswa dengan menggunakan penuntun praktikum yang dikembangkan. Penelitian pengembangan ini diharapkan dapat digunakan sebagai pedoman kegiatan praktikum yang dapat meningkatkan kemampuan berpikir kritis siswa.

Kata kunci : Penuntun praktikum, kemampuan berpikir kritis, *digital learning*.

ABSTRACT

Melanie Putri Harahap. The Development of Biology Practicum Guide Based on Problem Integrated Digital Learning to Improve Student Critical Thinking Skills For Class XI semester II. Thesis. Medan: Postgraduate Program Universitas Negeri Medan, 2023.

The aim of this study was to develop of biology practicum guide integrated digital learning in order to overcome the difficulties students in practicum activity and improve student critical thinking. This study was developed by ADDIE (analysis, design, development, implementation and evaluation) model which has been assessed during validation process in order to get the feasibility on material, learning design, and layout design using questionnaire as a data collection. Population on this research was student class of XI in MAN Tebing Tinggi. Based on Validation result of material expert showed that the percentage was 97.11%. The validation result of learning design expert showed that the percentage was 96.83%. The validation result of layout design expert showed that the percentage was 96.66%. Assessment result of individual testing was 89.58%. From small group testing students was 86.33%. Assessment result of big group testing was 87.11%. Validation result showed that all of assessment aspect had been very good category. It means practicum guide were suitable to be implemented during teaching and learning based on the validation result. The next stage was implementation stage was to see the effect of learning practicum guide to students critical thinking skill. Based on the calculation of probability (p) value which $p > 0.05$, p value = 0.418 for respiratory system, p value = 0.728 for excretion system and p value = 0,547 for coordination system at the level significance of 0.05, means that H_a is accepted and H_0 is rejected. The result of n-gain test in experiment class was high and in control class was moderate. It can be conclude that there are improvement on student critical thinking skills that developed. This development research is expected to be used as an guidance for practicum activity that can improve students critical thinking skills.

Keywords : Practicum guide, critical thinking skills, *digital learning*.