

ABSTRAK

KALE ADE WIWOHO. Pengembangan Penuntun Praktikum Inovatif Dan Virtual Laboratorium Materi SMA/MA Kelas XI Semester Ganjil. Program Pascasarjana Universitas Negeri Medan, 2017.

Telah dilakukan penelitian dengan tujuan untuk memperoleh penuntun praktikum kimia inovatif dan Virtual Laboratorium Materi SMA/MA Kelas XI Semester Ganjil yang valid dan efektif. Penelitian ini merupakan penelitian pengembangan. Model pengembangan yang digunakan adalah *Research & Development (R&D)* dengan tahapan *Analysis-Design-Development-Implementation-Evaluation (ADDIE)*. Instrumen yang digunakan adalah angket kelayakan penuntun praktikum dari BSNP yang telah dimodifikasi, angket kelayakan virtual laboratorium, instrumen tes kognitif, dan lembar observasi keterampilan. Tingkat kelayakan penuntun praktikum dan virtual laboratorium divalidasi oleh validator ahli yang terdiri dari 2 orang Dosen Kimia dan 8 Guru mata pelajaran kimia. Dalam tahap implementasi penuntun praktikum inovatif, digunakan rancangan penelitian *pretest-posttest control group design*. Teknik analisis data menggunakan *independent sample t-test* dengan *SPSS 20 for windows* pada taraf signifikansi 0,05. Berdasarkan hasil penilaian kelayakan penuntun praktikum inovatif diperoleh skor rata-rata 4,33 dengan kriteria sangat valid. Hal ini berarti penuntun praktikum inovatif dan virtual laboratorium layak digunakan. Uji coba diperoleh rata-rata nilai *pretest*, *posttest*, dan keterampilan pada kelas eksperimen masing-masing sebesar 25,6; 81,1 ; 86,03 sedangkan pada kelas kontrol sebesar 24,9 ; 71,9 ; 78,47. Berdasarkan analisis data hasil belajar aspek kognitif diperoleh bahwa nilai sig. $> \alpha$ (0,074 $>$ 0,05), sedangkan analisis data hasil belajar aspek keterampilan diperoleh nilai sig. $> \alpha$ (0,074 $>$ 0,05). Dengan demikian dapat disimpulkan bahwa: (1) Penuntun praktikum inovatif dan *virtual* laboratorium layak digunakan. (2) Pembelajaran menggunakan penuntun praktikum inovatif dan virtual laboratorium memberikan hasil belajar kognitif lebih tinggi dibandingkan dengan menggunakan penuntun praktikum di sekolah. (3) Pembelajaran menggunakan penuntun praktikum inovatif dan virtual laboratorium memberikan keterampilan lebih tinggi dibandingkan menggunakan penuntun praktikum di sekolah.

Kata Kunci: Penelitian Pengembangan, Penuntun Praktikum, Virtual Laboratorium, Kognitif, Keterampilan,

ABSTRACT

KALE ADE WIWOHO. Development of Innovative Practical Guidance And Virtual Laboratory Topic SMA/MA Kelas XI Semester Ganjil. Postgraduate School of the State University of Medan, 2017.

The research has been done aiming to obtain an innovative practical guidance And Virtual Laboratory Topic SMA/MA Kelas XI Semester Ganjil. The research was a of development research. The model used is Research & Development (R & D) with the stages of *Analysis – Design – Development – Implementation – Evaluation*. (ADDIE). The instruments used are laboratory feasibility study of questionnaires from modified BSNP, laboratory virtual feasibility questionnaire, cognitive test instrument, and skill observation sheet. The feasibility level of the practicum application and the virtual lab is validated by a validator consisting of 2 chemistry lecturers and 8 teachers of chemistry. In the implementation phase of innovative practical guidance in this research used *pretest-posttest control group* design. Data were analyzed by using *independent sample t-test* with *SPSS 20 for windows* at significant level of 0.05. Based on the obtaining results of assesing feasibility of innovative practical guidance and questionnaires were modified by BSNP with guided inquiry learning model with an average score of 4,33 was very valid criteria. The results of trials obtained an average value of pretest, posttest, and skills of the experimental class respectively of 25,6; 81,1 ; 86,03 while the control class was 24,9 ; 71,9 ; 78,47. Based on data analysis results obtained that the cognitive aspects of learning obtained that $\text{sig.} > \alpha$ ($0.074 > 0.05$), whereas the data analysis of skills aspects obtained that $\text{sig.} > \alpha$ ($0.074 > 0.05$). It could be concluded that: (1) Innovative practical guidance and virtual laboratory was valid to use. (2) Learning using innovative practical guidance and virtual laboratory outcomes were better than classroom practical guidance. (3) Learning using innovative practical guidance and virtual laboratory skill were better than classroom practical guidance.

Keywords: *Development Research, Practical Guidance, virtual laboratory, Cognitive, Skill,*