

ABSTRACT

Arif Maulana. 2021. “Development of a Practical Guide to the Anatomy Physiology of the Human Body based on *Macromedia Flash 8* with a *STEM* Approach to Biology Students at the Kerinci State Islamic Institute”. Thesis. Masters Program in Biology Education, Padang State University.

In the 21st century, science and technology is developing so rapidly. Students are required to master various skills in order to compete globally. Based on the results of the initial investigation at the Biology Tadris of the Kerinci State Islamic Institute, it is known that the Anatomy Physiology of the Human Body practicum which is carried out only uses a printed practicum guide book and direct objects, there is still no availability of practical teaching materials in the form of a practicum guide with a *STEM* approach. Students' difficulties in understanding the Anatomy and Physiology of the Human Body practicum on abstract concepts have an impact on student practicum results. The purpose of this research is to produce a practical guide for the Anatomy and Physiology of the Human Body based on *Macromedia Flash 8* with a *STEM* approach to students of Tadris Biology at the State Islamic Institute of Kerinci that is valid, practical and effective, and to train students' creative thinking skills.

Research and development (research and development) practicum guide using the Plomp model. This research method was carried out formative evaluation of practicum guide validation testing by 3 validator lecturers, practicality of practicum guides by Anfistuman lecturers and students, effectiveness in the experimental class and control class.

The results showed that the practical guide with the *STEM* approach was valid, practical, effective and creative. This is evidenced from the results of the validation of the didactic, construct, and technical aspects of the practical guide with an average value of 90.56 very valid categories. The results of the practicality assessment by the Anatomy Physiology of the Human Body lecturer showed an average score of 86.51 (very practical) and the results of the practicality assessment by students obtained an average value of 89.31 (very practical). The results of the effectiveness test of the practicum guide from the cognitive, affective, psychomotor aspects of students showed that the practicum guide was very effective and the value of the creative thinking test result was 85.19 in the very creative category. It can be concluded that the practicum guide developed is very valid, practical, effective, and creatively used in the practicum process.

Keywords: practical guide, *Macromedia Flash 8*, *STEM*.

ABSTRAK

Arif Maulana. 2021. “Pengembangan Penuntun Praktikum Anatomi Fisiologi Tubuh Manusia berbasis *Macromedia Flash 8* dengan Pendekatan *STEM* pada Mahasiswa Tadris Biologi Institut Agama Islam Negeri Kerinci”. Tesis. Program Studi Magister Pendidikan Biologi Universitas Negeri Padang.

Abad 21 ilmu pengetahuan dan teknologi berkembang begitu pesat. Mahasiswa dituntut dapat menguasai berbagai keterampilan agar dapat bersaing secara global. Berdasarkan hasil investigasi awal di Tadris Biologi Institut Agama Islam Negeri Kerinci, diketahui bahwa praktikum Anatomi Fisiologi Tubuh Manusia yang dilakukan hanya menggunakan buku penuntun praktikum cetak dan objek langsung, masih belum adanya ketersediaan bahan ajar praktikum berupa penuntun praktikum dengan pendekatan *STEM*. Kesulitan mahasiswa untuk memahami materi praktikum Anatomi Fisiologi Tubuh Manusia pada konsep-konsep yang abstrak, berdampak terhadap hasil praktikum mahasiswa. Tujuan penelitian ini adalah menghasilkan penuntun praktikum Anatomi Fisiologi Tubuh Manusia berbasis *Macromedia Flash 8* dengan pendekatan *STEM* pada mahasiswa Tadris Biologi Institut Agama Islam Negeri Kerinci yang valid, praktis dan efektif, serta melatih keterampilan berpikir kreatif mahasiswa.

Penelitian pengembangan (*research and development*) penuntun praktikum menggunakan model Plomp. Metode penelitian ini dilakukan evaluasi formatif pengujian validasi penuntun praktikum oleh 3 orang dosen validator, praktikalitas penuntun praktikum oleh dosen Anfistuman dan mahasiswa, efektifitas pada kelas eksperimen dan kelas kontrol.

Hasil penelitian menunjukkan bahwa penuntun praktikum dengan pendekatan *STEM* adalah valid, praktis, efektif dan kreatif. Hal tersebut dibuktikan dari hasil validasi penuntun praktikum aspek didaktik, konstruk, dan teknis dengan nilai rata-rata 90,56 kategori sangat valid. Hasil penilaian praktikalitas oleh dosen Anatomi Fisiologi Tubuh Manusia menunjukkan nilai rata-rata 86,51 (sangat praktis) dan hasil penilaian praktikalitas oleh mahasiswa diperoleh nilai rata-rata 89,31 (sangat praktis). Hasil uji efektifitas penuntun praktikum dari aspek kognitif, afektif, psikomotorik mahasiswa menunjukkan bahwa penuntun praktikum sangat efektif dan nilai hasil uji berpikir kreatif didapatkan 85,19 dengan kategori sangat kreatif. Dapat disimpulkan bahwa penuntun praktikum yang dikembangkan sangat valid, praktis, efektif, dan kreatif digunakan dalam proses praktikum.

Kata kunci: penuntun praktikum, *Macromedia Flash 8*, *STEM*.