

## ABSTRAK

**IVAN LAUREN RAJAGUKGUK, Pengembangan Penuntun Praktikum Genetika Berbasis Keterampilan Proses Sains.** Tesis: Program Studi Pendidikan Biologi Pascasarjana Universitas Negeri Medan, 2016.

Penelitian ini bertujuan untuk mengembangkan Penuntun Praktikum Genetika Berbasis Keterampilan Proses Sains yang layak secara empiris. Penuntun praktikum genetika yang dikembangkan mengintegrasikan 11 komponen keterampilan proses sains pada setiap kegiatan praktikum. Keterampilan proses sains ini akan memudahkan mahasiswa dalam menggali informasi berupa fakta dan konsep sains. Penelitian ini dilaksanakan pada bulan April 2016 hingga September 2016 di Laboratorium Jurusan Biologi FMIPA Universitas Negeri Medan. Jenis Penelitian ini berupa penelitian dan pengembangan (*reasearch and development*) model Borg and Gall. Langkah-langkah penelitian ini meliputi studi pendahuluan, pengembangan produk, validasi tim ahli, penilaian dosen, dan ujicoba produk dilapangan. Validasi tim ahli materi dilakukan untuk menilai kelayakan isi kelayakan penyajian, dan kelayakan komponen keterampilan proses sains pada penuntun praktikum. Validasi ahli desain dilakukan untuk menilai kelayakan desain kulit, tipografi kulit, desain isi dan ilustrasi isi pada penuntun praktikum. Penilaian yang dilakukan oleh dosen mata kuliah Genetika dan mahasiswa juga dilakukan untuk menilai kelayakan penuntun praktikum yang dikembangkan. Hasil validasi oleh tim ahli materi menunjukkan persentase rata-rata 88,2% dengan kriteria sangat baik, validasi ahli desain menunjukkan persentase rata-rata 88,3% dengan kriteria sangat baik, penilaian dosen mata kuliah menunjukkan persentase rata-rata 86,9% dengan kriteria sangat baik, penilaian atas tanggapan mahasiswa melalui ujicoba perorangan menunjukkan persentase rata-rata 79,3% dengan kriteria baik, ujicoba kelompok kecil menunjukkan persentase rata-rata 83,8%, dan ujicoba kelompok lapangan terbatas menunjukkan persentase rata-rata 87,6% dengan keriteria sangat baik. Penuntun praktikum yang dikembangkan ini layak untuk digunakan pada kegiatan praktikum Genetika di Laboratorium.

**Kata Kunci: Pengembangan, Penuntun Praktikum, Genetika, Keterampilan Proses Sains.**

## ABSTRACT

**IVAN LAUREN RAJAGUKGUK, The Development of Genetics Practical Guidance book Based on Science Process Skills.** Thesis: Biology Education, Postgraduate school, State University of Medan, 2016.

This research was aimed to develop a Genetics Practical Guidance book Based on Science Process Skills which feasible empirically. This Genetics Practical Guidance book was developed integrated to 11 components of science process skills in each practicum activity. This science process skills allowed students to explore the information in the form of facts and concepts of science. This study was conducted from April 2016 to September 2016 in Laboratory of Biology, State University of Medan. This research and development used Borg and Gall model. The steps of this study include preliminary studies, product development, validation from of experts, lecturers assessment, and preliminary field testing. Validation to content experts was carried out to assess the feasibility of the contents, feasibility of the presentation, and the feasibility of science process skills components on the product. Validation of design experts carried out to assess the feasibility of the design of cover, cover typography, content design and content illustration on practical guidance book. Assessment that was conducted to a lecturer of Genetics course and students also performed to assess the feasibility of practical guides were developed. The result shown that according to conten experts the product has average percentage of 88.2% with very good criteria, where as validation from design expert shown the average percentage of 88.3% with very good criteria, the assessment of lecturer shown the average percentage of 86.9% with very good criteria, student responses through individual preliminary field testing showed an average percentage of 79.3% with good criteria, small group shows the average percentage of 83.8%, and preliminary field testinng group shows the average percentage of 87, 6% with the criteria of excellent. As the conclusion Genetics Practical Guidance book Based on Science Process Skills is feasible empirically to be used in practical activities in the Laboratory of Genetics.

**Keywords: Development, Practical Guidance book, Genetics, Science Process Skills**