ABSTRAK

PENGEMBANGAN SISTEM LAYANAN INFORMASI MANAJEMEN KIMIA LABORATORIUM (SLIM KILAB) SEBAGAI MODEL MANAJEMEN LABORATORIUM KIMIA DI SMA SE-SUB RAYON

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Penelitian ini bertujuan mengembangkan Sistem Layanan Informasi Manajemen Kimia Laboratorium (SLIM KiLab) sebagai model manajemen laboratorium kimia berbasis digital di SMA se-Sub Rayon. Latar belakang pengembangan didasari oleh rendahnya efisiensi pengelolaan laboratorium yang masih dilakukan secara manual, serta keterbatasan fitur dalam sistem sebelumnya (SIML) yang belum mendukung akses siswa dan manajemen peminjaman yang terintegrasi. Penelitian ini menggunakan metode *Research and Development* (R&D) model Borg & Gall yang dimodifikasi, meliputi tahapan analisis kebutuhan, perencanaan, pengembangan produk awal, validasi ahli, uji coba lapangan melalui *Focus Group Discussion* (FGD), hingga revisi produk akhir.

Produk yang dihasilkan berupa aplikasi berbasis web yang dilengkapi fitur inventarisasi alat dan bahan berbasis *barcode*, sistem peminjaman dan pengembalian, manajemen stok, jadwal praktikum, penilaian, serta akses berjenjang untuk admin, guru, dan siswa. Berdasarkan hasil validasi dan hasil uji coba lapangan melalui FGD pada SMAN 14, SMAN 16 Bandar Lampung, dan akademisi menunjukkan sistem sangat efektif dengan skor 98,2% dan sangat praktis dengan skor 99,04%. Implementasi SLIM KiLab terbukti mampu meningkatkan efisiensi administrasi, meminimalisir kesalahan pencatatan manual, serta menyediakan akses informasi yang cepat dan akurat. Dengan demikian, SLIM KiLab layak digunakan sebagai model manajemen laboratorium kimia yang efektif di tingkat SMA.

Kata Kunci: SLIM KiLab, manajemen laboratorium, kimia, SMA, sistem informasi.

ABSTRACT

DEVELOPMENT OF A CHEMISTRY LABORATORY MANAGEMENT INFORMATION SERVICE SYSTEM (SLIM KILAB) AS A CHEMISTRY LABORATORY MANAGEMENT MODEL IN HIGH SCHOOL SUB-RAYONS

By

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This research aims to develop the Chemistry Laboratory Management Information Service System (SLIM KiLab) as a digital-based chemistry laboratory management model for high schools in the Sub-Rayon. The development is motivated by the low efficiency of laboratory management, which is still carried out manually, and by feature limitations in the previous system (SIML) which did not support student access and integrated loan management. The study utilized the modified Borg & Gall Research and Development (R&D) model, covering needs analysis, planning, initial product development, expert validation, field trials through Focus Group Discussions (FGD), up to the final product revision.

The resulting product is a web-based application equipped with barcode-based inventory features for tools and materials, a loan and return system, stock management, practicum schedules, assessment, and tiered access for administrators, teachers, and students. Based on the validation and field trial results through FGDs at SMAN 14, SMAN 16 Bandar Lampung, and among academics, the system was shown to be highly effective with a score of 98.2% and highly practical with a score of 99.04%. The implementation of SLIM KiLab proved capable of improving administrative efficiency, minimizing manual recording errors, and providing fast and accurate information access. Thus, SLIM KiLab is feasible for use as an effective chemistry laboratory management model at the high school level.

Keywords: SLIM KiLab, laboratory management, chemistry, high school, information system.