

ABSTRAK

WINDA SIHOTANG. Pengembangan Sistem Informasi Laboratorium Berbasis Website Sebagai Upaya Peningkatan Efektivitas Pengelolaan Laboratorium Sekolah. Pascasarjana Universitas Negeri Medan, 2024.

Penelitian ini bertujuan untuk (1) mengetahui kondisi faktual pengelolaan laboratorium yang sedang berjalan di SMA Brigjend Katamso II Medan (2) menemukan rancang bangun sistem informasi berbasis website sebagai sarana pengelolaan laboratorium; (3) menguji kelayakan sistem informasi berbasis website sebagai sarana pengelolaan laboratorium; dan (4) menguji efektivitas penggunaan sistem informasi pengelolaan laboratorium berbasis website. Penelitian ini menggunakan penelitian Research & Development (R&D) dengan model 4D (Define, Design, Development, and Disseminate). Subjek penelitian sebanyak 7 orang guru di SMA Brigjend Katamso II Medan dengan menggunakan teknik nonprobability sampling (sampling jenuh). Teknik analisis data kualitatif dengan cara reduksi data, penyajian data, dan penarikan kesimpulan. Sedangkan data kuantitatif dengan uji normalitas, uji paired sample t-test, dan uji N-Gain score. Hasil penelitian menunjukkan bahwa (1) kondisi faktual sistem informasi pengelolaan laboratorium yang sedang berjalan memiliki kendala yang disebabkan proses pengerjaannya masih menggunakan cara konvensional yang mengakibatkan kinerja, informasi, ekonomi, pengendalian, efisiensi dan layanan sistem menurun ; (2) sistem informasi pengelolaan laboratorium berbasis website dirancang meliputi fitur informasi sekolah, fitur pengguna website, fitur inventaris laboratorium, fitur peminjaman alat, bahan, dan peralatan pendukung, fitur pengembalian alat, bahan, dan peralatan pendukung, fitur data seluruh kelas dan siswa, fitur mata pelajaran yang menggunakan laboratorium, fitur jadwal pemakaian laboratorium, fitur absensi siswa, fitur upload jurnal praktikum, dan fitur download rekapitulasi alat, bahan, peralatan pendukung, pemakaian, pengembalian dan absensi; (3) kelayakan sistem informasi pengelolaan laboratorium berbasis website berada pada kategori sangat layak digunakan dengan hasil kelayakan pada produk final secara expert judgement sebesar 92,26% dengan kategori sangat layak dan untuk performa sistem sebesar 87,50% dengan kategori sangat layak digunakan; dan (4) efektivitas implementasi sistem informasi pengelolaan laboratorium berbasis website menunjukkan cukup efektif dalam meningkatkan kegiatan pengelolaan laboratorium di SMA Brigjend Katamso II Medan dilihat berdasarkan nilai N-Gain score sebesar 0,9264 berada pada kategori tinggi, dan persentase sebesar 92,64% dengan kriteria efektif.

Kata Kunci: Sistem Informasi, Laboratorium, Efektivitas, Pengembangan, Website

ABSTRACT

WINDA SIHOTANG. Development of a Website-Based Laboratory Information System as an Effort to Increase the Effectiveness of School Laboratory Management. Postgraduate School of State University of Medan, 2024.

This research aims to (1) determine the factual conditions of ongoing laboratory management at Brigjend Katamso II High School Medan (2) discover the design of a website-based information system as a means of laboratory management; (3) testing the feasibility of a website-based information system as a means of laboratory management; and (4) testing the effectiveness of using a website-based laboratory management information system. This research uses Research & Development (R&D) research with a 4D model (Define, Design, Development, and Disseminate). The research subjects were 7 teachers at SMA Brigjend Katamso II Medan using nonprobability sampling techniques (saturated sampling). Qualitative data analysis techniques by means of data reduction, data presentation, and drawing conclusions. Meanwhile, quantitative data uses the normality test, paired sample t-test, and N-Gain score test. The research results show that (1) the factual condition of the currently running laboratory management information system has problems due to the process still using conventional methods which results in decreased performance, information, economics, control, efficiency and system services; (2) a website-based laboratory management information system is designed to include school information features, website user features, laboratory inventory features, features for borrowing tools, materials and supporting equipment, features for returning tools, materials and supporting equipment, data features for all classes and students, feature for subjects that use the laboratory, laboratory usage schedule feature, student attendance feature, practicum journal upload feature, and download feature for recapitulation of tools, materials, supporting equipment, usage, returns and attendance; (3) the feasibility of the website-based laboratory management information system is in the very suitable for use category with the feasibility results for the final product using expert judgment of 92.26% in the very feasible category and for system performance of 87.50% in the very suitable for use category; and (4) the effectiveness of implementing a website-based laboratory management information system shows that it is quite effective in improving laboratory management activities at SMA Brigjend Katamso II Medan, seen based on the N-Gain score of 0.9264 in the high category, and a percentage of 92.64% with effective criteria.

Keywords: Information Systems, Laboratory, Effectiveness, Development, Website