

Moh. Darirul Anwar. 2025. Sistem Rekomendasi Penentuan Cabang OSN Di SMAN 2 Pamekasan Berbasis Web Menggunakan Metode *Preference Selection Index*. Skripsi, Program Studi Pendidikan Informatika, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Trunojoyo Madura. Dosen Pembimbing: Laili Cahyani, S. Kom., M. Kom.

ABSTRAK

SMAN 2 Pamekasan menghadapi hambatan dalam proses seleksi peserta didik potensial untuk kegiatan Olimpiade Sains Nasional (OSN) yang masih dilakukan secara konvensional, sehingga berdampak pada rendahnya efisiensi, akurasi data, dan keterlibatan siswa. Penelitian ini bertujuan untuk merancang dan mengevaluasi sistem rekomendasi berbasis web menggunakan metode *Preference Selection Index* (PSI) sebagai alternatif yang objektif dan sistematis dalam menentukan cabang OSN yang sesuai dengan potensi dan minat siswa. Penelitian ini mengadopsi pendekatan *Research and Development* (R&D) dengan model pengembangan *waterfall* yang meliputi tahapan analisis kebutuhan, perancangan sistem, implementasi, pengujian, serta pemeliharaan. Evaluasi sistem dilakukan berdasarkan standar ISO 25010, dengan pengujian pada aspek *functional suitability*, *performance efficiency*, *maintainability*, dan *usability*. Hasil uji validasi menunjukkan bahwa sistem memenuhi kriteria kelayakan dengan capaian tingkat *functional suitability* sebesar 100%, waktu respons sistem 1,5 detik pada aspek *performance efficiency*, serta dinilai konsisten dan mudah dirawat pada aspek *maintainability*. Sementara itu, aspek *usability* menunjukkan tingkat kelayakan sebesar 94% pada uji perorangan dan 86% pada uji kelompok kecil maupun besar. Berdasarkan temuan tersebut, sistem rekomendasi berbasis web ini dinyatakan sangat layak untuk diterapkan dalam proses seleksi peserta OSN di SMAN 2 Pamekasan, serta dapat berkontribusi terhadap peningkatan mutu seleksi dan pembinaan akademik secara lebih terstruktur dan terukur.

Kata Kunci: ISO 25010, Olimpiade Sains Nasional(OSN) , *Preference Selection Index* (PSI), SMAN 2 Pamekasan, Web

Moh. Darirul Anwar. 2025. A Web-Based Recommendation System for Determining OSN Branches at SMAN 2 Pamekasan Using the Preference Selection Index Method. Undergraduate Thesis, Informatics Education Study Program, Faculty of Teacher Training and Education, Universitas Trunojoyo Madura. Supervisor: Laili Cahyani, S.Kom., M.Kom.

ABSTRACT

SMAN 2 Pamekasan has encountered limitations in the selection process for potential participants in the National Science Olympiad (OSN), which is still predominantly conducted manually. This results in inefficiencies, data inaccuracies, and limited student engagement. This study aims to design and evaluate a web-based recommendation system using the Preference Selection Index (PSI) method to provide an objective and systematic approach in determining the most suitable OSN branch for each student based on academic performance and interest. The research employed a Research and Development (R&D) methodology using the waterfall model, encompassing requirement analysis, system design, implementation, testing, and maintenance. System evaluation was conducted in accordance with ISO 25010 quality standards, focusing on functional suitability, performance efficiency, maintainability, and usability. The validation results indicate that the system achieved a 100% rating in functional suitability, a response time of 1.5 seconds for performance efficiency, and strong indicators of consistency and maintainability. Furthermore, usability testing yielded satisfaction levels of 94% in individual trials and 86% in small and large group settings. These findings demonstrate that the web-based recommendation system is highly feasible for implementation at SMAN 2 Pamekasan and has the potential to enhance the accuracy, transparency, and efficiency of the OSN selection process.

Keywords: *ISO 25010, National Science Olympiad (OSN), Preference Selection Index (PSI), SMAN 2 Pamekasan, Web-based system*