

ABSTRAK

Kemajuan teknologi di era digital memicu berbagai tantangan adaptasi dalam bidang pendidikan, khususnya pada sistem pembelajaran. Permasalahan utama dalam implementasi sistem pembelajaran adalah kurangnya personalisasi pembelajaran sesuai karakteristik individual siswa. Penelitian ini bertujuan untuk mengoptimalkan sistem pembelajaran adaptif menggunakan kombinasi metode *Analytical Hierarchy Process* (AHP) dan *Technique for Order Preference by Similarity to Ideal Solution* (TOPSIS). Metode AHP digunakan untuk menentukan bobot kriteria gaya belajar, sedangkan TOPSIS berperan dalam meranking alternatif jalur pembelajaran berdasarkan kedekatan dengan solusi ideal. Sistem yang dikembangkan dilengkapi dengan lima fitur utama yaitu kuesioner penentuan gaya belajar, modul pembelajaran adaptif, *Pretest*, *coursetest*, dan *Posttest*. Implementasi sistem dilakukan pada 38 mahasiswa sebagai sampel penelitian. Hasil penelitian menunjukkan bahwa 36 mahasiswa mengalami peningkatan pemahaman setelah menggunakan sistem, dengan tingkat keberhasilan mencapai 94,74%. Evaluasi kinerja sistem membuktikan bahwa metode AHP-TOPSIS efektif dalam menyesuaikan konten pembelajaran berdasarkan gaya belajar individu, sehingga berkontribusi signifikan terhadap peningkatan pemahaman siswa dalam proses pembelajaran.

Kata Kunci: Personalisasi Pembelajaran, Gaya Belajar, AHP, TOPSIS.

ABSTRACT

Technological advancement in the digital era triggers various adaptation challenges in the field of education, especially in the learning system. The main problem in the implementation of learning systems is the lack of personalization of learning according to the individual characteristics of students. This research aims to optimize the adaptive learning system using a combination of Analytical Hierarchy Process (AHP) and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) methods. The AHP method is used to determine the weight of learning style criteria, while TOPSIS plays a role in ranking alternative learning paths based on proximity to the ideal solution. The developed system is equipped with five main features, namely learning style determination questionnaire, adaptive learning module, Pretest, coursetest, and Posttest. System implementation was conducted on 38 students as research samples. The results showed that 36 students experienced an increase in understanding after using the system, with a success rate of 94.74%. The system performance evaluation proves that the AHP-TOPSIS method is effective in customizing learning content based on individual learning styles, thus contributing significantly to the improvement of student understanding in the learning process.

Keywords: *Personalized Learning, Learning Style, AHP, TOPSIS.*