

Design of a learning management system applying artificial intelligence (AI) to analyze student learning outcomes and provide solutions to improve learning quality at Dong Hy Secondary Boarding School for Ethnic Minorities.

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Abstract: This study presents the design and implementation of an AI-enhanced Learning Management System (LMS) tailored for the Dong Hy Ethnic Minority Boarding Secondary School. The system integrates artificial intelligence to analyze student academic performance data, identifying learning gaps, behavioral patterns, and individual progress. By leveraging machine learning algorithms, the platform generates personalized learning pathways and provides actionable recommendations for both students and educators to improve academic outcomes. The system architecture includes modules for data collection, performance analytics, predictive modeling, and feedback generation. A pilot deployment demonstrated significant improvements in identifying at-risk students and tailoring instructional interventions. The findings indicate that the AI-driven LMS effectively supports data-informed decision-making, enhances teaching quality, and fosters a more adaptive learning environment. This research contributes to the application of educational technology in under-resourced contexts, offering a scalable model for improving learning quality in ethnic minority boarding schools.

Keywords: Learning Management System, Artificial Intelligence, Learning Outcome Analysis, Learning Quality Improvement