

## **ABSTRACT**

*This research explores the effect of the use of Learning Management System (LMS) on Course Learning Outcomes (CLO) in the Information Systems Study Program. The digital era has strengthened the role of LMS in higher education, although distance learning challenges still exist. This research compares the activities of students who passed and did not pass CLOs in various courses, identifying learning path patterns. Process mining techniques, specifically the Heuristic Miner algorithm, are used to analyze LMS event logs. The results show that students who passed the CLO have more in-depth interaction with the learning materials. The algorithm successfully identifies students' learning patterns in all courses as seen from the fitness values of non-passing and passing students ranging from 0.8093 to 0.9309 and 0.7143 to 1, respectively, while all students range from 0.8093 and 0.9309 which indicates the accuracy of the process model in representing the actual traces in the event logs. This analysis gives insight into the different learning paths and provides a basis for the development of a more effective LMS system. With measures such as attendance system, assignment collection per progress, and simplification of LMS features, improved learning outcomes and student success can be realized. This research provides valuable guidance for educational institutions in supporting better and more effective distance learning in the field of Information Systems.*

*Keywords: Process mining, Learning Management System (LMS), Event log, Heuristic miner algorithm, Learning patterns.*