

**PENGEMBANGAN SISTEM PENILAIAN KEAKTIFAN BELAJAR
SISWA OTOMATIS BERBASIS *LEARNING MANAGEMENT SYSTEM*
DENGAN METODE *RETRIEVAL AUGMENTED GENERATION***

Oleh

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ABSTRAK

Learning Management System (LMS) merupakan perangkat lunak berbasis internet yang digunakan untuk administrasi, dokumentasi, pencarian, serta penyampaian materi dan pelaporan kegiatan pembelajaran daring. Meskipun LMS telah memberikan kemudahan dalam proses pembelajaran, kenyataannya sistem ini masih memiliki kelemahan, terutama pada aspek penilaian keaktifan belajar siswa yang masih dilakukan secara manual oleh guru. Tujuan dari penelitian ini adalah mengembangkan sistem yang mampu melakukan penilaian keaktifan belajar siswa secara otomatis menggunakan *Large Language Model* (LLM) dengan *Retrieval-Augmented Generation* (RAG), serta menganalisis hasil penilaiannya. Penelitian ini menggunakan pendekatan *Research and Development* (R&D) dengan metode *System Development Life Cycle* (SDLC) model *Agile*. Penelitian ini dilakukan melalui empat tahapan, yaitu *Requirements*, *Design*, *Development*, dan *Testing*. Hasil pengujian akurasi nilai sistem menunjukkan sebesar 84,81% yang termasuk dalam kategori ‘*Good*’ dan dinyatakan ‘layak’ untuk diimplementasikan. Kelayakan sistem diperkuat dengan hasil penilaian guru melalui *User Acceptance Test* (UAT) yang memperoleh skor sebesar 89%.

Kata Kunci : *Learning Management System*, Penilaian Keaktifan Belajar, *Retrieval-Augmented Generation*, *Research and Development*, dan *System Development Life Cycle*.

**DEVELOPMENT OF AN AUTOMATIC STUDENT LEARNING
ACTIVENESS ASSESSMENT SYSTEM BASED ON A LEARNING
MANAGEMENT SYSTEM USING THE RETRIEVAL-AUGMENTED
GENERATION METHOD**

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ABSTRACT

A Learning Management System (LMS) is an internet-based software used for administration, documentation, retrieval, delivery of learning materials, and reporting of online learning activities. Although LMS has provided convenience in the learning process, in practice, it still has weaknesses, particularly in assessing students' learning activeness, which is still carried out manually by teachers. The purpose of this study is to develop a system capable of automatically assessing students' learning activeness using a Large Language Model (LLM) with Retrieval-Augmented Generation (RAG), as well as to analyze the assessment results. This study employed a Research and Development (R&D) approach with the System Development Life Cycle (SDLC) Agile model. The research was conducted through four stages: Requirements, Design, Development, and Testing. The accuracy test of the system's score achieved 84.81%, which falls into the 'Good' category and is declared feasible for implementation. The feasibility of the system was further supported by teacher evaluations through a User Acceptance Test (UAT), which obtained a score of 89%.

Keywords: *Learning Management System, Learning Activeness Assessment, Retrieval-Augmented Generation, Research and Development, and System Development Life Cycle.*