

Academic data analytics in a university environment

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Modern universities generate large volumes of academic data, including students' grades, attendance records, examination results, and learning activity indicators. Despite the availability of such data, it is often used solely for calculating final grades, which significantly limits its analytical potential and prevents a comprehensive understanding of the educational process.

This paper examines the role of academic data analytics in the university environment and evaluates its effectiveness in improving learning process assessment. The study addresses key challenges related to diverse assessment systems, score distribution, and the impact of attendance on academic performance. A practical analytical model based on Excel, SQL, and Power BI is proposed to support subject-level analysis, evaluation of assessment components, and interactive visualization of academic data. The findings demonstrate that data-driven analytics enhances transparency, supports evidence-based academic decision-making, and contributes to improving the overall quality and effectiveness of higher education institutions.