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# Exploring the Effectiveness of Differentiated Instruction in University Settings: A Text and Sentiment Analysis Approach

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## ABSTRACT

Differentiated Instruction (DI) is increasingly recognized as an effective pedagogical approach in addressing the diverse needs of learners. Despite its growing application in higher education, limited research explores its implementation from students' perspectives, particularly in specific cultural contexts. This study examines the application of the DI module in Indonesian universities, focusing on its impact on students' learning experiences. Using a sample of 320 students from four universities, qualitative data were collected through open-ended survey responses. Text and sentiment analysis methods were applied to identify key themes and evaluate student sentiments regarding the DI module. Results indicate that the module was well-received, with 61.3% of responses expressing positive sentiment, particularly emphasizing improved understanding of materials, interactive learning experiences, and increased access to resources. Neutral sentiments (34%) highlighted areas for refinement, while negative feedback (4.7%) identified challenges such as insufficient personalization or clarity in implementation. Topic modelling revealed recurring themes, including the module's role in enhancing learning outcomes, the need for more interactive activities, and the importance of tailored instructional materials. Students also provided actionable suggestions for improvement, such as incorporating diverse teaching strategies and enhancing material accessibility. The findings underscore the DI module's potential to foster inclusive and effective learning environments in higher education. However, the study also highlights the need for flexibility in instructional design better to address diverse student preferences and local educational contexts. While specific to Indonesia, the insights offer valuable guidance for educators and policymakers seeking to optimize DI practices globally. Future research should explore broader applications and incorporate mixed-method approaches to evaluate DI effectiveness comprehensively.

## KEY WORDS

Differentiated instruction, higher education, text analysis, sentiment analysis, student perspective

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