



ENHANCING STUDENT MATHEMATICS ENGAGEMENT AND PERFORMANCE THROUGH DIFFERENTIATED LEARNING ACTIVITIES

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ABSTRACT

Differentiated instruction has surfaced as a promising strategy to address students' diverse learning needs and abilities found in the classroom. This study examined the impact of differentiated instruction strategies on the behavioral and cognitive engagement, as well as the mathematical performance of Grade 11 senior high school students. The main objective was to assess whether these strategies can significantly enhance student engagement and performance in mathematics. A mixed-methods approach was applied, combining both quantitative and qualitative data. The study involved pre-test and post-test assessments, engagement surveys, and student experiences. Quantitative data were analyzed using the Wilcoxon Signed-Rank Test to examine the significant differences in engagement and mathematical performance. On the other hand, qualitative data were gathered through student interviews to provide insights into their experiences with differentiated instruction. Results showed improvements in both behavioral and cognitive engagement indicators, though these were not statistically significant but descriptive statistics indicated consistently high engagement ratings and low interquartile ranges. This suggested uniform positive responses. On the other hand, there was a statistically significant increase in students' mathematical performance after the implementation. The mean post-test scores were notably higher than the pre-test scores and it confirmed the effectiveness of the intervention in improving academic performance. Student feedback further highlighted increased engagement, and appreciation for the different learning activities. These findings support the continued application and development of differentiated instruction in mathematics education.

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