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ENHANCING STUDENTS' INTEREST AND PARTICIPATION IN MATHEMATICS LESSON DEVELOPMENT

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Mathematics significantly improves students' problem-solving and analytical thinking skills. However, based on the experience as a teacher, many eighth-grade students show low levels of engagement and participation, which negatively affects their academic performance. This study investigates strategies to enhance student engagement in mathematics learning through interactive and student-centred methods. A quantitative research design was employed, focusing on five students in grade 8 from a selected Type 1AB school in the Rathnapura Educational Zone of Sabaragamuwa Province, Sri Lanka. Participants were selected through purposive sampling. Three intervention sessions were designed and conducted to address different aspects of students' disengagement in mathematics learning. These interventions include the use of technology integration, collaborative learning, real-world problem-solving, and differentiated instruction. Data was collected using observations for classroom activities, memos based on student reflections, and surveys. The findings indicate a positive impact of the interventions on students' engagement. Specifically, 60% of the selected students showed increased interest in interactive learning methods such as group discussions and hands-on activities. The application of real-world contexts to mathematical concepts resulted in 75% of the selected students demonstrating increased interest and finding learning more relatable. Furthermore, 95% of the students reported increased enthusiasm and reduced anxiety towards mathematics when lessons incorporated technology-based activities. Since interactive methods and technology-based activities enhanced students' interest, participation, and conceptual understanding of mathematics, this study provides practical insights for educators aiming to implement active student engagement in mathematics through innovative lesson design. Among the insights, the interactive and student-centred interventions positively influence students' engagement with mathematics. Observations and student feedback reveal that interactive learning methods, such as group discussions and hands-on activities, led to higher levels of participation. Applying mathematical concepts to real-world contexts appeared to help students grasp abstract ideas more effectively, making learning more meaningful and relatable. In conclusion, these strategies significantly enhance students' engagement, enthusiasm, and pleasure in studying mathematics. This study offers useful advice for teachers, indicating that incorporating these technology-enhanced and interactive techniques can make mathematics classes more interesting, which will ultimately boost student motivation and academic achievement.

Keywords: Interactive learning, Mathematics learning strategies, Technology integration