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Effect of Student-Centered Teaching Approach on Academic Performance in Mathematics at the Secondary School Level

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ABSTRACT

Objective: The study's primary purpose is to investigate the effect of a Student-Centered Teaching Approach on Student's Academic Performance in Mathematics at the Secondary Level. **Method:** The study was carried out using the quasi-experiment method. In this study, convenient sampling was used to select secondary schools and select students for intervention. This study used a few instrumentations, such as a mathematics test, which was used for pre-and posttests. **Results:** The analysis data in the posttest reveal an increase in mean, mode, and median scores after implementing a student-centered approach toward the experimental group. This study proves that the effectiveness of a student-centered teaching approach positively impacts students' academic performance in mathematics. The rejection of the null hypothesis suggests that the student-centered approach led to a statistically significant improvement in students' scores compared to the teacher-centered approach. **Novelty:** This contributes valuable insights to educational practices, advocating for adopting student-centered methods in mathematics instruction. This study proved the effectiveness of the Student-Centered Teaching Approach on students's Academic Performance in Mathematics at the Secondary Level.

INTRODUCTION

Mathematics is paramount in the education system and is the basis of many scientific and business fields. The core objective of Mathematics education is to equip students with essential computational skills and foster logical reasoning and problem-solving competencies (Bakker et al., 2021). However, Mathematics often poses challenges for many students, which may result in low academic achievement (Sneck et al., 2019). The teaching approach is crucial to students' understanding and academic achievement. Traditional teaching methods, often described as teacher-centered, focus on direct instruction where teachers are the primary source of knowledge (Sutaphan & Yuenyong, 2019; Richit & Tomkelski, 2020). Though effective in specific contexts, such methods might not encourage critical thinking or foster a deep understanding of Mathematics in students. Many education experts have suggested a shift towards student-centered teaching approaches to enhance students' engagement and academic performance. Student-centered learning focuses on students' needs, abilities, interests, and learning styles and involves them as active participants in the learning process (Richit & Tomkelski, 2020; Sutaphan & Yuenyong, 2019). However, more research is needed to investigate the effectiveness of student-centered teaching approaches on academic performance in mathematics, specifically in the context of Bangladesh.

This study aims to fill this gap by focusing on the effects of the student-centered teaching approach on students' academic performance in Mathematics at the secondary level in Khulna, Bangladesh. It is hypothesized that the use of a student-centered

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