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Transforming Mathematics Education in Disadvantaged Communities through Learnercentred-Centred Teaching

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Abstract

Despite ongoing education reforms in South Africa, many learners in marginalised communities continue to perform poorly in mathematics due to outdated instructional practices, overcrowded classrooms, and a lack of learner engagement. This study addresses the persistent problem of low mathematics achievement in under-resourced secondary schools by investigating the impact of interactive teaching methods on learner performance and participation.

Using a mixed-methods approach, the study was conducted in three public secondary schools in the Western Cape province, targeting Grade 9 learners. A quasi-experimental design with pre- and post-tests was used to compare outcomes between classes taught with traditional methods and those using interactive strategies such as peer instruction, group problem-solving, and formative feedback. Qualitative data were gathered through classroom observations and interviews with teachers and learners to understand their experiences and perceptions.

Our findings revealed that learners exposed to interactive teaching showed significant improvements in test scores, confidence, and participation. Teachers noted better classroom dynamics and a clearer understanding of learners' needs. Students reported feeling more engaged and less anxious about mathematics. The study confirms that interactive, learner-centred pedagogy can lead to improved academic outcomes, especially in disadvantaged settings.

It is recommended that education departments invest in professional development for teachers on interactive instructional strategies. Curriculum designers should integrate these approaches more deliberately into classroom practice to promote equity and excellence in mathematics education.

Keywords: Educational Equity, Interactive Teaching, Learner Engagement, Mathematics Education, South Africa