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Enhancing Mathematics Performance in Rural Cape Town Schools: Investigating the Impact of Peer-assisted Learning

Comfort Asiamah , Isaac Quarm

Cape Town Community College, South Africa

Abstract

Mathematics achievement in rural areas of Cape Town, Western Cape, remains significantly below national benchmarks, especially in under-resourced schools. This study investigates the effectiveness of Peer-Assisted Learning (PAL) as a strategy to improve learners' performance and engagement in mathematics. The central problem addressed is the persistent low mathematics pass rates among Grade 9 learners in rural Cape Town schools, attributed to limited teacher support, overcrowded classrooms, and lack of learner motivation.

A mixed-methods approach was used, combining quantitative and qualitative data collection techniques. The study involved 120 Grade 9 learners and 8 mathematics teachers across four rural schools in the Cape Flats and surrounding farming communities. Learners were divided into control and experimental groups. The experimental group participated in weekly PAL sessions over 12 weeks, while the control group continued with conventional instruction.

Findings revealed a notable improvement in the experimental group's test scores, with an average increase of 18% in mathematics performance. Additionally, learners in the PAL program reported higher confidence, better conceptual understanding, and increased peer collaboration. Teachers also noted improved classroom participation and reduced learner anxiety toward mathematics.

The study recommends the integration of structured peer-assisted learning programs into the rural school curriculum, accompanied by training for both learners and educators. Further research should explore the long-term impacts of PAL and its application across other grades.

Keywords: Collaborative Strategies, Grade 9 Mathematics, Learner Engagement, Mathematics Education, Rural Education