

Exploring Effective Mathematics Teaching Practices in Private Secondary Schools in Johannesburg, Gauteng Province

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Abstract

Mathematics education plays a vital role in developing learners' analytical thinking, logical reasoning, and problem-solving abilities. However, many secondary school learners continue to experience difficulties in understanding mathematical concepts and applying them effectively in different contexts. In private secondary schools in Johannesburg, Gauteng Province, concerns have been raised about whether existing teaching practices adequately support meaningful learning and sustained learner engagement. Despite relatively better learning resources and smaller class sizes often found in private institutions, some learners still demonstrate weak conceptual understanding and limited participation during mathematics lessons. This study, therefore, investigates effective mathematics teaching practices that enhance learner engagement and improve academic performance in private secondary schools in Johannesburg. The study employed a quantitative research approach with a descriptive survey design. Data were collected from 120 participants, consisting of 100 Grade 10 and Grade 11 learners and 20 mathematics teachers from five selected private secondary schools in Johannesburg. The participants were selected via purposive and simple random sampling techniques. The data collection instruments included structured questionnaires and classroom observation checklists designed to examine teaching strategies, classroom interactions, and learner participation in mathematics lessons. The collected data were analysed via descriptive statistics, including frequencies and percentages. The findings reveal that learner-centred instructional strategies, including collaborative problem solving, guided practice, and practical examples, significantly improve learners' understanding and participation in mathematics classrooms. However, the study also identified challenges such as the limited integration of digital learning tools and the continued use of traditional teacher-dominated instructional methods in some classrooms. The study recommends that mathematics teachers adopt interactive teaching approaches,



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integrate educational technology, and engage in continuous professional development programmes to strengthen instructional effectiveness. School management should also support innovative practices that encourage critical thinking and deeper conceptual understanding in mathematics learning.

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