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Barriers to Effective Teaching and Learning in Geography and Mathematics Classrooms in South African Secondary Schools

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Abstract

Effective teaching and learning in geography and mathematics remain significant challenges in many South African secondary schools, as reflected persistent low learner performance and limited conceptual understanding. Several barriers, including inadequate teaching resources, overcrowded classrooms, insufficient teacher support, learner motivation issues, and socioeconomic constraints, negatively affect the quality of instruction and learning outcomes. These challenges hinder the development of critical thinking, spatial reasoning, and problem-solving skills, which are essential for academic success and future careers. This study aimed to identify the major barriers affecting teaching and learning in geography and mathematics classrooms and to examine their impact on learner academic performance. A quantitative descriptive survey design was employed. Data were collected from a sample of 120 participants, consisting of 100 learners and 20 teachers, selected from five secondary schools in KwaZulu-Natal Province, South Africa. Structured questionnaires and classroom observation checklists were used to gather data on teaching practices, classroom conditions, resource availability, and learner engagement. The data were analysed via descriptive statistics, including frequencies and percentages. The findings revealed that the most significant barriers included a lack of adequate teaching and learning materials, large class sizes, limited access to technological resources, and low learner motivation. Teachers also reported insufficient professional development opportunities and heavy workloads as factors affecting instructional effectiveness. The study recommends increased provision of teaching resources, integration of educational technology, continuous teacher professional development, and implementation of learner-centred teaching strategies. Additionally, education stakeholders should prioritise reducing class sizes and strengthening institutional support to enhance teaching quality and learner performance in geography and mathematics classrooms.

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