

An Appraisal of Grade 12 Educators' Difficulties in Understanding Electric Circuits in South Africa: A Case Study of Umgungundlovu District of Kwazulu-Natal

Authors : Akinrogunde Omolere Moses

Abstract : A plethora of studies indicated that teaching and learning of the physical sciences in the Further Education and Training (FET) Phase (Grades 10-12) have long been declared problematic in South Africa. For instance, the results from the National Senior Certificate Matric Examination in Physical Sciences, especially in the questions related to practical skills, more specifically, electric circuits, have been unsatisfactory in the past decades. Learner difficulties in understanding electric circuits are well stated. Thus, this study appraised the difficulties Grade 12 Educators often face in understanding Electric Circuits in Umgungundlovu, District of Kwazulu-Natal, South Africa. A mixed-methods research methodology was employed, while a total of 30 schools were sampled, including Ex-Model C, Independent Exam Board, community, rural, and deep rural schools. Data were collected through semi-structured questionnaires. The findings revealed that a large percentage of the Grade 12 physical sciences educators have difficulties with the Grade 9 and 12 physical sciences content. It was also observed that most of the educators who had difficulties were unable to detect the type of difficulties learners would experience; as a result, they were unable to explain why learners experience such difficulties. The results also showed that only those educators with more experience in teaching the physical sciences were able to provide clearer explanations of both the why and how of dealing with learner difficulties with this section on electric circuits. The study recommended that there is a need to recruit more qualified educators, with at least a Bachelor of Science in Physics in particular, in order to combat the misconceptions. Also, Educators with an inadequate understanding of physical sciences should be orientated in order to meet the standard of classroom practice.

Keywords : grade 12 educators' difficulties, electric circuits, learners' difficulties, educators understanding of EC.

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