

https://dspace.org/

Classification of Grade 11 learners' responses to functions examination items in terms of Webb's depth of knowledge

Buthelezi, Thabani Sibongiseni

2021
https://hdl.handle.net/10539/32864

Downloaded from a DSpace repository. https://dspace.org/

ABSTRACT

This study was aimed at determining learners' depth of knowledge in the topic of functions in Grade 11. The 2019 Grade 11 question paper examined by the Gauteng Department of Education (GDE) and learners' written responses to examination items that tested conceptual or procedural knowledge or a combination of both on the topic of functions were analysed and classified in terms of Webb's Depth of Knowledge (DOK) model. The study participants were 44 learners from two schools who had written the Grade 11 Mathematics Paper I in the final standard examination of 2019. The study followed a qualitative methodology involving aspects of document analysis. The study results show that most items in the Grade 11 examination paper are pitched at **DOK Level-2**, which addresses the basic skills or concepts. However, learners perform better on questions that require **DOK Level-1** and poorly on questions that require **DOK Level-3**. The findings of this study also reveal that procedural knowledge was the most tested knowledge in the question paper. From 19 questions that were analysed, 11 questions required procedural knowledge to respond to it, 2 questions required procedural and conceptual knowledge, and another 3 questions required conceptual or procedural knowledge, while only 3 questions required conceptual knowledge. It was observed that learners struggle with questions that require conceptual knowledge. The study recommends integrating technologies in the teaching and learning of functions because the use of technology in mathematics, more specifically in the concept of functions, has been recognised by many researchers to improve learners' conceptual and procedural knowledge. Improving conceptual knowledge and procedural knowledge is necessary for learners to perform better in all questions consisting of different DOK levels.