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Application of Webb's depth of knowledge on learners' responses to probability questions

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ABSTRACT

This study focuses on Probability Questions from a selection of National November examinations. Probability was selected as a focus for this study because it is a topic that has been made compulsory across grades 4 to 12 in recent years. This study is two-fold as it investigated the Depth of Knowledge in selected Grade 12 Probability questions, and it looks at a sample of learners' responses to those probability questions. Given the unpredictable Pandemic we are experiencing, a total of 29 learners and one teacher participated in this study. A mixed method research methodology was employed in the study. Webb's Depth of Knowledge (DOK) Model was used as a framework of analysis. Probability questions from November examinations (2017 to 2019) were analysed to determine the DOK level for each question. Probability questions from a selection of November examinations were then reorganised in order to design the Probability Revision Task (PRT). Learner performance was examined by analysing their responses to the PRT. The study found that DOK level 1, 2 and 3 were present in all selected November examination Probability questions. However, there was no consistency with the weighing and spread of DOK levels from those examinations. The results revealed that learners in this study performed better than the cohorts of learners whose scripts were sampled and used to analyse the November examinations. Learner performance for DOK level 1 questions exceeded the performance in DOK level 2 and DOK level 3 questions by almost 31%. In an interview with the teacher, the Pandemic motivated some learners and provided relief for others from various pressures experienced in school.