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Investigating the nature of challenges faced by grade 12 teachers in the teaching and learning of probability and counting principles in South Africa. A case of Thokoza, east rand

Dube, Obadiah

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Abstract

This study investigates the challenges faced by mathematics teachers in the teaching of probability counting principles (PCP) in Thokoza secondary schools in Johannesburg, South Africa. The motivation for doing this study came from two main observations. The first observation is learners' poor performance in the topic of probability and counting principles (PCP) in the matric examinations over a long period from 2014. Results from my school always indicated that PCP was the worst topic in terms of learner performance in different tasks. Despite all this, I realized that less attention has been paid to the development of teachers in regarding probabilistic thinking. Department of Basic Education (DBE) diagnostic reports revealed that matric learners performed badly in PCP from the time the topic was introduced in 2014 to the present. Examiners' comments suggest that this topic is not properly taught in schools.

The second reason was that, when I did my Honours degree l investigated problems that teachers faced in teaching probability. In doing that study I found out that there was not much literature about teachers' challenges in teaching probability, yet the topic was poorly done by learners. This encouraged me to want to know more about probability and how its teaching could be improved.

This study focused on investigating the challenges faced by mathematics teachers in the teaching and learning of probability especially at grade 12 level. It was a qualitative study with 11 mathematics teachers participating from five different secondary schools. Data was collected through an open-ended questionnaire, short text messages (follow-up messages), classroom observations and document analysis. Questionnaire responses from teachers indicated that teachers found it difficult to explain probability terms. The majority of the teachers indicated that they faced challenges when teaching probability tree diagrams, dependent and independent events. Implications for this study have been made to address the specific challenges identified in this report.