

Analysis of certificate of secondary education mathematics teachers' conceptions and practices of formative assessment in selected schools in Tanzania

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This study aimed at investigating certificate of secondary education mathematics teachers' conceptions and practices of formative assessment in selected schools in Tanzania. The study had four objectives: (i) to explore mathematics teachers' conceptions of formative assessment in teaching and learning mathematics; (ii) to examine the influence of teachers' demographic factors on the practice of formative assessment in teaching and learning mathematics; (iii) to find out teachers' views on the relevance of mathematics curriculum materials in promoting formative assessment practices in teaching and learning, and (iv) to explore challenges facing teachers in implementing formative assessment in teaching and learning mathematics. The study employed mixed-method research approach to collect data from twelve public and private secondary schools in Arusha city and Kinondoni municipality. The study involved 59 mathematics teachers. The data were collected by using questionnaire, interview, classroom observation and documentary analysis. The main tool was classroom observation schedule adapted from Oswalt (2013). The schedule had five aspects: learning intention, monitoring, feedback, self-assessment and peer- assessment. Based on the five aspects of formative assessment, quantitative data were analysed using SPSS version 21 to obtain descriptive statistics such as mean, frequency and standard deviation. Similarly, non-parametric analysis was conducted to obtain "Mann-Whitney U test, Kruskal-Wallis H test and Spearman's (rho) correlation coefficient". Qualitative data were analysed through thematic analysis. The findings of the study indicate that mathematics teachers had limited knowledge about formative assessment. However, classroom observation showed that, teachers utilized some aspects of formative assessment. Evidence from the study indicates that frequently utilized aspects of formative assessment were: learning target, feedback and classroom monitoring and less utilized aspects were: self-assessment and peer-assessment. Spearman's correlation coefficient indicated that learning intention, monitoring and feedback aspects of formative assessment were strongly correlated. Further analysis indicated that in implementing formative assessment, teachers faced challenges namely limited time; overcrowded classrooms; students disliking mathematics, and students' language barrier. The study concludes that mathematics teachers do utilize some aspects of formative assessment

regardless of their limited knowledge. On the basis of the findings, the study recommends regular INSET that focus on formative assessment to mathematics teachers.