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The pedagogical value of tablet technology in the teaching of sixth grade Mathematics in two township schools in Gauteng Province, South Africa

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ABSTRACT

Tablet technology technology is becoming an integral part of teaching and learning mathematics in township schools in South Africa. This is after concerns were raised in several reports about learners' underachievement in mathematics, thus, urging the Government to implement a potential solution to the poor quality of teaching and learning of mathematics. Despite increasing use of tablet technology in mathematics classrooms in the Province, there is lack of empirical evidence to show the benefits of using this type of technology in the teaching and learning of mathematics in township schools. This study sought to bridge this gap by exploring the pedagogical value of tablet technology in the teaching of mathematics in two township schools in Gauteng Province, South Africa. The qualitative case study research design was considered the most appropriate as it allowed eliciting rich data on the lived experiences of mathematics teachers. Data came from interviews with five purposefully selected mathematics teachers, observations of five mathematics lessons and the analysis of important documents such as the learners' marked work. Data were analysed thematically using an analytical tool developed from various theories underpinning modern teaching and progressive pedagogy. The findings of the study revealed that tablet technology gives township teachers access to various forms of media for meaningful teaching of mathematics concepts. The use of narrative media, interactive media, productive and adaptive media in particular promotes meaningful engagement in instructional mathematics conversation, and enables more reflective and adaptive mathematics teaching and learning. The study noted that the lack of supporting technological infrastructure and teachers' pedagogical knowledge to use educational applications, coupled with inadequate teachers' training in the use of tablets in teaching mathematics seriously constrain teachers' efforts to optimise the use of tablet technology in their teaching. Based on these findings, it is recommended that teachers should be provided with adequate technological support infrastructure and ongoing training on the use of tablet technology in mathematics teaching. The study provides a model for optimal use of tablet technology in mathematics teaching in poor township schools.

Key words: tablet technology, bundled technology, discursive and experiential events