THE USE OF GEOGEBRA DYNAMIC SOFTWARE WITH FET MATHEMATICS EDUCATORS

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Extended abstract

This article describes reactions by Umlazi district grade 10 to 12 educators to the use of dynamic Mathematics software package called GeoGebra during a workshop organized by the Department of Mathematical Science at Mangosuthu University of Technology in its campaign to empower communities on issues of Mathematics and Science. The workshop was based on the teaching of functions using GeoGebra. The challenges that educators faced during the workshop were largely due to inexperience with computer usage in a classroom situation, let alone using a specific software package. Findings of the study provided the basis for the development of several new materials for assisting workshop activities and contributed to the improvement of introductory GeoGebra workshops.

The intervention by the department at MUT, aims to respond to the crisis of, poor quality of Mathematics and Science education in the schools, learners not being exposed to modern teaching strategies including the use of technology in the classrooms since most schools do not have computer laboratories and some do not have even electricity. The whole idea is to empower educators so that their engagement with learners on problem solving skills are improved. It is also responding to the Curriculum and Assessment Policy Statement (CAPS) document (Department of Basic Education, 2011) that educators are supposed to enhance their teaching by using available technologies. This is done through the workshops organized during school vacations. Rigor of the content presented is measured by the Bloom's Taxonomy of Learning Domains (Bloom, 1956) and is aligned to the CAPS document.

Participating educators in the workshop are mathematics and physical science teaching grade 10 to 12. We discovered during the workshop that almost 90% of educators have never made use of any technical support in their classrooms due to the fact that they do not have relevant resources such as computers in their schools. Some educators were honest enough to say that they have never used a computer before, let alone using a specialized mathematics software package such as GeoGebra.

In the article, we highlighted the evaluation of a professional development programme with a versatile mathematical software package called GeoGebra. The examples discussed during the workshop, showed that a dynamic approach can be used with great success to deal with functions and such a mathematics software package offers several educational advantages compared to traditional methods. The

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experience of the educators showed that access to technology should be readily available to educators at school as well as at home so that they can improve their teaching strategies in class. In order to support educators in the challenge of successfully integrating technology into teaching and learning of mathematics, professional development opportunities must be created in order to foster change in teaching practice and this will assist in the improvement of learners' achievement in mathematics in general.

Finally, subject specialists or advisors should be the drivers of the process of integration of technology in the teaching of mathematics since this will assist in introducing educators to different technologies available for use in class. Intensive workshops should be organized in all districts in the country so that the number of educators using technology in classrooms can be increased. This may help a large number of learners with potential to succeed in Mathematics.