

An Assessment of the Readiness of Grade 10 Learners for Geometry in the Context of Curriculum and Assessment Policy Statement (CAPS) Expectation

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ABSTRACT In 2012 January, as part of the ongoing process of curriculum revision which began in 1994, the South African Department of Education (DoE) introduced the Curriculum and Assessment Policy Statement (CAPS). The CAPS brought Euclidean geometry with its formal proof back into the compulsory mathematics curriculum. It also implied that all learners needed to perform at level 4 (Deduction: with formal proof) of the van Hiele levels in Euclidean geometry in all grades in the Further Education and Training (FET) phase-Grades 10-12. The main aspect of the van Hiele theory is that of children's understanding of geometric concepts can be characterised as being at certain specific levels within a hierarchy of levels from 0 to 4 with level 0 being the lowest. This paper reports on the assessment based on the van Hiele model of geometrical thinking levels of a sample of South African Grade 10 learners in Euclidean Geometry. It is a follow up of an earlier published study with 191 grade 10 learners by the same authors. Data for this study were generated from 359 Grade 10 learners in five senior secondary schools in one Education District. These schools were selected through purposive sampling. The study made use of both quantitative and qualitative research techniques for data collection. In the former, multiple choice questions and in the latter, structured interviews were made use of. The quantitative and qualitative data were analysed using Microsoft Excel 2007 and thematic analysis, respectively. The results from the study revealed that the majority of the learners were at level 0 despite the CAPS expectation that learners are to perform at level 3 in order to be ready for level 4 thinking in Grade 10. The findings from the study assisted the authors to suggest recommendations that could be made use of by curriculum developers and implementers to improve the instructional strategies of geometry learning and teaching.