

The Grade 9 Maths ANA – What Can We See After Three Years?

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INTRODUCTION

The Annual National Assessments (ANA) were introduced to address South Africa's poor performance in international mathematics assessments such as TIMSS and SACMEQ. The Grade 9 test was first written in 2012 with a national average of 12.7%. In 2013 the average increased to 13.9% but then dropped to 10.8% in 2014. The overall picture is one of very poor performance with the result that many questions are being asked about the value and purpose of the ANA.

The Department of Basic Education (DBE) identifies three purposes for the ANAs: (1) a measure for the state to gauge improvement in the education system, based on learner performance year-on-year; (2) a diagnostic assessment to identify areas of weakness in learners' performance; and (3) to provide a model of good assessment practice. While these are all important goals, they are not necessarily achievable through a single instrument. However, this is not the focus of our article. Our purpose here is to report on a content analysis of the three ANA papers which we undertook in the first quarter of 2015, paying particular attention to cognitive demand and levels of difficulty. We share our findings on these aspects, as well as on trends that arise as we look across the first three years of the Grade 9 Maths ANA.

CLASSIFICATION OF ITEMS

Classification of items into taxonomies is never a simple matter, and there are no perfect taxonomies. We have attempted to use existing taxonomies with which teachers are familiar but we are not suggesting that these are definitive levels or categories.

LEVELS OF COGNITIVE DEMAND

Levels of cognitive demand describe the nature of the item in terms of the mathematical demand. An early Grade 9 ANA document (DBE, 2011) distinguishes three levels: knowledge of basic concepts, application of concepts and non-routine problem solving. However, we chose to work with the four levels of cognitive demand as described in the CAPS document since these are the levels that teachers work with regularly.

- *Knowledge* – requires straight recall, use of mathematical facts, identification and direct use of formulae.
- *Routine procedure* – well-rehearsed and familiar algorithms, simple calculations that may involve several steps, use of formulae requiring change of subject.
- *Complex procedure* – several calculations that are not all of the same type, complex calculations, route to solution is not entirely obvious, connecting representations, developing proof, requires conceptual understanding.
- *Problem solving* – unseen, non-routine problems, route to solution is not suggested, also requires conceptual understanding.

Grade 9 Maths Ana 2014

R Bogdan



Grade 9 Maths Ana 2014:

Unveiling the Energy of Verbal Art: An Mental Sojourn through **Grade 9 Maths Ana 2014**

In a global inundated with displays and the cacophony of immediate connection, the profound energy and emotional resonance of verbal artistry frequently disappear in to obscurity, eclipsed by the constant barrage of noise and distractions. However, located within the musical pages of **Grade 9 Maths Ana 2014**, a charming work of literary elegance that pulses with organic thoughts, lies an unique journey waiting to be embarked upon. Written by a virtuoso wordsmith, this mesmerizing opus instructions viewers on a mental odyssey, gently revealing the latent possible and profound influence embedded within the elaborate internet of language. Within the heart-wrenching expanse with this evocative examination, we will embark upon an introspective exploration of the book is central themes, dissect its captivating publishing design, and immerse ourselves in the indelible effect it leaves upon the depths of readers souls.

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