

Exploring the Grade 9 maths ANA

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Teachers' perceptions

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Overview of the research

- to explore the Grade 9 mathematics ANA: the design, the perceived usefulness and relevance, perceptions of teachers
- Objectives: To identify ways of improving validity of the Grade 9 maths ANA ; to explore teachers' perceptions of the ANA, and in general about teaching mathematics at Gr 9 level.
- To identify conceptual and learner trends in performance in ANA; to make comparisons about performance between the ANA and the internal school based assessments. It also aims to explore the extent to which information is being used

Overview of the research cont.

- Objectives: To identify ways of improving validity of the Grade 9 maths ANA ; to explore teachers' perceptions of the ANA, and in general about teaching mathematics at Gr 9 level.
- To identify conceptual and learner trends in performance in ANA; Compare performance in ANA and e internal school based assessments; explore the extent to which information is being used

Methodology

- Quantitative analysis of 1028 learner scores in 2014 ANA and school examinations- five schools
- Rasch analysis – item level analysis of 1187 learner scripts from seven KZN schools, from different quintiles
- Teacher semi-structured interviews- 31
- Teacher questionnaires: 262
- Learner notebook analysis from 5 schools



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Methodology cont.

Limitations of research.

- Had to do a retrospective analysis using available scripts for 2014 run, because the test was not written in 2015
- Not able to get learner scripts retrospectively for internal examinations to merge items from ANA and internal examinations to do item level comparison across tests.

Key research findings

ANA programme was too ambitious.

Function: Tool to judge progress in improving learner achievement However the reality:

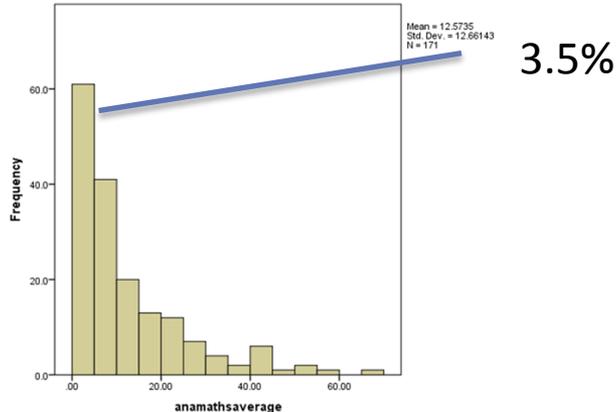
- *it does not count towards the school based assessment mark- (not taken seriously by learners)*
- *timing in September – cannot cover work done in the year*
- *ANA categorised too many learners on the L1 and L2 levels (0-39%) as compared to their final examination. At the other end classified far fewer learners with outstanding achievement, when compared to the examination*
- *Difference between means of school summative assessments and the ANA- 7, 8, 8, 10 and 17 points!*

Key research findings cont.

Provides a powerful insight into the health of the education system - information to make inferences about the achievement ... Targeting interventions to schools that need them most.

However:

- *Too many schools doing too poorly to enable the targeting of interventions – one district: 61 schools below 5%, distribution too low to make inferences*



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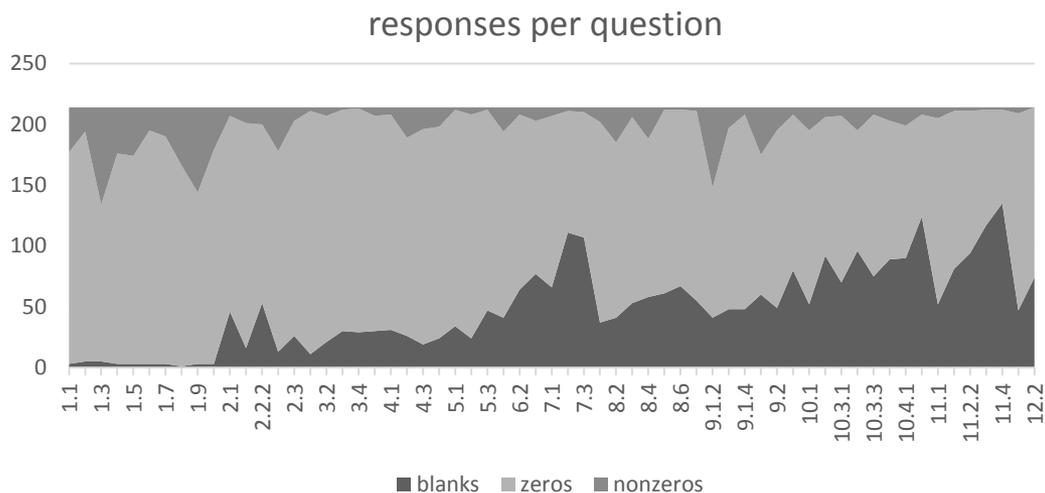


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Key research findings

- At this level- , no information of levels of performance or reports of value to parents can be made.
- No diagnostic value
- can only distinguish between zeros, blanks, non-zeros:



Key Research findings

Exposing teachers to best practices in assessment; can inform continuous improvements in the design of assessment. But:

- *teachers are feeling overwhelmed*
- *tired of being criticised*
- *feel that there is a curriculum overload -76% said not possible to complete the Grade 9 curriculum*
- *Involvement in ANA led to increase in workload, not decrease because after all that work, marks were not considered in SBA*
- *Moderation process not clear- often no explanations for changes*

Key Research findings

Can be used as diagnostic analysis. However:

- *Diagnostic means carefully selected tasks, covering various strands-set at different cognitive levels, different levels of skills. Rasch analysis and comparison with schools' assessments shows:*
- *Many items set at the similar difficulty levels, so not sensitive enough to distinguish between proficiency levels*
- *Geometry and measurement items over-represented at the higher difficulty levels.*
- *ANA has under-reported the proficiency of Grade 9 learners in comparison to the examination results in sample of five high-performing schools in two districts*
- *A test where most items are beyond the proficiency of the target group, will not provide much information of what learners can do.*

Conclusions & Policy implications

The ANA grade 9 mathematics in its current form is not working to achieve the aims it was set out for. It is recommended that

- Make decisions on what the purpose of an assessment at that level should be. It cannot serve both a diagnostic and summative function
- Timing must be matched with its function. If summative, then closer to end of the year and it must serve a substantive role in the SBA, or as an external mark.
- If diagnostic, must be simplified, and shortened .
- To enable co-operation with teachers, the participation in the programme must lead to an easing of their load- cannot be an



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Conclusions & Policy implications

- Curriculum for Grade 9 mathematics needs to be interrogated, 76% teachers could not complete it
- DoBE must look at ways to help teachers feel better supported in their schools- teachers are stressed and frustrated with inefficiencies in the education system and the increase in administrative demands
- Need to create spaces where innovation and creativity is valued. Instead of focus on compliance and monitoring, should be reciprocal responsibility. For example benefits such as study leave, should be introduced.

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