



**INVESTIGATION INTO THE SENIOR  
CERTIFICATE EXAMINATION  
SUMMARY REPORT ON THE EVALUATION OF THE  
SENIOR CERTIFICATE EXAMINATION  
AUGUST 2004**

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## OVERVIEW

The Senior Certificate (SC) Examination, or Matric as it is popularly known, represents a high point of learning in South Africa. Most young people are encouraged to aspire to it. It holds great significance as a rite of passage, as it marks the culmination of twelve years of schooling. It is still, by far, the most popular determinant of access to higher education and, to a lesser extent, to the world of work. Perceived as a "high stakes" examination, the Senior Certificate year-end examination attracts a great deal of public interest. As a public measure of learners' performance, the quality of teaching and learning, and how well the system is doing, it is critical that the exam enjoys public confidence.

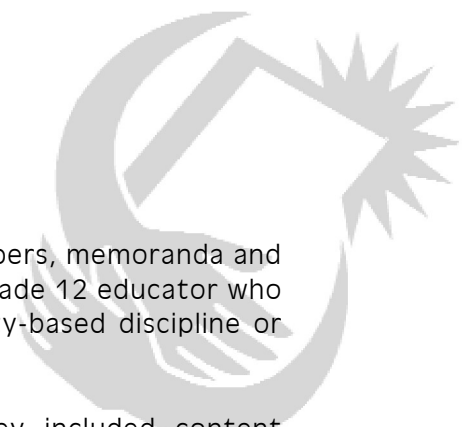
There have been dramatic changes in the overall pass rate in the Senior Certificate examination in the last ten years. It fell from 56% in 1992 to a low of 47% in 1997. It then climbed rapidly to 73% in 2003, an improvement of 26% over a six-year period. This significant increase in the pass rate over the last few years has fuelled speculation that the standard of the Senior Certificate is dropping. In view of this perception, and as part of Umalusi's usual review of the Senior Certificate, we undertook research to evaluate the standard of the Senior Certificate examination.

The question of assessing standards is not a simple one. Standards mean different things to different people: they can refer to benchmarked norms and standards of assessment, statistical standardisation procedures, and curriculum standards defined as part of the curriculum. More popularly, standards refer to a commonly accepted level of performance. However, these standards vary across space and time, including those which are commonly accepted. A high standard for one person may be a low standard for another. What was at one time considered a high standard may in another be considered a low standard. Who defines standards for whom is another critical question. Standards are defined in the context of social and cultural norms, which themselves are considered appropriate by some and inappropriate by others. The influence of context in the definition and achievement of standards is also crucial.

In addition, there are many factors which could have contributed to the significant increase in the pass rate, and not just dropping standards. This research did not, however, undertake to explain the increase in the pass rates.

Bearing these issues in mind, Umalusi undertook the investigation to come to grips with the changing nature and character of the examination as it has been set, assessed and moderated. Teams of researchers, both internal and external to Umalusi, investigated several aspects of the matric examinations between 1992 and 2003:

- The first part of the investigation comprised a qualitative evaluation of the matric examination papers and marking procedures in 1992 (when education was still divided into eighteen different departments), 1999 and 2003 (when pass rates were at their highest). Subjects examined were English First Language, English Second/Additional Language, Biology, History, Mathematics and Physical Science.



Three people for each subject evaluated examination papers, memoranda and marking. Each team consisted of a subject specialist, a Grade 12 educator who had produced consistently good results, and a university-based discipline or teaching subject expert.

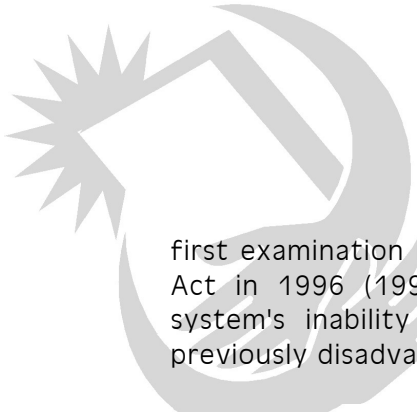
Criteria were developed to guide the evaluation. They included content coverage, constructs employed, relative difficulty and challenge presented to learners, variety of task types, length of paper, language and cultural bias, clarity of instructions, organisation of paper, criteria supplied to candidate, and relationship of the paper and marking memorandum. Each team used a three-point scale to describe the challenge or difficulty level of an item. Each team produced a report.

- Next, the statistical moderation process that is used to standardise the results was evaluated. Two specialists in statistical analysis conducted this part of the investigation. The purpose was to establish whether or not there had been any changes in the standardisation processes and how, if at all, they might have affected the standard of the examination. They produced two independent reports that corroborated one another.
- The practice of 5% language compensation for those African first-language candidates who write the examination in their second language was evaluated. A regression analysis was conducted comparing the achievements of learners who received the language compensation with those who did not. To obtain a valid comparison, the achievements were viewed relative to an anchor: English or Afrikaans Second Language.
- Related aspects of the examination, such as pass rates, rules, processes and procedures used in the administration of the examination, were also examined.

Each of these studies raised a range of issues. In general, it appears that significant parts of the system remain unchanged, there is marked improvement in others, while some areas are in serious need of attention. Before turning to the findings, we need to consider some related contextual issues.

## **CONTEXTUAL BACKGROUND**

The Senior Certificate examination has progressed through various phases in the political history of South Africa. It has gone from being administered by the racially and ethnically segregated departments of education during the apartheid years, through the provincially set and administered examination papers from 1990 to 2000, to the present where, since 2001, six subjects are set nationally. This history brings with it its own complications because the different departments and later the different provinces set their own papers. The respective standards of those examination papers have differed from one another in various respects. The




first examination results following the promulgation of the South African Schools Act in 1996 (1997-1999) were extremely poor and provided evidence of the system's inability to cope with pass requirements, especially on the part of previously disadvantaged schools.

In 1998 the Minister of Education appointed a research team to investigate the language issue, on the assumption that learners who write the Senior Certificate examination in a language that is not their mother tongue are seriously disadvantaged. The team concluded that language was a major factor contributing to poor performance by such learners in the Senior Certificate. The team also established that these learners were further disadvantaged by the syllabi of the African languages, in that they did not promote higher cognitive thinking. The South African Certification Council (SAFCERT) decided in 1999, as part of its responsibility to ensure fairness in the Senior Certificate examination, to apply a compensatory measure for learners whose first language is neither English nor Afrikaans and who offer an African language as their first language. This compensatory mechanism was implemented as an interim measure while provincial departments were in the process of upgrading the teaching and learning of English Second Language; it was intended to be reviewed later on.

In 1999 the Minister of Education commissioned an exercise of benchmarking the South African Senior Certificate with the Scottish Higher Grade Examination in order to assess the comparability of our education standards and quality with international standards. The results confirmed the high quality, validity and reliability of the Senior Certificate. However, the content of the South African curriculum and the level of demand on learners in some content subjects were found to be inadequate compared to the Scottish standards. Also, South African English Second Language learners at the lower levels of the range did not even compare with the learners at the foundation level in Scotland. What that study showed, were the problems which were already inherent in the system. This study, aims to find out whether or not these deficiencies remained or have been corrected.

In South Africa, as indeed is the case elsewhere in the world, there are rules governing the awarding of the Senior Certificate. This is a crucial element of the whole examination process, as these rules determine which learners pass or fail. They come from the long history of the Joint Matriculation Board (JMB) and were passed down to SAFCERT when it was born in 1986. When Umalusi (the Council for Quality Assurance in General and Further Education and Training) took over from SAFCERT in June 2002, it retained these rules as well as many of the processes and procedures used in the administration of the examination.

This context begins to point us to where we should start tracing the changes in the system that affect the Senior Certificate in its current form. For example, the changed landscape of provincial departments brought together a student population that was previously assessed under different authorities, using different norms to judge their expected performance. Every reorganisation of examination arrangements had implications for what remained and what was taken



out of the curriculum. Recent research has suggested that, in practice, the Joint Matriculation Board concentrated on the matriculation exemption certificate instead of the whole examination. In addition, a number of school-level educators and examination bodies became involved in the arbitration of standards during the period when SAFCERT was in authority; the power of higher education academics accordingly was limited. These are but a few examples to illustrate that even though this matric examination has been taken by generations of South Africans, the terrain has been changing. Has this coincided with and did it result in a decline of standards? This study sought to find this out.

## **SUMMARY OF FINDINGS**

Research conducted for each of the areas identified - examination papers, memoranda and marking; statistical moderation processes; language compensation; and rules and procedures - show that there were both changes and continuities across time, and cause for concern about some but not all issues. There are variations across subjects with regard to content coverage, conceptual demand and level of difficulty.

There are varying findings in each of the areas examined. For example, evaluators observed both improvements and problems in the examination papers. For this reason the findings of each investigation are best analysed in terms of what has remained the same, what has improved and what is in need of attention.

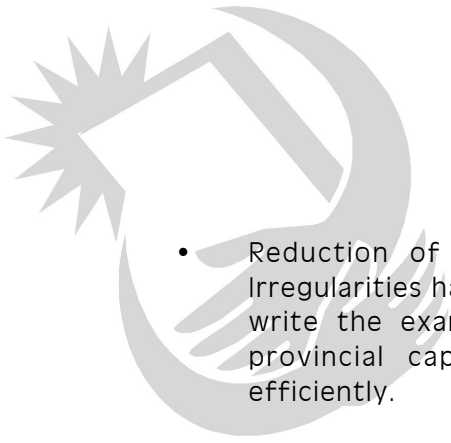
### **What has remained the same?**

Those things that have remained virtually the same throughout the various metamorphoses of the examining and quality assurance authorities in charge of this examination include:

- The rules for awarding the Senior Certificate have not changed in any significant manner over the years covered by the study.
- The process of statistical moderation of the Senior Certificate examination has in principle remained the same since the time of the Joint Matriculation Board.
- The numbers of candidates who pass this examination with university endorsement or exemption have remained static despite the fluctuating numbers of candidates.

### **What has improved?**

- Pass rates have increased from 221 409 candidates in 1991 to 322 492 in 2003, making the senior certificate a real school-leaving certificate accessible to many more learners than in the past.

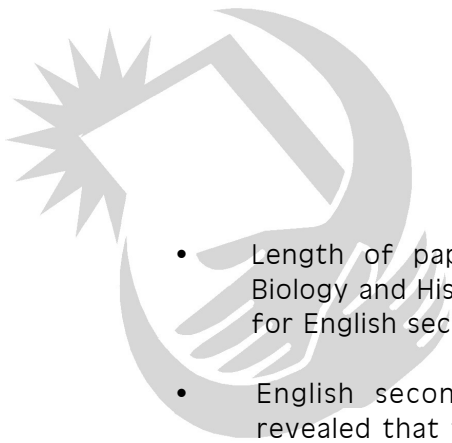


- Reduction of irregularities in the administration of the examination: Irregularities have been significantly reduced, ensuring that most candidates write the examination under the same conditions. There is evidence of provincial capability to execute and manage this huge examination efficiently.
- Quality of presentation of the examination question papers: Evaluators commented favourably on the layout of question papers.
- Content coverage: With the exception of Biology, evaluators for examination question papers selected for the study considered content coverage for 1992, 1999 and 2003 to be in line with the requirements of the relevant syllabi and guideline documents.
- Language accessibility has improved in all the examination question papers although there is concern from Biology, History and Physical Science that English Second Language speakers are at a major disadvantage because of their poor proficiency in English.
- Level of challenge in Physics and History: The 2003 Physical Science paper was considered to be of a high standard, comparable to that set by the Independent Examination Board (IEB) in 2003 and better than the JMB papers. The standard of the 2003 History paper was also considered higher than the previous papers, in that earlier papers required the simple regurgitation of facts whereas this one did not. Problems were assessed as being in the domain of marking rather than the paper itself.

### **What is in need of attention?**

- Increase in number of Standard Grade students: There has been a growing trend of candidates who register for subjects like Mathematics, Physical Science, Biology and History at the Standard Grade. The percentage of endorsements has remained virtually static in the last three years.
- Differentiation of papers into Higher Grade and Standard Grade: This aspect, as reflected in the examination question papers, was found to be arbitrary and in need of better conceptualisation. This concern is at the heart of two major debates that have to be confronted:
  - what the reasonable expectation of school-leaving certificate requirements should be as opposed to higher-education entrance requirements;
  - how this age-old problem is going to be handled in the forthcoming Further Education and Training Certificate;

- Standard of Biology, English Second/Additional Language and English First Language: Syllabus changes have contributed to some examination question papers becoming easier. For example, Biology evaluators noted a significant reduction in content between 2001 and 2003. This problem was also marked in English First Language and English Second/Additional Language papers.
- Declining levels of conceptual challenge in Standard Grade papers: The evaluations of Standard Grade papers confirm that there are too few questions pitched at higher levels of cognitive challenge. The English Second/Additional Language report concluded, "From the analysis of the papers above, it is difficult to escape the conclusion that the nationally set paper (Paper 1) is becoming easier, or, in the jargon of the examiners, becoming more accessible . . . What is of concern, however, is the seeming fall in the number of questions designed to operate at more challenging levels". Evaluators for English First Language found standards had declined particularly in the Language paper. The Mathematics report concluded that "there was a decrease in mathematical work related to the highest level". The History report found that "candidates are still being marked on the content of their essays rather than their ability to answer the question . . . The overall consequence . . . is that the results of the examination are currently unreliable". However, there were exceptions. The Physical Science report concluded that the papers "were of a slightly higher than required standard" and "set the standard" in terms of presentation. The Physics papers appear to have become slightly easier, while the Chemistry papers are generally more difficult.
- The statistical moderation process: The rules for statistical moderation have remained unchanged. Statistical moderation is however, dependent on reliable norms. The unification of racially and ethnically based departments into one system with nine provinces in the mid 1990's resulted in uncertainty about the norms with which to work. The statistical moderation process reflects this uncertainty for a brief period until the early 2000's. Statisticians report that the situation has now normalised. The cumulative effects of the period of instability need further investigation. This Umalusi is dedicated to doing.
- Expectations of markers: The problem of inadequate conceptual knowledge does not seem to be limited to question papers. The evaluators of the History paper observed that even a progressive and relevant question paper tended to be stifled by markers who paid lip service to the interpretive intent of the paper but who marked "facts".
- Predictability of questions: In Biology, History, Mathematics and Physical Science a level of predictability seems to have crept in and this, coupled with good examination preparation, could conceivably advantage some candidates. In some papers, questions tended to be shorter and more superficial, rather than the longer, more demanding essay type.



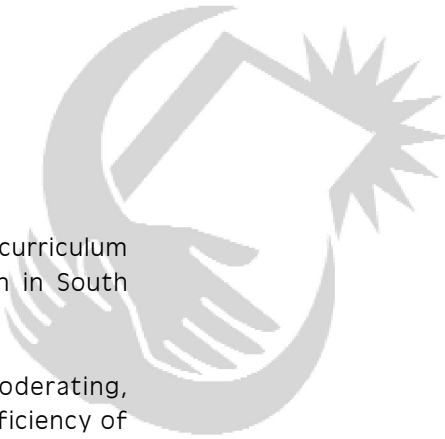
- Length of papers: Some of the examination question papers, especially Biology and History, were found to be too long. This is especially problematic for English second-language candidates.
- English second-language learner disadvantage: The statistical analysis revealed that the competency levels of the compensation candidates in the second language have not improved over the last seven years, since they are achieving lower results than their peers in other subjects. Overall, their results are significantly lower than other candidates even with the compensation. The content of the English Second/Additional Language curriculum, together with assessment practices at the SC level for this subject, are singularly inappropriate for preparing students for the study of other subjects. Cognitive and proficiency demands in this subject are low.

## CONCLUSIONS

Have standards in the Senior Certificate examination declined or not? Some findings lend themselves to a negative answer to the question, others to an affirmative answer. The following issues seem to be particularly worthy of emphasis:

- Higher pass rates are not a sign of examinations becoming easier. Some examinations have become more difficult, while others have become easier. An appreciable portion of the increase in the overall pass rate observed in 2002 and 2003 is an artefact of more learners enrolling for the Standard Grade rather than for the Higher Grade exam. Since the Standard Grade syllabus and examination has always been easier, and was indeed designed to be so, an increase in the overall pass rate is only to be expected. However, the lack of increase of candidates for the Higher Grade is a matter for national concern. We need finer-grained data on the changing enrolment trends and pass rates by subject and province to be able to say with any greater specificity what is happening here.
- Improvements have occurred in a variety of areas. This includes the removal of irregularities in the administration of the examination, as well as improved quality and standard of some papers, seen in content coverage, language accessibility and the level of challenge in some subjects such as Physics and History.
- Areas of concern that requiring attention include:
  - declining Higher Grade enrolments;
  - the declining level of conceptual demand in Biology (HG & SG), History (SG), Mathematics (SG), English Second/Additional Language (HG) and English First Language (HG);



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- the low level of the English Second/Additional Language curriculum and language proficiency in the medium of instruction in South African schooling;
  - the quality of examination setting, marking and moderating, including length and language use of papers as well as efficiency of markers and moderators;
  - the statistical moderation process and its cumulative effect on pass rates needs to be investigated; and
  - poor data management and collection.

## **RECOMMENDATIONS**

### **Declining Higher Grade enrolments**

A strategy of encouraging an increased number of candidates to offer subjects at the Higher Grade is needed in order to increase the participation rates in higher education. Increased Higher Grade participation levels will not only help in correcting the skewed overall results of this examination, but will help clarify the appropriate grading levels as the system moves into the implementation of the Further Education and Training Certificate.

### **Declining level of conceptual demand in examination question papers**

The sufficiency of higher education participation in matters that are critical to the articulation of upper secondary education and higher education must be reviewed. This does not mean that higher education must now control school matters, but their involvement in norms and standards, curricula, assessments and certification must be adequate to make the Senior Certificate credible in the public domain.

### **English second-language and mother-tongue instruction**

It is imperative that the Department of Education pay special attention to the position occupied by English Second Language in the school curriculum. A national strategy is required that addresses the issues of curriculum and teacher preparation. This is one problem that will not go away with the introduction of a new curriculum. It should also be stressed that the success in teaching and learning of English as a second language in further education can only happen when supported by adequate mother-tongue instruction in the early grades. Learners who are taught to use their mother tongue well do not find the switch to a second language a problem.



## **Quality of examination setting, marking and moderating**

The issue of moderating and monitoring the process of setting the question papers requires attention. More specifically, the selection, training and monitoring of examiners and moderators must take far greater cognisance of current assessment best practice. The present criteria for selection - subject expertise and experience - are no longer sufficient to ensure that the question papers are appropriate tests of candidate knowledge and competence. Inappropriate length of papers, inappropriate terminology and expression, inappropriate types of questions, predictability of questions and, most importantly, inappropriate level of cognitive demand are all issues that affect the quality of the examination paper and the question of its standard.

In addition, all examiners and moderators must have a far greater awareness of the absolutely central impact of language competence on all aspects of examination performance. The Department of Education must put much more emphasis in the selection and training of examiners and internal moderators. Because of its unique overseeing vantage point in the Senior Certificate process, Umalusi has a crucial educative and advocacy role to play with respect to language for the national and provincial education departments, and for the public at large. Umalusi has to improve its moderation processes to be of benefit in controlling and improving the standard of this examination.

## **Standard setting**

One other important issue that this study has brought sharply into focus is the location of the standard-setting function in the South African education system. In particular, the role of Umalusi as the quality assessor for the general and further education band has come under the spotlight. The establishment of standards of the Senior Certificate has always been influenced by using a statistical standardisation process that relied on established norms. Umalusi is also expected to play a role in control over norms and standards of curriculum and assessment. This role should be strengthened in order for it to monitor norms and standards adequately.

## **Collection, processing and archiving of data about all aspects of the Senior Certificate process**

The research teams had great difficulty in gaining access to examination papers, examiners' reports and generally to information about the Senior Certificate. It is important that the examination system is appropriately archived. At present, this does not seem to be the responsibility of any one institution. Umalusi is one central body that is strategically placed to get all records from both the national and provincial departments. It is recommended, therefore, that Umalusi upgrades its archival and data storage and retrieval functions.

## **OUTSTANDING MATTERS**

Two areas of research could not be finalised at the time of publication of this report, because more time was needed to collect the information required. In some cases, we were not even certain if we would be able to find the necessary information, as the processing of the examination information is so complicated that historical information is often impossible to untangle and disaggregate. The two areas are the impact of continuous assessment (CASS) on the pass rates in 2003, and the analysis of types of statistical adjustments over the last three years and their impact on pass rates.

## **FURTHER RESEARCH**

Umalusi intends to continue this research with a follow-up study that compares South African question papers with the corresponding examinations papers of other countries.



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Rufus Poliah, Senior Manager: Qualifications, Curriculum and Assessment - wrote the section on Umalusi quality assurance processes

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