Makoya

Official Newsletter of Umalusi

July 2018

SIR publishes Exemplar Books for Effective Questioning

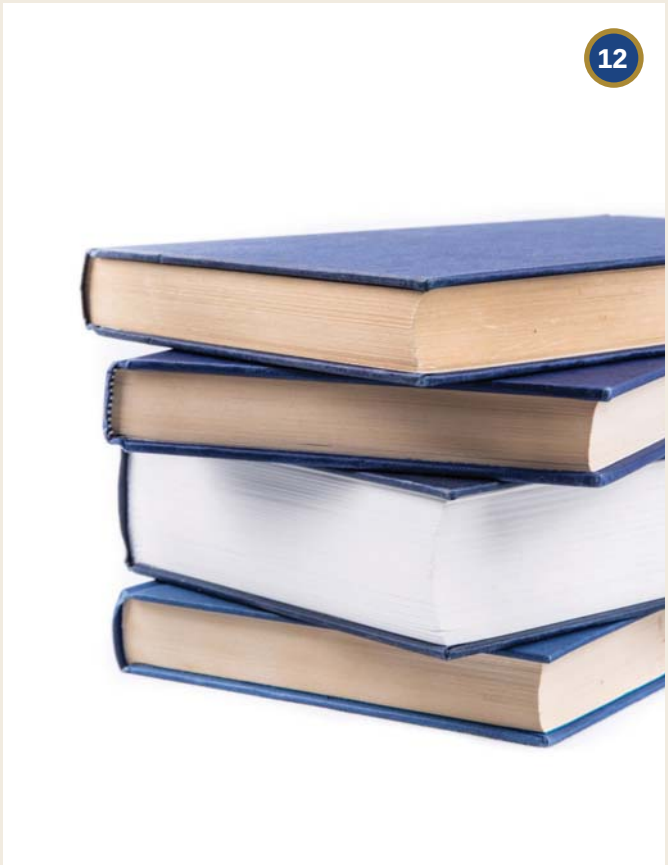
Umalusi bids farewell to outgoing Council

A South Africa-Finland initiative

Statistical moderation helps ensure SBA credibility

UMALUSI

Council for Quality Assurance in General and Further Education and Training



CONTENTS

From the Editor's Pen 3
From the CEO's Desk 4
A South Africa - Finland initiative 6
What kind of Mathematics does South Africa need? 8
Exemplar books for effective questioning 10
Encouraging diversity in assessment 12
Statistical moderation 14
(Mis)conceptions about education standards 16
The role of monitoring 19
Professional development 21
Ongoing ECD research 22
The new age of BIG DATA 24
Moderating ICASS 25
We bid farewell to council members 27

From the **Editor's Pen**

By Lucky Ditaunyane

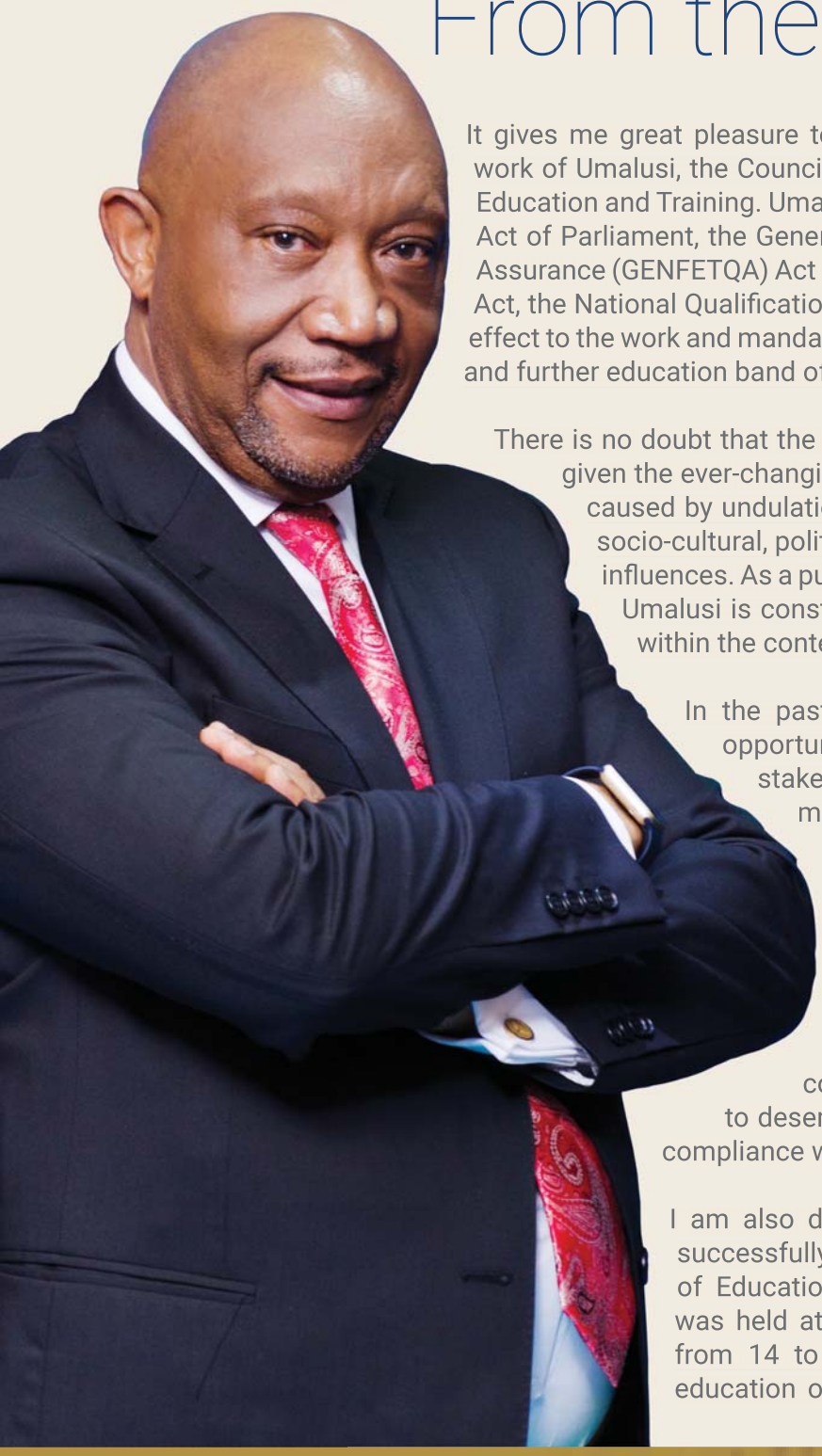
Welcome to this issue of Makoya, Umalusi's official external newsletter. It is amazing that the first half of 2018 has already gone. This shows that, as the old adage says, "time and tide wait for no man". While this is true, one can only maximise the use of time through careful planning and judicious implementation of the plan.

As the Council for Quality Assurance in General and Further Education and Training, Umalusi remains committed to the achievement of its strategic objectives and goals in the medium to long term. To this end, the organisation can only achieve its goals if there is collaboration at different levels of the organisation. It was this teamwork that enabled the organisation to implement its strategic plan in the first six months of this year.

Once again, we are delighted to bring you stories that depict key moments in the work of Umalusi. This publication highlights, in the main, the work done by Umalusi's Statistical Information and Research Unit, which entails conducting and commissioning research projects to enhance the organisation's quality assurance systems and processes. These, in turn, inform Umalusi's strategic direction.

As usual, Makoya contains vital information about its work. Over the years, Umalusi has positioned itself as a key stakeholder in education. We are constantly looking for opportunities to communicate significant, strategic messages about the mandate and work of the organisation to our external stakeholders. Makoya, Umalusi's official newsletter, is one of the platforms that we use to achieve this goal. Enjoy!

From the **CEO's Desk**



It gives me great pleasure to once again pen my thoughts regarding the work of Umalusi, the Council for Quality Assurance in General and Further Education and Training. Umalusi is a statutory body that was founded by an Act of Parliament, the General and Further Education and Training Quality Assurance (GENFETQA) Act No. 58 of 2001. Over and above the GENFETQA Act, the National Qualifications Framework (NQF) Act No. 67 of 2008 gives effect to the work and mandate of Umalusi as a quality council in the general and further education band of our education system.

There is no doubt that the work of Umalusi is in a constant state of flux, given the ever-changing landscape of our education system. This is caused by undulations in external environmental factors such as socio-cultural, political, legal, technological, economic and global influences. As a public entity and a significant player in education, Umalusi is constantly looking for ways to make itself relevant within the context in which it operates.

In the past three months Umalusi has had numerous opportunities to interact meaningfully with its stakeholders in various forums. Part of Umalusi's mandate as the Council for Quality Assurance in General and Further Education and Training is to accredit private education institutions offering qualifications registered on the General and Further Education and Training Qualifications Sub-framework, which constitutes levels 1–4 of the NQF. To fulfil its mandate, in April Umalusi organised a series of ceremonies, countrywide, to award accreditation certificates to deserving private institutions in recognition of their compliance with Umalusi's rigid accreditation standards.

I am also delighted to inform our readers that Umalusi successfully hosted the 12th Southern Africa Association of Educational Assessment (SAAEA) conference, which was held at the Capital Hotel, Menlyn Maine, in Pretoria from 14 to 16 May 2018. The SAAEA brings together education officials, assessment practitioners, academics

"There is no doubt that the work of Umalusi is in a constant state of flux."

- Dr Mafu S Rakometsi, **CEO**

and educationists from around the Southern Africa Development Community (SADC) region, with the aim of providing a platform to share ideas and discuss issues of common interest as a broader community of practice.

Umalusi's Evaluation and Accreditation Unit also hosted a very successful roundtable discussion on distance and online education with relevant stakeholders on 30 May 2018.

I would also like to use this opportunity to bid farewell to our Council whose four-year tenure ended on 8June 2018. It was truly a pleasure to serve under the outgoing Council with Prof John Volmink at the helm as the Chairperson. I appreciate the support given by each member of Council to the work of Umalusi during their very successful tenure. I wish them well in their future endeavours, as we prepare to welcome a new Council later in August.

This issue of Makoya contains important information regarding the work of one of our core units, the Statistical Information and Research Unit, whose main task is to conduct research on the educational issues that are related to Umalusi's work, and to provide strategic direction to the work of the organisation. As a quality council, we usually say that we do not take any strategic position unless it is backed by research. Enjoy your reading!

Dr Mafu S Rakometsi

A South Africa - Finland initiative

From STEM to STEAM: developing 21st century skills

By Dr Celia Booyse

In an uncertain global economic climate a focus on innovation can ensure a prosperous future. Traditionally innovation has remained tightly coupled with Science, Technology, Engineering and Maths, also referred to as the STEM subjects. However, Art + Design are poised to transform economies and push innovation in this 21st century.

Creative skills have finally been recognised as a core ingredient to add significance and meaning to a business, products, systems, environments–even service industries. Now, integration between different fields of study and cooperative learning is vital to drive a shift in education, from STEM to STEAM.

A global movement, STEAM is championed by the Rhode Island School of Design (RISD) and has been widely adopted by institutions, corporations and individuals around the world. Adding Art + Design to the STEAM equation transforms STEM to STEAM and brings focus to developing innovative entrepreneurs and critical thinkers using 21st century skills.

Umalusi has taken note of research done in the UK and released by the New Schools Network (NSN) Arts Report (providing information on how art and design can help drive up standards in schools); research by Cambridge University; and recommendations made at the NECT symposium on 12 June 2017. Findings from Umalusi's research and international benchmarking initiatives have also pointed to the impact of a shift from horizontal to vertical demarcation in the curriculum, and the lack of cross-curricular integration.

In response, Umalusi collaborated with South African stakeholders and representatives from Finland to co-host the first symposium on the application of the STEAM approach in Africa. This collaboration, between Umalusi, the Nelson Mandela Metropolitan University, Open Design, Cape Peninsula University of Technology and Dr Kristof Fenyvesi, post-doctoral researcher at the University of Jyväskylä and CEO of the International Symmetry Association, made the event a first for Africa.

Umalusi CEO Dr Mafu Rakometsi referred in his opening remarks to the importance of collaboration and exercising a holistic outlook that will guide South Africa towards a more sustainable and effective answer to the question: "What skillset is required for the 21st century?"

What we know for sure is that problem-solving and dynamic, creative and innovative process-thinking are at the forefront of required skills.

The symposium introduced the STEAM approach and its application value across sectors but, additionally and importantly, 40

teachers also had the opportunity to practice the STEAM approach in a workshop led by the Idea Collective and Umalusi. The course material is SACE-registered and adds 10 credits to teacher development profiles. Learners, too, were privileged to experience the application of the STEAM approach in a variety of workshops led by Dr Fenyvesi during the week.

The following leaders in higher education and sectors like engineering, business, technology and service industries that have recognised and adopted creativity as a core skill that adds significance and meaning to their business, shared their stories of success and motivation behind the new strategy:

- Prof Mugendi M'Rithaa (president of the World Design Organisation; researcher at the Cape Peninsula University of Technology)
- Prof WA Olivier (director of the Govan Mbeki Mathematics Development Centre at the Nelson Mandela Metropolitan University and active in practices to improve the quality of Mathematics' teaching and learning at secondary school and TVET college level)
- Dr P Collett (Govan Mbeki Mathematics Development Centre, who discussed TouchTutor® Quiz: designing an innovative mobile application to connect learners to curriculum content and mathematical problem-solving opportunities)
- Dr Richard Perez (founding director of the UCT School of Design Thinking, or d.school, at the University of Cape Town)
- Abbas Jamie (director for innovation and transformation at Aurecon, the largest engineering consulting and advisory business in Africa)
- Jacqueline Beling (design lecturer and expert in revisualising a holistic approach in teaching and learning through visual design strategies, analytical and creative thinking, problem-solving strategies, understanding how to bridge the language gap and taking ownership of own education)
- Marco Rosa (managing director of Formula D Interactive, who has a passion for technology-aligned education).

This unique collaboration between Umalusi, Open Design, Finland, World Design Organisation and Aurecon will also help to drive the important Pan Afrikan Design, Innovation and Education agendas towards preparing the next generation to succeed in a more dynamic future.

Umalusi is particularly interested in how a conceptual grasp of the Sciences, Mathematics, Technology and Engineering can be enhanced through the STEAM approach. A second interest, which will feed into a longitudinal study later in 2018, is how to revive horizontal demarcation in curriculum implementation: how the current expected learner profile can be enhanced; how research policy can be transformed to place Art + Design at the centre of STEM; and further, how to encourage the integration of Art + Design in education across all learning areas to enhance process-thinking across all subjects and phases.

"What we know for sure is that problem-solving and dynamic, creative and innovative process-thinking are at the forefront of required skills."

What kind of **Mathematics** does South Africa need?

Mathematics occupies a central place in both our educational system and in the eyes of the public at large. Our system also plays host to several different types of mathematics that have, to a greater or lesser degree, specialised purposes that aim to mould learners and set them on certain paths in life.

Each subject a learner offers at school level is intended to open doors for them, whether they lead to further study or a vocation or occupation. The following question could be asked: what doors are the different types of Mathematics opening for learners in South Africa?

A host of important questions flow from this, especially once we begin to take into account the rapidly changing world we find ourselves in today. The skillset required for the 21st century is in flux, and we can only vaguely discern exactly what skills will be required as we gaze into our educational crystal ball.

What we know for sure is that problem solving and dynamic thinking will be at the forefront of the required skills as we progress in the 21st century. As technology advances at a breakneck pace, whole categories of occupation are changing in response. Some occupations will become redundant, while new categories–as yet unimagined–will emerge. In this uncertain future, a learner with solid fundamentals and a dynamic set of thinking skills would be well equipped to deal with the rollercoaster that this 21st century is proving to be.

Before we can look ahead, however, we must take stock of where we find ourselves and try to discern if the foundations that we are laying for our learners will give them the platform they need to launch as they emerge with our qualifications.

By Marco MacFarlane

These questions regarding the categories of Mathematics were asked at a focus seminar:

- Does the discipline instil dynamic problem-solving skills in learners, or is it primarily instrumental in nature?
- Is the breadth and depth of the curriculum pitched at an acceptable level?
- Are the intended outcomes in each subject in synergy with the expected skills in wider society?

We could answer some of these questions with a fair degree of certainty because Umalusi has for several years conducted in-depth curriculum analyses to understand how each of our various curricula function. Other questions are more speculative, since we never truly know what will be required once we have opened the doors to tomorrow, instead of just surmising what might lie behind them. We also know that the disciplines of pure Mathematics, Mathematical Literacy, and Technical Mathematics are each intended for a different purpose. However,

fundamentally those purposes emerge from the bedrock that requires our learners to have an underlying grasp of numerical principles that will allow them mobility and success in the rapidly changing world of the 21st century.

Mathematics has a focus on analytical skills and 'pure' mathematics–where numerical functions are emphasised and contextual factors are often unnecessary or omitted altogether. This type of Mathematics prepares learners for working in complex numerical disciplines at tertiary level and beyond, but of course much of the content has little direct application in everyday living. Technical Mathematics has a more practical bent, in that it covers much of the same ground as Mathematics, but it aims to tailor the content and the problem-solving approaches to practical/industrial contexts. This discipline leads directly into education or employment of a technical nature, but the context-specific nature also makes it an imperfect fit for a learner who does not intend to pursue education or employment in such spheres. It is inarguable, however, that numerical skills are a pre-requisite for modern living–and as such Mathematical Literacy provides a highly grounded interpretation of Mathematics that focuses on its use in daily living.

Thus the subject offerings for Mathematics in South Africa attempt to cover many bases and cater for those who aim to be mathematicians as well as those who just need to understand what the 1% VAT increase is all about. It represents an understanding that content is no longer "king"–but, rather, that skills and application are the primary needs of a 21st century learner.

By Agnes Mohale

SIR publishes 'Exemplar Books for Effective Questioning'

The Statistical Information and Research (SIR) Unit has compiled and published "Exemplar Books for Effective Questioning". This project was undertaken in response to the recommendations of an Umalusi report titled Developing a Framework for Assessing and Comparing the Cognitive Challenge of Home Language Examinations (2012). This report recommended that the type and level of cognitive demand of a question, and the level of a question's difficulty, should be analysed separately.

It is important to note that the recommendation was made in line with the finding that examiners, moderators and evaluators judge questions differently, as far as cognitive demands are concerned. This contradiction in judgement is to a certain extent attributed to the interpretation of "clues" in verbs or nouns used in questions: to be precise, there is sometimes disagreement in the way examiners and evaluators understand the interpretation of action verbs in examination questions and the response that they may elicit. A question that instructs candidates to "evaluate information" could be interpreted by evaluators as just requiring recall of information from long-term memory.

This proves that judging the cognitive levels to be employed in answering questions remains inconsistent and requires intervention.

The Umalusi report also suggested that Umalusi's external moderators and evaluators be provided with a framework for thinking about question difficulty to help them identify where the main sources of difficulty or ease in questions might reside. The purpose of the exemplar books is therefore to provide guidelines for test developers, moderators and evaluators to have a shared understanding about cognitive demands and levels of difficulty of examination questions.

Umalusi is of the opinion that if they develop a shared understanding, the examination questions will potentially discriminate more effectively between exceptional A-grade learners and middle- and low-performing learners, thus adding value to the process of standardisation.

Umalusi appointed a team of moderators and evaluators to compile "Exemplar Books for Effective Questioning" for both gateway and non-gateway subjects. Assessment bodies were consulted to provide reviews before the exemplar books were finalised.

A team of reviewers, together with subject experts who helped during the development of the exemplar books, were engaged prior to finalisation to ensure that all exemplar questions were reliable and valid. The purpose was to eradicate possible contradictions and discrepancies, lack of clarity and potentially confusing comments as far as the users of the exemplar books were concerned. The goal was to ensure that the examples selected and provided, and the rationale in the discussion after

each example, were as good and clear as they could be, before being handed to users.

Umalusi believes that the exemplar books will benefit examiners, internal and external moderators and teachers, and will strengthen both examination questions and school-based assessments.

The "Exemplar Books for Effective Questioning" are available on the Umalusi website at http://www.umalusi.org.za/list.php?type=Reports

"The purpose of the exemplar books is therefore to provide guidelines for test developers, moderators and evaluators to have a shared understanding when thinking about cognitive demands and level of difficulty of examination questions."

2018 SAAEA Conference

Encouraging diversity in assessment

By Dr Celia Booyse

The member countries of the Southern African Association for Educational Assessment (SAAEA) are Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Each hosts the body's annual conference in turn. The baton being passed from one SADC country to the next symbolises the fraternal bonds that bind the countries; a bond further strengthened by a common desire to cultivate and maintain strong professional relations among the member countries.

Umalusi, representing the South African section of SAAEA, hosted the 12th SAAEA Conference from 13–16 May 2018 at The Capital Hotel at Menlyn Maine. Delegates represented the Southern Africa Development Community (SADC) sub-region, and some came from as far afield as India. They included education specialists, test developers, administrators, curriculum specialists, researchers and various stakeholders with an interest in the region's education systems.

The SAAEA was established primarily to provide a platform for test developers, administrators, curriculum specialists and researchers to exchange good practices in conducting educational assessments within the SADC sub-region.

The association seeks to:

- Encourage and facilitate dialogue and debate among member states and institutions on educational assessment issues;
- Promote cooperation among educational assessment agencies within the SADC sub-region;
- Provide a forum where test developers, curriculum specialists and researchers can exchange ideas and good practices on matters related to educational assessment.

The focus of the 2018 conference was on the following sub-themes:

i. Beyond a technical approach to assessment
ii. Sustainable assessment practices and standards
iii. Innovative assessment: opportunities and challenges
iv. Diversifying assessment: diverse learners and diverse assessment practices
v. Assessment and the development of critical thinking
vi. The impact of stakeholding on effective assessment.

Deeper thinking about assessment practices and moving beyond a mere technical approach were

encouraged. Both keynote addresses emphasised the role of assessment in developing critical process-thinking and of promoting assessment approaches and practices that have the potential to develop learners throughout their programme of study and into their lives and careers beyond leaving school.

A new emphasis was placed on innovative assessment, learner engagement and diversifying assessment. The latter pointed to assessing learners in culturally diverse classes, group work assessment and assessment issues related to inclusivity policies.

It was clear from the debates that it was time to:

- Establish multi-institutional, multi-agency partnerships to create an inclusive, quality education system;
- Link activities and programmes that positively affect livelihoods and the social economy;
- Mobilise community action to ensure quality schooling and community development; and
- Prioritise a holistic approach to teaching, learning and assessment in future.

Statistical moderation
helps ensure SBA credibility

By Bridget Mthembu

The South African resulting system for the National Senior Certificate (NSC) and General Education and Training Certificate: Adult Basic Education and Training Level (GETC: ABET L4), as well as the National Certificate (Vocational) (NC(V)), are comprised of an internal school-based assessment (SBA) component, or continuous assessment (CASS), as well as the external component, the examination. The internal assessment is set and administered at school level, whereas the external component is set and marked at national level.

Umalusi, as the Quality Council for General and Further Education and Training, is mandated to quality assure and certify these qualifications. As part of its mandate, Umalusi standardises the SBA through moderating both the SBA and the examination. Unfortunately, given the number of subjects and candidates involved, moderators are not able to cover all.

Given that the standardisation meetings are held at the end of each examination cycle, the examination component of the final mark contributes 75% of the final mark and the SBA contributes 25% in NSC and NC(V). In the GETC: ABET L4, the examination mark and SBA count 50/50 towards the final promotion mark. The administration and quality of internal assessment are major concerns to Umalusi, given the subjectivity involved. As a way of ensuring the credibility and reliability of the final mark, Umalusi introduced a process of statistical moderation.

Statistical moderation

Statistical moderation is the standardisation of a candidate's internal component of the examination (SBA/ICASS).

This takes place after the examination marks are standardised. During standardisation meetings, the current examination marks of the candidates are compared with those of the past three to six years' average examination sitting, per subject, at national level. The standardisation meeting then adjusts candidates' examination marks upward or downward, based on how it compares with previous examinations. The candidates' final examination marks are then calculated, and adjusted marks are calculated.

The statistical moderation seeks to align candidates' SBA marks with adjusted examination marks after standardisation. The assumption is that if assessments were set as per assessment guidelines and administration was done credibly, then there should not be a significant difference between candidates' performance in the examination and the SBA.

Statistical moderation is done per centre or school, per subject, following a statistical moderation calculation model to moderate each candidate's SBA mark. The analysis of the alignment between the average of the adjusted examination mark and that of the SBA, per centre, will determine whether the SBA will be adjusted, accepted, or rejected.

Accepted: there is a tolerance range of between 5% and 10% above the mean of the adjusted examination, in which case the candidates' SBA marks are accepted as they are.

Adjusted: if candidates' average for the SBA is 5% below and 15% above that of the adjusted examination mark, candidates' SBA will be adjusted either upward or downwards respectively.

Rejected: if candidates' total variation of the SBA marks from the average/mean (standard deviation) is less than 5% of the maximum mark (e.g. 15% in NSC) and at the same time less than 75% of that of the adjusted examination mark, then these centres' SBA marks will be rejected.

The rationale behind the rejection is an indication that the assessor was not really able to distinguish fully the abilities of candidates, hence the variation (standard deviation) was small. In this case the candidates will only be compensated 1.25% of the maximum mark.

Impact of statistical moderation on candidates

The rejection of the SBA will negatively impact on candidates as it implies that the SBA mark was not utilised in the final mark. This simply implies that candidates' marks were resulted out of 78.75 instead of 100, which negatively affects the final mark.

Impact of statistical moderation on assessment bodies

- The feedback from each year's statistical moderation assists assessment bodies, and Umalusi, to establish which centres require close monitoring.
- The feedback provides teachers with the impact of SBA not being effectively administered and assessed. This, hopefully, means that measures for improvement are implemented.
- The feedback also helps assessment bodies to identify subjects and centres to include in capacity-building programmes.

The use of statistical moderation is, therefore, a way Umalusi can ensure that, although internal assessment components are not externally set, administered and marked, the component added to the examination for resulting is credible and reliable.

"Umalusi, as the Quality Council for General and Further Education and Training, is mandated to quality assure and certify these qualifications."

(Mis)conceptions about education standards: evidence from the field

By Biki Lepota

We hear, all too often, of education standards falling or being low, especially regarding school results. The assertions of falling standards are, in most cases, associated with low learner achievement.

The purpose of the current discussion is to highlight, using evidence collected at a seminar, that education standards are perceived differently, and often erroneously, by different people.

Umalusi participated in a seminar organised by the National Education Collaboration Trust (NECT) in conjunction with the Department of Basic Education (DBE), on 27 February 2017 at Freedom Park in Pretoria. Held as part of NECT's Education Dialogue SA series, the seminar was framed by the theme "The currency of the National Senior Certificate (NSC)". The topic was informed by the scale of public interest in the standard of exit level examinations at the end of Grade 12. A broad spectrum of just more than 100 people took part, including the Minister and Deputy Minister of Basic Education, DBE officials, policy makers, academics, other education stakeholders including teachers, members of SGBs and teacher unions, as well as business and the general public from across the country.

An issue of equal, or perhaps greater, importance was whether participants held common views of what "standards" meant to them, given their homogeneity. In gauging their views, participants were invited to voluntarily provide an anonymous response to the question: What words immediately come to mind when you think about the National Senior Certificate (NSC) results and standards? This was presented on a half-page form that was completed while the seminar was in session. Whereas the seminar was attended by 110 people, 19 participant responses, representing around 17%, were returned. Of these, five respondents were from higher education, six from non-government organisations (NGOs) and eight were unspecified.

The question elicited remarkably varied responses as shown below:

Respondent	*Answer*
1	It is deceiving…The numbers are impressive but the real results are disappointing…but there is hope for improvement.
2	Low expectations–30% pass requirement vs 50% pass requirement. Gateway to university.
3	Opaque. Incredible. We still need to deal with pre-school.
4	Controversy. Questioning of quality.
5	Quality; success; university entry, bachelors, improvement.
6	Subjects, curriculum, improvement of teacher, involvement of parents in the education of their children, training of SGB, learner discipline.
7	Quality of results. Adjustment and not true reflection of learner performance.
8	To give our learners who could not make it second chance.
9	Over-emphasised, important, low, concerning.
10	Throughput rate. Obsession with provincial rankings.
11	That the quality of education is reduced and focus is on exit learners. Standards must be relayed to communities since most are not informed about it.
12	Matric results are used to engage readiness of the country towards tertiary level. Quality vs quantity. Quality assurance, leakages of exam papers, management level, leadership level.
13	Only the beginning of a career pathway. It seems it is no longer enough to get a good job.
14	One important indicator of quality of our education system…
15	Education standards in the country. Obsession of higher % vs good quality results.
16	Gateway–future, end of schooling, quality assurance, improvement.
17	Excitement, disappointment, mathematics.
18	Quality? Credibility? So what? Skills?
19	Progress.

Evidently the views of the 19 respondents differed radically. It is not the intention of this contribution to analyse the responses thematically; rather, the purpose is to show that the concept of "standards" is used loosely without any clarity on its meaning (Sosibo & Nomlomo, 2014: 76). In brief, the responses ranged through: "the NSC results are being perceived as controversial", "the NSC is associated with university admission", "standards must not be de-linked from quality" to "an NSC pass [is] associated with progress". Such different responses provided evidence that in spite of education standards being a topical issue, there is no common understanding in the South African education community of what "standards" mean. Clearly, standards mean different things to different people.

An interesting observation was that respondents 1, 2, 7 and 15 cast gloom over the standard of the NSC. Specifically, it would appear that they associated low standards with a mark of less than 50% being a benchmark for a pass. This reinforces a commonly held belief that a score of five separates competence and incompetence, in certain contexts, on a scale of 0–10. Doesn't this constitute a restricted view of education standards?

> "The purpose of the current discussion is to highlight, using evidence collected at a seminar, that education standards are perceived differently, and often erroneously, by different people."

Since it is accepted, in general, that tests are administered so that marks obtained can be interpreted as an indicator of what the learners know and can do, a question of equal or greater significance to be asked before meaning can be attached to marks is whether the "metric" used to measure the ability purported to be measured is the appropriate one. To illustrate the point, carefully study the following questions:

1) If Nthabi is 5 years older than Sthe and Sthe is 27 years old now, how old will Nthabi be in 6 years' time?

2) What is the sum of 5 + 27 + 6 = _____

The correct answer to both questions is 38. Let us assume that these were choice questions given to learners in Grade 12. Again, assuming that some learners opted for Question 1 and answered it incorrectly while others chose Question 2 and answered correctly, how would society interpret the two sets of results? Based on the results, my inclination would be that those responding to Question 2 are low achievers in contrast to those getting Question 1 correct.

But the question–whether the two questions are on the same level in terms of challenge–is almost never asked. A short answer is "No". Question 1 is cognitively engaging compared to Question 2, which requires simple mathematical computations. This is what differentiates between the two questions. The same can be observed in evaluating the following two questions:

3) The amount of money to be paid monthly/annually by the insured to the insurer for indemnification is known as…
(a) premium
(b) risk
(c) transfer
(d) excess

4) What is the term for the amount of money that the insured pays monthly/annually to the insurer for indemnification?

I would argue that, everything being equal, Question 3 would be experienced as less challenging than Question 4. This is something that cannot be seen when marks are interpreted in isolation from the actual questions asked.

This discussion makes it clear that there needs to be a common operational definition for what the concept "educational standards" means in relation to high-stakes, exit-level examinations such as the NSC. This would enable the system to appropriately and meaningfully interpret marks yielded by the application of assessment instruments.

The role of monitoring in the capturing of marks

By Doctor Phokwani

As marks obtained by candidates reflect their actual performance, due care and consideration must be taken to ensure that candidates' performance is recorded accurately.

It is against this backdrop that the recording and the capturing of candidates' marks should be free from errors as far as possible. Umalusi is mandated to assure quality in the recording and capturing of school-based assessment (SBA) and external assessment marks. In terms of the Requirements and Specifications for Standardisation, Statistical Moderation and Resulting, version 5 of 31 July 2016, marks must be captured accurately, on time and these should be verified.

The document stipulates expectations for capturing marks for the assessment bodies, which include, among others:

- Examination marks must be recorded by the marker and verified by a marking assistant or other responsible assessment body official. All mark sheets must be approved and signed off. All these procedures should be reflected in the assessment body/provincial procedural manuals. The verification here again includes checking that all calculations are correct.
- For SBA/ICAS/year/term marks, schools/centres/colleges must ensure that each mark is verified by a responsible person other than the teacher/lecturer/facilitator who entered the mark. The verifier should preferably be another teacher/lecturer/facilitator or Head of Department, but not a learner. Marks entered must correspond with the marks on the candidates' portfolios. Further verification should be conducted by the province/assessment body. Mark sheets, portfolios and any other necessary schedules must be made available to Umalusi's external moderators for verification. Verification includes checking that all calculations are correct.
- Only computer-generated mark sheets must be used to capture marks. In cases where, for example, a candidate was registered incorrectly or for the wrong subject, the [correcting] process must be controlled and an audit trail made available to Umalusi on request.
- Although the double-capture method is the preferred method for capturing marks on the computer system, any capture method can be used as long as verification takes place. This means that there should not be any processing of marks until verification has been done. It should be noted that the verifier should not be the same person who captured the marks. Assessment bodies must ensure that reports on the status of the capturing of marks are made available to Umalusi on request.
- The assessment body must ensure that sufficient suitably qualified data capturers are employed to complete the capturing in the time available before the standardisation meetings are held.

The expectations as stipulated in the requirements document are in line with the National Policy Pertaining to Programme and Promotion Requirements for the National Curriculum Statement, and the National Policy Pertaining to Administration, Conduct and Management of Assessment for the National Senior Certificate.

Process

Every year and for every examination cycle, Umalusi deploys monitors to capturing centres to monitor the capturing of marks. The monitors are trained in monitoring and verification of mark capturing before they are deployed.

The training includes understanding Umalusi's mandate, interpretation/mediation of the monitoring instrument, reporting on monitoring, the monitors' code of conduct, and performance evaluation. The monitors use the monitoring instrument to record their observations and discussions/engagements. They are also expected to collect all required evidence to support their claims.

They are alerted to the fact that narratives do not necessarily support compliance, therefore every claim should be supported by the requisite evidence. After every site visit, the monitor is expected to compile a report which should reflect the findings, areas of good practice and weakness/improvement, as well as any directives for compliance.

The impact of monitoring

It was noted that the number of non-standardised subject offerings due to a low capture rate at the standardisation meetings in December 2017 had decreased dramatically.

For instance, in 2018 we have had no subjects in the NSC which were not standardised due to low capture rates. We have had fewer applications for missing script mark calculations compared to previous years. Most requests we received in January 2018 were not due to the loss of mark sheets, but incidents that emanated from the conduct of the examination, e.g. candidates who were issued with English Home Language Paper 1 instead of English First Additional Language Paper 1. The incidence of mark changes from absent to a mark have also decreased.

These examples indicate that the monitoring process has improved the quality of mark capturing, eliminated errors, impacted positively on time management and ensured the credibility of marks in the system.

Participating in conferences for professional development

By Pauline Masemola

Conferences, or gatherings of people who share common interests, usually take place over several days with topics discussed following a theme of interest. For instance, if the topic of interest is associated with innovations in education, the sub-themes will speak to related themes.

Some conferences include pre-conference workshops, which offer learning opportunities about a topic of interest related to the conference theme. Workshops allow facilitators to deliver the theory component while allowing attendees to engage in practical exercises, which enhances attendees' ability to relate theory to practice. These workshops are a great build-up to the main conference and set a tone for delegates.

It is important for professionals to attend conferences to learn about best practices in their fields. Conferences create a platform for receiving feedback from experts and enable direct interaction and networking with such experts. Moreover, networking is important in any field because it creates an opportunity to establish new relationships and strengthen existing ones.

Participation at conferences provides an opportunity to disseminate information and, through discussions during the dissemination process, one can acquire new information from others. In addition to reading the work of experts, one has the opportunity at a conference to network and converse with them about their work. One also attends conferences to listen to different perspectives and learn about new ideas and trends in one's field. This encourages a culture of learning and improves skills and knowledge.

Conferences are not only attended by researchers, but also scientists, experts in the field of interest, policymakers, stakeholders and students, providing an opportunity to obtain hands-on information specific to the field of interest, directly from the source(s). There are often innovations and improved technologies, techniques, software and new practices that can enhance one's working environment and improve efficiency.

Participating at conferences enables one to become known in professional circles. Conferences offer the opportunity for professionals to meet business leaders and position themselves as experts in their fields. As a result, opportunities for better employment can be realised through participating in a conference.

Participating at conferences also forces one to operate out of one's comfort zone and encourages thinking differently about approaches used in daily operations. Allowing employees to attend conferences affords them an opportunity to gain confidence and bring fresh ideas back to the office. As a result, this is an investment for the organisation.

A great benefit, too, to attending conferences is that they afford delegates an opportunity to discover new places and have fun. As one works hard, one also needs to play–as they say, "All work and no play makes Jack a dull boy".

Ongoing ECD research
evaluates different approaches

By Sisanda Loni

Umalusi's research into early childhood development (ECD) continues. This project is a component of a larger longitudinal study, which seeks to develop a construct of intended learner attainment from Grade R to Grade 12. It aims to formulate exit level outcomes for early childhood development. The first phase of the project entailed the appraisal of the South African National Curriculum Framework for Children from Birth to Four (NCF). The second phase includes site visits to early childhood education centres across four provinces to obtain a better understanding of the sector and the teaching and learning approaches being used.

To narrow its focus the research team categorised centres according to the following: Montessori, Waldorf, Reggio Emilia and Ordinary. An ordinary centre is a "typical" South African ECD centre established under the regulations of the Department of Social Development.

Two provinces have been visited so far, the Western Cape and Limpopo, with visits to Gauteng and the Eastern Cape to follow. While it would be ideal to include all provinces, time and cost have proved to be constraints against such aspirations.

Teaching approaches

The research team's site visits entailed classroom observations and interviews with the practitioners and managers of the identified ECD centres. The following are some of the responses from the interviewees on their teaching approaches.

(a) Montessori

"… so we just have faith that the child will just keep revealing himself; he will get there." (ECD practitioner)

The foundation of the Montessori teaching philosophy is that all children develop at their own individual pace and level. Every child deserves to be treated with respect and provided with choices and interesting alternatives with which to develop their learning potentials . The Montessori classroom consists of different age groups (e.g. 3-6 years). The aim is for children to observe and learn from one another. Children work at their own pace, within boundaries, and are free to choose their own activities. The learning environment and activities are designed to foster the spontaneous and natural development of the child. The three rules of the Montessori classroom are for learners to: respect the environment; respect each other and respect self.

(b) Waldorf
"It's not just intellectually; it's about the whole child; teaching them concepts and not just numbers. The education has to suit the child; meet them at their level." (ECD practitioner)

The Waldorf approach in early learning is rooted in creating a warm, beautiful and loving home-like environment. The environment created seeks to nourish the child's senses and their power of imagination. Sensory integration, hand-eye coordination, language development and sequencing are some of the areas developed to prepare learners for school. The approach seeks to prepare balanced children in such a way that they have inner freedom, initiative and self-discipline.

(c) Ordinary centres
"I have heard about it, the NCF, but I have never seen it."(ECD practitioner)
"… we [have] a compendium of approaches … I usually get my information from overseas …" (ECD principal)

The teaching philosophies adopted in the centres vary. While some centre managers and practitioners indicated that they had heard about the national curriculum framework, they acknowledged that they had never used it. The framework was described as being too formal and strict. Only one community centre, out of the three visited, was using the NCF as a guide in their teaching and learning. The others indicated that their teaching approach was informed by international practices.

While the NCF merely serves as a guide, it provides a significant foundation for both caregivers and practitioners in the public ECD sector. The realisation that most practitioners and caregivers are not fully conversant with the document is concerning. While the framework is not prescriptive, it is advisable that advocacy of its use be strengthened as a base for those centres that have minimum access to alternative educational resources and guidelines.

The diversity of the South African ECD sector evidences that no single early childhood education framework will fit every community. It is our assumption that a lot can be learnt from the various approaches. For this reason, Umalusi continues to investigate the ECD sector.

"The ECD research project is a component of a larger longitudinal study, which seeks to develop a construct of intended learner attainment from Grade R – Grade 12."

The new age of **BIG DATA**

By Nthabeleng Lepota

Going back 100 years and more, data has always been there: data is not a new invention. Before computers and databases there were paper transactions and records and huge libraries with archived files–all data. However, according to an IBM Marketing Cloud study, since the new age of digital technology "90% of the data on the internet has been created since 2016"! That is hard to imagine, right? And guess what? The amount of data created continues to grow rapidly. But, one may ask, how is all this data generated? This data comes from everywhere: sensors used to gather shopper information, posts on social media sites, purchase transactions and cell phone GPS signals, among others. This data is BIG DATA.

Because of this massive daily generation of data, quantitative research also grows. This, in turn, makes the application of statistical software a crucial part of our daily lives. Equally important are the experts, the statisticians and data analysts who help to convert this unstructured, messy data into forms that are easy to read and understand. As a result, data analysts are in demand in our country and internationally. Expectations of what researchers do have changed significantly. It is impossible to operate a research organisation without a statistician or quantitative expert. Statisticians no longer play a role in research only in the final stages of analysis. Now, they are involved even before the research commences, assisting in, for example, defining representative samples and designing questionnaires.
There has been a significant shift from manual analysis (with pen and paper) to more efficient electronic analysis. Statistical software plays a very important role in improving research studies. While small amounts of data may be handled manually or with the help of a pocket calculator, statistical packages are required for large data sets.

At Umalusi a number of software programs make our job in statistical support less disheartening and, most importantly, help us to produce accurate results. Imagine calculating the average Mathematics score of 600 000 Grade 12 candidates, or counting the number of candidates registered for English First Additional Language per province. That would take forever and would probably end up with wrong conclusions as a result of errors. But with statistical software one can do such calculations with just the click of a button, or no more than five lines of more advanced programming software. Popular programs include SAS, SPSS, R and Stata, and many others are commercially available depending on usage requirements and familiarity.

Although the old saying, "you get what you pay for" is true about many things, free packages like R and Python are exceptions. These are available at no charge and use free software licences. Data analysis can also be done with a spreadsheet program such as Excel, which is part of Microsoft's popular Office package. Excel and other spreadsheets are user-friendly and excellent for entering coding and storing data.

There are many benefits to using software rather than computing statistics manually. These include improving quality and being able to produce almost perfect results. Using software reduces the difficulty and potential for inconsistencies in making complicated calculations. Additionally, software has powerful graphical tools to assist with presentation. It can also eliminate manual updating. Every organisation involved in research should invest in quality software packages and enthusiastic, trained statisticians. Quality software ensures that you'll be able to do more, do it efficiently and more accurately. Being able to be faster and better not only benefits the client but the employee as well, leaving them more time to focus on other projects.

Moderating **ICASS** is crucial for success

By Marble Shirilele

Introduction

ICASS is an acronym used for internal continuous assessment conducted at technical and vocational education and training institutions. These include both private and public colleges as well as Correctional Services' centres and schools. It is assessment conducted at sites of learning and is therefore integrated into the teaching.

An ICASS mark is a compulsory component of the final subject promotion mark for all students registered for the NC(V) and Report 190/191 Engineering Studies.

This mark has a weighting of 25% for the fundamental subjects; 50% for the vocational subjects in NC(V); and 40% in Report 190/191 Engineering Studies.

Moderating internal assessment is a key process that Umalusi uses to ensure the quality and credibility of assessment.

The Department of Higher Education and Training (DHET) developed and implemented standardised practical tasks for the Level 3 and Level 4 vocational subjects. This was done to address the poor quality of practical tasks set at college level, to ensure uniform standards across colleges and to improve the development of skills and chances of employment of NC(V) students.

Process

Umalusi conducted quality assurance of internal assessment for both NC(V) and Report 190/191 in 2017. NC(V) external moderators visited a sample of 55 college campuses in each of the nine provinces in May 2017 to monitor progress in conducting internal assessments.

During October 2017, centralised moderation took place across the provinces, in which 239 sites were sampled. The subjects moderated in May were repeated, but an additional four campuses offering the subjects, in the same provinces, were also sampled, for provincial moderation purposes.

Colleges and regional officials were informed of the monitoring and moderation in both phases. Because of the magnitude of the October moderation, selected college staff and regional officials were asked to help with organising venues, as well as receiving, handling and returning portfolios to colleges.

Report 190/191 Engineering Studies' external moderators visited the colleges in March, July and November 2017 to monitor practices and moderate the internal assessments of N2 and N3 students' and lecturers' portfolios. Around 15 visits were planned per trimester. In addition to the sampled instructional offerings (subjects), moderators were requested to gather information on three additional subjects. Although colleges were informed about the possibility of additional monitoring, no specifics were indicated in correspondence, to prevent window-dressing.

Five tasks are administered for vocational

subjects and seven for the fundamental subjects (Mathematics, Mathematical Literacy, Life Orientation and a Language) to make up ICASS marks for the NC(V).

In the case of Report 190/191, two tests are administered per trimester and are used for the compilation of the trimester mark.

Students must obtain a minimum mark in the ICASS for admission to the examination. Since poor-performing students are sifted from the system, this assists candidate pass rates. The table below reflects the minimum marks, per subject or per component, for NC(V) and Report 190/191.

Table 1: Minimum mark for admission to examination

SUBJECT or COMPONENT	MARK %
First Additional Language	40
Life Orientation	40
Mathematics and Mathematical Literacy	30
Vocational Subjects	50
Report 190/191 instructional offerings	40

Good practices

Some sites delivered work as expected. It was pleasing to observe that at some sites planning was done effectively; lecturer and student portfolios were organised; there was evidence that good quality tasks were developed and implemented; students were exposed to work-based learning; and there was evidence of qualitative feedback to both the examiners and students.

Challenges

The monitoring, moderation and verification visits did, however, reveal shortcomings that require attention.

These can impact on the quality and integrity of the ICASS component of both the NC(V) and Report 190/191. Of concern was:

- Lack of resources and capacity to teach some subjects;
- Students were not exposed to practical work conducted in workshops;
- Lack of understanding and interpretation of the standardised practical tasks;
- Inferior quality of tasks and quality assurance processes;
- Lack of teacher development; and
- Lecturers who had not been exposed to a workplace environment.

Conclusion

Many challenges continue to exist with continuous internal assessment and the reliability of the marks submitted. Umalusi will continue to quality assure ICASS to not only ascertain compliance with requirements as stipulated in the guidelines provided by DHET, but also to raise the standards.

WE BID **FAREWELL** TO COUNCIL MEMBERS

A farewell gala dinner was held for the Umalusi Council members that served the organisation with distinction from 2014 until 2018.

The gala dinner was held at The Protea hotel on Tuesday, 22 May 2018. This was a time to reflect and appreciate work done by the Council over candle lit dinner – good food and laughter.

Various speakers shared fond memories of the past four years and expressed their heartfelt gratitude to the outgoing Council members for steering Umalusi in the right strategic direction.

Mr SA Tlhabane, from the Department of Basic Education gave a word of thanks to the Council members for their hard work on behalf of the Minister of Basic Education, Honourable Angie Motshekga.

Each Council member was presented with a token of appreciation and service certificate. The Umalusi family would like to thank the Council members for their service and we wish them well in their future endeavours!

Back Row, From L to R: Dr PAD Beets, Adv MJ Merabe, Mr MHW Ehrenreich, Prof N Baijnath, Mr V Naidoo, Mr J Samuels.
Front Row, From L to R: Prof R Mampane, Dr MS Rakometsi, Prof JD Volmink, Prof MLE Monnapula-Mapesela, Mr D Hindle.

UMALUSI HOUSE
37 General Van Ryneveld Street
Persequor Techno Park
Pretoria
South Africa
0020

POSTAL ADDRESS
PO Box 151
Persequor Technopark
Pretoria
0020

Telephone: +27 (12) 349 1510
Fax: +27 (12) 349 1511
E-mail: info@umalusi.org.za

UMALUSI FRAUD HOTLINE
FreeCall: 0800 000 889
FreeFax: 0800 00 77 88
FreePost: KZN 138 Umh;anga Rocks, 4320
Email: umalusi@tip-offs.com
Website: www.tipp-offs.com

UMALUSI

Council for Quality Assurance in
General and Further Education and Training