Makoya

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UMALUSI

Quality Council for General and Further Education and Training

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Editor's Pen

Lucky Ditaunyane

Welcome to another enthralling issue of Makoya, Umalusi's official newsletter. Umalusi continues to add value to the basic education sector in South Africa by remaining faithful to its mandate as the Council for Quality Assurance in General and Further Education and Training. This is in spite of the fact that the education system in South Africa is in a constant state of flux. As can be expected, any changes in Umalusi's external environment can affect the organisation, either directly or indirectly.

This is especially true in 2020, the year in which the entire world has been plunged into a period of volatility, uncertainty and complexity, due to the scourge of COVID-19. Despite the challenges caused by COVID-19, the work of Umalusi, as the Quality Council in the General and Further Education and Training, remains crucial in the South African education landscape. There is no doubt that quality in education remains a topical issue within educational circles in South Africa. This is the one area where Umalusi is looking to locate itself as a thought leader in response to its mandate as a quality council.

As part of its response to its mandate, Umalusi uses various communication channels and platforms, such as Makoya, to communicate the intricate aspects of its legislative mandate to relevant stakeholders. To this end, we are always careful to craft messages that resonate with the essence of what the South African government has entrusted us to do. This issue of Makoya focuses mainly on the work of the Statistical Information and Research Unit, a national operations unit specifically tasked with the responsibility of conducting esoteric research on issues related to Umalusi's legislative mandate. Enjoy!

From the
CEO's Desk

Dr Mafu Rakometsi

I am delighted to pen this introductory piece for the second edition of Makoya in the 2020 financial year. It is hard to believe that we are already in the third quarter of the academic year. The work of Umalusi keeps on expanding as we identify new areas of growth within the parameters of our legislative mandate. Be that as it may, Umalusi is fortunate to have a formidable team of highly experienced and qualified individuals who are passionate about their work.

Unfortunately, the year 2020 will be remembered as a year in which the entire world faced a crisis of catastrophic proportions, called COVID-19. The COVID-19 pandemic has brought a great deal of misery and pain to the lives of many people in South Africa. I sincerely empathise with people who have lost their loved ones as a result of the pandemic. My heart also goes out to people who have lost their jobs and livelihoods because of the devastating impact of COVID-19 on our country's economy. I also feel for the 2020 cohort of learners who will be writing their national examinations towards the end of this year, after facing the most difficult year of their lives. I know it is not going to be easy for them. For this reason, we need to stand together as fellow patriots of this beautiful country and help those who need our help within our sphere of influence. Together we can overcome the challenges occasioned by COVID-19.

Due to lockdown regulations enforced by government, many organisations have been forced to think outside the box and formulate innovative ideas for staff members to do their work from their homes. Among others, we have learnt that with proper planning, it is possible for people to do plenty of work from their homes and still achieve the strategic objectives of the organisation. We have also learnt a lot about how best to harness the benefits of technology to achieve a certain level of efficiency in the work that we do. Work needs to be done despite the challenges we are experiencing.

Once again the work of Umalusi, as a quality assurer of national assessments, will be under the spotlight as all assessment bodies prepare to administer the 2020 end-of-year national examinations. Scores of Umalusi officials will be deployed to various provinces to verify the readiness of provincial education departments (PED) and independent assessment bodies to administer examinations for the following qualifications: the National Senior Certificate, the National Certificate (Vocational), the General Education and Training Certificate, the Senior Certificate (amended) and the National Technical Certificate (N3).

As we prepare for the rollout of this year's national examinations, this issue of Makoya, rightly, focuses on some of the work of the Statistical Information and Research Unit, which performs a crucial function as part of Umalusi's legislative mandate.

In conclusion, I wish the Grade 12 class of 2020 all success as they face the mammoth task of writing their final examinations. I advise them to prepare well under these trying circumstances, to rely on their teachers' sound advice and to avoid unnecessary distractions during the exam period. Enjoy reading!

The value of alignment studies

in standard setting

By Paulina Masemola

The intended curriculum specifications for cognitive demand weightings and assessment standards are aligned to evaluate the level of cognitive processing expected from candidates at a particular grade, against a standard or an expectation. In alignment studies, experts evaluate assessment items against standards and the evaluated ratings are used to compute alignment indices. The alignment, as translated in examination papers, guides the system towards what knowledge and skills candidates are expected to attain. It is therefore important to conduct alignment studies in cases of curriculum change. This ensures that a curriculum (which is the specified set standard) and the examination paper are aligned.

In South Africa the national schooling curriculum changes quite often. The national curriculum statement (NCS) was introduced in 2006 in Grade 10 and in 2007 in Grade 11, with the first Grade 12 examination in 2008. Amendments to the NCS brought about the implementation of the curriculum and assessment policy statements (CAPS) from 2012, with the first Grade 12 examination on the revised curriculum in 2014. Curriculum changes might include changes in the structure of the subjects. This can affect candidate performance, due to the change in the curriculum content focus, the selection of knowledge and skills, assessment structures and teacher capacity to teach the changed curriculum.

Candidates undergo school-based assessment (SBA) in preparation for the examination. If SBA is not aligned with the expected demands in the examination, a false impression of the candidates' performance, relative to examination, might occur. The alignment of continuous classroom assessment with the curriculum specifications for cognitive demand weightings would ensure correlation between the preparation of learners and the intended expectancies.

There are several criteria that can be used to analyse alignment. That is, categorical concurrence (or content consistency), depth-of-knowledge consistency (or cognitive demand), range-of-knowledge correspondence (or content coverage) and balance of representation (or distribution of test items). At the simplest level, an alignment study might examine only the content match

between the assessment and a specific set of curriculum specifications for cognitive demand weightings.

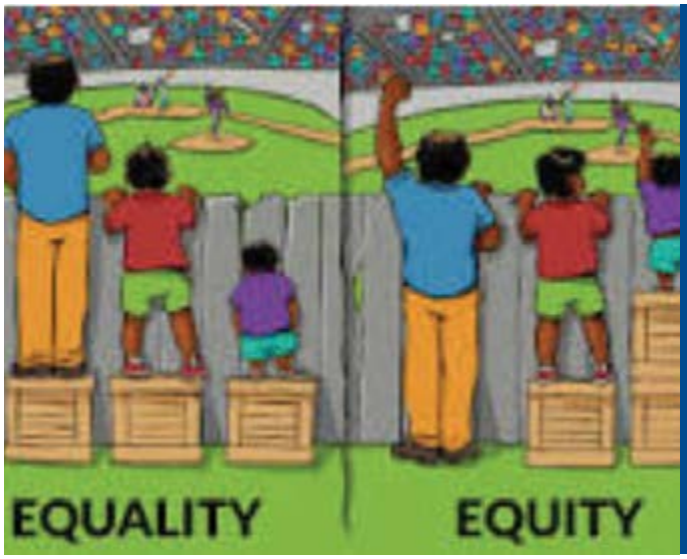
The Porter index is used to analyse this alignment. Porter focuses the alignment analysis on two dimensions i.e., the content and cognitive domains, represented by topic and level of cognitive demand. That is, it can be applied when analysing alignment between curricula, instructions and assessment. The Porter alignment index creates two tables, one representing the curriculum specifications for cognitive demand weightings; the other for the specification in the actual examination. Each uses a two-dimensional matrix in which the rows represent topics and columns represent levels of cognitive demand.

Evaluating alignment is one way to demonstrate the connection between outcomes and assessment, which can improve the quality of the education system. That is, if learning objectives are aligned to expectancies the possibility of meeting expectancies is greater.

AFL: the champion of inclusive pedagogy

and learner achievement

By Thabo Letsoalo



"SBA can be a very powerful pedagogic device" (Johnson & Burdett, 2008).

The COVID-19 global pandemic has not only rattled the economy but has brought to the fore burning issues of equity within the education system. While some schools are able to continue with the business of the day, others are simply not able to do so, due to a myriad factors. This again brings to the fore assessment for learning (AFL) and how it can be used to level the playing fields for every learner. History points out to us that the first usage of AFL was with reference to learners with disabilities (Mittler, 1973). AFL was used to establish how a learner with an impairment engaged with the learning process and what supportive measures should be taken to practise inclusive pedagogy and promote learner achievement. Literature has highlighted the importance of AFL in levelling the playing fields for all learners and in promoting inclusive pedagogy (Yates & Johnston, 2018; Johnson & Burdett, 2008; Black and Wiliam, 1998). Thus, AFL is rooted in inclusive education.

In South Africa this type of assessment is referred to as school-based assessment (SBA), but may be formative assessment and/or the use of summative assessment for formative purposes (Kanjee & Moloi, 2020). It may involve a number of activities, such as written work, essays, project work and investigations, practical experiments, production of works of art or other items, oral

work and various other activities, which build up towards the summative assessment (Yates & Johnston, 2018; Johnson & Burdett, 2008).

Within the current context of South Africa's high levels of inequality, signified by the Department of Education's quintile system, many learners will not achieve their capabilities: the result of a system that fails to support their learning. Research also reminds us that for pedagogy to be effective, the practise in a classroom should provide evidence of learning that could be used in planning the next step and thus remove barriers to learner achievement. From a socio-cultural point of view, AFL has the ability to improve educational outcomes for learners because it allows for student engagement and is learner centred (Yates & Johnston, 2018).

What can we learn from assessment practices elsewhere in the world pertaining to the role of AFL?

Empirical studies from Malaysia have highlighted the role of AFL in inclusive pedagogy and learner achievement. Poor performance in international assessment prompted Malaysia to introduce SBA, where it is referred to as Pentaksiran Berasaskan Sekolah (PBS). The introduction of SBA replaced the previous centralised examination. SBA in Malaysia is made up of four components: school assessment; central assessment; psychometric assessment; and physical, sports and co-curricular activities assessment (Ministry of Education, 2012). Thus, SBA in Malaysia has both academic and non-academic components.

Since the institutionalisation of SBA in the Malaysian education system in 2011, the approach adopted has been to equip teachers to conduct SBA, because teachers better understand the context of the learner as well as the subject matter (Mansor et al., 2013).

A review of six studies (Mansor et al., 2003; Ghazali, 2017; Veloo et al., 2016; Majid, 2011; Fook & Sidhu, 2006; Abdullah et al., 2016) conducted between 2003 and 2017 in Malaysia produced results (regardless of sample size, school type and study method used) that South Africa, as a developmental state, could draw from, as follows:

- the studies highlight the successful implementation of SBA in a country with high levels of poverty and education inequalities;
- the studies show that implementation of SBA promotes both inclusive pedagogy and learner achievement. Teachers are able to improve their pedagogy and support struggling learners;
- the implementation of SBA requires constant evaluation and consultation to strengthen teacher development; and
- continuous teacher development and institutionalisation of SBA are key for the successful implementation of SBA.

As pointed out by the studies conducted in Malaysia, given the inequality and equity challenges within the South African education context the institutionalisation of AFL, coupled with robust policies for continuous teacher development, has the potential to improve teaching and learner achievement. This will ensure that no learner is left behind while, at the same time, it will strengthen the integrity and quality of the education system.

> *"They can give many different answers, there are no wrong answers …we cannot limit their abilities, such as creativity …no student can be left out (Malaysia)" (Mansor et al., 2003-13: 103)*

Appendix

Table 1: Selected SBA studies conducted in Malaysia, 20032017

	Author	Sample (teachers)	Method	Promotes inclusive pedagogy	Promotes learner achievement
1	Mansor et al., 2003	Three, in-depth	Qualitative	Yes	Yes
2	Ghazali, 2017	776	Quantitative	Yes	Yes
3	Veloo et al., 2016	49	Quantitative	Yes	Yes
4	Majid, 2011	40	Qualitative	No	No
5	Fook & Sidhu, 2006	49	Quantitative	Yes	No
6	Abdullah et al., 2016	112	Mixed methods	Yes	Yes

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Measuring item quality beyond marks

By Biki Lepota

Introduction

This discussion is situated within a broader Umalusi capacity-building initiative, a series of planned discussions intended to stimulate debates about strategies to enhance the quality of items that are included in exit-level examination papers.

Studies conducted by Umalusi on the quality and standards of exit-level examinations in the further education and training system have revealed complexities pertaining to the setting and quality assurance of exams. Close scrutiny reveals that the emphasis to date has been, largely, on the determination of the degree to which the examinations adhere to national assessment policy. What has not been addressed in depth is the quality of the items used. Our interest in "item quality" originates from our decade-long involvement in the analysis of question papers in a selection of subjects. The context of this article is, therefore, the broader case that must be made, not only for compliance of examination papers with national policy and regulations, but also for the social accountability that attaches to each responsibly designed item.

Test or examination items and mark allocation

For the sake of clarity, this article uses "item" to refer to the basic building block of a task that candidates are asked to perform in an examination or a test. It is a generally accepted view that items are administered under examination or test conditions so that the marks obtained can be interpreted as an indicator of what the candidates know and can do. Thus a good quality item contributes to the quality of the examination paper as a whole, thereby improving reliability and validity. However, the question almost never asked is whether the low or high marks have been achieved as a result of invalid, or unintended, sources of difficulty located in the examination items, rather than in the intrinsic difficulty or easiness of the item itself.

In one of the studies commissioned by Umalusi, a sharp argument is made against the use of marks as indicators of education quality and standards because "the mark does not tell you what was assessed, how it was assessed and whether the process was well administered" (Wedekind, 2013: 31). It is necessary to illustrate Wedekind's point by considering the following three multiple choice items extracted from previous question papers:

Item 1 (1 mark): The apartheid system in South Africa was legislated in …
a) 1994
b) 1976
c) 1948
d) 1652

Item 2 (2 marks): Nelson Mandela became the first president of a democratic South Africa in …
a) 1994
b) 1992
c) 2005
d) 2019

Item 3 (5 marks): The main economic problem is:
a) security
b) unemployment
c) inflation
d) poverty
e) scarcity

The first two items are from papers that fall within the further education and training sector, whereas the third was extracted from a first-year university examination paper. Three observations can be made from these items. Firstly, these are all completely discrete items in that they test one objective or point. The second observation is that the three items vary in the marks allocated. Looking at items 1 and 2 closely shows that they both test knowledge of the year in which a particular event occurred. That begs the question: why is it that Item 1 is allocated one mark whereas Item 2 receives double the marks? As far as Item 3 is concerned, there does not appear to be anything in it that warrants five marks. This is not an integrative item; it does not test more than one objective. So, the over-generosity with marks should be the real concern.

These items prove the argument made by Wedekind (2013: 31) that conclusions arrived at on the basis of marks obtained are open to question. Is the problem limited to multiple choice items? Trawling through available data reveals that this is not so. Let us look at the following two items:

Item 4 (1 mark): When the business purchases stock on credit, the supplier of that stock is called a (creditor/debtor).

Item 5 (2 marks): The current VAT rate in South Africa is (14%/15%).

There are five of these question types in two different question papers. However, the two question papers differ in how they allocate marks to these item types. The paper from which Item 4 was extracted allocated half the total marks allocated to items similar to Item 5. The observations that can be made here are not dissimilar from the ones made above, with reference to items 1 – 3 above. This would imply that in spite of there being no differences in difficulty, candidates sitting the examination, or sub-section from which Item 5 was extracted, are in an advantageous position to score more marks than those writing the exam associated with Item 4. The same is true for items 2 and 3 in comparison with Item 1. This is the context that is never considered when achievement of high marks is celebrated in the public domain.

In conclusion

Notwithstanding the fact that all five items presented above make similar demands on candidates, the metrics used to measure candidates' knowledge of the areas tested are not the same. Stated differently, the effort does not match the mark/s allocated. While this analysis is based on only five items, the discussion is useful in showing that the process of generating quality items is one that needs careful thought.

The next steps

Umalusi has initiated a capacity-building programme to focus on what contributes to reliable, valid and fair examination items. The following are some of the key aspects that the initiative focuses on:

i. Avoiding confusing instructions or poorly phrased items.
ii. Designing different task types for inclusion in

examinations.

iii. Determining cognitive demand and calibrating items at different levels of cognitive demand.
iv. Determining difficulty and calibrating items at different levels of cognitive demand.
v. Avoiding item predictability and bias.
vi. Enhancing the quality of the language used in items.
vii. What to consider in allocating marks to items.

The target audience for the initiative is examiners, moderatos and subject specialists, among others. The initiative is intended to continually deepen participants' knowledge of item quality, which will, in turn, contribute to the improvement of quality and standards of examinations.

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"Whoever masters the curriculum, masters themselves. One of the core derivatives of the curriculum is to give agency back to the self." (Julius Nyerere, 1961, 1988)

By Shilela Nkadimeng

ECD: towards local curricula and research-informed assessment practices

Global research has provided evidence that enabling children to develop to their full potential, especially in the first three years of life, has high return rates across the lifespan (Jolly, 2007; National Development Plan [NDP] 2030, 2012; Lancet, 2016; South African Early Childhood Development [ECD] Review, 2019). Creating sufficient opportunities for learning, as well as providing appropriate care and affection, remain among the core elements that contribute to children developing to their full potential. The impact could be visible in a reduction in social inequality and an increase in economic participation, as more people have the requisite development to apply themselves within and beyond their communities (South African ECD Review, 2019; Jolly, 2007).

The South African government recognises that quality ECD is a fundamental pillar to building

national capabilities (NDP 2030, 2012; South African ECD Review, 2019). Underpinning quality are curricula and assessment styles that reflect local realities while keeping abreast of global research on early childhood education and development. The current South African ECD terrain is pervaded with curriculum approaches originating from the global North, which raises concerns about a lack of contextualised curricula. A representative, local curriculum that take cognisance of the diversity that famously characterises South Africa and its peoples is not at the forefront of curricula in the sector.

The contents of localised early childhood curricula, assessment thereof, the resources and pedagogy must continue to endeavour to be more holistic in their targets (Schafer et al., 2004). The ignorance of the diverse ways of knowing and becoming that characterises the South African education system is proving to be not ideal in preparing learners for national citizenry, global citizenry, the labour market and lifelong learning. If investment in lifelong learning is to be grounded it must, firstly, be within the purview of locality and, secondly, feeding forward onto the global stage.

It is against this backdrop that assessment practices in early learning are founded. Who is being taught and how learning is assessed are equal in achieving educational outcomes. Early learning assessments differ, based on the educational outcomes stipulated by the different approaches to and philosophies about childhood and children. Observation is a common assessment style, across most early learning approaches (Forman & Hall, 2013). This is one of the pedagogical tools (teachers use observation to learn about children and learn from children)and assessment practices that provide a platform for self-directed learning in the form of *assessment as* and *assessment for* learning (Nyerere, 1988; Forman & Hall, 2013). In African ways of becoming, observation also echoes how the child learns and how adults monitor task and/or phase mastery (Pence and Schafer, 2006; Huang and Lay, 2017). The rites of passage that the observation would feed into is aligned with the call for contextualised curricula and inclusion of African cultural ways of becoming.

As more research is conducted globally in early learning, it is becoming increasingly trendy for approaches to blend best practices and borrow from one another in ways that would empower phase mastery, as opposed to the traditional developmental milestones (Huang and Lay, 2017). This has, equally, opened a gap for local ways of learning and assessing to play a role in affirming identities and the lived experiences of South African children. It is paramount in early learning that affirmation of self is intentionally grounded in curricula, pedagogy and assessment. Of course, these not only hold early

learning sites to localise learning, teaching and assessment but, equally, institutions of higher learning that train and develop practitioners in the sector.

We have to understand childhood in emergent collective perceptions. These reflect ever-changing philosophical, socio-political, economical and other societal categories. The philosophies and perceptions we have about childhood have to be deconstructed and envisioned within broad cultural contexts. This envisioning will have to make way to multicultural and multidimensional ways of becoming and, for the purposes of education, multiple ways of knowing. It is within this framework that assessment can be re-imagined and fed forward into lifelong learning, the ultimate educational outcome.

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Improving assessment practices through Item Response Measurement

By Nthabeleng Lepota

Assessment is a critical part of the teaching and learning process. It is, therefore, very important for all stakeholders with an assessment interest to reflect on and evaluate the effectiveness of teaching, learning and assessment through measuring candidate responses. As a result, there is a need for a reliable and valid approach that can evaluate ability levels in learners' responses to items and tasks.

Application of the Item Response Theory (IRT) could assist in determining learners' ability. IRT is a mathematical model used to provide accurate measurement results about candidate ability, growth and achievement. The most critical insight we can gain from IRT is that a candidate's response to a set of items of various demands can tell us about their level of ability to respond to the items. For example, mathematical problems set in an examination can tell us, broadly, about a candidate's mathematical ability. Additionally, IRT can be used to evaluate the characteristics of items set in an examination. The properties refer to how difficult an item is and how well it discriminates between candidates of lower and higher abilities. With IRT, we can also determine if a candidate scored an item correct simply by chance, through guessing.

The IRT models make an assumption that a candidate with high ability has a higher probability of scoring an item correct; whereas a candidate with lower ability has a lower probability, but can score the answer correctly by chance, through guessing. For example, consider a multiple choice question with five options: even a candidate with the lowest ability in a class has one in five chances of answering the question correctly by guessing. The discrimination index provides information on how much an item discriminates between different ability levels of candidates. If an item has a very high discrimination index, it means the question discriminates well between candidates of different ability levels. However, if an item has a lower discrimination index, it means that the item does not discriminate between different ability levels. With this item information at hand, teachers and assessment bodies can build reliable item banks where items can be stored and used in assessment tasks from year to year.

The information gained through IRT is not attained in other measurement theories. For example, the classical test theory provides only the observed scores of candidates. This is the total number of correct responses a candidate scored. This means that the only information available is that a candidate scored, for example, 50%, without mentioning whether the test consisted of easy or difficult questions. The disadvantage of raw scores is that they tell us nothing about the candidates' underlying ability.

IRT provides a variety of tools that can be used to improve assessment. IRT analysis provides us with the average ability scale of each candidate, in addition to the total number of questions a candidate has endorsed. For example, a candidate who scored 60% in a test with difficult items will have an ability score higher than a candidate who scored 60% in a test with easy items.

The information provided by the IRT can help educators to plan targeted instructions according to the needs of candidates. Candidate scores may be mapped to the learning outcomes and instructional materials to provide effective assistance, for example by planning appropriately challenging activities for the candidates, or by offering extra time to the appropriate group of candidates. IRT also allows assessors to track growth or change in a candidate's ability over time. Moreover, the IRT equating technique enables us to equate different examinations by putting them on the same scale. Therefore, if educators make the right decisions informed by the right data, candidates are on the right path for success.

Embracing adult learning: the case of the Senior Certificate (amended)

By Tsholofelo Madise

Introduction

The National Qualifications Framework (NQF) Act No. 67 of 2008 (as amended) and the General and Further Education and Training Quality Assurance (GENFETQA) Act No. 58 of 2001 (as amended) mandate Umalusi to develop and manage general and further education and training in South Africa. Umalusi is not only responsible for schooling qualifications but also adult learning. This includes the General Education and Training Certificate: Adults (GETC) at NQF level 1 and the Senior Certificate (amended) (SC(a)) at NQF level 4. This article has a specific focus on the latter. The SC(a) is designed to serve adult learners aiming to achieve a qualification equal to the National Senior Certificate (NSC), or what the public would, in general terms, refer to as "matric".

Historical background

In September 1992, the South African Certification Council (SAFCERT) was mandated, through the SAFCERT Act, to certify the Senior Certificate (SC). A *Résumé of Instructional Programmes in Schools; Report 550 (09/05)* governed the SC. The certificate was awarded as the final exit qualification at the end of "matric" to candidates who complied with the requirements and rules of combination as stipulated in Report 550. The NSC replaced the SC in 2008 as a national school-leaving qualification. However, as a measure to cater for those candidates with incomplete SCs, a qualification extension was approved. With that in place, the SC(a) was promulgated, in 2014, through Government Gazette No. 37902 of 11 August 2014, titled *Approval of the Amended Senior Certificate Qualification for out of School Learners as Stipulated in the Policy Document, A Résumé of Subjects for the Senior Certificate, Report 550*.

The first SC(a) examinations were written in June/July 2015. The SC(a) adopted the curriculum and assessment policy statements (CAPS) as its underpinning curriculum, and the Senior Certificate Examination Guidelines Grade 12, for the structure and content of the examinations. In essence, the subjects offered are that of the NSC, excluding the school-based assessment (SBA) component. That is, the examinations constitute 100% of the final promotion mark.

For whom is the SC(a) meant?

The qualification continues to exist, to provide for adults and out-of-school youth who did not

complete their high school education, or failed their Grade 12 examination, to obtain their school-leaving certificate and, thus, further their education if they so choose. Additionally, the SC(a) is intended for candidates with the GETC or a recognised, equivalent qualification at NQF level 1, with two official languages and, in special cases, those with expired SBA.

What is the intended learner profile for the SC(a)?

The qualification intends to produce candidates who demonstrate fundamental knowledge in the field(s), can apply this to related fields and can use the knowledge to solve common problems. The candidates are also expected to demonstrate a basic ability to gather relevant information; display analysis and evaluation skills; the ability to communicate and present information reliably and accurately; the capacity to make decisions; and assume responsibility for actions. As in the case of the NSC examinations, successful candidates can also qualify for admission to Bachelor, Diploma or Higher Certificate programmes at higher education institutions.

Going forward

Notably, as a result of the COVID-19 pandemic SC(a)candidates will write their examination in November 2020. To answer questions about the future of the SC(a) and the cohort it serves: plans are in place to continue provision of adult learning, through the National Senior Certificate for Adults (NASCA). The NASCA is a general educational qualification at level 4 on the NQF and it will provide a general educational pathway for adults. That is, it is going to serve the same cohort as the SC(a). Through NASCA, the intention is to produce candidates who are equipped with a substantial basis of discipline-based knowledge, skills and values to enhance meaningful social, political and economic participation and to form a basis for further and/or more specialised learning and, possibly, to enhance the likelihood of employment.

Maintaining standards: using historical averages to measure comparability of examinations

By Matome Sebola

Introduction

The setting and maintenance of standards in education is a technically challenging issue and a matter that attracts lots of public scrutiny. What usually works in one country might not be suitable in the next, given differences in complexity and contexts in each scenario. Umalusi uses qualitative and quantitative approaches to deal with standard setting. The focus in this article is on a quantitative method, the historical average, which aims to achieve comparability of attainment and performance over time for high-stakes exit examinations. In this instance, this article considers exit examinations for qualifications on the General and Further Education and Training (GFET) Sub-framework that are quality assured by Umalusi.

What are historical averages?

Historical averages or "norms", as commonly referred to, are calculated using the previous three, to a maximum of five, examination sittings approved during the standardisation process. The norms are constituted by the raw mark distribution of the previous cohorts and are used as a predictor of performance for current candidates. The principle predicts that different cohorts are exposed to similar conditions of curriculum coverage, teaching modalities and that examination papers are comparable across years. In cases where a distribution contains outliers, the norms are calculated excluding data from the outlying examination sitting. However, distribution that contains an outlier remains part of the three to five examination sittings on the statistics table. A new subject, or subject without adequate history, makes use of what is called a "fictitious norm". This is an interim norm that serves only to assist in plotting the graph for the raw mark normal distribution.

Subject	Subject desc		201411		201511		201611		201711		201811		0				
19321024	Mathematical Literacy	0	7	7	32	32	7	7	0	0	0	0	0	0	46	46	000.0027549
19321024	Mathematical Literacy	1	4	11	48	80	9	16	2	2	0	0	0	0	63	109	000.0065279
19321024	Mathematical Literacy	2	12	23	66	146	21	37	1	3	5	5	0	0	105	214	000.0128162
19321024	Mathematical Literacy	3	9	32	101	247	30	67	6	9	3	8	0	0	149	363	000.021796
19321024	Mathematical Literacy	4	20	52	170	417	42	109	9	18	4	12	0	0	245	608	000.036124
19321024	Mathematical Literacy	5	24	76	209	626	56	165	8	26	6	18	0	0	303	911	000.0545587
19321024	Mathematical Literacy	6	35	111	267	893	75	240	9	35	6	24	0	0	392	1303	000.0780351
19321024	Mathematical Literacy	7	49	160	312	1205	88	328	9	44	9	33	0	0	467	1770	000.1060031
19321024	Mathematical Literacy	8	70	230	411	1616	109	437	13	57	16	49	0	0	619	2389	000.1430743
19321024	Mathematical Literacy	9	81	311	431	2047	115	552	24	81	12	61	0	0	663	3052	000.1827805
19321024	Mathematical Literacy	10	84	395	576	2623	143	695	19	100	8	69	0	0	830	3882	000.2324882
19321024	Mathematical Literacy	11	118	513	575	3198	196	891	28	128	16	85	0	0	933	4815	000.2883644
19321024	Mathematical Literacy	12	139	652	678	3876	214	1105	28	156	19	104	0	0	1078	5893	000.3529245
19321024	Mathematical Literacy	13	165	817	785	4661	212	1317	49	205	30	134	0	0	1241	7134	000.4272465
19321024	Mathematical Literacy	14	206	1023	830	5491	260	1577	51	256	22	156	0	0	1369	8503	000.5092343
19321024	Mathematical Literacy	15	222	1245	936	6427	296	1873	52	308	34	190	0	0	1540	10043	000.6014630
19321024	Mathematical Literacy	16	240	1485	996	7423	366	2239	70	378	42	232	0	0	1714	11757	000.7041123
19321024	Mathematical Literacy	17	261	1746	1106	8529	409	2648	79	457	45	277	0	0	1900	13657	000.8179010
19321024	Mathematical Literacy	18	278	2024	1192	9721	477	3125	63	520	45	322	0	0	2055	15712	000.9409724
19321024	Mathematical Literacy	19	339	2363	1315	11036	495	3620	91	611	60	382	0	0	2300	18012	001.0787166
19321024	Mathematical Literacy	20	381	2744	1419	12455	543	4163	97	708	71	453	0	0	2511	20523	001.2290973
19321024	Mathematical Literacy	21	433	3187	1527	13982	625	4788	139	847	87	540	0	0	2821	23344	001.3980436
19321024	Mathematical Literacy	22															

Figure1: Norm per mark distribution for Mathematical Literacy (2014–2018)

Figure 1 provides an example of raw mark distribution for Mathematical Literacy for the period 2014–2018. A pertinent observation is the raw distribution of mark 0–10 intervals between 2014 (the year the amended curriculum and assessment policy statements (CAPS) was introduced) until 2016. Mathematical Literacy had a high of 32 candidates who obtained mark zero in 2015. What could explain the drastic change from 2017 and 2018 is what is termed "curriculum maturity", in which learners and teachers have developed a concise understanding of the curriculum examined. The other explanation could be that the examinations are becoming predictable and, therefore, that new candidates may have an advantage compared to those from previous cohorts. To mitigate against such factors, adjustments towards the norm are made during standardisation. This aims to "level the playing field" for different cohorts.

How does using norms ensure comparability?

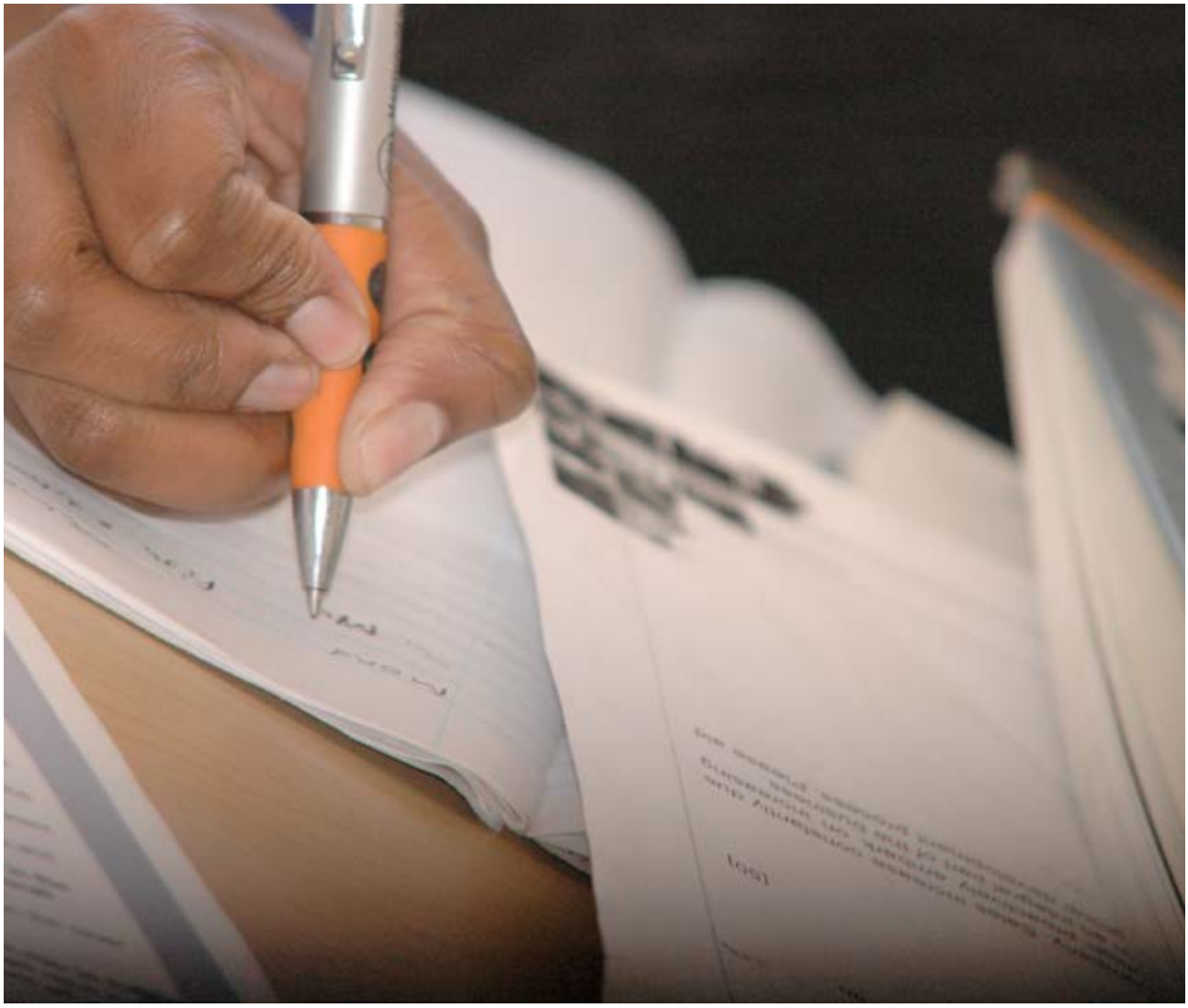
The essential characteristic of using norms is that candidate performance in an examination is compared to performance by previous cohorts. The principle is to achieve a comparability of standards by representing the level of attainment of a particular candidate in relation to the level of attainment of all others who sat for the examination in question. The raw mark distributions, per subject, of candidates across the past three to six examination sittings are used to develop the norm for a particular cohort. The norm then involves fitting a ranked list of candidates' raw scores to a pre-determined distribution, which is spread to fit a "bell curve", known as "normal distribution" in statistical terminology. The main assumption underlying the usage of norms is that for sufficiently large populations, the distribution of aptitude and intelligence does not change appreciably from year to year. The current sitting cohort is assumed to have been exposed to similar conditions, such as curriculum coverage and teaching aptitudes; and the examination questions papers are comparable in terms of structure, content and cognitive demand. Norms are also used to detect variability in candidate performance that may be a result of factors that are not examination-related, learners' subject knowledge, abilities or aptitude.

Why comparability is important

Comparability declarations claim that there exists equivalence in the standards for the same qualification in different years and sometimes offered by different examination authorities. The South African context relates to qualifications such as the National Senior Certificate (NSC), administered by the Department of Basic Education (DBE), the Independent Examinations Board (IEB) and the South African Comprehensive Assessment institute (SACAI), and quality assured by the same body, Umalusi. This, further, includes comparability of examinations within each assessment body across different years. The first assumption indicates that although the mandates of these assessment body differ in terms of magnitude of the population they serve and different socio-economic backgrounds, the currency of qualification remains the same. The major benefits for comparable standards are that candidates from different assessment bodies are viewed in equal terms for opportunities into higher education institutions and the transition to the working world.

Conclusions

The debate about standards in matric examinations has become the January ritual by media and the public in general. The scrutiny is often polarised by what is termed "lowered standards" of the matric qualification. Umalusi's interest in the matric results is to ensure that the candidates' raw mark, normal distributions conform to the norms of previous examination sittings; hence, the mandated function is to standardise the raw marks by either adjusting upwards or downwards, or by retaining the raw marks.



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