



# Standardisation of External Examination Marks

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# Empowering legislation

- Standardisation of external exam marks started during the Joint Matriculation Board (JMB) era; moved to the South African Certification Council (SAFCERT) era and it is now performed by Umalusi.
- Umalusi draws its mandate of standardising external exam marks from Section 17A(5) of the General and Further Education and Training Quality Assurance (GENFETQA) Act:
  - (4) “The Council **may adjust raw marks** during the standardisation process.” (own emphasis)

# Standardisation and its necessity

- Standardisation of marks is a practice used all over the world.
- In Cambridge-rooted systems, the process is called “grading”, and it entails moving grade boundaries from year-to-year.
- In South Africa, standardisation is done through statistical adjustment of **mark distribution on the guidance of the norm**, to mitigate the effects on performance, of factors other than candidates' ability and knowledge.
- Standardisation process assumes that there has not been significant changes in the current year relative to previous years.
- Standardisation is necessary in order to reduce the variability of marks from year-to-year. Some of the causes of variability of marks are:
  - disruptions of exams, leakages of exam papers, group copying, too much difficult or too much easy exam papers, leniency or rigidity in marking, changes in cohort profiles, etc.

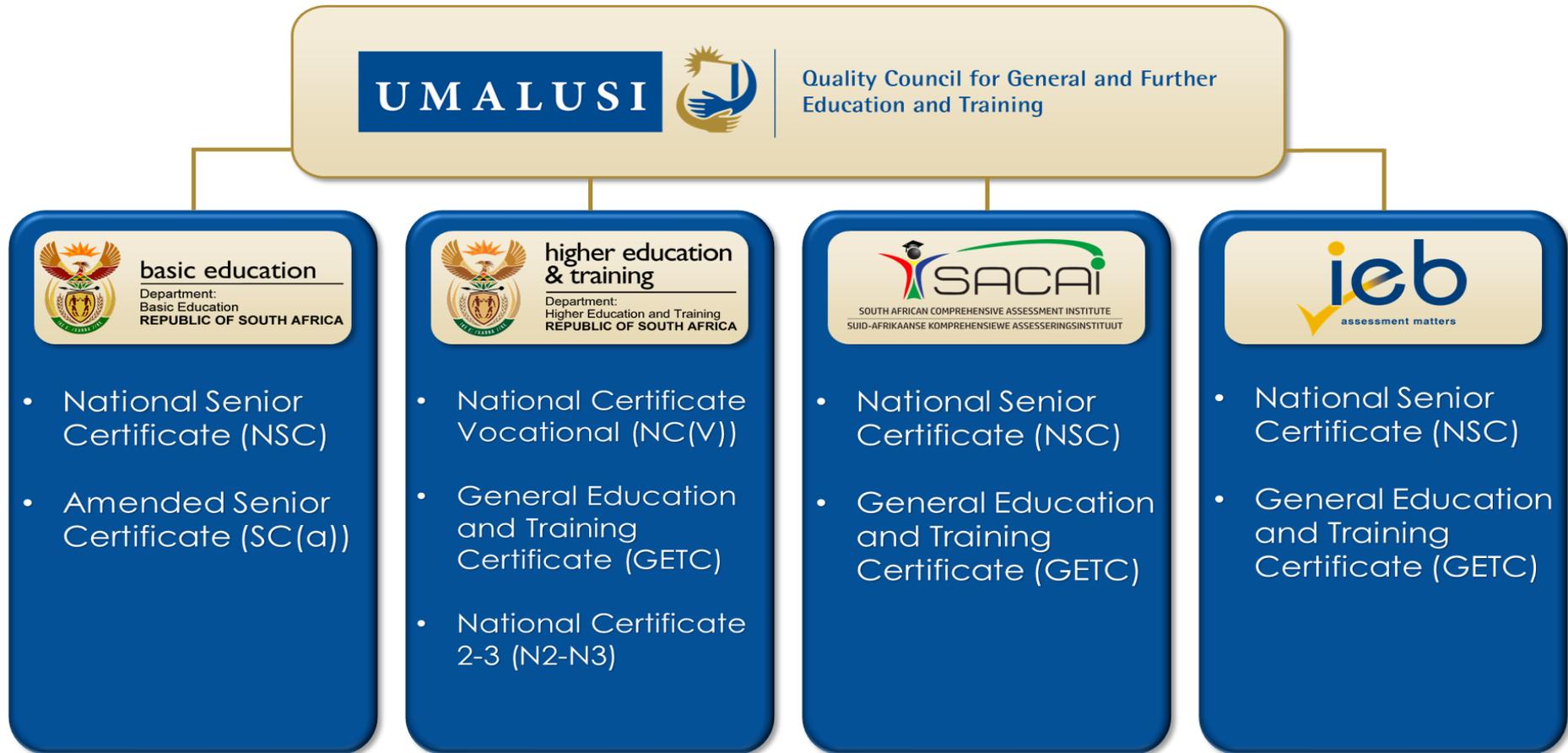
# The value of standardisation

- The value of standardisation lies in the fact that:
  - it mitigates the impact of factors other than the learners' subject knowledge, abilities and aptitude on performance,
  - it addresses any variation in the standard of the question papers, which may occur despite careful moderation processes, as well as variations in the standard of marking that may occur from year to year, and
  - it ensures comparability and consistency in learner performance across years.

# Who standardises exam marks?

- The role of standardisation of exam marks is assigned to the Assessment Standards Committee (ASC) of Umalusi Council.
- The members of the ASC are not employees of Umalusi. Rather, they are drawn from various universities and research institutions. The ASC members:
  - are independent experts in different subject fields such as education, business sciences, mathematics, natural sciences, statistics, languages, etcetera and
  - have years of experience working in South Africa's general and further education and training (schools, colleges and adult education and training) and higher education systems - are some of the finest minds in our country.
- In standardising exam marks, the ASC relies on well-established principles and approaches, which are a matter of public knowledge.

# The examinations standardised



- In standardising the external exam marks of the public and private assessment bodies, Umalusi uses the **same principles and approaches**.
- That is because (a) the exams are based on the **same curriculum** and (b) that candidates receive the **same certificate** from Umalusi.

# The standardised components

- The qualifications on the GFETQSF have two prescribed components:
  - internal component: set and assessed at school/site level
  - external component: set and internally moderated by assessment bodies and externally moderated by Umalusi
- The external component is what the ASC standardises

<b>Qualification</b>	<b>Internal</b>	<b>External</b>	<b>Total</b>
NSC - Subjects without PAT	25%	75%	100%
NSC - Subjects with PAT	50%	50%	100%
NC(V) - Fundamentals	25%	75%	100%
NC(V) - Core Subjects	50%	50%	100%
NATED Report 190/191	40%	60%	100%
GETC: ABET	50%	50%	100%

# What is the norm?

- It is necessary first to talk about the norm before focusing on the standardisation principles.
- The “norm” is defined as
  - the average of the total raw marks of the immediate past 5 comparator examination sittings, excluding outliers, in all qualifications, except for the NATED programme in which case the immediate past 6 consecutive examination sittings are considered.
- In cases where there are fewer than the stipulated number of examination sittings, the norm should be based on a minimum of three examination sittings.

# Umalusi standardisation principles (i)

- 1) In general, adjustments should not exceed 10 percentage points or the historical average (norm). That is:
  - a) No adjusted mark should be beyond the norm or historical average
  - b) No adjustment should exceed 10 percentage points
    - For example, if the **raw mean is 41%** and the **norm mean is 50%**, the final adjusted mark cannot exceed 50% (the maximum allowable is 9 percentage points).
- 2) In exceptional circumstances, adjustments in excess of 10% (10 percentage points) may be considered and recommended to EXCO of Council for approval. This principle should be read in conjunction with Principle 1 (a) above.
- 3) In the case of the individual candidate, the adjustment effected should not exceed 50% of the raw mark obtained by the candidate. This principle should be read in conjunction with Principle 1 above.
  - For example, if a candidate obtains **80 marks** out of 300 (26.6%), his/her final marks after adjustments cannot be more than 120 marks or less than 40 marks.

# Umalusi standardisation principles (ii)

4) If the distribution of the raw marks is below the historical average (norm), the marks may be adjusted upwards, subject to the limitations above.

5) If the distribution of the raw marks is above the historical average (norm), the marks may be adjusted downwards, subject to the limitations above.

6) The computer adjusted mark is calculated based on the above principles.

7) For those subjects with a practical component of 50%, raw marks could be accepted, unless there is strong evidence for an adjustment.

# What informs ASC decisions?

- The ASC spends considerable amount of time carefully analysing numerical and narrative reports to look for evidence to serve as the basis for its decisions.
- Amongst the reports considered by the ASC are:
  - Evidence-Based Reports (assessment bodies)
  - Statistical information (ogive graphs, distribution tables, pairs analyses, etc - assessment bodies)
  - Reports of internal moderators (assessment bodies)
  - Reports of external moderators (Umalusi)
  - Reports of marking verifiers (Umalusi)
  - Reports of chief markers (assessment bodies)
  - Reports from Post Exam Analyses – NSC (Umalusi)
  - Any other relevant reports

# Questions of interest for the ASC

- The ASC is interested in whether there has been any significant, material changes to the quality and standard of the current exam relative to previous ones? The discussion from subject-to-subject centres around changes regarding the:
  - i. Format and structure of the exam. For example, Business Studies changed from 1 to 2 papers & increased its duration by 1 hour, but the marks remained 300.
  - ii. Content / topic specifications. To illustrate the point:
    - Geography P1 was out of 225 marks for 3 hrs & P2 out of 75 marks for 1.5 hrs. That has now changed to each of P1 & P2 counting 150 marks for 3 hrs.
    - In Mathematics the weighting of P2 content changed: Trigonometry counts 50% while Euclidean Geometry is 40%.
  - iii. Distribution of questions / marks across cognitive levels. **Cognitive level denoted the level of engagement of a question / question paper.** For example, a paper with a 30/40/30 cognitive demand split is not as engaging as the 30/30/40 one.
  - iv. Distribution of questions / marks across difficulty levels. **Difficulty level refers to how easy or difficult a question paper is.** E.g. a question paper with a 40/40/20 weighting is not as difficult / hard as the one with a weighting of 20/40/40.
  - v. Overall standard and degree of comparability of the current exam with previous ones.
- Taking the above into account, the key question asked is what is the likely overall effect of the changes on candidates' performance?



RAW

Candidates Enrolled = 241243 Outstanding = 756 Absent = 7490 Irregular = 0 % Standardise = 99,68

### Statistics

Percentage Distribution	1C 00-09	1B 10-19	1A 20-29	2 30-39	3 40-49	4 50-59	5 60-69	6 70-79	7B 80-89	7A 90-100	Mean	Median	Cand.
Norm	18,48	18,86	18,59	15,99	11,54	7,48	4,62	2,77	1,35	0,33	29,57	26,67	1230515
Cumulative Norm	18,48	37,33	55,92	71,92	83,46	90,93	95,55	98,32	99,67	100,00			
Rawmark 201511	23,13	21,71	18,61	13,56	8,99	5,85	3,77	2,47	1,43	0,47	26,80	22,33	263706
Cumulative Rawmark 201511	23,13	44,84	63,45	77,00	85,99	91,85	95,62	98,09	99,53	100,00			
Adjusted mark 201511	16,60	21,27	18,68	15,26	10,52	7,48	4,84	3,17	1,71	0,47	30,08	26,00	263706
Cumulative Adjusted mark 2015	16,60	37,86	56,55	71,80	82,33	89,81	94,65	97,82	99,53	100,00			
Rawmark 201611	23,21	20,35	18,31	14,00	9,62	6,46	4,05	2,49	1,24	0,27	27,01	23,00	265667
Cumulative Rawmark 201611	23,21	43,56	61,87	75,88	85,50	91,96	96,01	98,49	99,73	100,00			
Adjusted mark 201611	16,11	19,52	18,72	16,00	11,07	7,83	5,21	3,33	1,74	0,45	30,79	27,00	265667
Cumulative Adjusted mark 2016	16,11	35,63	54,36	70,36	81,44	89,27	94,49	97,81	99,55	100,00			
Rawmark 201711	18,44	17,84	16,95	15,36	12,10	8,44	5,69	3,35	1,51	0,32	30,81	28,00	245453
Cumulative Rawmark 201711	18,44	36,28	53,24	68,59	80,69	89,13	94,82	98,17	99,68	100,00			
Adjusted mark 201711	18,44	17,84	16,95	15,36	12,10	8,44	5,69	3,35	1,51	0,32	30,81	28,00	245453
Cumulative Adjusted mark 2017	18,44	36,28	53,24	68,59	80,69	89,13	94,82	98,17	99,68	100,00			
Rawmark 201811	12,95	15,66	19,36	19,67	14,06	8,41	5,04	3,10	1,44	0,30	32,57	30,67	233726
Cumulative Rawmark 201811	12,95	28,61	47,98	67,65	81,71	90,12	95,16	98,26	99,70	100,00			
Adjusted mark 201811	12,95	15,66	19,36	19,67	14,06	8,41	5,04	3,10	1,44	0,30	32,57	30,67	233726
Cumulative Adjusted mark 2018	12,95	28,61	47,98	67,65	81,71	90,12	95,16	98,26	99,70	100,00			
Rawmark 201911	13,13	18,18	19,89	18,11	13,59	8,57	4,68	2,46	1,13	0,26	31,38	29,33	221963
Cumulative Rawmark 201911	13,13	31,31	51,21	69,32	82,90	91,48	96,16	98,62	99,74	100,00			
Adjusted mark 201911	13,13	18,18	19,89	18,11	13,59	8,57	4,68	2,46	1,13	0,26	31,38	29,33	221963
Cumulative Adjusted mark 2019	13,13	31,31	51,21	69,32	82,90	91,48	96,16	98,62	99,74	100,00			
Rawmark 202011	16,28	16,69	18,90	16,52	12,22	8,34	5,44	3,28	1,84	0,49	31,65	29,00	232997
Cumulative Rawmark 202011	16,28	32,97	51,87	68,39	80,61	88,94	94,39	97,66	99,51	100,00			
Adjusted mark 202011	18,39	18,95	18,72	16,07	11,34	7,53	4,58	2,71	1,38	0,33	29,55	26,67	232997
Cumulative Adjusted mark 2020	18,39	37,34	56,05	72,12	83,47	91,00	95,58	98,29	99,67	100,00			





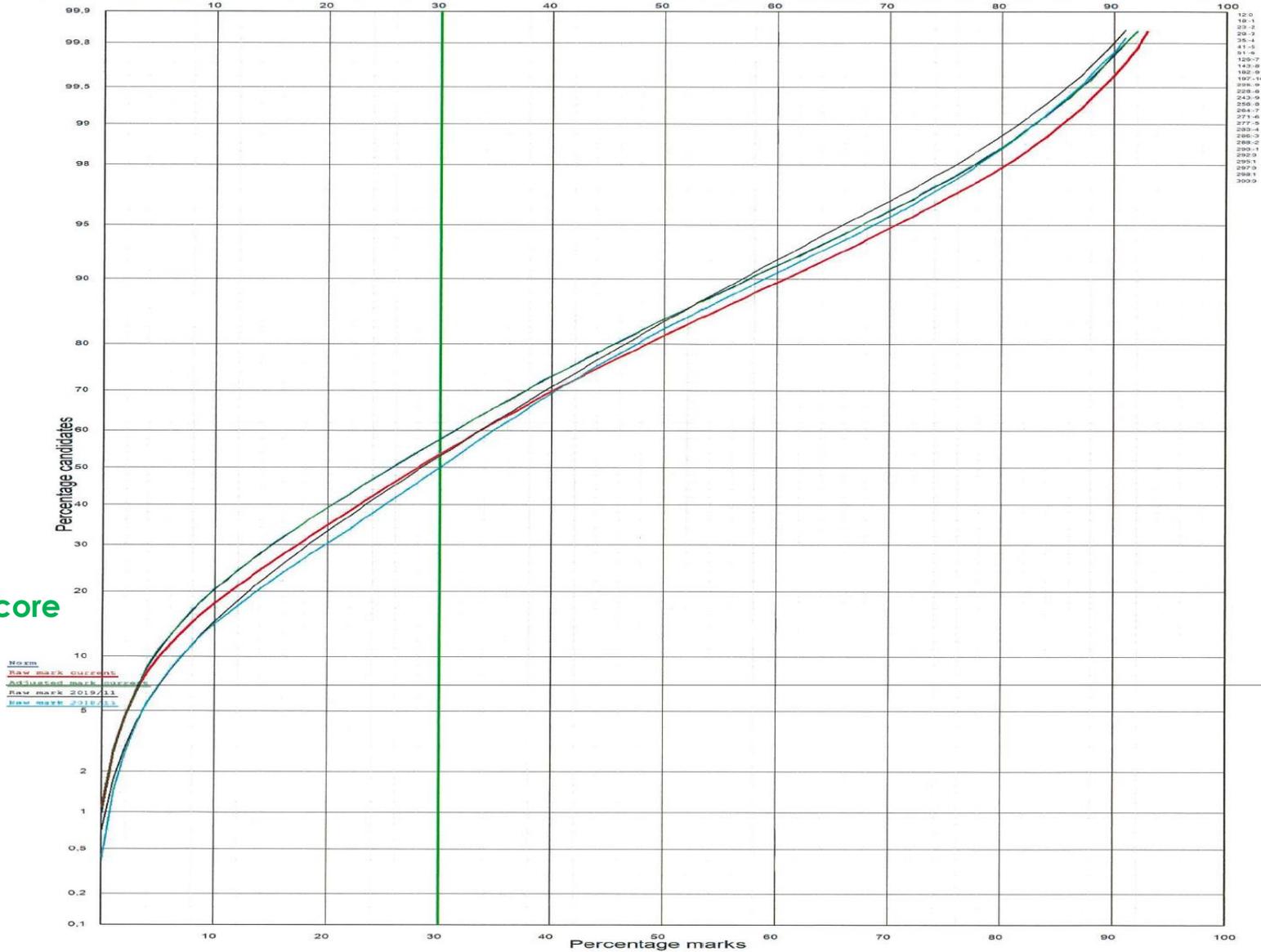
RAW

Candidates Enrolled =	241243	Outstanding =	756	Absent =	7490	Irregular =	0	% Standardise =	99,68
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Number of candidates in norm : 1230515

Number of candidates in raw mark : 232997

Computer Adjustments



Blue: Norm  
Red: Raw 2020  
Green: Adjusted score  
Black: Raw 2019  
Green: Raw 2018





UPWARD

History (16351084)

Maximum mark 300

Pass mark 30

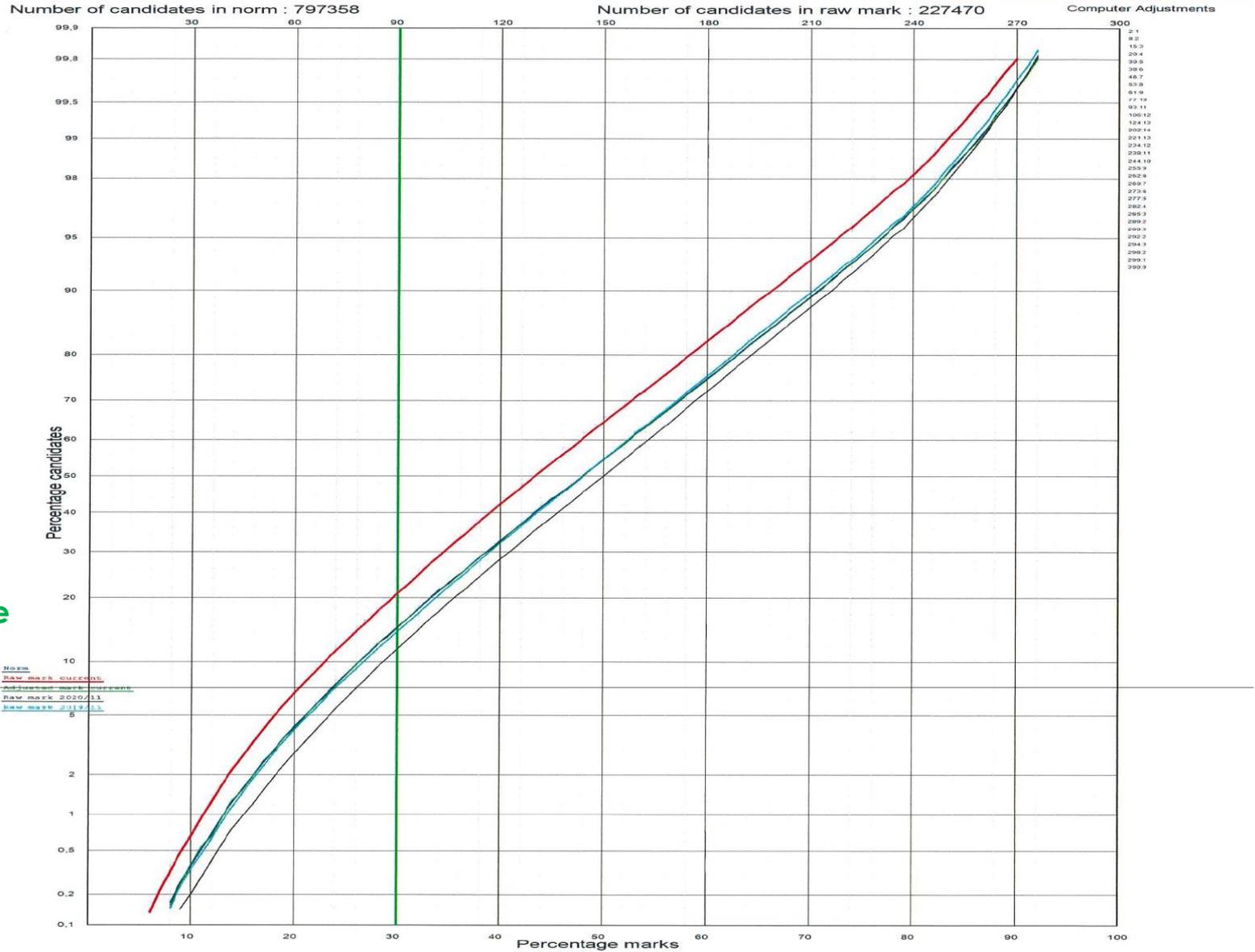
Candidates Enrolled = 234823 Outstanding = 30 Absent = 7055 Irregular = 268 % Standardise = 99,99													
Statistics													
Percentage Distribution	1C	1B	1A	2	3	4	5	6	7B	7A	Mean	Median	Cand.
	00-09	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100			
Norm	00,31	03,69	10,38	17,68	21,63	20,45	14,43	07,71	03,22	00,49	48,52	48	797358
Cumulative Norm	00,31	04	14,38	32,06	53,7	74,15	88,58	96,29	99,51	100			
Rawmark 201611	00,54	06,14	14,43	20,51	21,59	17,39	11,13	05,73	02,2	00,34	44,56	43,67	157241
Cumulative Rawmark 201611	00,54	06,68	21,1	41,62	63,21	80,6	91,73	97,46	99,66	100			
Adjusted mark 201611	00,54	06,14	14,43	20,51	21,59	17,39	11,13	05,73	02,2	00,34	44,56	43,67	157241
Cumulative Adjusted mark 2016	00,54	06,68	21,1	41,62	63,21	80,6	91,73	97,46	99,66	100			
Rawmark 201711	00,42	04,48	11,51	18,03	20,69	18,94	13,91	07,92	03,49	00,61	47,97	47,33	147628
Cumulative Rawmark 201711	00,42	04,9	16,41	34,44	55,12	74,07	87,97	95,9	99,39	100			
Adjusted mark 201711	00,48	05,23	12,83	19,97	21,35	18,07	12,38	06,65	02,6	00,43	46,09	45,33	147628
Cumulative Adjusted mark 2017	00,48	05,71	18,54	38,51	59,86	77,93	90,32	96,97	99,57	100			
Rawmark 201811	00,15	02,03	07,69	15,96	21,99	22,65	16,6	08,85	03,52	00,57	50,96	50,67	154506
Cumulative Rawmark 201811	00,15	02,18	09,87	25,83	47,82	70,46	87,06	95,92	99,43	100			
Adjusted mark 201811	00,27	03,43	10,63	18,43	22,8	20,03	13,86	07,22	02,89	00,44	48	47,33	154506
Cumulative Adjusted mark 2018	00,27	03,7	14,33	32,76	55,56	75,59	89,45	96,67	99,56	100			
Rawmark 201911	00,28	03,5	09,93	17,69	22,31	20,95	14,43	07,37	03,12	00,42	48,55	48,33	164784
Cumulative Rawmark 201911	00,28	03,78	13,71	31,4	53,71	74,66	89,09	96,46	99,58	100			
Adjusted mark 201911	00,28	03,5	09,93	17,69	22,31	20,95	14,43	07,37	03,12	00,42	48,55	48,33	164784
Cumulative Adjusted mark 2019	00,28	03,78	13,71	31,4	53,71	74,66	89,09	96,46	99,58	100			
Rawmark 202011	00,17	02,47	08,57	16,33	21,53	22,08	15,96	08,62	03,75	00,52	50,39	50,33	173199
Cumulative Rawmark 202011	00,17	02,65	11,22	27,55	49,07	71,15	87,11	95,74	99,48	100			
Adjusted mark 202011	00,17	02,47	08,57	16,33	21,53	22,08	15,96	08,62	03,75	00,52	50,39	50,33	173199
Cumulative Adjusted mark 2020	00,17	02,65	11,22	27,55	49,07	71,15	87,11	95,74	99,48	100			
Rawmark 202111	00,57	05,82	13,78	21,27	22,27	17,98	11,05	05,13	01,88	00,25	44,39	43,67	227470
Cumulative Rawmark 202111	00,57	06,39	20,17	41,43	63,71	81,68	92,73	97,86	99,75	100			
Adjusted mark 202111	00,3	03,71	10,18	17,5	21,84	20,46	14,51	07,87	03,13	00,5	48,55	48,33	227470
Cumulative Adjusted mark 2021	00,3	04,02	14,19	31,69	53,53	73,99	88,5	96,37	99,5	100			





UPWARD

Candidates Enrolled =	234823	Outstanding =	30	Absent =	7055	Irregular =	268	% Standardise =	99,99
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Blue: Norm  
Red: Raw 2020  
Green: Adjusted score  
Black: Raw 2019  
Cyan: Raw 2018



# Examples of problematic questions

- NSC - History Paper 2: Question 3.4.1 (2 marks) referred candidates to find a historical concept in Paragraph 2 instead of Paragraph 1.
- GETC- English: Questions 5(a) and 5(b) worth 4 marks required candidates to identify the underlined words and write them in full where no words were underlined.
- NSC - Mathematical Literacy Paper 2: Question 4.2.6 (6 marks) erroneously refers candidates to the year 2019 instead of 2020.
- NSC - Mathematics Paper 2: Question 5.1 (7 marks): The restriction on the values of  $x$  should have read  **$x \in (0; 270^\circ)$**  instead of  **$x \in (0; 90^\circ)$** .
- It is mistakes of this nature that creep in and go undetected until the question paper are administered that necessitate standardisation of marks.



DOWNWARD

Candidates Enrolled = 215256 Outstanding = 389 Absent = 8084 Irregular = 0 % Standardise = 99,81

**Statistics**

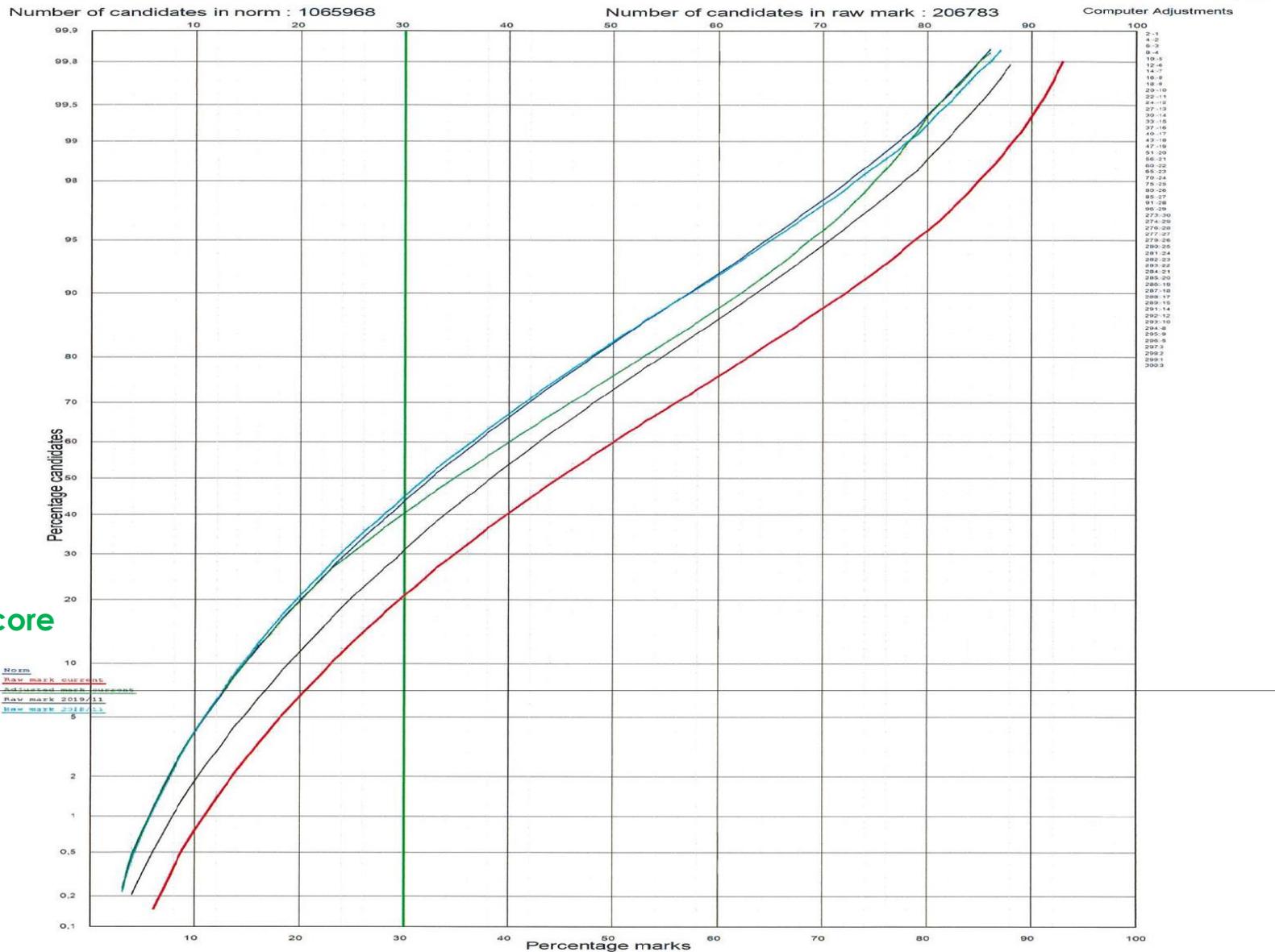
Percentage Distribution	1C 00-09	1B 10-19	1A 20-29	2 30-39	3 40-49	4 50-59	5 60-69	6 70-79	7B 80-89	7A 90-100	Mean	Median	Cand.
Norm	3,10	14,66	23,15	23,49	16,81	10,25	5,46	2,32	0,69	0,06	35,28	33,33	1065968
Cumulative Norm	3,10	17,76	40,91	64,41	81,22	91,47	96,93	99,25	99,94	100,00			
Rawmark 201511	4,21	16,59	24,72	24,28	16,25	8,57	3,88	1,24	0,25	0,01	32,88	31,33	247800
Cumulative Rawmark 201511	4,21	20,79	45,51	69,79	86,05	94,62	98,50	99,74	99,99	100,00			
Adjusted mark 201511	1,47	9,58	19,25	24,16	19,32	13,06	7,78	3,88	1,34	0,16	39,67	37,67	247800
Cumulative Adjusted mark 2015	1,47	11,05	30,29	54,46	73,78	86,84	94,62	98,50	99,84	100,00			
Rawmark 201611	4,17	17,28	24,89	23,20	15,24	8,68	4,33	1,73	0,45	0,03	33,07	31,00	234085
Cumulative Rawmark 201611	4,17	21,45	46,34	69,54	84,78	93,46	97,79	99,52	99,97	100,00			
Adjusted mark 201611	1,87	11,18	20,00	22,89	19,10	12,94	7,12	3,48	1,26	0,15	38,74	37,00	234085
Cumulative Adjusted mark 2016	1,87	13,05	33,05	55,94	75,04	87,98	95,10	98,59	99,85	100,00			
Rawmark 201711	2,09	13,97	23,33	23,47	17,13	11,08	5,85	2,42	0,62	0,05	36,03	34,00	204997
Cumulative Rawmark 201711	2,09	16,06	39,39	62,86	79,99	91,07	96,91	99,33	99,95	100,00			
Adjusted mark 201711	2,09	13,97	23,33	23,47	17,13	11,08	5,85	2,42	0,62	0,05	36,03	34,00	204997
Cumulative Adjusted mark 2017	2,09	16,06	39,39	62,86	79,99	91,07	96,91	99,33	99,95	100,00			
Rawmark 201811	3,09	15,54	23,62	23,08	16,18	9,79	5,39	2,42	0,80	0,09	34,99	32,67	192248
Cumulative Rawmark 201811	3,09	18,63	42,25	65,33	81,51	91,30	96,69	99,11	99,91	100,00			
Adjusted mark 201811	3,09	15,54	23,62	23,08	16,18	9,79	5,39	2,42	0,80	0,09	34,99	32,67	192248
Cumulative Adjusted mark 2018	3,09	18,63	42,25	65,33	81,51	91,30	96,69	99,11	99,91	100,00			
Rawmark 201911	1,39	8,69	18,23	23,27	19,81	14,01	8,64	4,28	1,54	0,15	40,72	39,00	186838
Cumulative Rawmark 201911	1,39	10,08	28,31	51,58	71,39	85,40	94,04	98,32	99,85	100,00			
Adjusted mark 201911	2,20	12,05	22,22	23,12	18,62	11,59	6,43	2,91	0,79	0,07	37,24	35,33	186838
Cumulative Adjusted mark 2019	2,20	14,25	36,46	59,59	78,20	89,80	96,22	99,14	99,93	100,00			
Rawmark 202011	0,55	5,16	13,40	19,30	19,70	16,60	12,41	8,01	4,04	0,84	47,03	45,67	206783
Cumulative Rawmark 202011	0,55	5,71	19,11	38,40	58,10	74,71	87,12	95,12	99,16	100,00			
Adjusted mark 202011	3,15	14,79	20,46	19,70	16,60	12,41	8,01	4,04	0,77	0,06	37,47	35,67	206783
Cumulative Adjusted mark 2020	3,15	17,94	38,40	58,10	74,71	87,12	95,12	99,16	99,94	100,00			





Downward

Candidates Enrolled =	215256	Outstanding =	389	Absent =	8084	Irregular =	0	% Standardise =	99,81
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Blue: Norm  
Red: Raw 2020  
Green: Adjusted score  
Black: Raw 2019  
Green: Raw 2018



# Examples of giveaway questions

- NSC – Geography Paper 1 2016): Question 3.1.1 (1 mark): Movement of people from rural areas to cities (rural-urban migration).
- NSC – Geography Paper 1 2016: Question 3.1.2 (1 mark): Movement of people from cities to rural areas (counter urbanisation).
- GETC: ABET L4 – SMME 2018): Question 3.1 (2 marks) A **(business pitch/business plan)** is a formal document that describes the future strategy and financial development of the business.
- GETC: ABET L4 – SMME 2018): Question 3.3 (2 marks): **(Formal report/Body language)** is a non-verbal communication method in which physical behaviour is used to express information.

# During standardisation process

- Umalusi's quality assurance framework is concerned with the maintenance of standards and quality of external question papers and SBA tasks from year-to-year.
- Umalusi uses a norm-referencing approach during standardisation of examination results.
- Sometimes an assessment body presents a proposal which differs from the ASC's position, in which case the assessment body is allowed to gather new evidence and to strengthen the argument that it wishes to present to the ASC in motivation for an alternative standardisation position.
- Should there be compelling reasons for the ASC to agree with the motivated proposal without violating any of the standardisation principles the ASC's initial decision gets altered. The opposite is also true,
- The decisions of the ASC are final.

# Misconceptions about standardisation

- There are some in our society who believe that
  - there is an IEB matric and DBE matric. This is incorrect. There is only one National Senior Certificate (NSC) in the country, and it is assessed by the DBE, IEB and SACAI;
  - candidates' final marks are finalised during standardisation process. That is incorrect. The truth is that adjustments are applied to marks obtained from the external component;
  - an improved pass rate is as a result of manipulation of figures by Umalusi's standardisation process. The fact is that it is not possible that Umalusi can gauge or foresee an increase or decrease in overall pass rates, or in pass categories, because subjects are standardised individually, and the process is not iterative;
  - Umalusi's task in standardising results is to implement decisions that are made elsewhere. This is patently false; Umalusi performs its quality assurance duties free from any external interference; and that
  - the mainly upward or downward adjustment of marks involves the increase or decrease of candidates' marks by the same mark from 0 – 300. This is clarified by Principle 3: "In the case of the individual candidate, the adjustment effected should not exceed 50% of the raw mark obtained by the candidate". So, the marks are adjusted in differing proportions.

# What matters is the currency

- Based on the foregoing, it is clear that at the heart of Umalusi's quality assurance mandate is the need to defend the currency of the certificates [(NSC; SC(a); NC(V); N2-N3; GETC: ABET)] that it issues to successful learners.
- Importantly, it is not within the mandate of Umalusi to concern itself with whether the overall results improve or drop. It is for that reason that in adjusting marks Umalusi relies on consistently applied and defensible standardisation principles, which are a matter of public knowledge.
- This is because HE institutions, employers, parents and learners rely on persistently applied educational principles to ascertain the reliability and validity of the results they receive.
- It is this awareness that gives such institutions and other stakeholders confidence in the results that appear on a learner's certificate of educational achievement.

# Thank You!



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