



Standardisation of marks – 2011

Overview

Standardisation is

- one of the Curriculum Council's marks adjustment processes intended to ensure fairness in the calculation of WACE course scores and scaled scores for students.
- an adjustment which supports the comparison of examination marks, from the same course/stage, but in different calendar years.
- an adjustment which supports the requirement that the combined mark for a course/stage is to reflect a 50:50 weighting of information from WACE examination marks and school marks.

Figure 1 shows where standardisation fits in the sequence of marks adjustment processes that generate WACE course scores and scaled scores for a course/stage with only a written component. For a course/stage with both written and practical examination components, the same set of processes is applied separately to both components. See 'Your Marks 2011' for more detail.

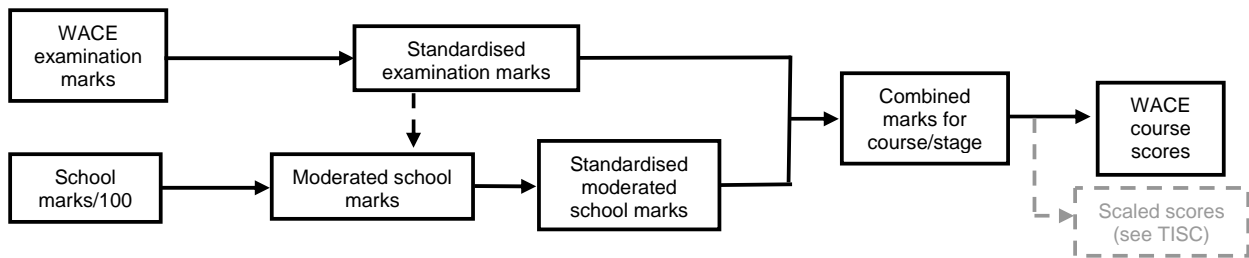


Figure 1 Marks adjustment processes

Standardisation control points

Standardisation control points are specified percentiles that are matched to pre-determined marks in the standardised distribution. For example, the 8.9th percentile has a standardised mark of 40. Similarly, the other percentiles have specified marks as shown in Table 1.

WACE examination mark	Standardised Examination mark
0 mark	0
0.2 th percentile	10
0.9 th percentile	20
2.9 th percentile	30
8.9 th percentile	40
24.0 th percentile	50
50.5 th percentile	60
77.0 th percentile	70
92.1 th percentile	80
98.1 th percentile	90
highest mark	100

Table 1 Control points for standardisation

The standardisation procedure

WACE examination marks of a course/stage are standardised using the standardisation function shown in Figure 2.

This function is established by using the following steps:

1. The percentile rank of each WACE examination mark is determined.
2. WACE examination marks that fall on specified control points are assigned the pre-determined standardised marks as shown in Table 1.
3. WACE examination marks that fall between control points are assigned standardised marks by linear interpolation between the two nearest control points.

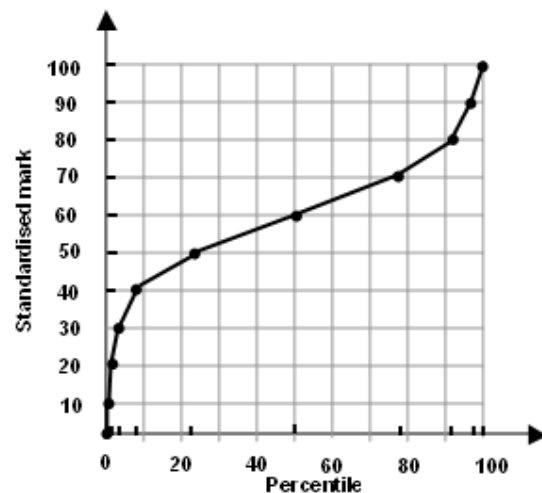


Figure 2 The standardisation function

Examiners of WACE courses aim to set papers with an average mark of 60%. However, if an examination yields high marks (an average above 60%), standardised examination marks may be lower than the examination marks, and vice versa.

Since examination marks are standardised in several linear segments, it may be found that standardised marks are greater than examination marks near the bottom of the range and less near the top, or vice versa; this is quite in order.

Standardised WACE examination marks and standardised moderated school marks are on the same scale. These two measures, rather than the 'raw' marks, should be used to compare a student's performance in the WACE examination with the student's performance at school.

The standardised distribution

The distribution of standardised examination marks resembles the distribution shown in Figure 3.

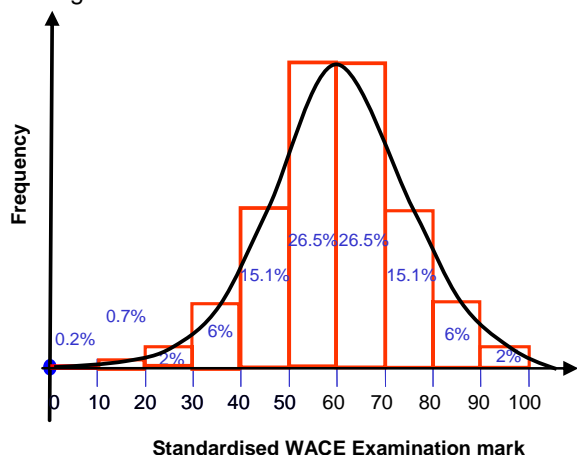


Figure 3 The standardised distribution

Figure 3 was drawn by placing the proportions of the distribution (0.2%, 0.7%, 2%, 6%, 15.1%, 26.5%, 26.5%, 15.1%, 6%, and 2%) evenly between the control points. In practice, the distribution of marks between the control points is not uniform, as depicted by the columns in Figure 3, but is more likely to be approximated by the smoothed curve.

The standardised distribution is not perfectly symmetrical. It is not a 'normal' distribution. The mean is approximately 60, and varies slightly because the distribution of the middle 53 per cent of students may be asymmetrical. Approximately 24 per cent of students in a course/stage are located below a mark of 50. In every course/stage the highest standardised mark is always 100, regardless of how difficult the examination may have been.

Example of the standardisation procedure

Consider an examination that yielded WACE examination marks falling on the control points as shown in Table 2.

Control point	WACE examination mark %	Standardised examination mark
0 mark	0	0
0.2 th percentile	1	10
0.9 th percentile	12	20
2.9 th percentile	19	30
8.9 th percentile	31	40
24.0 th percentile	41	50
50.5 th percentile	54	60
77.0 th percentile	67	70
92.1 th percentile	79	80
98.1 th percentile	88	90
highest mark	96	100

Table 2 Allocation of control points

The control points are plotted in Figure 4, with the lines for interpolation shown between each pair of adjacent control points.

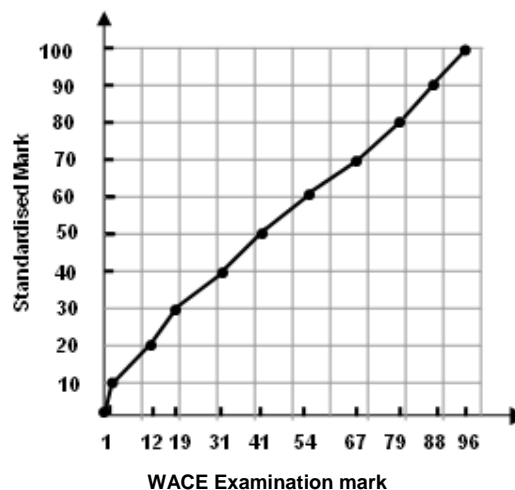


Figure 4 Use of control points to standardise marks

From the graph above, it can be seen that the highest examination mark of 96 is standardised to a mark of 100. For the next lowest control point, the 98.1th percentile, an examination mark of 88 goes to 90, and so on. The examination marks between the control points are linearly adjusted.

Useful points to remember

The benefit of the standardised distribution is that:

- it is a common scale onto which WACE examination marks and moderated school marks are adjusted
- a common scale is a required if two different measures are to be combined on a 50:50 basis or if the two measures are to be compared.

Further information

The Curriculum Council publishes a number of other information documents describing the marks adjustment processes. These can be found under 'Your marks' on the Council website at http://www.curriculum.wa.edu.au/internet/Senior_Secondary/WACE_Examinations/Your_Marks