

Statistical moderation – 2011

Overview

Statistical moderation is

- one of the marks adjustment processes used by the Curriculum Council to ensure fairness in the calculation of WACE course scores and scaled scores for students
- an essential adjustment which makes it possible to compare school marks in different schools and enables fair use of school marks when creating combined marks
- an adjustment of a school's marks which places them on the same scale as the standardised examination marks at the school.

Figure 1 shows where statistical moderation 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.

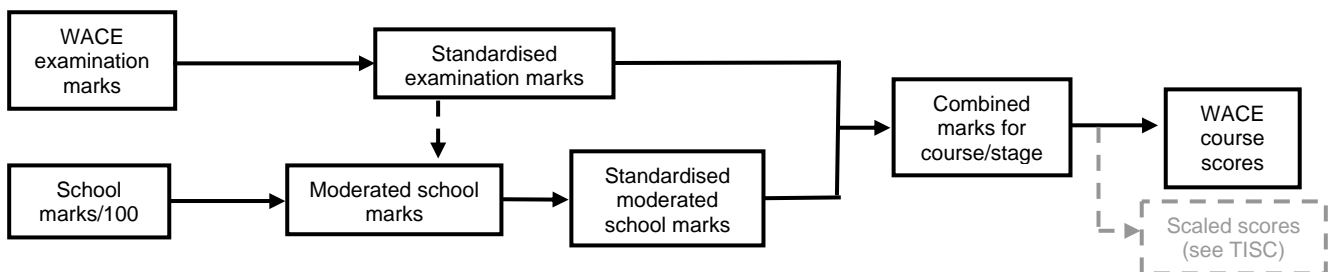


Figure 1 Marks adjustment processes

Why statistical moderation is needed

For each unit, teachers must develop a set of assessment tasks which assess students' skills and knowledge of the syllabus content, and use the range of assessment types, and their weightings, as outlined in the syllabus. Within these requirements, teachers have a high level of flexibility in the design of assessment tasks for their students. Different schools will use different sets of tests, assignments, investigations, projects and other assessment tasks for the same unit, so it cannot be assumed that school marks for a unit are on the same scale in every school.

Because of this flexibility, students at one school, where assessment tasks are easy and/or the marking of these tasks is generous, may gain an unfair advantage over students at another school, where the assessment tasks are more difficult and/or the marking is less generous.

The use of unadjusted school marks for the calculation of combined scores would almost certainly result in some students at particular schools gaining an unfair advantage over others.

The process of statistical moderation

Statistical moderation is the process whereby the set of school marks for a course/stage at each

school is adjusted so that they all are put onto the same, common scale. The common scale used in statistical moderation is the scale of the standardised examination marks for the particular stage of the course. The reason for choosing this scale is that all students who complete a Stage 2 or Stage 3 pair of units sit the Stage 2 or Stage 3 WACE examination (unless they are exempt). This examination is marked by independent panels of expert markers, so that the standardised examination marks can be used to compare students in different schools.

Statistical moderation is like currency conversion. Amounts of money in several different currencies cannot be compared until they are converted to a common currency such as the Australian dollar.

Statistical moderation in detail

The first step in statistically moderating school marks is to identify the 'moderation population' for the course/stage at each school. The moderation population comprises students who sat the examination for that course/stage.

Students who are not included in the moderation population are those who:

- do not have a mark out of 100 for each of the units and the WACE examination

- have made a successful application under the Council's sickness/misadventure procedures
- have not made a genuine attempt at the WACE examination
- have achieved examination results that are significantly poorer than could be expected on the basis of their school results.

In addition, for some Language courses (such as French, German, and Italian) students who have a background in the language are not included in the moderation population.

The second step is to use the standardised WACE examination marks of the moderation population from the school to adjust the school marks of all students at the school, including those not in the 'moderation population'. This is done by calculating the mean and the standard deviation of the standardised WACE examination marks of the moderation population at the school.

Following this, the school marks are adjusted so that their mean (average) and standard deviation are the same as the mean and standard deviation of the standardised WACE examination marks of the moderation population at the school.¹

What is the effect of statistical moderation?

The effect of statistical moderation on two sets of schools marks is shown in Figure 2 below.

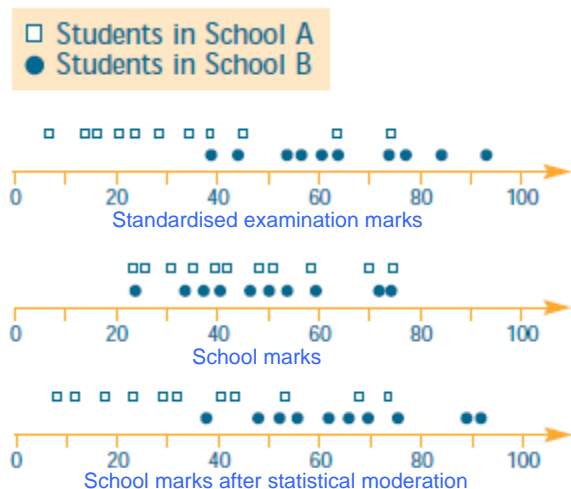


Figure 2 The effect of statistical moderation

From the standardised examination marks, it is clear that, on average, the achievement of students in School A is lower than for students in School B. However, their school marks are similar. Without adjustment, a direct numerical comparison would give an inflated assessment of students in School A, whose school assessment tasks may have been easier, or may have been marked more generously, than those at School B.

Statistical moderation adjusts school marks so that the moderated school marks more fairly reflect the relative standards of achievement of the two groups of students.

School course/stage groups with few students may form small group moderation partnerships with other schools to allow any measurement error to be divided amongst the bigger population. This makes statistical moderation more accurate.

While the adjustment of an individual's school marks for a course/stage rarely exceeds 10 marks, students should be aware that the use of un-moderated school marks to estimate a Tertiary Entrance Aggregate (TEA) or Australian Tertiary Admissions Rank (ATAR) is likely to be misleading.

Useful points to remember

Statistical moderation is a process that adjusts, onto the same scale, the school marks of students at each school. All students should expect some adjustment of their school marks.

Statistical moderation is required to ensure that school marks are used fairly for the calculation of WACE course scores and scaled scores for university admission.

Statistical moderation does not affect the letter grade (A, B, C, D, or E) awarded by a school for a course/stage.

High-achieving students will not be disadvantaged by the presence of low achievers in the class, provided that school assessment tasks are fair, based on the syllabus, and are an accurate measure of the student's achievement in the course/unit.

Procedures are in place to prevent examination absentees, students who underperform in the examination (anomalous performers), and sick candidates from adversely affecting other students in the statistical moderation process.

Apart from indicating student rankings at a school, unadjusted school marks have little meaning outside that school, and so estimates of Tertiary Entrance Aggregates or Australian Tertiary Admission Ranks should not be based on them.

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.

¹ In some cases it is necessary to make further adjustments to ensure that no moderated marks are lower than zero or greater than 100.