2001 Higher School Certificate Standards Package

Introduction

In 2001 the Board of Studies introduced, as part of the Higher School Certificate, major changes to the way in which student achievement was reported. The Board determined that student performance in the examinations from 2001 onwards would be reported in relation to standards (or levels of achievement). Specifically, Mathematics Extension 1 students receive a mark for Mathematics Extension 1 (out of a maximum possible score of 50) and a place within a performance band. Four performance bands are used with band E1 covering the range of marks from 0 to 24, band E2 covering from 25 to 34, band E3 covering from 35 to 44, and band E4 covering the range of marks from 45 to 50. Mathematics Extension 2 students receive a mark for Mathematics Extension 1 (out of a maximum possible score of 100) and a place within a performance band. Four performance bands are used with band E1 covering the range of marks from 0 to 49, band E2 covering from 50 to 69, band E3 covering from 70 to 89, and band E4 covering the range of marks from 90 to 100. With the exception of band E1, the level of achievement represented by each performance band is described in a statement summarising the knowledge and skills typically demonstrated by students who have achieved that performance band. There is no statement corresponding to band E1, which is considered to be below the minimum standard expected.

The new way of reporting student achievement is different from that previously used by the Board in that there is no predetermined proportion of students in any course who will be awarded each performance band. In this standards-referenced approach, students are awarded a particular band (and mark) if they demonstrate they have reached the performance standard associated with that band. Importantly, after the performance standards have been set, student achievement in the following years is reported in relation to the same standards. In this way, it is possible to make comparisons between the performances of students who have sat for the examinations in different years.

How the standards were set following the 2001 examinations

Stage 1

The first step in the process was to have the judges individually consider the band description statements that had been prepared and develop an image of the type of students described. By drawing on their professional experiences and understanding of their subject each judge refined these initial images and developed an understanding of the knowledge and skills typically possessed by students on the borderline between two bands.

The judges then considered each examination question in turn. Each judge recorded the mark that they believed a borderline student would receive. Each judge’s borderline marks for each question were then added to give that judge’s cut-off marks between the bands. Each judge then looked at the total cut-off marks they had created to check that they were satisfied with the outcome. The average of the borderline marks between bands E3 and E4 proposed by each judge was calculated. This value was the initial cut-off mark between band E3 and band E4. A similar process was followed for the other borderlines.
Stage 2
The next step involved the judges meeting to compare and discuss the decisions they had made individually. This process also involved them in reviewing statistical reports specially developed to support the standards-based approach being used. A random sample of students was selected and the marks they obtained on every question on the examination extracted. These data were then analysed and presented in a form that made it easy for the judges to see how students at various ability levels performed on the questions. The judges reviewed and discussed the statistical data. During these discussions they had the opportunity to modify any question cut-off marks they had previously set. If their earlier values and the values predicted by the statistical analysis were different, the judges were not required to change their values. That is, the judges had the choice of whether to change or not. For each borderline, after all changes were made, the cut-off marks proposed by the judges for each question were averaged. The averages for all questions were then added to obtain a cut-off mark for that borderline. At the end of this step a revised set of cut-off marks was available.

Stage 3
The next step in the procedure was to have the judges consider a sample of student responses that had been awarded marks equal to the cut-off marks for each question that they had established. In reviewing and discussing these responses the judges were asked to assure themselves that they demonstrated levels of performance in each question that were on the borderline between two bands. The judges then looked at responses to each question that had been awarded marks on either side of the cut-off marks to confirm their decisions.

At the conclusion of this process, the judges’ final cut-off marks were applied to the mark distribution from the examination and bands were allocated to students accordingly. This was done by setting the averages of cut-off marks that the judges had determined, to the band borderline marks of 25, 35 and 45 for Mathematics Extension 1 students, and to the band borderline marks of 50, 70 and 90 for Mathematics Extension 2 students, that are shown on the performance scale. In this way the raw examination marks awarded to students are aligned to the performance scale. For example, a student who received a raw examination mark that was between the borderline between band E2 / band E3 and the borderline between band E3 / band E4 would receive a mark between 35 and 45, or between 70 and 90, through a simple linear mapping process. In most cases, the examination mark reported will be different from the raw examination mark.

This package
A sample of student responses that were awarded the final band cut-off marks for each question established by the judges have been chosen to be included on this CD-ROM. Also provided are a copy of the 2001 examination paper and a copy of the band descriptions. A copy of the syllabus has also been provided for reference purposes. This material will form an essential part of the operation in future years by exemplifying and clarifying the standards that are applied. It is important to note that:

The samples of student examination question responses used in this standards package typify the standard of work produced by students on the borderline between performance
bands. They should not be regarded as exemplary responses, or be seen as typical of all students achieving a particular band.

In reviewing scripts at the cut-off marks in Mathematics Extension 1 it was observed that there was an acceptable level of deterioration of performance as the questions became more difficult towards the end of the paper. Consequently, some scripts will contain non-attempts in some parts, particularly in the samples included to demonstrate the band E1/2 borderline.

As some samples are faint, you will find it easier to click on the Bookmarks Tab to show/hide the navigation pane while viewing the sample.

**The Purpose of the CD-ROM**

The CD-ROM is designed to serve two purposes:

- To equip the team of judges, who will have the task of determining what examination marks will represent the borderlines between the performance bands for future examinations, with clear and concrete information showing the standards they are to apply.
- To give teachers and students a clearer understanding of the standard of work required of students in order to achieve each performance band.

**The structure of the material**

For each question in the examination the responses of up to three students, whose work was of the standard typical of students placed at the borderline between band E3 & band E4, are provided. The responses of up to three students whose work was typical of students at the borderlines between band E2 & band E3, and band E1 & band E2 have also been provided. This material is organised in such a way that if a particular question from the test paper is selected, and then a particular borderline between two bands selected, it is then possible to view, in turn, the responses of each of the students at that borderline.

**How it can be used**

By looking at each question students were required to answer and then studying the responses of the students, teachers will gain a very clear understanding of the standard of work typically produced by students at the borderline between each band. This understanding will be further enhanced when teachers re-read the band descriptions used to report student achievement and match these descriptions to their images of students at each borderline.

Teachers can look at the questions students were required to answer, study the actual responses students provided and then read the corresponding band descriptions to ascertain why the work of these students was typical of that demonstrated by students placed at the borderline between the two bands.
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