

## A Primer on Norm-Reference Based Assessment and Grading on the Curve

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Individual lecturers sometimes create grading curves when crafting various kinds of assessments (e.g., exams, essays, portfolios, performance assessments etc.). In such cases, the number of grade levels and grade quotas employed is discretionary, as the example in Table 1 shows. Lecturers 1 and 3 are both employing 5-tiered performance levels, grading their students' work from A through E, inclusive. In contrast, Lecturer 2's grading curve is limited to 4 levels; there is no E category. Further, the quotas to be awarded at each level differ by lecturer.

Table 1: Examples of Individual Lecturer's Grading Curves

Grades	Lecturer 1 (Quotas)	Lecturer 2 (Quotas)	Lecturer 3 (Quotas)
A	Top 20% of students	Top 25% of students	Top 5% of students
B	Next 30%	Next 30%	Next 10%
C	Next 30%	Next 30%	Next 25%
D	Remaining 15%	Next 15%	Next 35%
E	Remaining 5%	N/A	Remaining 25%

This example raises some important take away points about norm-based, on the curve, grading.

1. Grading on the curve is a form of relative grading. This means that in the example given, each of the three lecturers would assign their grades (in this case, letter grades: A, B, C...) in accordance with his/her predefined quotas, irrespective of the overall standard of students' work. As indicated in Table 1, 20%, 25% and 5% of students, respectively, would be awarded A grades, even if the highest scoring students performed relatively poorly, answering only 50% of the exam or assignment questions correctly. This is because when relative grading is used, results are interpreted on the basis of overall student performance.
2. Differences in quotas reflect, and are informed by, individual lecturer's expert knowledge and professional judgement and can differ. In the example given, only 5% of students in Lecturer 3's class can earn a grade A. This points to the fact that, more generally, in high performing classes, a top performing student, who might otherwise earn a grade A (if criterion-referencing and absolute grading were applied), might receive a B grade (or lower), when normative grading is applied.
3. Feedback in the form of grades alone can impact student motivation and affect in different ways. Research suggests that grade-based feedback generally impacts low performing students negatively; in contrast, it tends to induce ego-related (as distinct from effort-related) competition amongst high achievers, which can undermine

collaboration, peer-learning and teamwork. Relating this to the example provided, if students could exercise choice, one might expect them to elect to take Lecturer 2's module given that 85% would be awarded Grade C or above.

4. Whatever form of grade used, for example letters (A, B, C...), or letters and numbers combined (H1.1, H1.2...), students benefit from knowing how to interpret the information provided, even in cases where one might reasonably expect a common or intuitive understanding by students and the public.

In light of the limitations of grading on the curve, it is common practice to combine, supplement or replace norm-reference based assessment with criterion-referenced assessment. However, while attempting to mitigate the disadvantages of norm-referenced assessment, it is important also to acknowledge that there are times when ranking student performance is required – for instance, when students are competing for limited places on a programme or for elite bursaries.

**Related documents of potential interest include:**

A Primer on Differences between Norm-reference based and Criterion-referenced Assessment

A Primer on Criterion-Referenced Assessments and Rubrics

A Primer on Performance Standards, Cut Scores and Weights

An Example of a Weighted Rubric

A PowerPoint on Rubrics.