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**Title** Investigating marking mindset as part of a learning gain project

**Session** New Evidence on Learning Gain (Rogaten)  
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## **Investigating marking mindset as part of a learning gain project**

### **The project and methods**

The student marks strand of the Learning Gain project looks at how student progress is expressed in the award of marks. At UEA, a percentage system is used for the award of marks on taught programmes, with the marks awarded for individual pieces of assessment aggregated first at module level and then by year, with a set algorithm for the conversion into a final percentage, which feeds a calculation of Higher Degree Classification (HDC) against the traditional groups of first class, upper second class, lower second class, third class and fail. In addition, we have recently decided to add a Grade Point Average (GPA) calculation to the student final degree transcript as a supplement to the HDC.

This way of expressing student progress and achievement is common throughout UK HE, although there are many differences in the way in which marks are awarded and their overall impact on an individual student's outcome. It is tempting to see this process as a systematic way of converting student performance into an outcome that can be expressed to all, however, there are a number of reasons why this system could be regarded as problematic for the purposes of comparing student outcomes, both within and between institutions.

Higher education institutions take different approaches to algorithms to calculate outcomes and regulations vary on issues such as whether a student is required to pass all their modules. Even with mark schemes and guidance, there are significant differences in the numbers of and types of assessments undertaken by students (see, e.g. Pokorny, 2016; Gibbs, 2010). Furthermore, even with institution-wide scales and frameworks to guide the award of marks for assessments, it is inevitable that there will be elements of disciplinary marking

cultures which can make comparison of marks across an institution complex (Sambell et al., 2013).

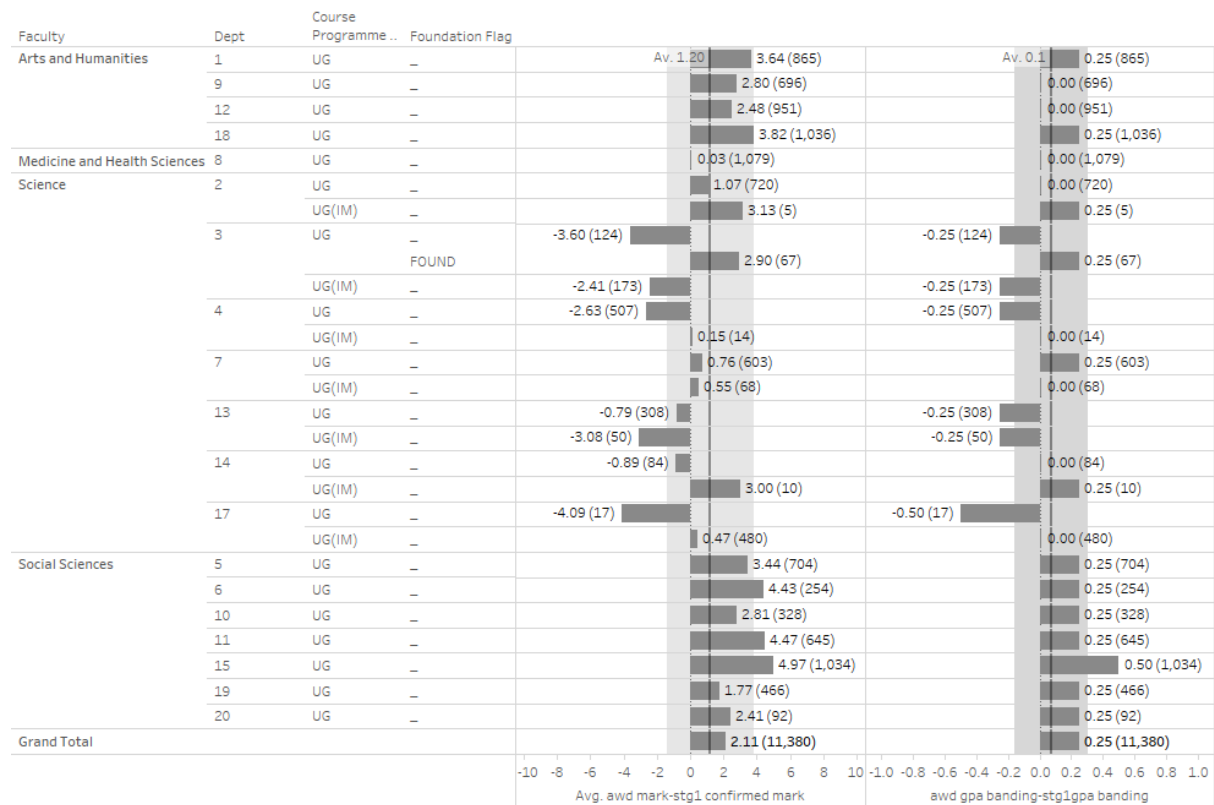
At UEA there are differences between disciplines in the number of compulsory credits and optional credits that students have to complete each academic year. For example, in Chemistry at an undergraduate level the students have more compulsory credits and fewer optional credits than do students in Humanities. There is also variation in the types of assessment undertaken.

## **Findings**

Our approach to using student marks to calculate learning gain compared a standard measure of actual percentage marks awarded at two points in time. The study looked at undergraduate student marks across all Schools of study across the University. This approach created 25 groups, classifying Integrated Masters courses and degrees with foundation years in science schools separately. We compared the average mark per student cohort, first by School and then by route (standard, with foundation year, or, with integrated master year). We calculated an average mark using the last 5 years of student cohorts' marks at the end of Year 1 and compared them to the average mark at the end of Year 3. We then converted this to a raw GPA and used an amended form of the HEA GPA scale to give each student a banded GPA.

**Figure 1: Average difference between final award mark and stage 1 mark across the four main faculties at UEA**

Av difference between final award mark and stage 1 confirmed mark (2011/2-2015/6 combined)



Key  
 Course programme  
 UG - Standard UG course  
 UG (IM) - UG Integrated Masters  
 Dept (Department) is numerically coded for anonymity

Figures in (brackets) denote base population  
 Grey reference bars highlight +1 standard deviation from the mean

Figure 1 above shows learning gain differences expressed as the difference in average marks in the first column and as the difference expressed as banded GPA in the other. The apparent range of variation in distance-travelled is significant. Expressed as marks, the difference between the cohort with the greatest distance-travelled (average student mark 5.52% higher in final year than first year) and the cohort with the lowest (average student mark 4.58% lower) is over 10%. The differences are particularly marked in the Faculty of Science,

In order to explore the hypothesis outlined above, namely that the assessment process is likely to be an important factor in explaining the differences in variation, we carried out six semi-structured interviews covering a range of topics related to the assessment and marking process and are currently in a process of undertaking more interviews.

The interview findings highlighted various inconsistencies inherent in the assessment process. These can be summarised into five different possible explanations:

1. The nature of subjects give different marking profiles, with mathematical subjects producing a different (bimodal) distribution of marks when compared to essay based subjects which tend to be more clustered.
2. The nature of the assessment design varies from course to course with some students having to produce different numbers of assessments for modules of the same credit size.
3. There is an acceptance of the subjectivity of the marking process in some subjects, especially when it comes to small differences (for example 2%) in marks awarded.
4. While a generic marking scale is applied across the university, several academics have developed more subject based marking rubrics.
5. The opportunities to discuss marking and assessment approaches between schools are limited

## **Conclusion**

The interview data show that while all subjects use a 0-100 percentage scale to award marks at undergraduate level, the practices behind the award of marks are not consistent, even though they are all working within university policies and procedures. The reasons for the differences are complex and as Bloxham (2009) extrapolates, are deeply embedded in academic cultures and practices. While interviews for the project continue, this paper gives the opportunity to consider the early findings and questions raised as a result. Given that the Teaching Excellence Framework aims to use a comparative measure of Learning Gain across subjects and institutions, exploring the cultures and practices of assessment design and marking seems vital.

## **References**

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