Bologna hub online training

Autumn 2019
Grade Conversion
Professor Anthony Vickers

This webinar will comprise of 5 topics, which are

- **A review of grading and grade distributions**

- **Grade distribution variations**

- **Grade conversion in principle - simple mathematics**

- **An example grade conversion**

- **Why is it important?**

A review of grading and grade distributions

Grading

We undertake grading on the assessment of learning that has been undertaken to achieve learning outcomes. The grading could be a simple Pass/Fail, and indeed this is used in some countries for all assessments, and probably in all countries, for some assessments. For the purpose of this webinar we will assume that grading has a range, either represented numerically (0-100 for example) or by letters (F, D,C,B,A for example). Grades are awarded in the range depending on the students success against the published grading criteria. In the UK is I assign a grade below 40 for an undergraduate module, the student will fail. If I assign above 70 the student has done very well.

All of us that grade in HEIs will assign grades to students based on a set of grading criteria and after grading all students, a grade distribution can be produced.

A review of grading and grade distributions

Grading Scales

|														
Italy	18	19	20	21	22	23	24	25	26	27	28	29	30	30 cum laude
Belgium	10	11	12	13	14	15	16	17	18	19	20			
Netherlands	6	7	8	9	10									
Spain	5,00 - 5,49	5,50 - 5,99	6,00 - 6,49	6,50 - 6,99	7,00 - 7,49	7,50 - 7,99	8,00 - 8,49	8,50 - 8,99	9,00 - 9,49	9,50- 10,0				
Norway	E	D	C	B	A									
UK	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-100		
Germany	5	6	7	8	9	10	11	12	13	14	15			

A review of grading and grade distributions

Grade distributions

As we discussed earlier, grade distributions show the distribution of grades awarded to a population of students. Given a large enough population of students these distributions tend to look like a bell shape. This is called a normal distribution. We will now look at an example. This of you who have graded will recognize the typical shape.

Grading Table - Example 1 - UK

Grading Table - Example 2 - UK
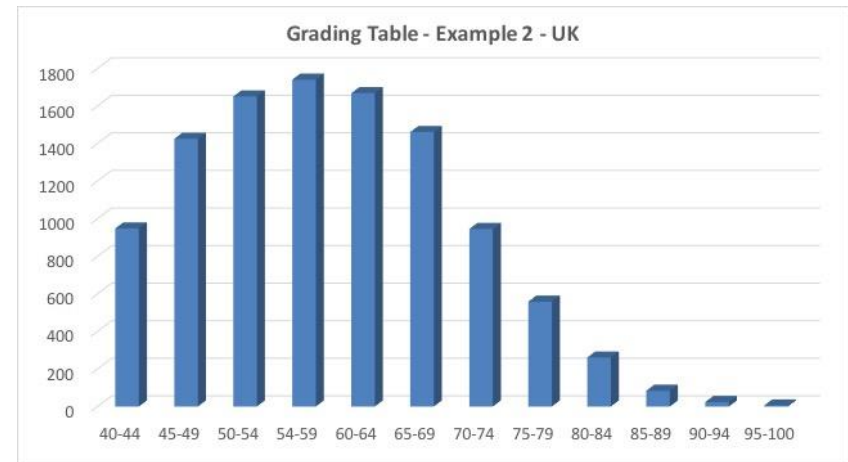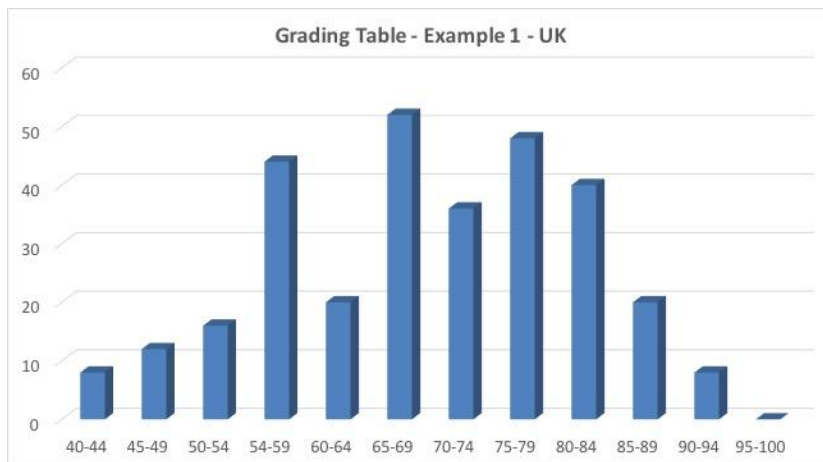
A review of grading and grade distributions

How can an Institution use grade distributions?

To monitor the distribution of student grades for quality assurance purposes.

To compare distributions for modules within a degree programme, and across degree programmes.

For grade conversion!

Grade distribution variations

Why could there be variations in grade distributions?

The distribution of student ability varies from module to module or year to year.

A module changes from one year to another.

Professors grade with varying discretion or vary their approach to an expected distribution.

The module class varies in its effectiveness in creating a community of learning.

Grade conversion in principle - simple mathematics

Initial Assumptions

The student class size is large enough to generate a grade distribution. This can be achieved be aggregating several modules to create average grade distributions for a degree, a Department, Faculty, or even University.

The home and host Institution have a similar population of students, in terms of ability.

The comparison group(s) are agreed. One method is to use ISCED codes to agree comparison groups.

Only passing grades are used to create the distribution. This is the convention in the ECTS system.

Grade conversion in principle - simple mathematics

What is the underlying mechanism to convert a grade?

Start with the two agreed grade distributions. The two distributions will be against the grade scale for each Institution.

Conversion from one scale to the other is done by comparing similar slices of the distributions. A student receiving a grade in a particular slice of one distribution should be awarded a grade in the other distribution in the same slice.

It turns out that mathematically the relationship between two different normal distributions is a linear relationship, a straight line!). It should therefore be possible to create a simple grade conversion chart.

Grade conversion in principle - simple mathematics

A simple grade conversion chart

We will draw a graph with the axes being the two grade scales between which we wish to convert.

Conversion line

Home Grade Scale

Host Grade Scale

• An example grade conversion

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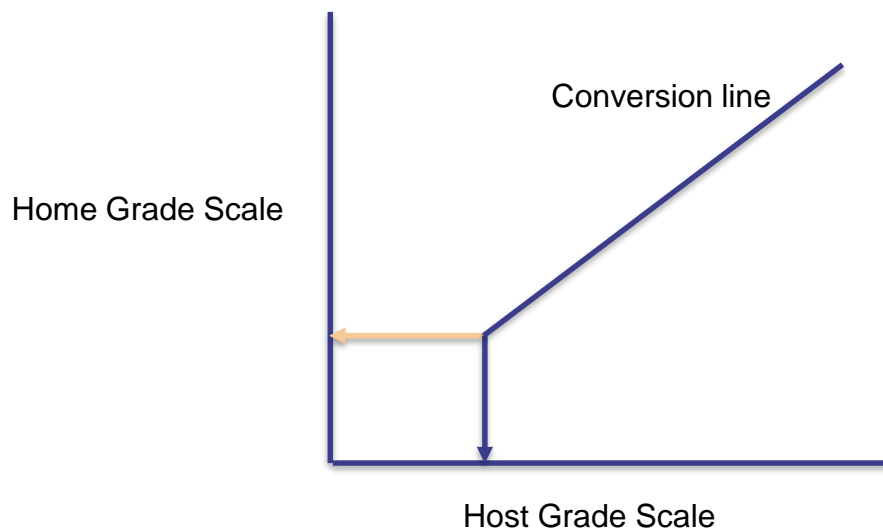
Using a more sophisticated tool?

Although the mechanism shown in the previous slide does work in most cases it is quite simplistic.

It is better to use a more sophisticated tool that actually compares the two real distributions and provides a grade conversion.

It is also better if all grade conversions use a standard tool.

The need for a standard approach led to the development of the EGRACONS grade conversion tool.

There will now follow a demonstration of that tool.

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- **An example grade conversion (10 minutes)
The EGRACONS tool demonstration**

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Summary of your Learning Outcomes

You have gained an awareness, or a refreshment, of your knowledge of grades and grade distributions.

You have gained an awareness of the reasons for variations in grade distributions.

You have gained knowledge of the simple mathematics underlying grade conversion, with any algebra or calculus!

You have gained knowledge of the EGRACONS grade conversion tool, and the plan to include the grade conversion with the EWP API tool set.

You have gained knowledge of why grade conversion is so important.

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