

INCLUSION OF FIRST YEAR RESULTS IN CALCULATION OF GPA - DELETERIOUS TO WIDENING PARTICIPATION STUDENTS?



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INTRODUCTION OF GRADE POINT AVERAGE (GPA) AT OXFORD BROOKES UNIVERSITY

- UUK and the Burgess Group exploring the potential of GPA (2007); UUK recommendations (2012)
- September 2013 GPA implemented for new entrants
- Benefits of GPA
 - complementary overall summative judgment in addition to the degree classification
 - greater international portability than the largely UK-centric degree classification
 - with its continuous scale, it offers greater granularity than the degree classification system
 - an incentive for students to engage fully with their studies from the start of their course
- Brookes GPA methodology
 - scale 1 to 4.5 for module results; capped at 4 for final overall GPA
 - based on the arithmetic mean of the summative module grade weighted by module credit value
 - including all module grades (including fail attempts; with mitigating circumstances considered at module level)
 - including the first level (level 4), no higher weighting given to level 5 and 6.

RESEARCH QUESTIONS AND METHODOLOGY

- GPA introduction provides an opportunity to examine the impact of different classification systems (in the UK) on students' performance and outcomes.
- Research questions
 - Q1: Positive impact of GPA introduction of students' module results?
 - Q2: Including first year results – does it disadvantage any group of students in particular? Especially those students that come from backgrounds without prior exposure to the nature of higher education or those returning to study (Widening Participation WP backgrounds)?
 - Q3: Analysing the differences in WP vs non-WP students using the traditional degree classification system and the newly introduced GPA – does GPA magnify any differences vs traditional degree attainment analysis?

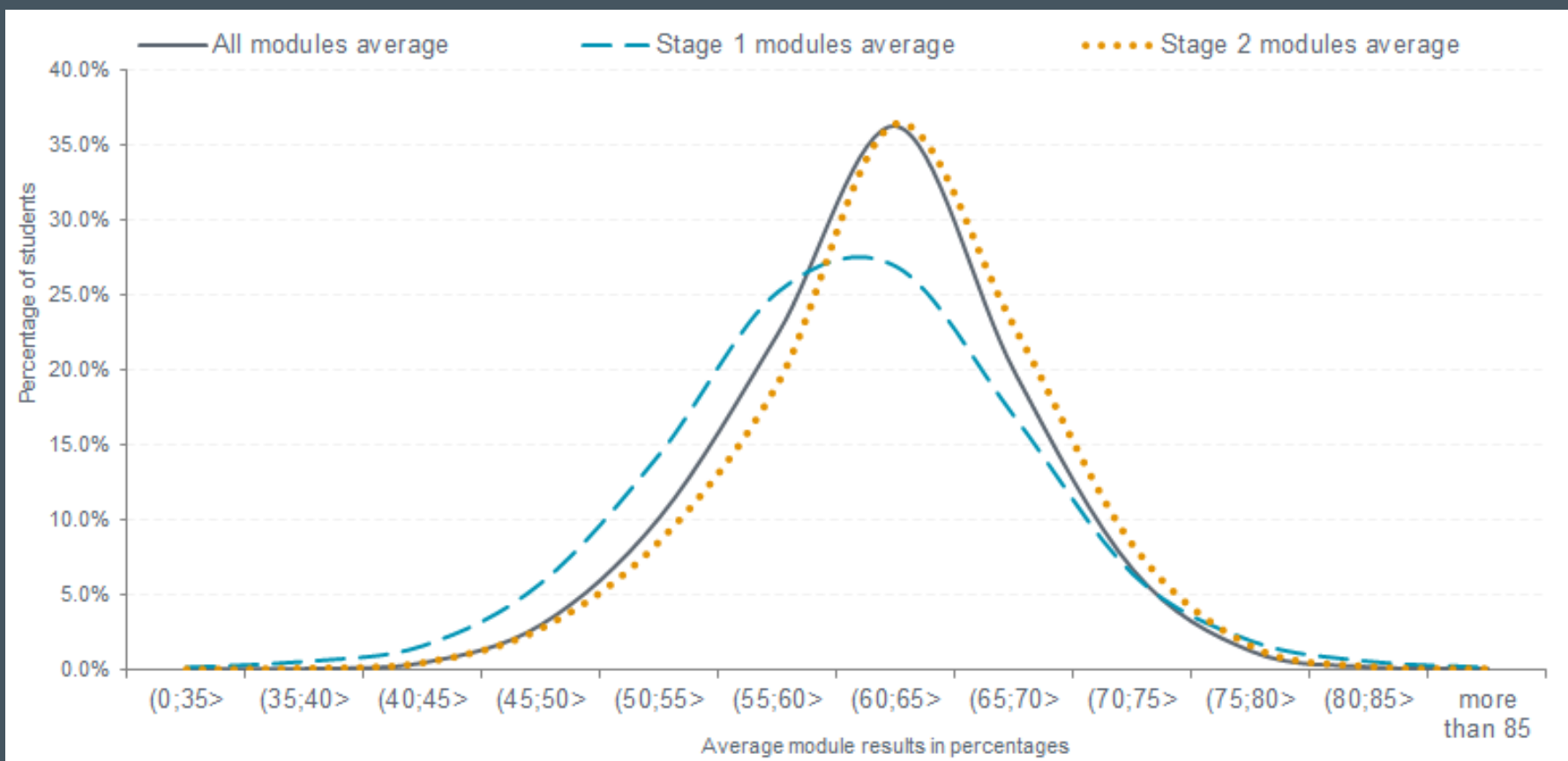
RESEARCH QUESTIONS AND METHODOLOGY

- Methodology
 - Two cohorts of students 2013/14 start year following the GPA introduction and 2012/13 cohort for comparison purposes
 - UK-domiciled, full-time, Undergraduate First degree, Stage 1 entrants (circa 3,500 students)
 - **Linear regression modelling of module results** (expressed as an average module mark)
 - **Multivariate modelling** enables the assessment of impact of certain variables (Q1: GPA introduction; Q2: ethnicity and other WP characteristics) **controlling for other factors** (e.g. subject of study, previous attainment – entry tariff)

STUDENT CHARACTERISTICS AND CONTROLLING FACTORS

Student characteristics	Controlling/other factors
Gender (male vs female)	Subject of study (18 standard JACS areas) Entry tariff GPA introduction
Ethnicity (Asian, Black, Other vs White)	
Entry age (mature without honours degree vs young)	
Disability (known disability vs no disability)	
Low participation area (POLAR Q1&2 vs Q3-5)	

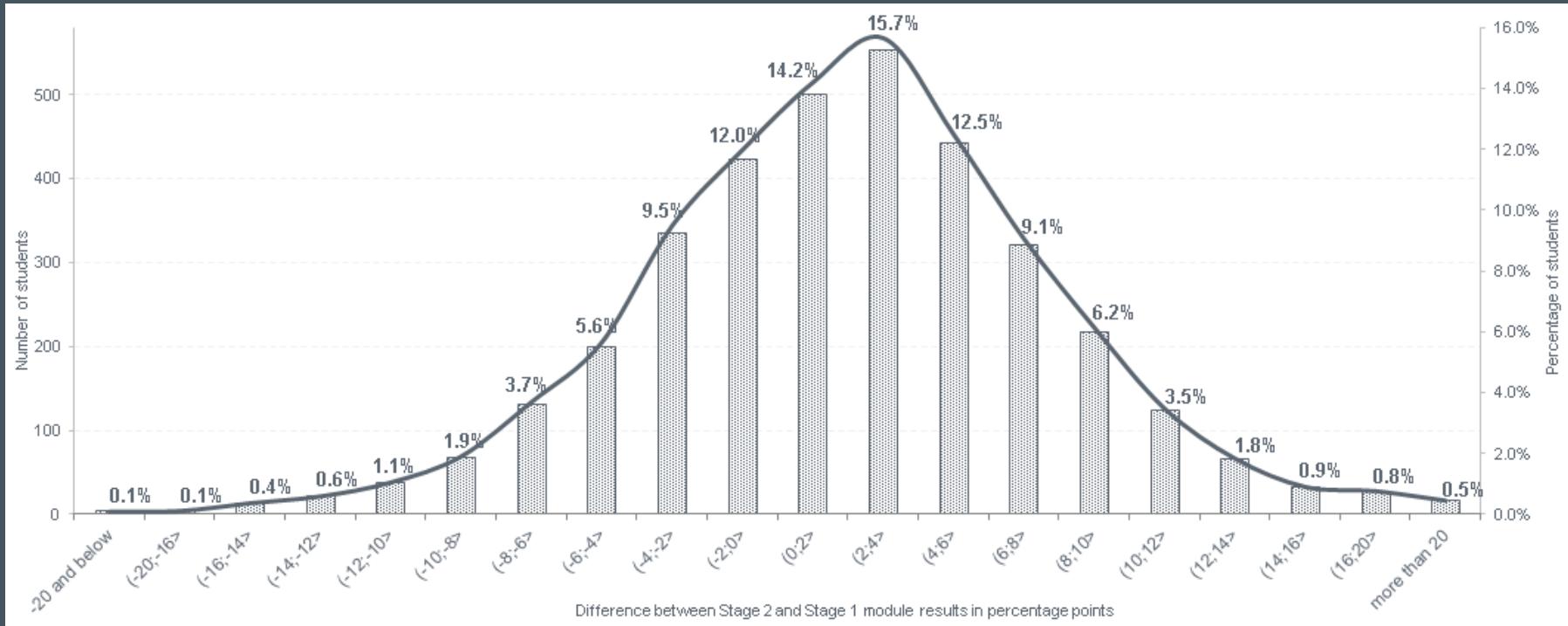
AVERAGE MODULE MARK DISTRIBUTION



IMPACT OF GPA INTRODUCTION AT OXFORD BROOKES (RESEARCH QUESTION 1)

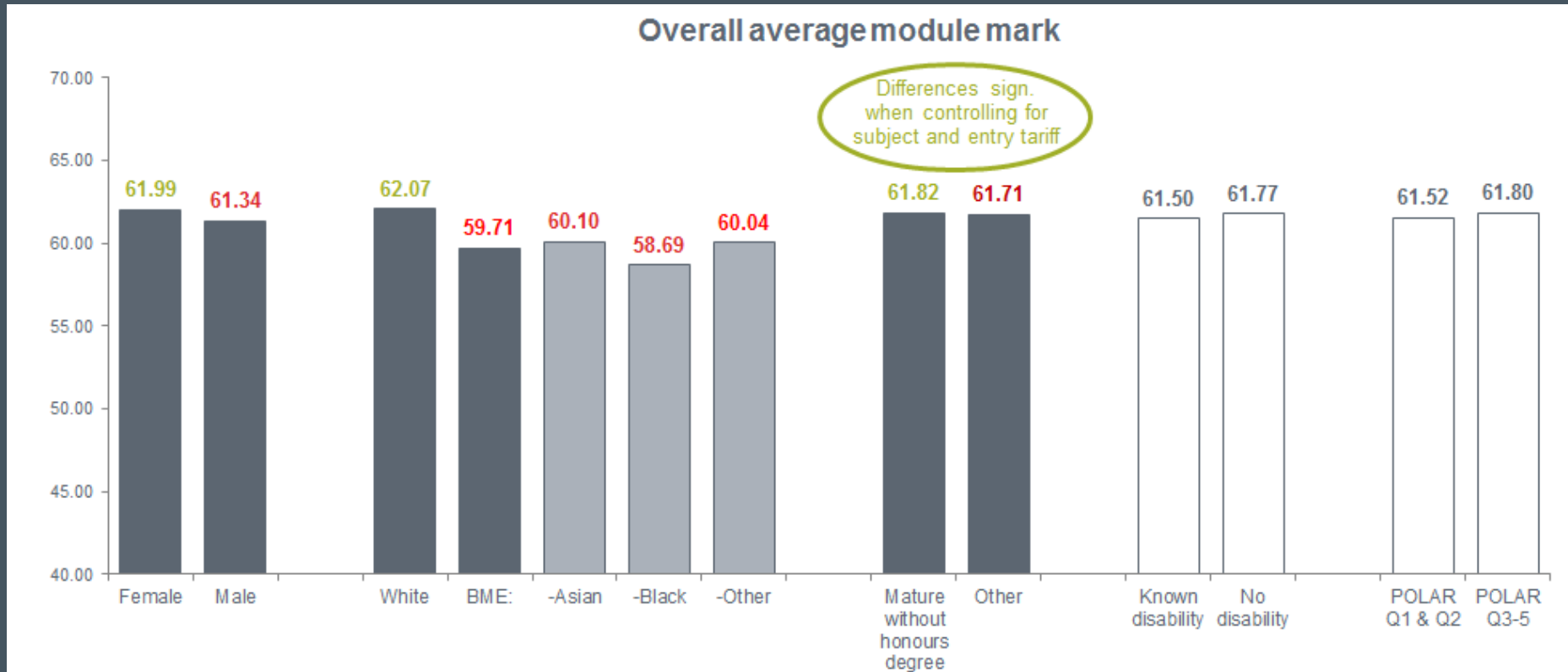
- Three separate models assessing the possible impact of the GPA introduction on – *Overall module mark*, *Stage 1 average module mark* and *Stage 2 average module mark* for two analysed cohorts of students – pre- and post-GPA introduction.
- Controlling for subject of study and entry tariff as well as for gender, ethnicity and entry age.
- Results
 - Statistically significant impact of GPA introduction on Stage 1 average module mark (increasing by 1.06 point)
 - Statistically significant impact of GPA introduction on Overall average module mark (increasing by 0.47 point)
 - No statistically significant impact of GPA introduction on Stage 2 average module mark

DIFFERENCE BETWEEN STAGE 2 AND STAGE 1 MODULE MARKS



Controlling for *subject of study* (as well as for *ethnicity* and *age*), the GPA introduction has an impact on the *difference between Stage 2 and Stage 1 results*, closing the gap between the two average marks (decreasing it by 0.8 point).

STUDENTS FROM WIDENING PARTICIPATION BACKGROUNDS AND THEIR MODULE MARKS



STUDENTS FROM WIDENING PARTICIPATION BACKGROUNDS AND THEIR MODULE MARKS

- The modelling confirms and allows us to quantify differences between different groups of students at the most granular level of average module mark.
- Three separate linear regression models: *Overall module mark*, *Stage 1 average module mark* and *Stage 2 average module mark*
- Controlling for entry tariff and subject of study, the main statistically significant differences by student characteristics are as follows:
 - **Male students have on average 0.60 lower assessment results than female students** (for all the models).
 - There are **significant differences for BME students vs their White peers** – 1.90 lower Overall module results, 1.27 point lower Stage 1 results and 2.26 points lower Stage 2 module results. The differences are the most substantial for Black vs White ethnicity group.
 - **Mature students (without honours degree) in general achieve better module results than their younger peers** – 2.20 higher Overall average module marks; 3.17 higher Stage 1 results and 1.85 point higher Stage 2 results.

DIFFERENTIAL PERFORMANCE OF WP STUDENTS AND GPA (RESEARCH QUESTION 2)

- The modelling of the *difference between Stage 2 and Stage 1 average module mark*. If the difference was bigger for WP students, it would mean that these students were particularly disadvantaged by the GPA introduction and the inclusion of the first year results.
- Controlling for the *subject of study* (entry tariff does not have a statistically significant influence):
 - **Entry age has a statistically significant influence on the difference between Stage 2 and Stage 1 module results** – decreasing it by over 1.25 point.
 - **Ethnicity also has a statistically significant influence on the difference between Stage 2 and Stage 1 results** – decreasing it by circa 1 point (0.95) . Again the difference is particularly substantial for Black vs White students.
- WP students are **not disadvantaged** by including their first year results in their GPA...
- ... **but there is gap in their Stage 2 performance that need further investigation.**

ETHNICITY, ENTRY AGE AND ATTAINMENT GPA VS TRADITIONAL DEGREE CLASSIFICATION (RESEARCH QUESTION 3)

- Average module mark – the most detailed way of looking at students' outcomes
- Modelling of difference in GPA vs differences in traditional degree attainment (% of 1st and 2.1 degree class), controlling for subject of study and entry tariff.
- Ethnicity – similar findings but of a substantially different magnitude.

Variable	GPA	Percentage of 1 st and 2.1 degrees
Ethnicity	<p>Statistically significant differences, controlling for subject and entry tariff: BME in general 0.18 lower GPA than their White peers Asian -0.15; Black -0.24 and Other -0.18</p>	<p>Statistically significant differences, controlling for subject and entry tariff: BME in general 54% less likely to get a 1st or 2.1 than White students Asian 39% less likely, Black 64% less likely, Other 55% less likely</p>

ETHNICITY, ENTRY AGE AND ATTAINMENT GPA VS TRADITIONAL DEGREE CLASSIFICATION (RESEARCH QUESTION 3)

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Variable	GPA	Percentage of 1 st and 2.1 degrees
Entry age	<p>One dimensional differences: Mature GPA 2.95 Young GPA 2.97 BUT Controlling for subject and entry tariff, mature students (without honours degree) have a GPA higher by 0.18 point than young students</p>	<p>One dimensional differences: Mature 73% of 1st or 2.1 Young 83% BUT Controlling for subject and entry tariff, no statistically significant differences between mature and young attainment</p>

DISCUSSION AND CONCLUSIONS

- Q1: The statistically significant **positive impact of the GPA introduction not only means better results in the early stages of a degree** but also a more even performance across student lifecycle at the university.
- Q2: **Inclusion of the first year of studies in the calculation of GPA was not disadvantageous to students from Widening Participation background.** For BME and Mature students it actually has a beneficial influence on their overall GPA.
- Q3: In terms of differential performance and comparison with the traditional degree classification, **the GPA system appears to magnify the performance differences at modular level to a far lesser extent than degree classification** and suggests that it is more reflective of actual performance at the module level.

DISCUSSION AND CONCLUSIONS

- The analysis confirms that **in general the WP groups perform less well overall and at two stages of their degree than their non-WP counterparts.**
- It is important to mention that it highlights a new element – **the differences in learning trajectories of WP and non-WP groups.** Non-WP students appear to make a much more substantial improvement at the second stage of their studies than WP students. **In particular it increases the gap between BME and non-BME students.**
- **Were this finding not only Oxford Brookes specific and common across HEIs, it would have a significance for the debate on the differential performance of BME and non-BME students which is important within the sector.**