

# Variability in GCSE results for schools and colleges

## 2015 to 2017



August 2017

Ofqual/17/6263

## Key points

- Some variation in year-on-year results for individual schools and colleges is normal.
- Overall, the level of variation is generally similar to last year.
- There is slightly more variation in science outcomes for all students. This is likely to be due to the decrease in year 10 entries this summer.

GCSE results in England have been relatively stable in recent years, with only very small changes in the overall percentages of students achieving grades A\* to C. However, we know that individual schools and colleges will always see variation in the proportion of students achieving particular grades from one year to the next. This can be due to many different factors, including differences in the ability mix of the students, different teaching approaches, changes in teaching staff or teaching time, and changes to qualifications.

This summer, new GCSE qualifications in English language, English literature and mathematics, graded 9-1, are being awarded for the first time. We have analysed the year-on-year variation in the percentage of students achieving grades 9 to 4 or A\* to C in these subjects. Like last year, we have also looked at the year-on-year variation in English language<sup>1</sup> across GCSE and level 1/2 certificates, as many students took these GCSE alternatives in 2015 and 2016. The removal of level 1/2 certificates from performance tables this summer has resulted in the majority of 16-year-old students taking GCSEs this summer<sup>2</sup>.

We have also analysed the year-on-year variation in the percentage of students achieving grades A\*-C in schools and colleges for 10<sup>3</sup> unreformed subjects from 2015 to 2016 and from 2016 to 2017.

For English language, English literature and mathematics we have looked only at schools and colleges with 50 or more students in both years. Graphs for 2016 to 2017 for these subjects report on changes in the percentage of students achieving grade 4 or above compared to the percentage achieving grade C or above in previous years. For all other subjects<sup>4</sup>, we have looked at

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<sup>1</sup> For legacy qualifications the analyses for 'English language' include both English and English language specifications.

<sup>2</sup> <https://www.gov.uk/government/statistics/summer-2017-exam-entries-gcses-level-1-2-certificates-as-and-a-levels-in-england>

<sup>3</sup> Science, additional science, biology, chemistry, physics, French, German, Spanish, geography and history.

<sup>4</sup> These subjects are still awarded on an A\*-C scale.

schools and colleges with 25 or more students in both years. We have also looked at the variation in English language, English literature, mathematics and science for students in year 11 only (16-year-old students).<sup>5</sup>

We have plotted the variation seen in each of several hundred schools and colleges. Each bar represents the number of schools and colleges with a particular level of variation, measured in intervals of 2.5 percentage points. For example, the bar to the left of zero represents schools that had a drop of up to 2.5 percentage points and the bar to the right of zero represents schools that had an increase of up to 2.5 percentage points. The higher the peaks in the middle, the greater the stability from one year to the next.<sup>6</sup> The mean on each graph is the average of the year-on-year difference for each school. The standard deviation (SD on the graphs) is a measure of the spread of the variation – a lower standard deviation means there is less variation overall whereas a higher standard deviation means there is more variation.

Overall variation in results is similar to last year. In these graphs the schools tend to be clustered around the middle, which means that most schools see very little year-on-year variation. There is slightly greater variation in English language results this year compared to 2015/2016, and slightly less variation in mathematics results. However, for English language the variation in results is less when comparing GCSE and level 1/2 certificate outcomes last year with GCSE outcomes this year.

More centre variability graphs can be seen using our online application <http://analytics.ofqual.gov.uk>. Here the graphs are 'interactive' such that users can explore centre variability:

- within different subjects;
- for various sizes of centres; and
- for stable and unstable cohorts.

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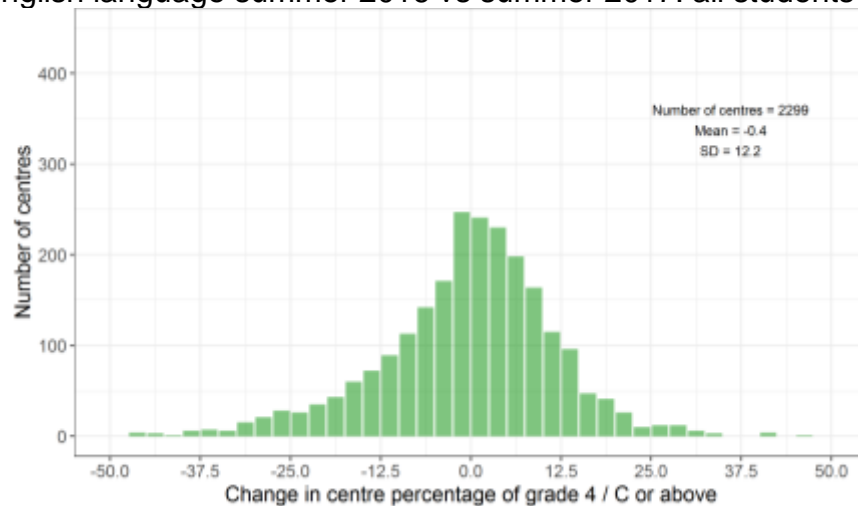
<sup>5</sup> Note that the number of schools/colleges is slightly lower in the year 11 only graphs because we have only included schools and colleges with 50/25 or more year 11 students.

<sup>6</sup> Note that, although the same scales are used for the y axis on each of the graphs within a subject, the scales do vary between subjects.

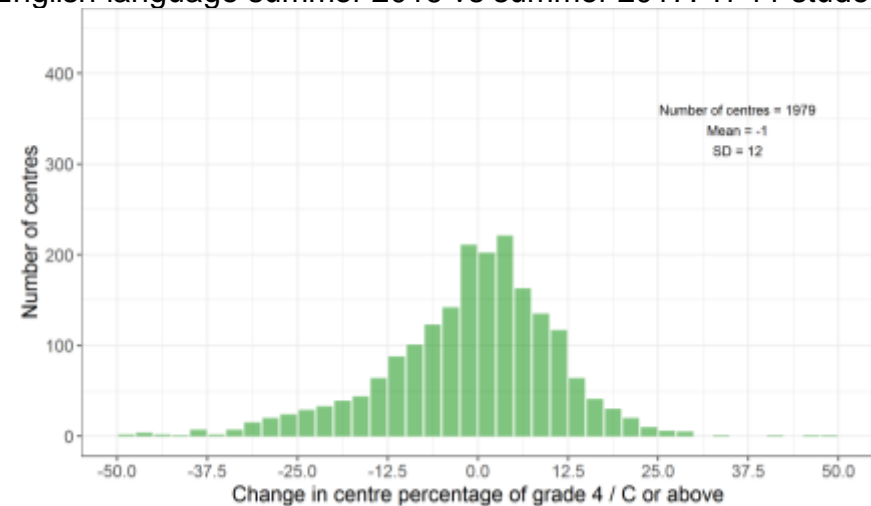
## English language

There is slightly more variability in English language results this year than last year, when considering all students or year 11 students. This is illustrated by the very small increase in the standard deviations in 2016/2017 compared to 2015/2016. The increase in variability could be a result of new specifications being awarded in these subjects this summer. The average (mean) difference for all schools' and colleges' outcomes is lower in 2016/2017 compared to 2015/2016 though.

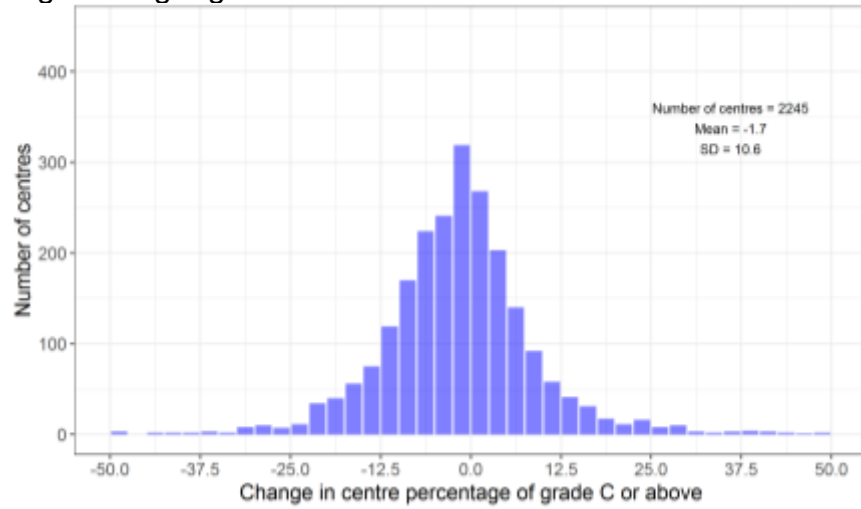
English language summer 2016 vs summer 2017: all students



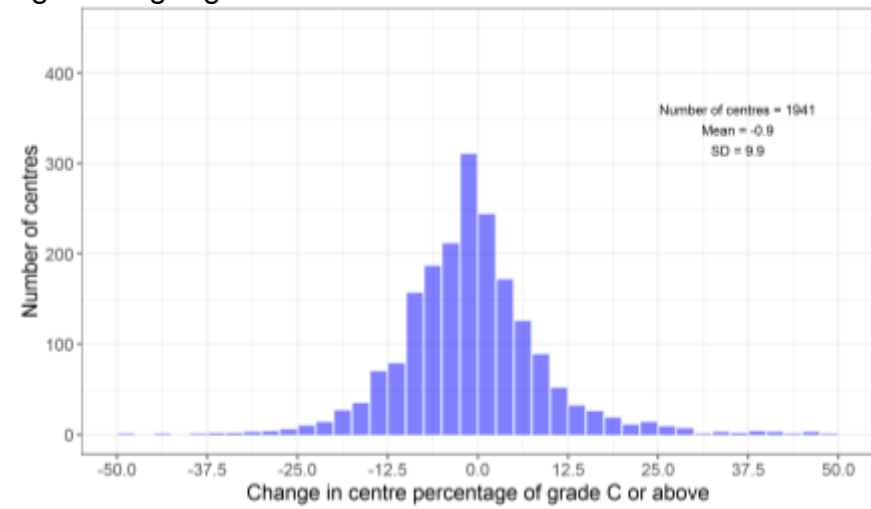
English language summer 2016 vs summer 2017: Yr 11 students



English language summer 2015 vs summer 2016: all students

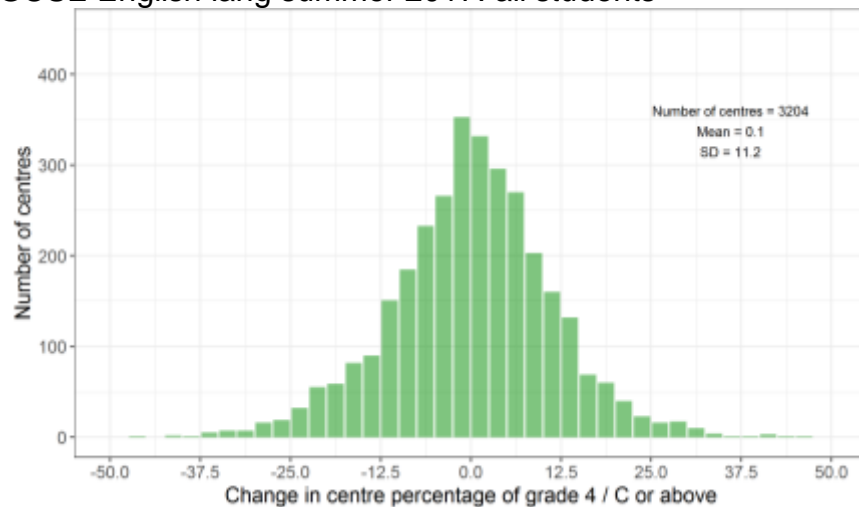


English language summer 2015 vs summer 2016: Yr 11 students

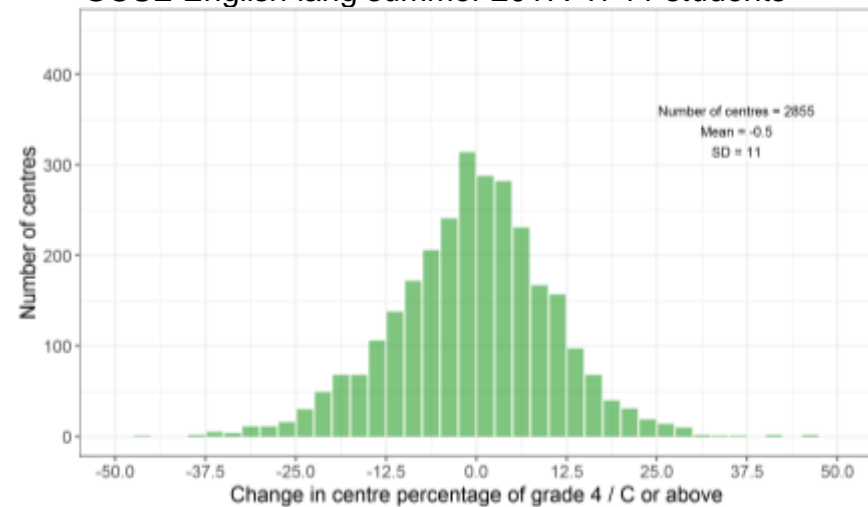


In 2015 and 2016, students taking level 1/2 certificates (GCSE alternatives) in English/English language made up around one third<sup>7</sup> of the cohort in this subject. This year, level 1/2 certificates no longer count in performance tables and the majority of 16-year-old students took GCSE qualifications in English language. The graphs below show the year-on-year variability in results for GCSE and level 1/2 certificate outcomes combined and students taking GCSE English language in 2017. These graphs show that for the overall cohort there is slightly less variability than when considering the GCSE only outcomes.

GCSE & level 1/2 English lang summer 2016 vs GCSE English lang summer 2017: all students



GCSE & level 1/2 English lang summer 2016 vs GCSE English lang summer 2017: Yr 11 students

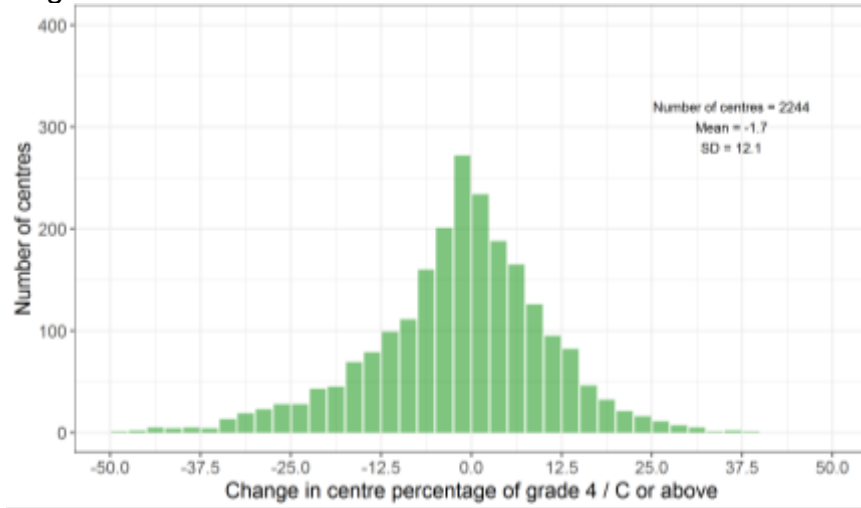


<sup>7</sup> <https://www.gov.uk/government/statistics/summer-2016-exam-entries-gcses-level-1-2-certificates-as-and-a-levels-in-england>

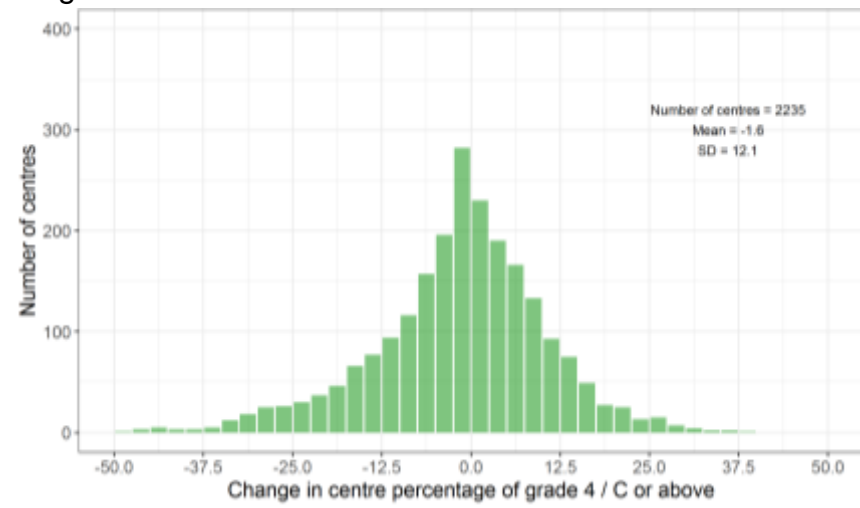
## English literature

The average (mean) difference in schools' and colleges' outcomes is slightly higher between 2016/2017 than between 2015/2016 for all students, and the standard deviation is very similar, particularly for year 11 students. This indicates that the overall variability in English literature results is similar to last year.

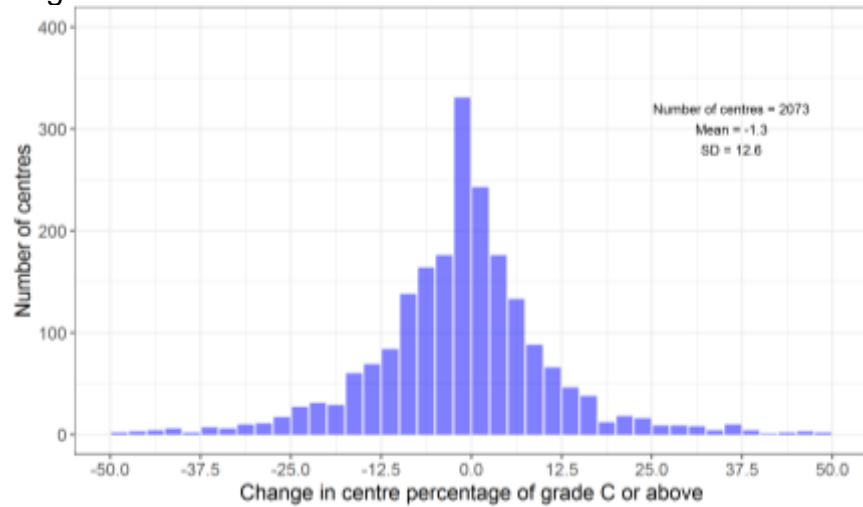
English literature summer 2016 vs summer 2017: all students



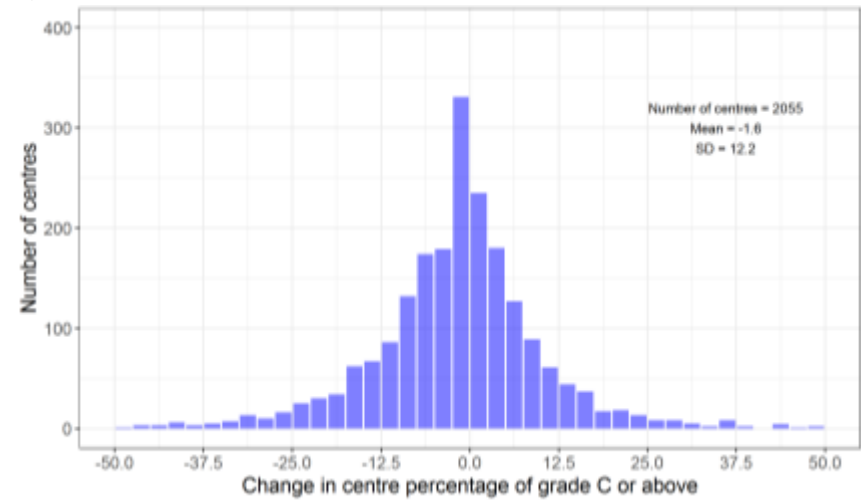
English literature summer 2016 vs summer 2017: Yr 11 students



English literature summer 2015 vs summer 2016: all students



English literature summer 2015 vs summer 2016: Yr 11 students

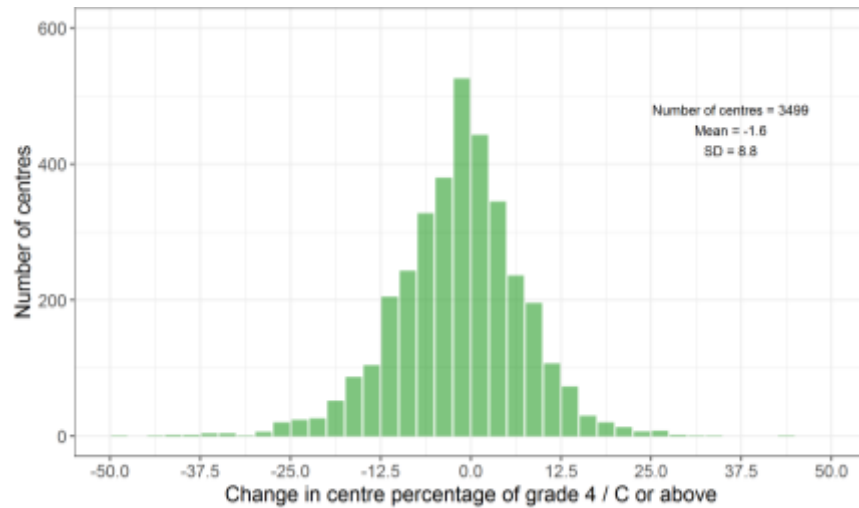




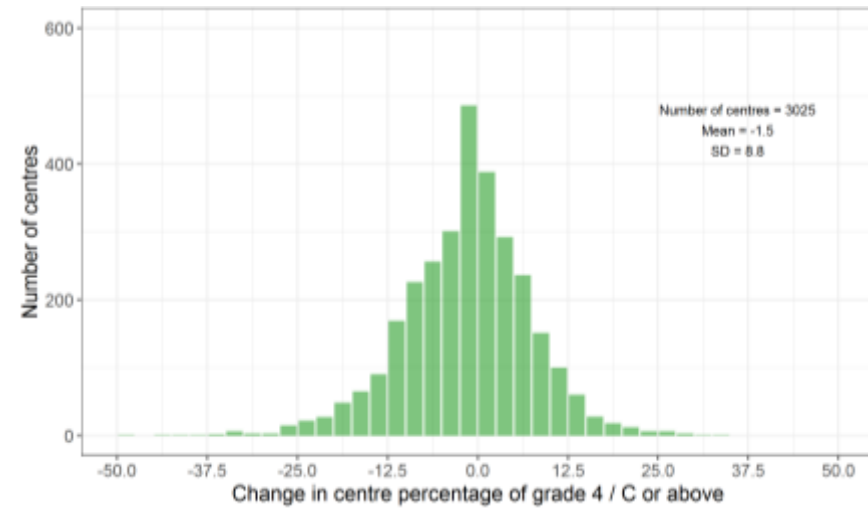
## Mathematics

In mathematics, there is slightly less variation in schools' and colleges' results between 2016/2017 than there was between 2015/2016. In general, most schools are clustered around the middle of the graphs, so overall they see very little variability from one year to the next.

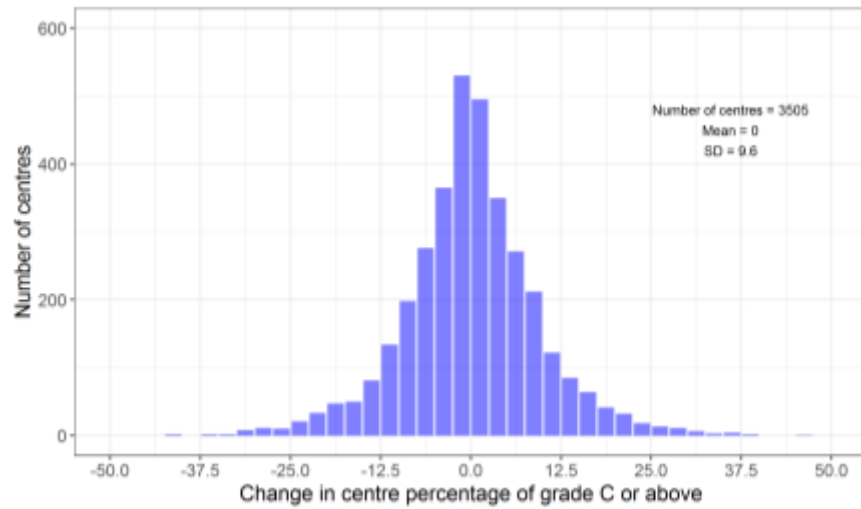
Mathematics summer 2016 vs summer 2017: all students



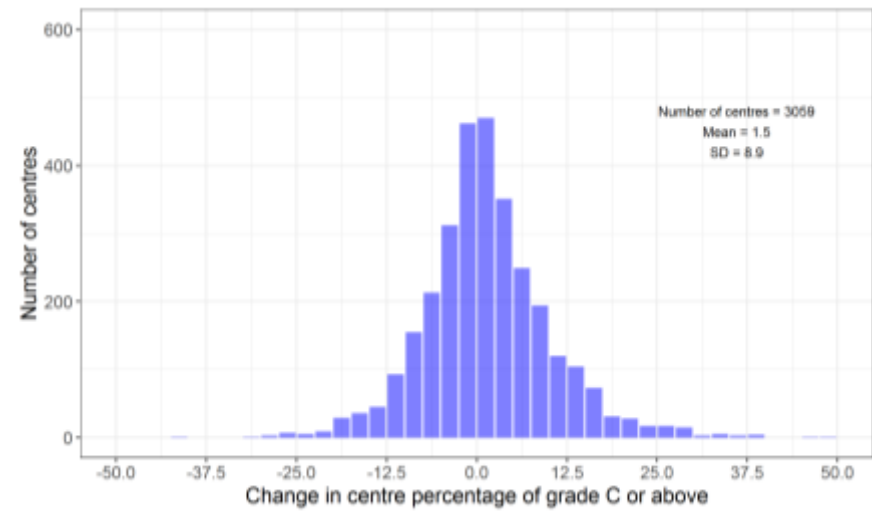
Mathematics summer 2016 vs summer 2017: Yr 11 students



Mathematics summer 2015 vs summer 2016: all students



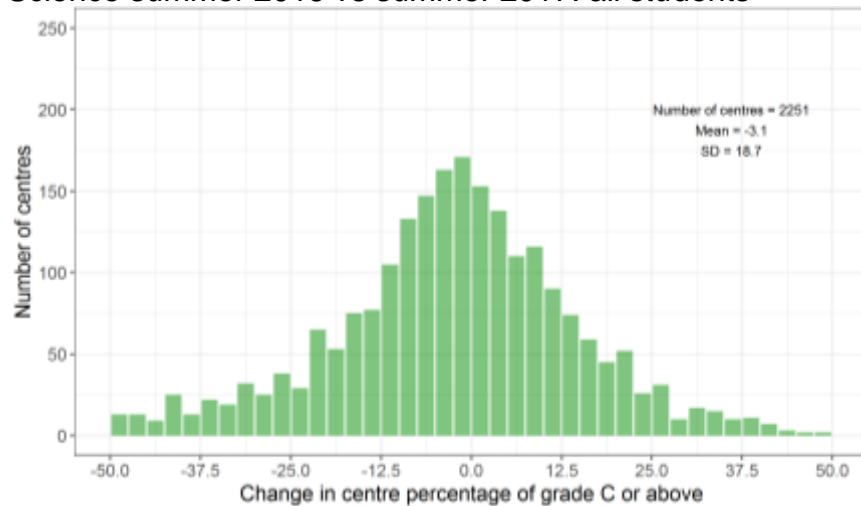
Mathematics summer 2015 vs summer 2016: Yr 11 students



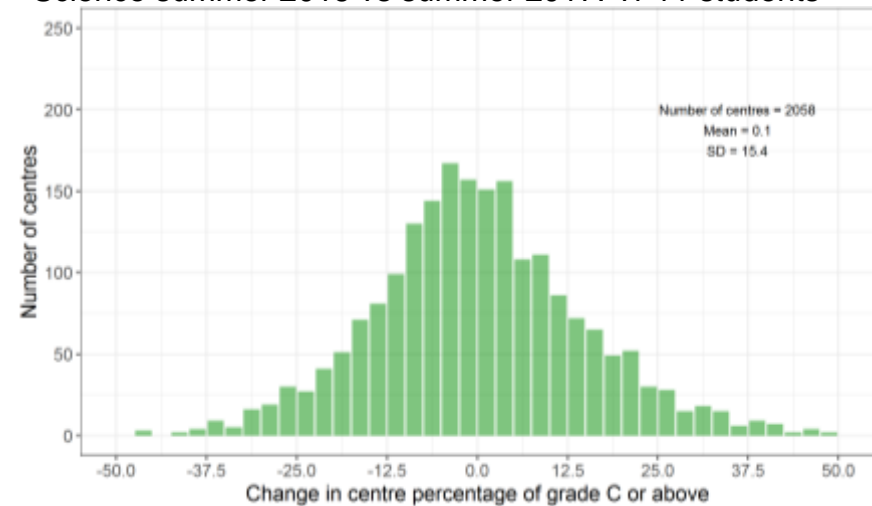
## Science

There have been some changes in entry patterns for science in recent years and this explains variability in schools' and colleges' outcomes. Until recently, a larger proportion of students taking GCSE science were year 10 students, who then went on to take additional science in year 11. However, with the introduction of reformed specifications next summer, the year 10 entry is dramatically smaller this year as these students will take the new reformed science specifications in 2018. This change in entry is likely to have contributed to the increased variability this year for schools' and colleges' outcomes for all students, but the reduced variability for schools' and colleges' outcomes for year 11 students.

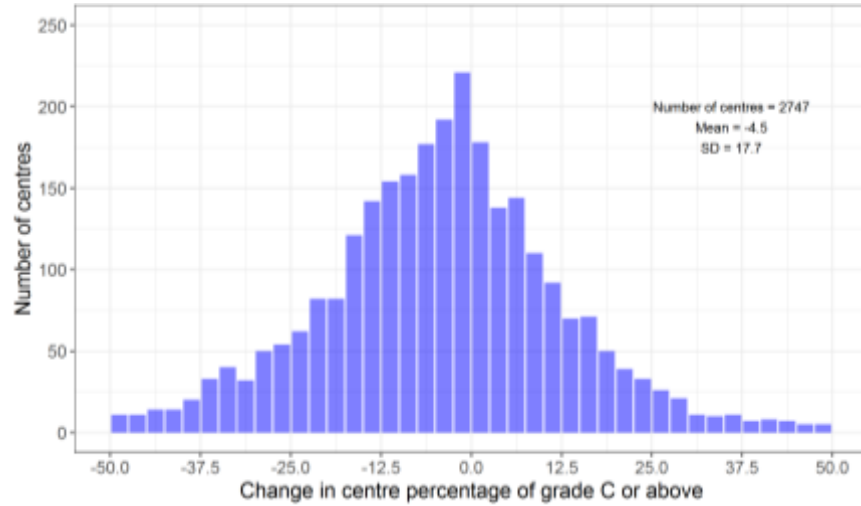
Science summer 2016 vs summer 2017: all students



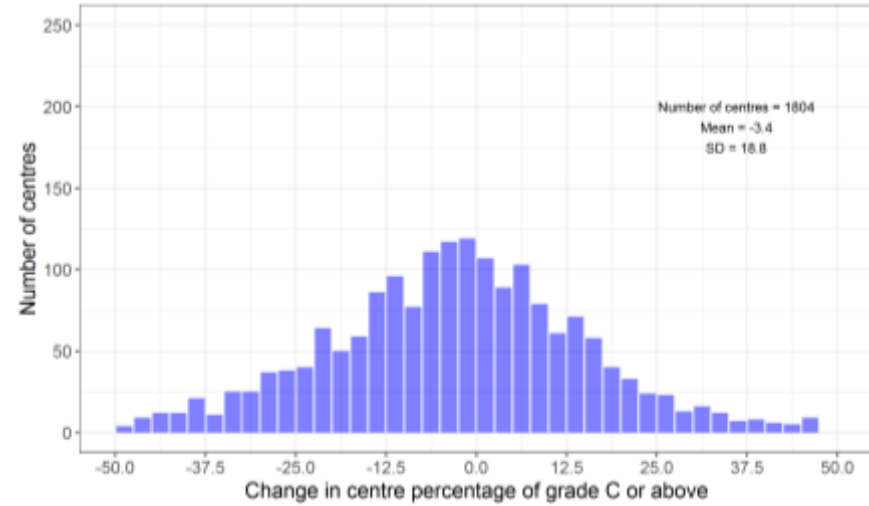
Science summer 2016 vs summer 2017: Yr 11 students



Science summer 2015 vs summer 2016: all students

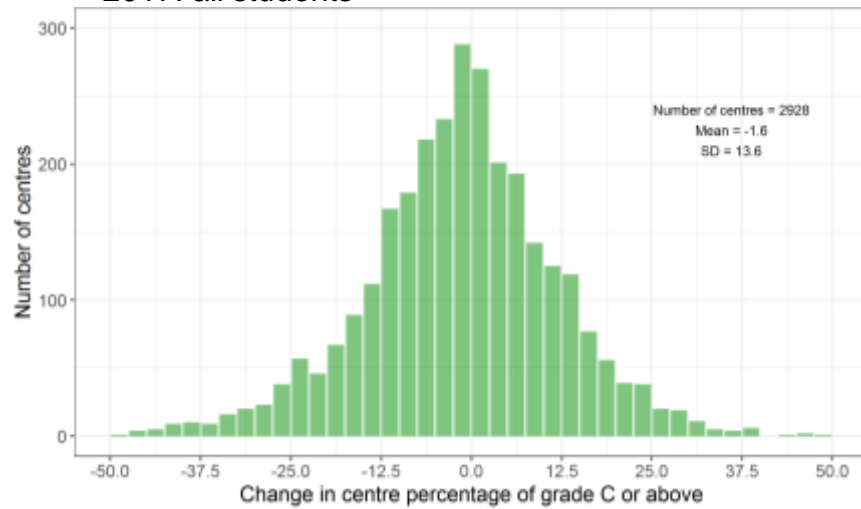


Science summer 2015 vs summer 2016: Yr 11 students

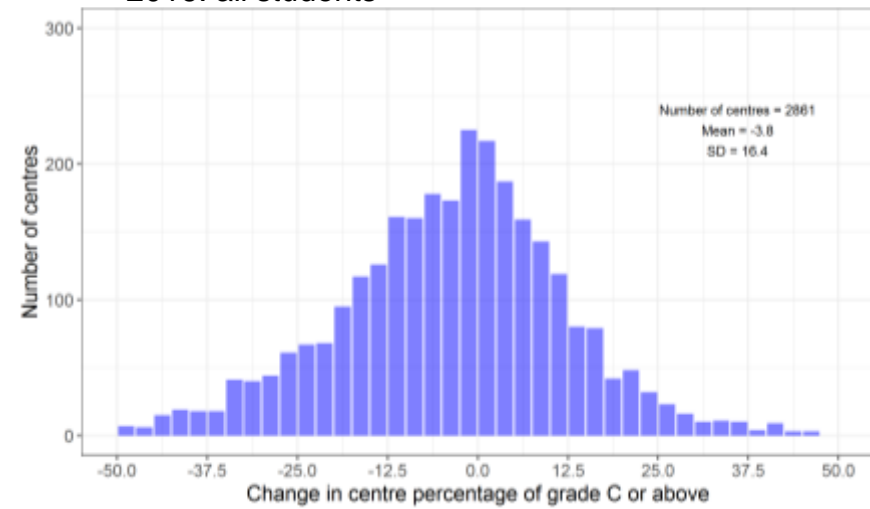


## Additional science

Additional science summer 2016 vs summer 2017: all students

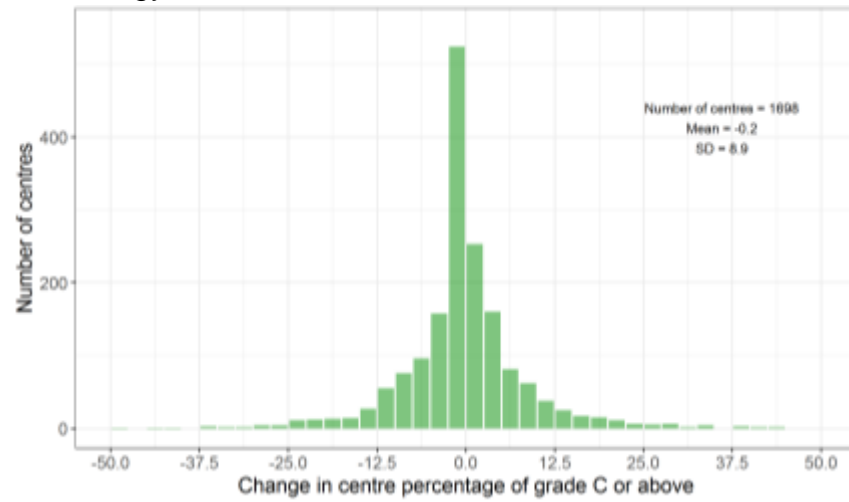


Additional science summer 2015 vs summer 2016: all students

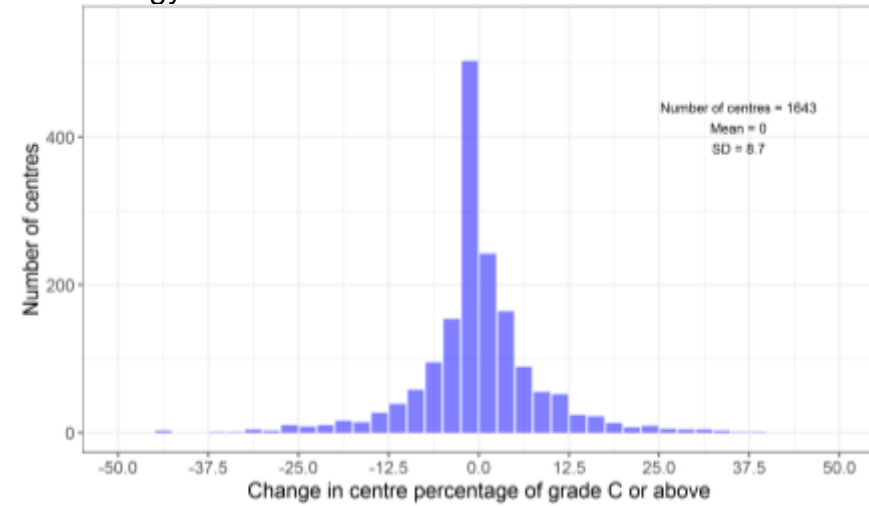


## Biology

Biology summer 2016 vs summer 2017: all students

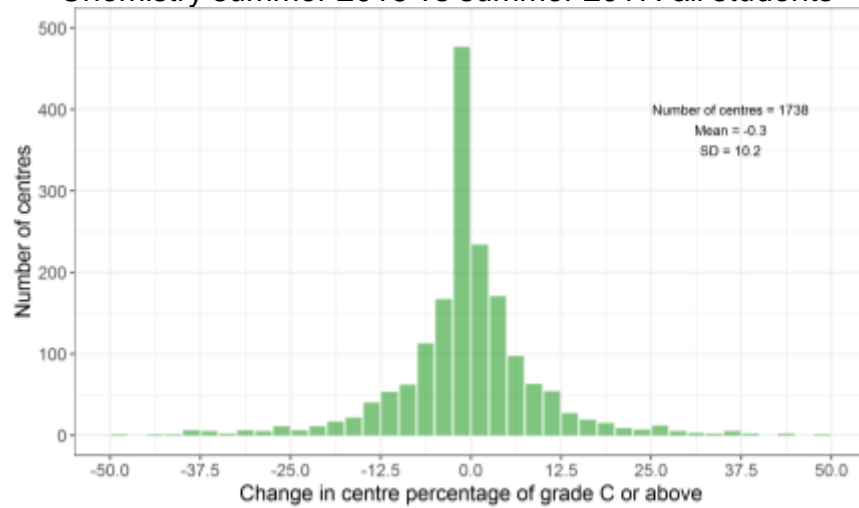


Biology summer 2015 vs summer 2016: all students

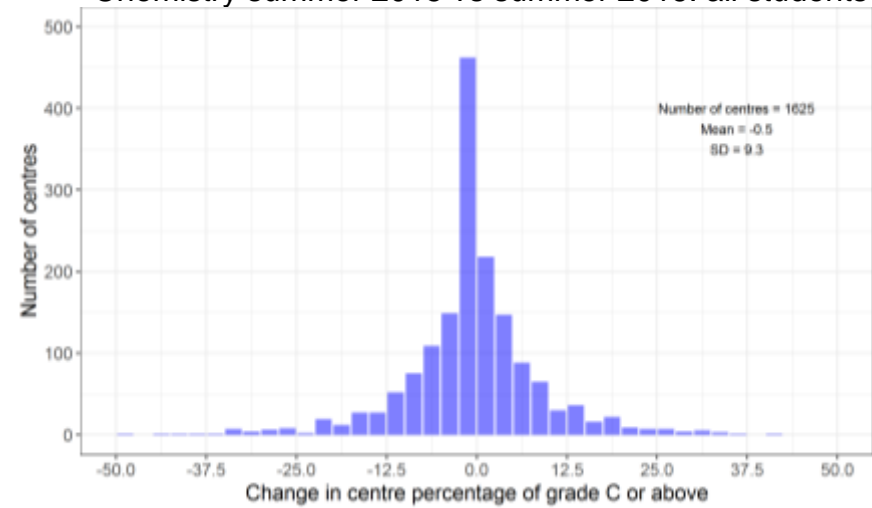


## Chemistry

Chemistry summer 2016 vs summer 2017: all students

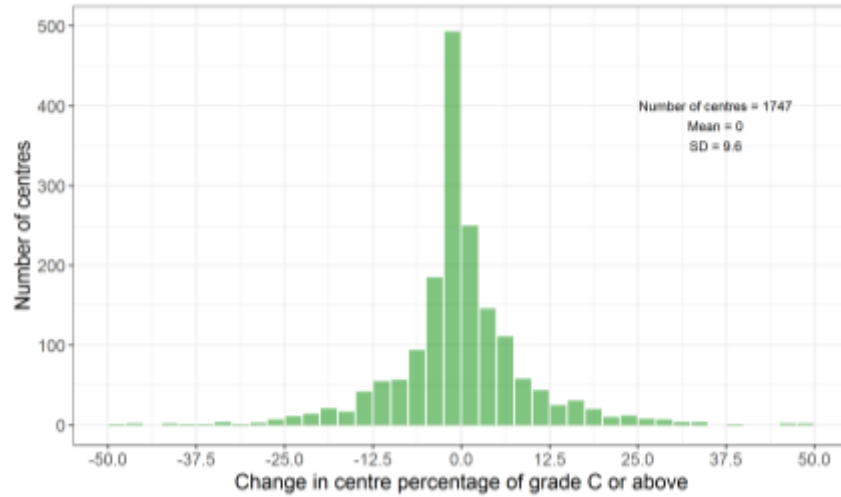


Chemistry summer 2015 vs summer 2016: all students

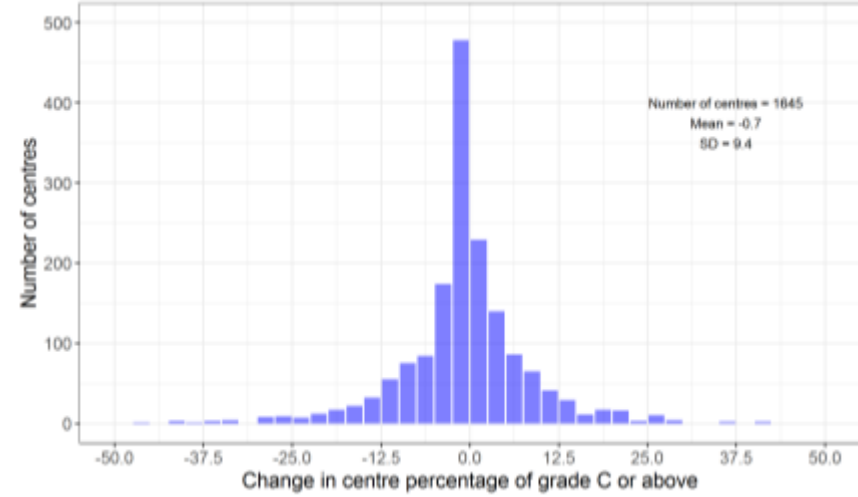


## Physics

Physics summer 2016 vs summer 2017: all students



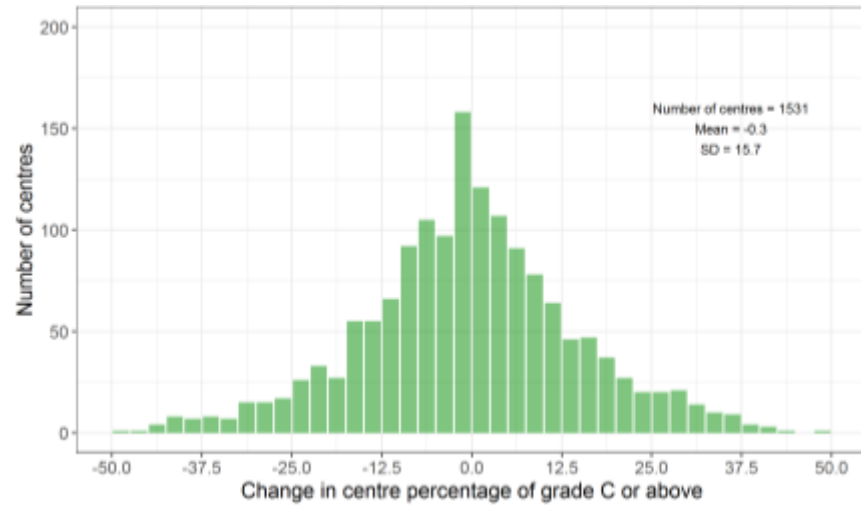
Physics summer 2015 vs summer 2016: all students



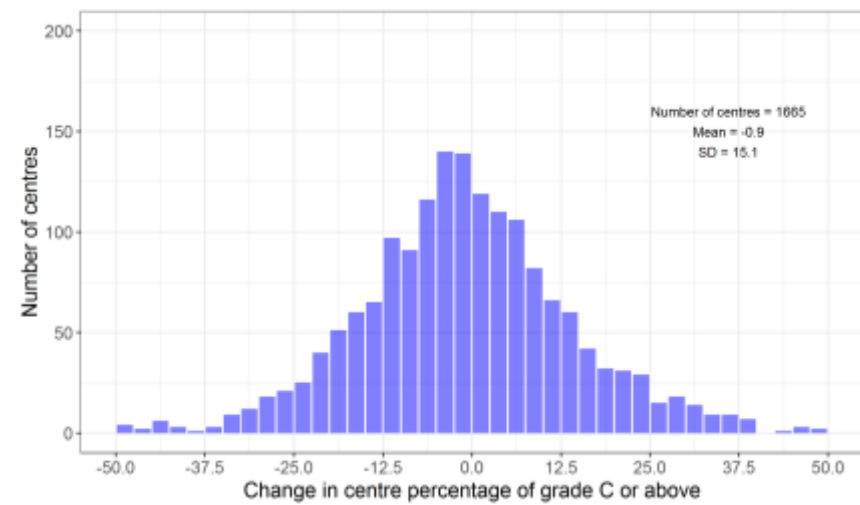


## French

French summer 2016 vs summer 2017: all students

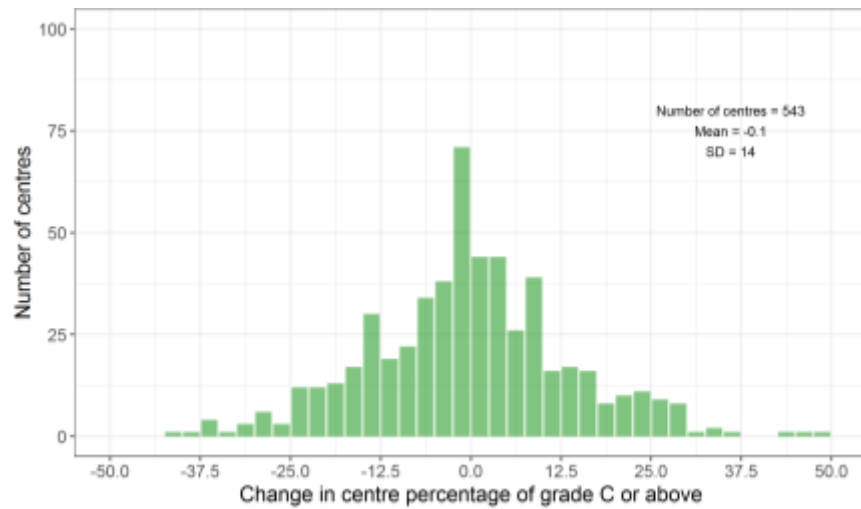


French summer 2015 vs summer 2016: all students

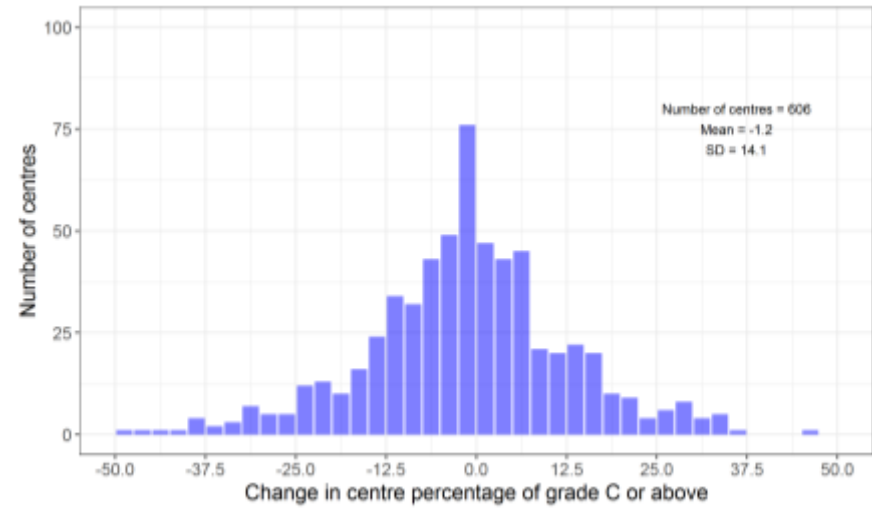


## German

German summer 2016 vs summer 2017: all students

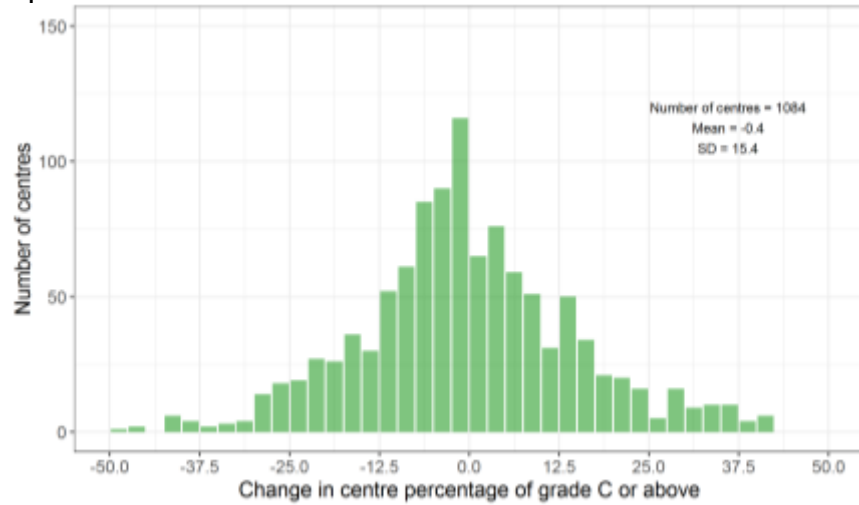


German summer 2015 vs summer 2016: all students

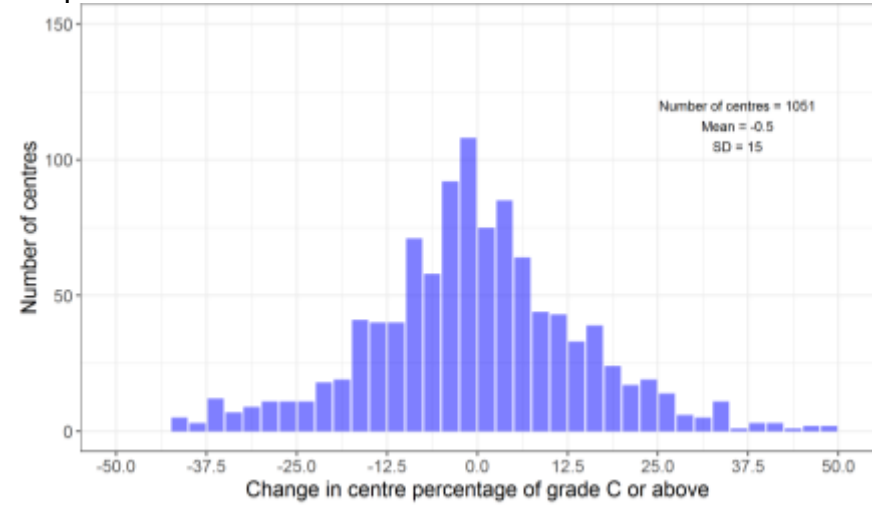


## Spanish

Spanish summer 2016 vs summer 2017: all students

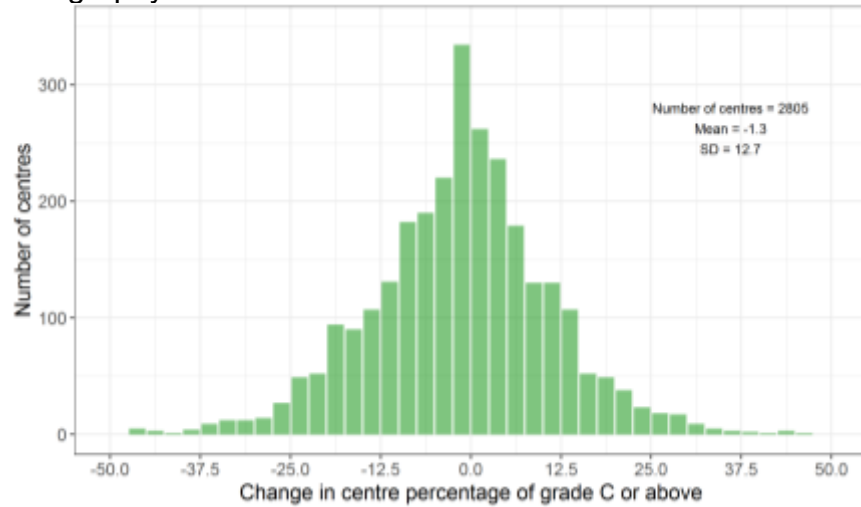


Spanish summer 2015 vs summer 2016: all students

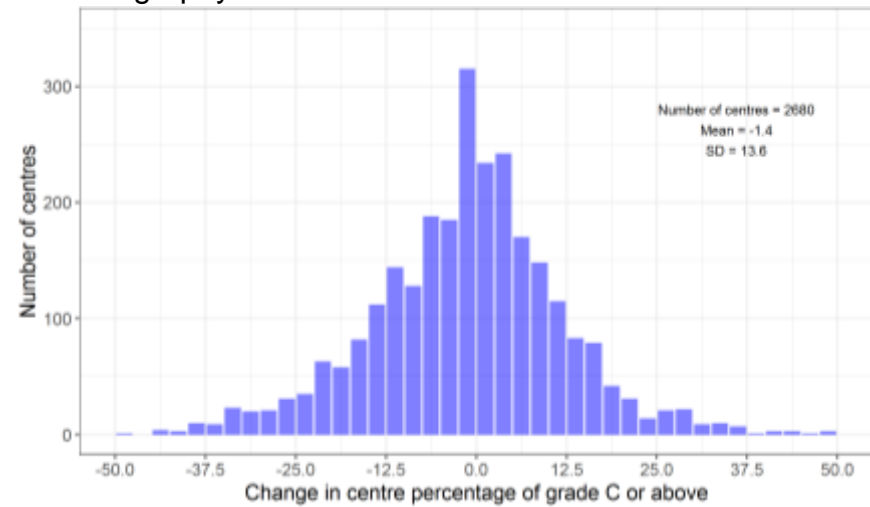


## Geography

Geography summer 2016 vs summer 2017: all students

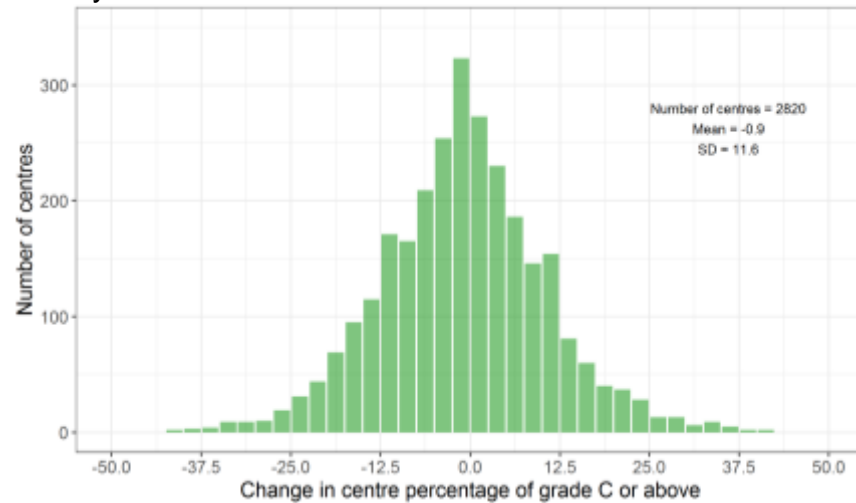


Geography summer 2015 vs summer 2016: all students

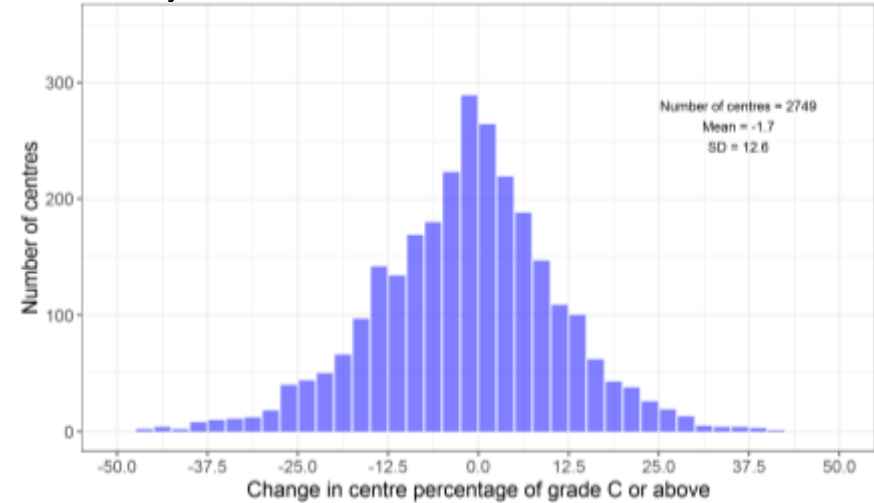


## History

History summer 2016 vs summer 2017: all students



History summer 2015 vs summer 2016: all students



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Textphone 0300 303 3345  
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