Variability in GCSE Results for Individual Schools and Colleges

2012 to 2015

August 2015

Ofqual/15/5767

Key points

- Some variation in year-on-year results for individual schools and colleges is normal. The level of variation this year is similar to previous years.
- In general, there is less variation when we look only at 16 year-old students (those in Year 11).
- In English and English language, the average variation is less when we look only at schools and colleges who have stable entry numbers.

We have previously published an analysis of the year-on-year variation in the proportion of students achieving A* to C in a number of GCSE subjects. 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.

Now that GCSE results for summer 2015 have been published, we have looked at the year-on-year variation in the same subjects in summer 2015. They are presented here, as well as the graphs we have previously published. For English/English language, English literature and mathematics we have looked only at schools and colleges with 50 or more students in both years. For all other subjects, we have looked only at schools and colleges with 25 or more students in both years. We have also carried out additional analysis for English/English language to look at schools/colleges where the entry numbers are stable.

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 two bars either side of zero represent schools that had either a drop of up to 2.5 percentage points or 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.[1] The mean on each graph is the average of the year-on-year difference for each school. The standard deviation (Std. Dev. or 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.

[1] 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

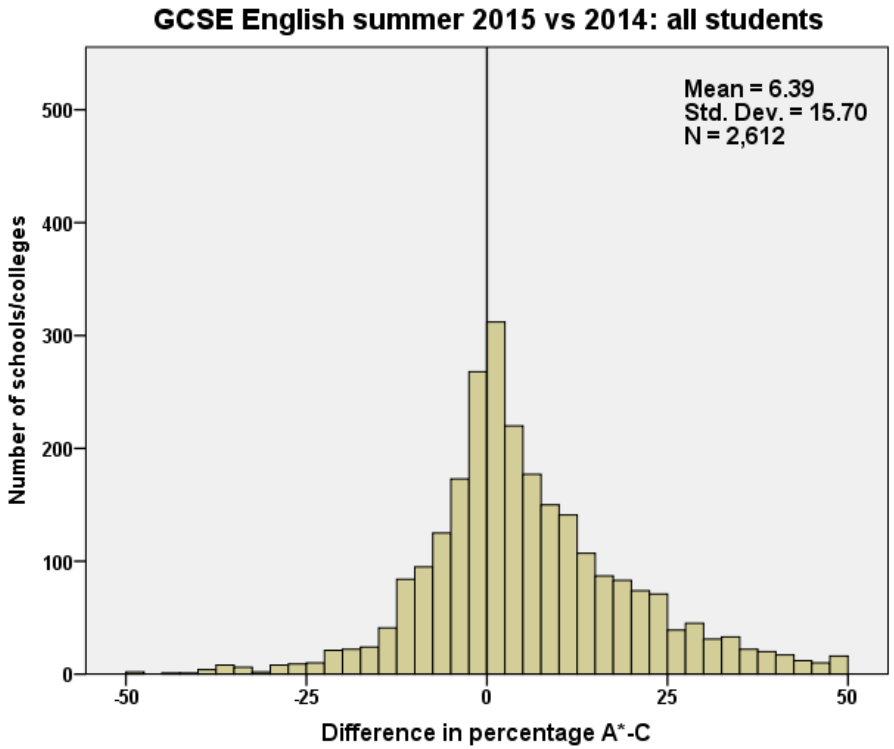
This year we have also looked at the variation in English/English language, English literature and mathematics for students in Year 11 only (16 year old students). The average variation for Year 11 students is less than the variation for all students.[2]

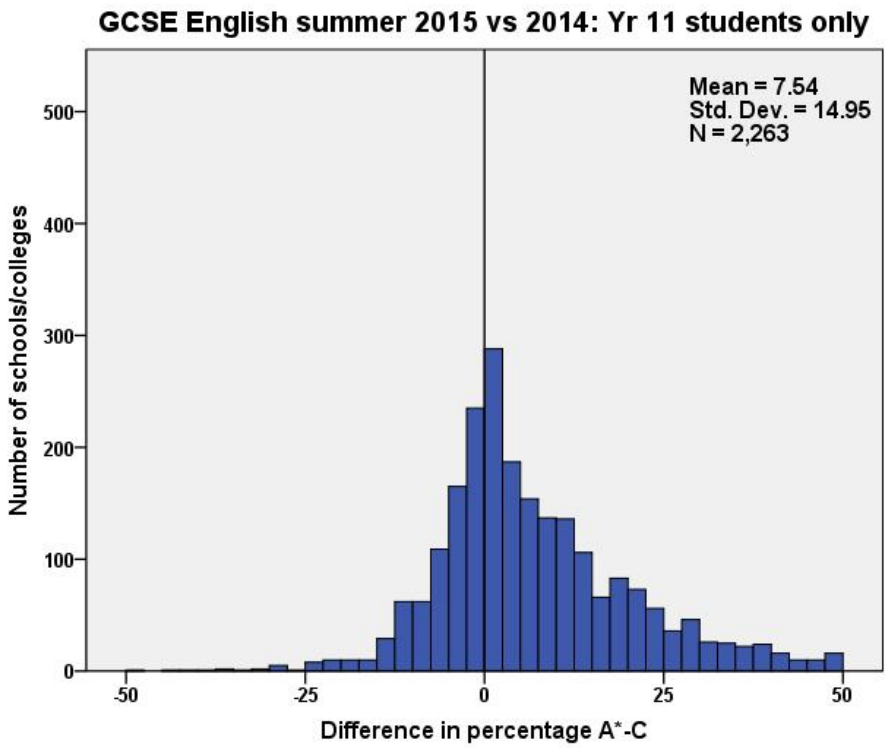
In these graphs the schools tend to be clustered around the middle, which means that most schools see very little year-on-year variation. At the edges of the graphs schools are seeing much greater variation (both increases and decreases in the proportion of students achieving A*-C).

[2] 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 or more Year 11 students

English/English language

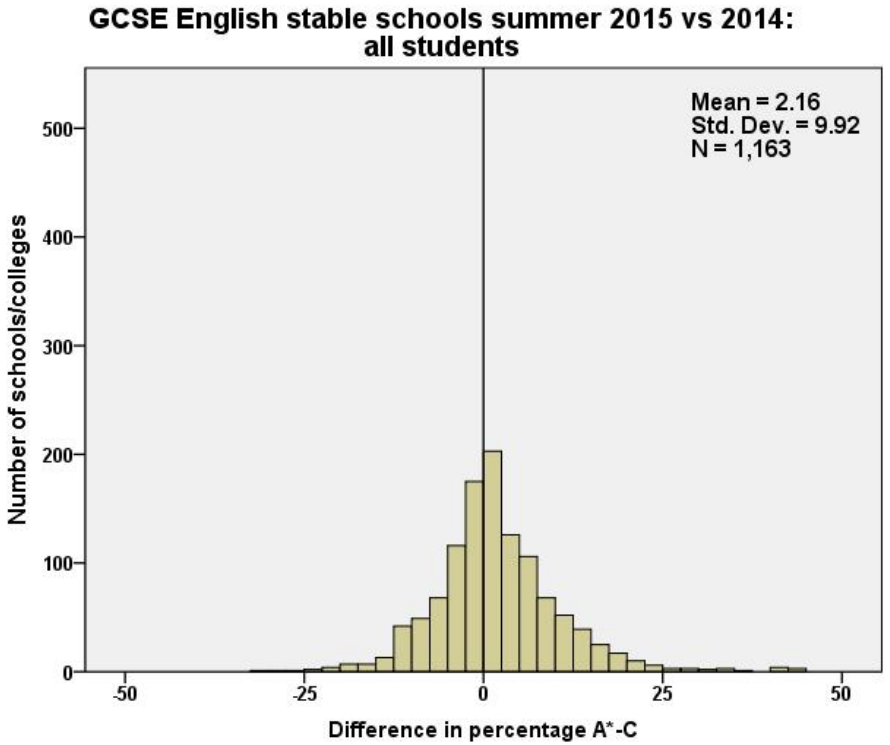
This year the average (mean) variation is positive, and slightly more so when we look only at Year 11 students (shown in blue).

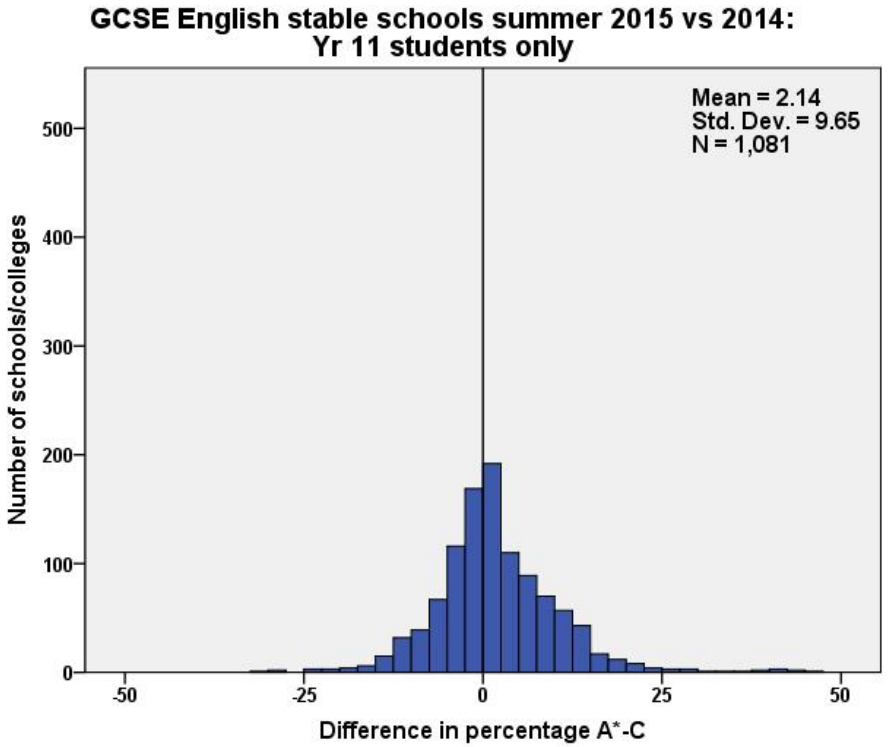


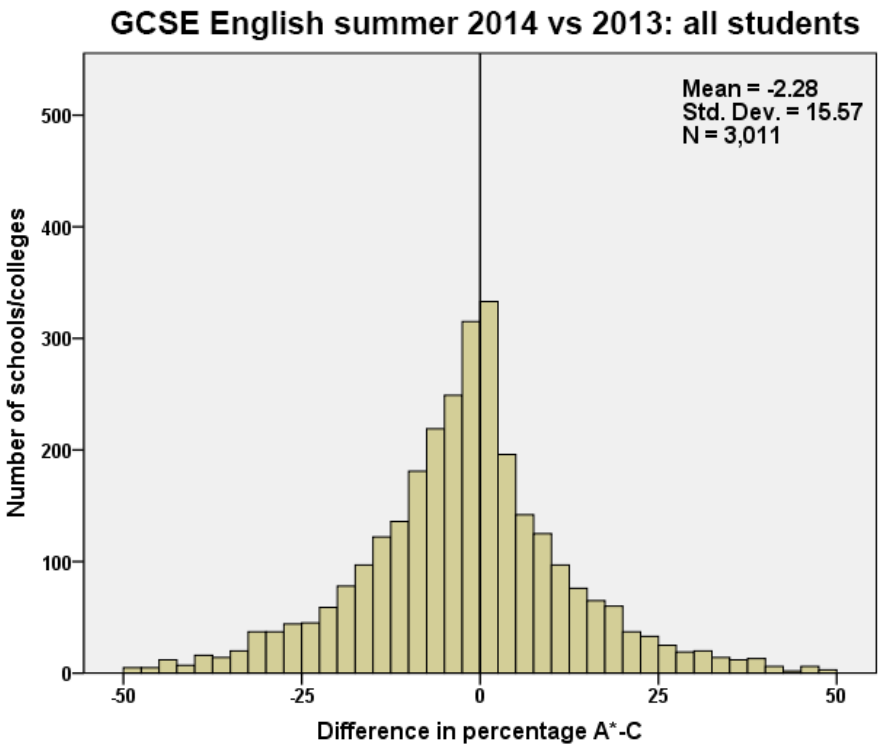


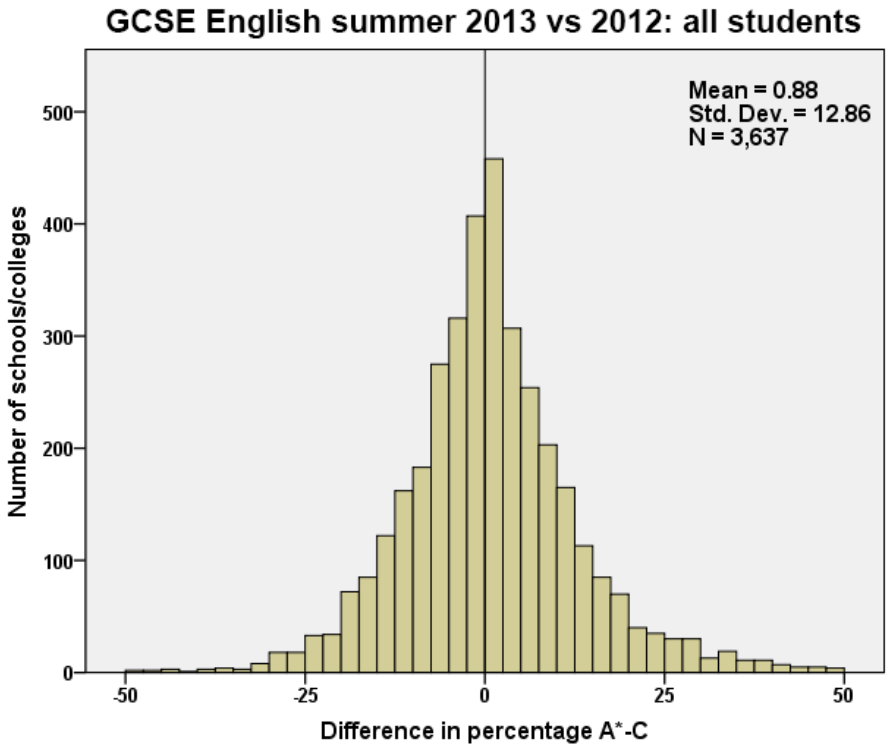
We know that schools and colleges have changed their approach to GCSE entries in recent years, because of changes to the qualifications and changes to the performance table rules. The graphs on the next page look at variation for 'stable' schools and colleges – those where their entry in 2015 has changed by less than 10 per cent compared to their entry in 2014.

The average variation is less when we look only at schools and colleges where the entry numbers are stable. This is not surprising since large changes in the entry numbers are likely to affect the overall profile of the students entered. The standard deviation is also lower for stable schools and colleges, so there is generally less variation in those schools and colleges.





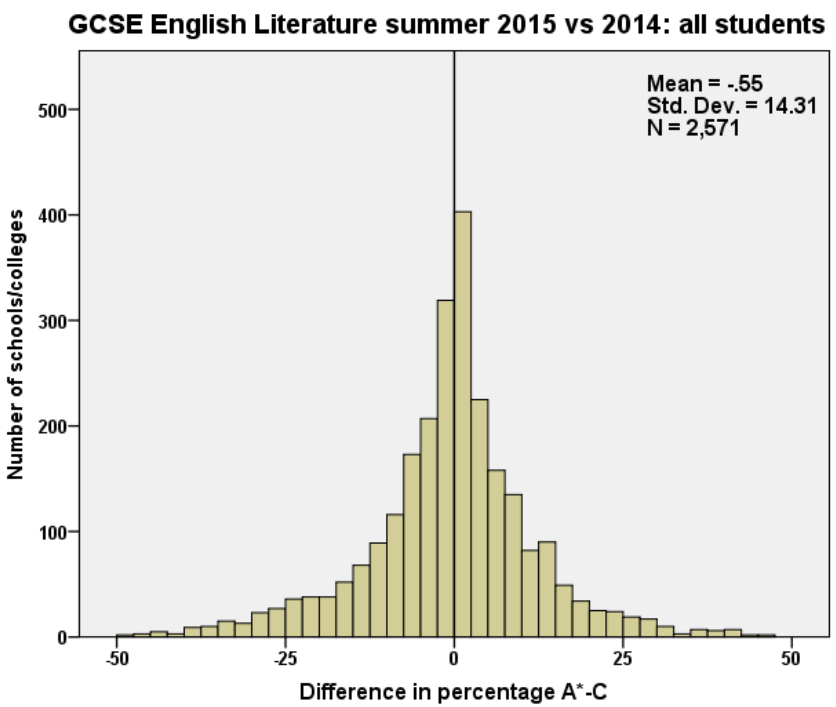

GCSE English summer 2014 vs 2013: all students
Mean = -2.28
Std. Dev. = 15.57
N = 3,011
Number of schools/colleges
0
100
200
300
400
500
-50
-25
0
25
50
Difference in percentage A*-C

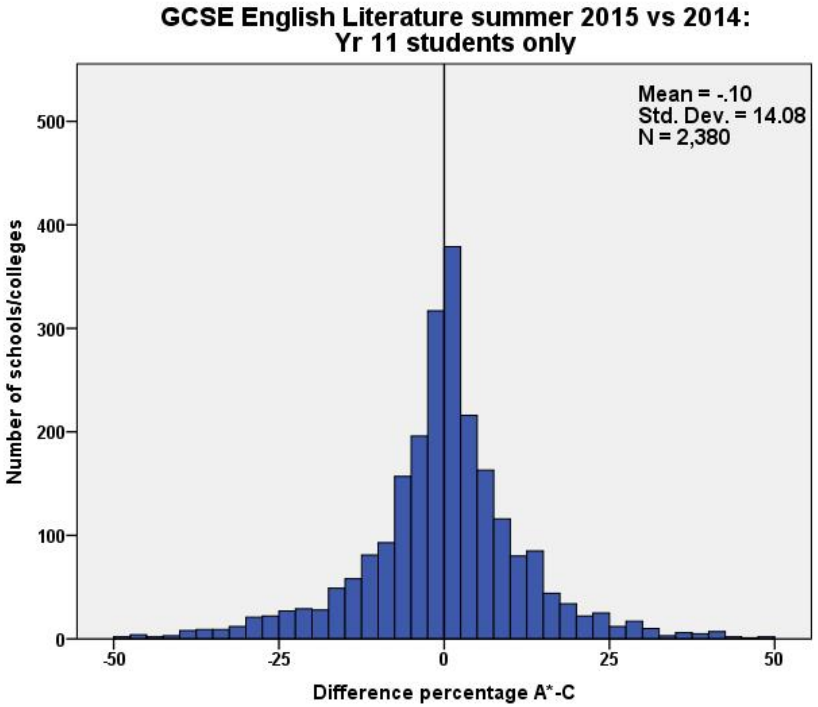

GCSE English summer 2013 vs 2012: all students
Mean = 0.88
Std. Dev. = 12.86
N = 3,637
Number of schools/colleges
0
100
200
300
400
500
-50
-25
0
25
50
Difference in percentage A*-C

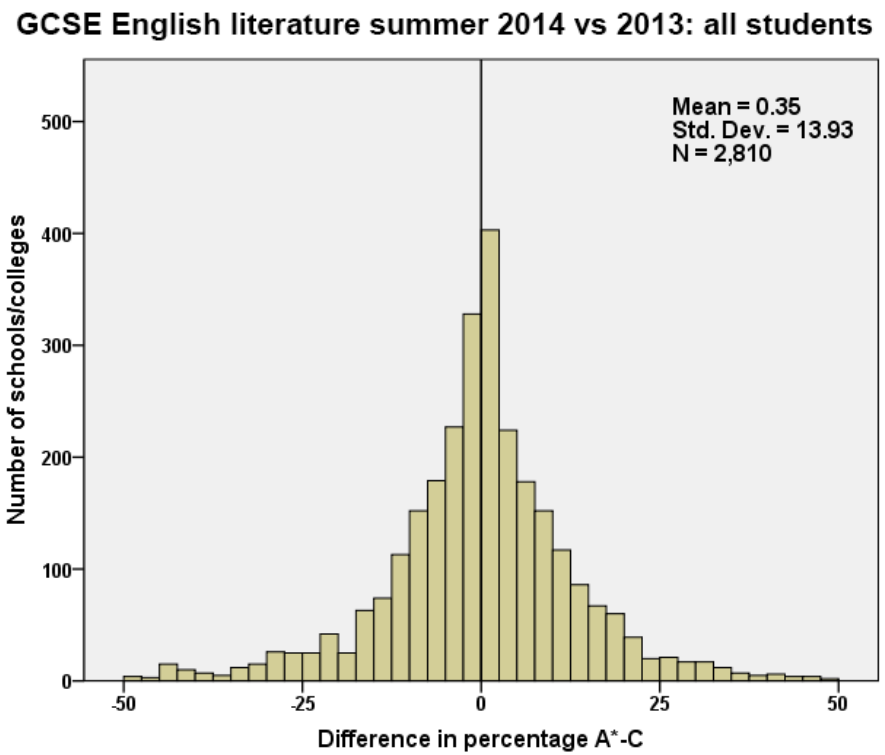
English literature

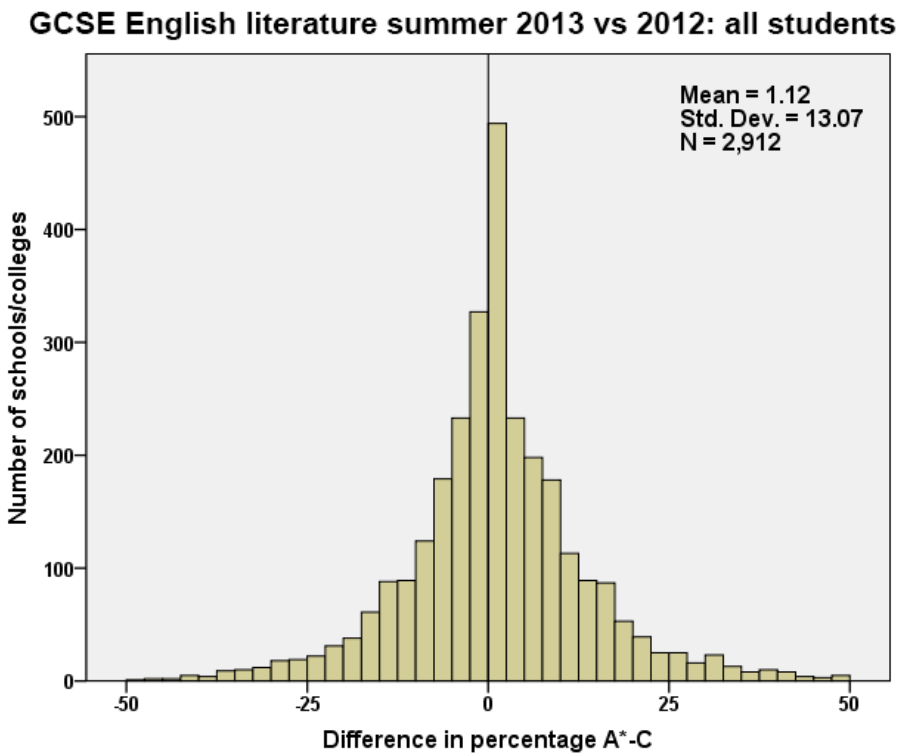
The graphs below suggest the level of variation is very similar to 2014. As you can see from the graphs, most of the schools are clustered around the middle so most schools see very little variation. And the variation in 2014 is similar to variation in 2013 as can be seen by the similar standard deviation.

Looking at Year 11 students only (shown in blue), the average variation is less than for all students, but the overall picture is otherwise similar.



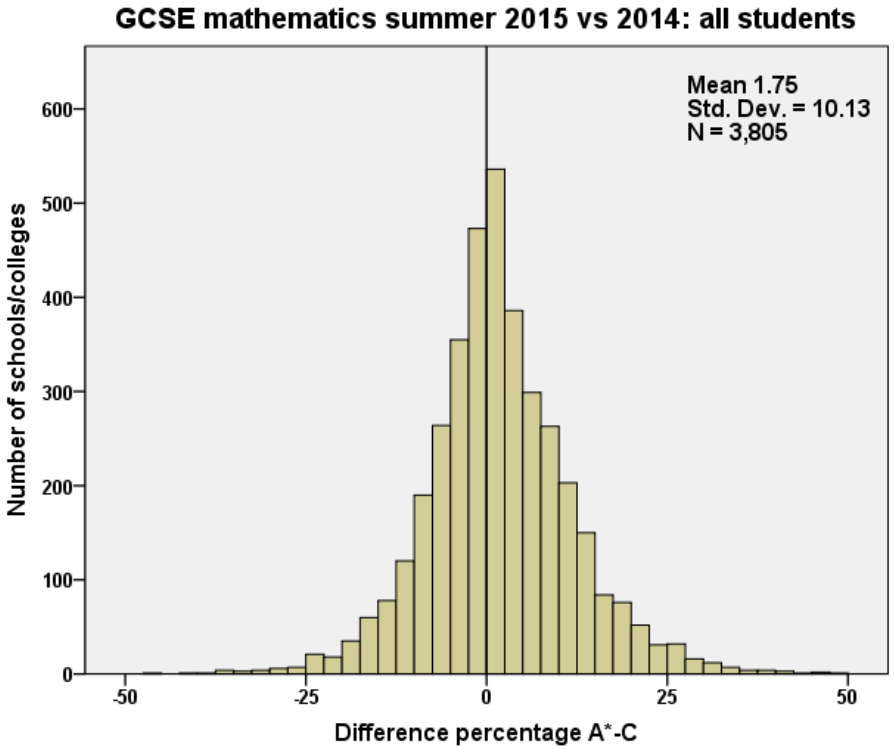


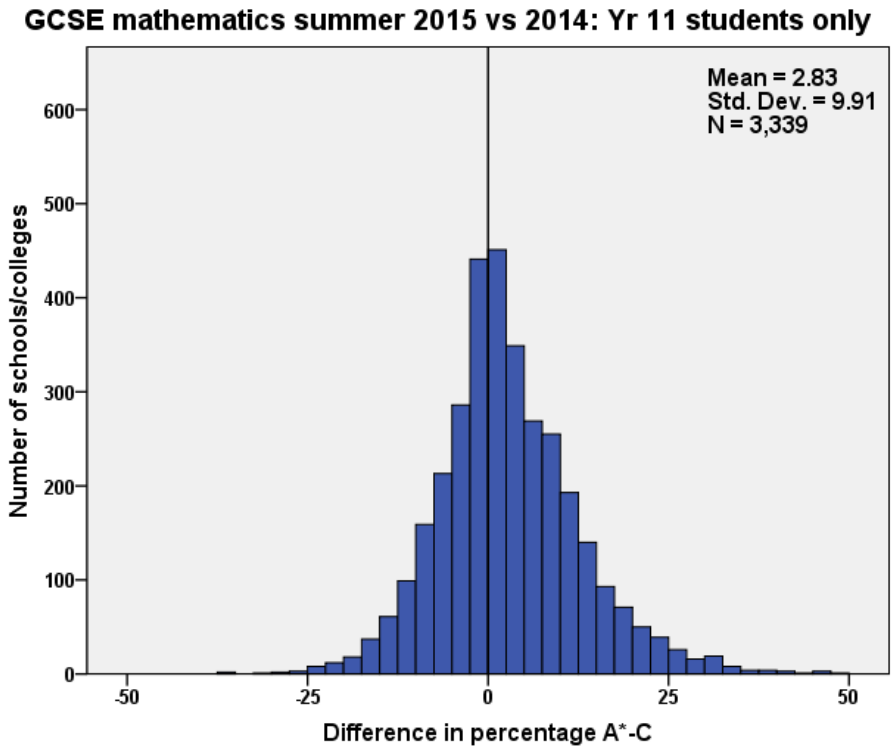

GCSE English literature summer 2014 vs 2013: all students
Mean = 0.35
Std. Dev. = 13.93
N = 2,810
Number of schools/colleges
0
100
200
300
400
500
-50
-25
0
25
50
Difference in percentage A*-C

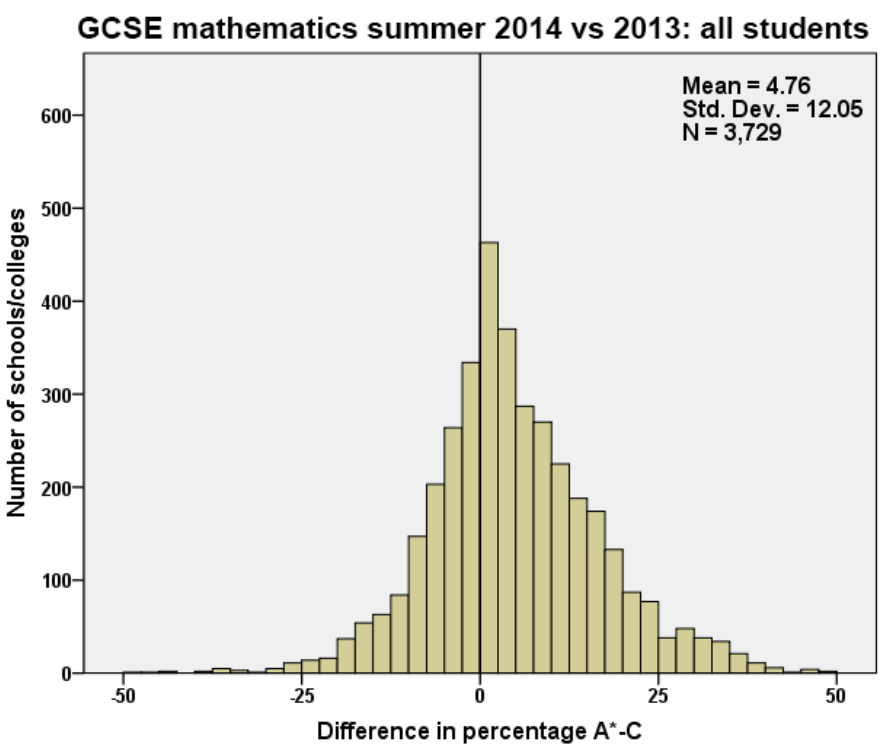

GCSE English literature summer 2013 vs 2012: all students
Mean = 1.12
Std. Dev. = 13.07
N = 2,912
Number of schools/colleges
0
100
200
300
400
500
-50
-25
0
25
50
Difference in percentage A*-C

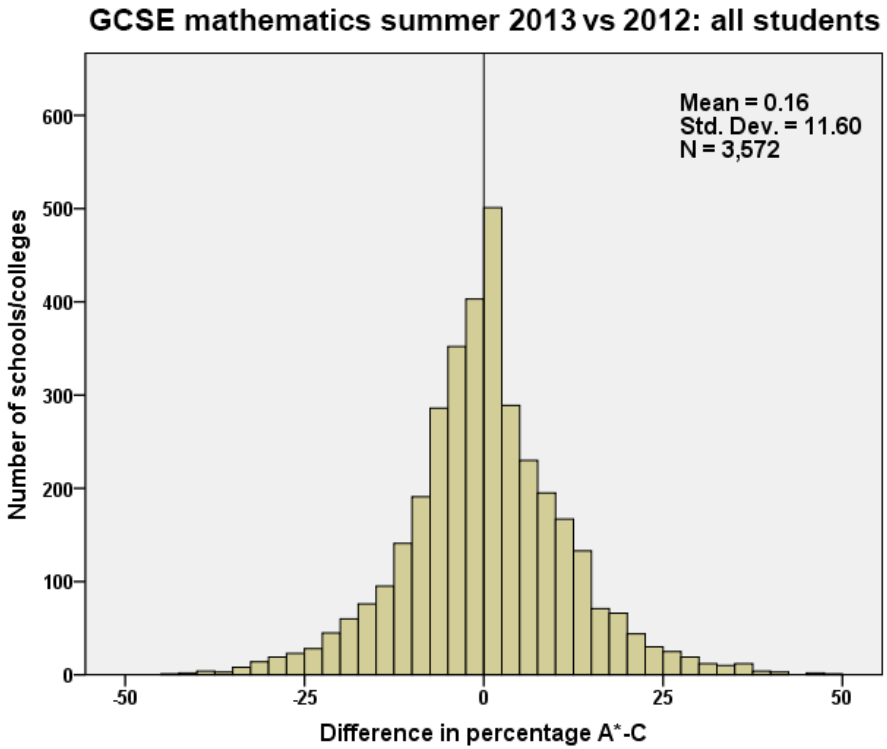
Mathematics

In mathematics there is less variation this year than in 2014. Most schools are clustered around the middle of the graphs, so they see very little variation from one year to the next, as can be seen by the similar standard deviation in the graphs. For Year 11 students only, the average variation is more positive than for all students.



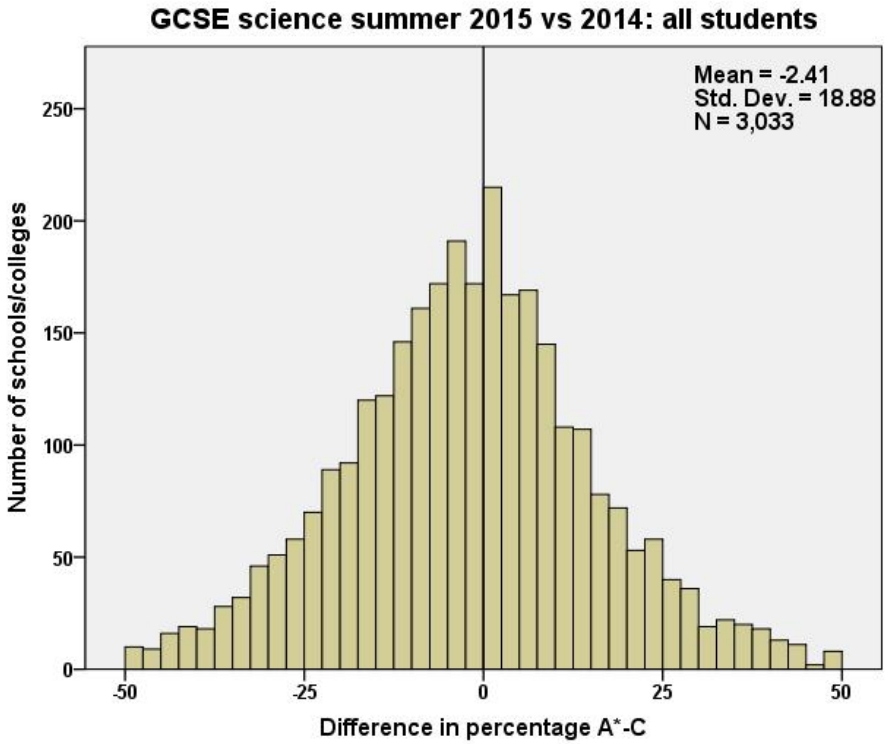


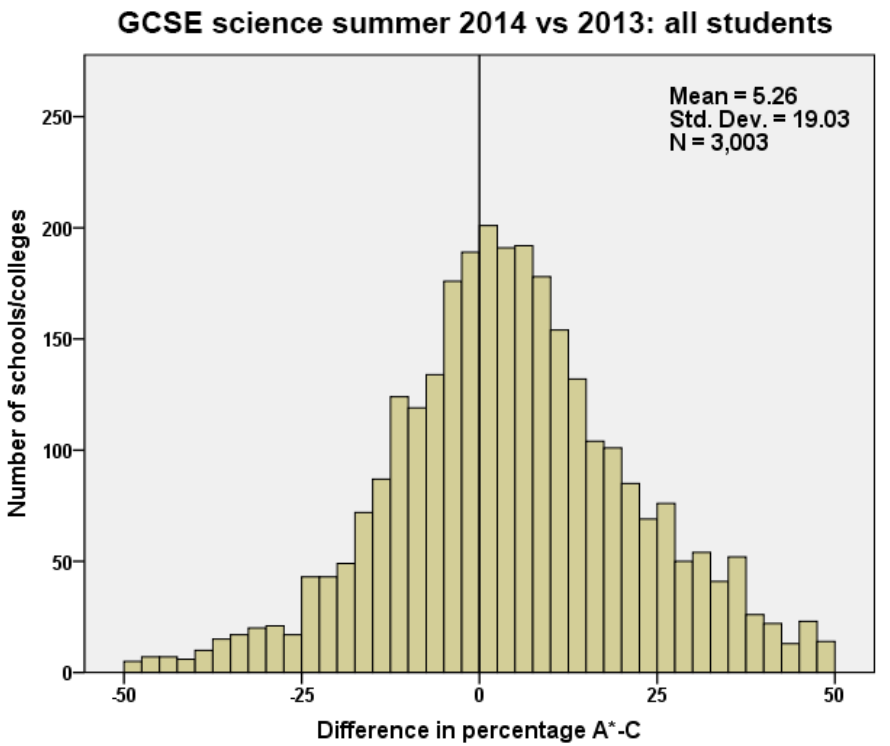

GCSE mathematics summer 2014 vs 2013: all students
Mean = 4.76
Std. Dev. = 12.05
N = 3,729
Number of schools/colleges
600
500
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

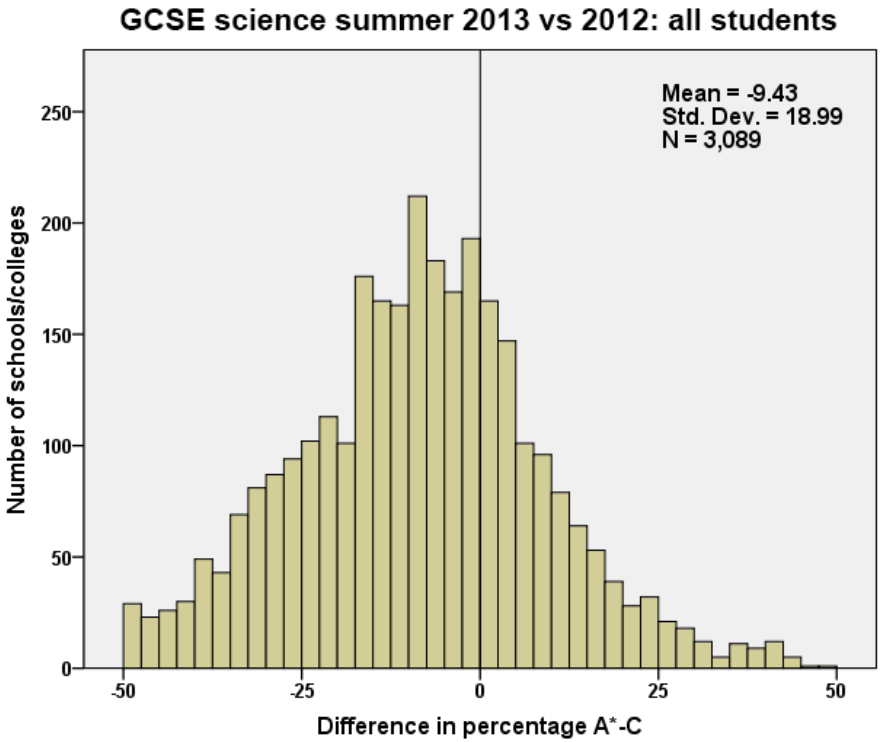

GCSE mathematics summer 2013 vs 2012: all students
Mean = 0.16
Std. Dev. = 11.60
N = 3,572
Number of schools/colleges
600
500
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

Science

In science, the amount of variation appears similar to last year (as shown by the similar standard deviation). The average variation is negative whereas in 2014 the variation was generally in a positive direction.

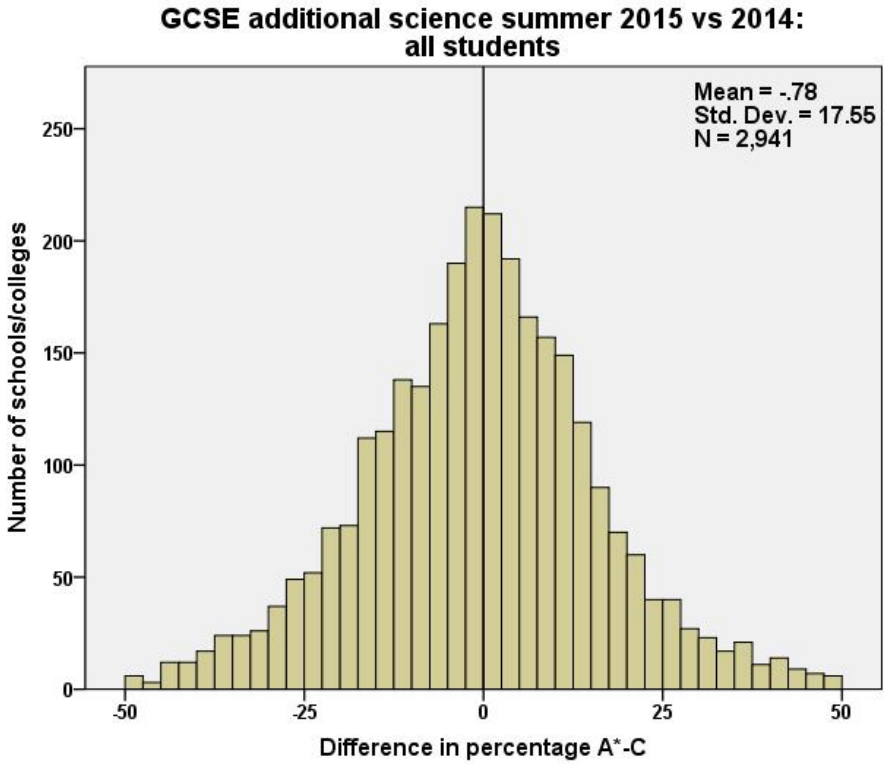


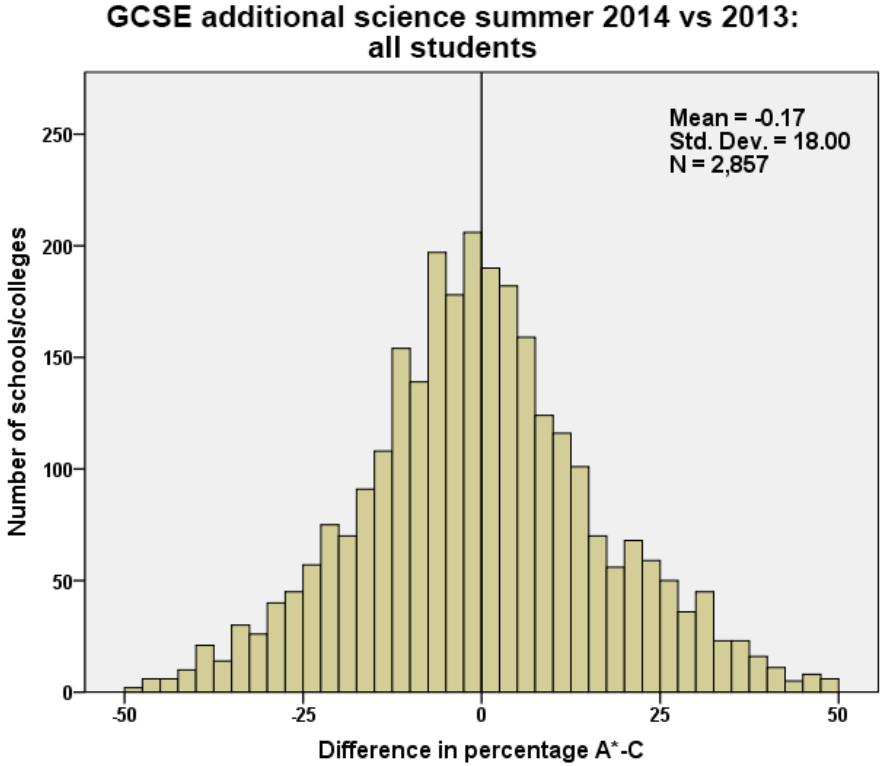


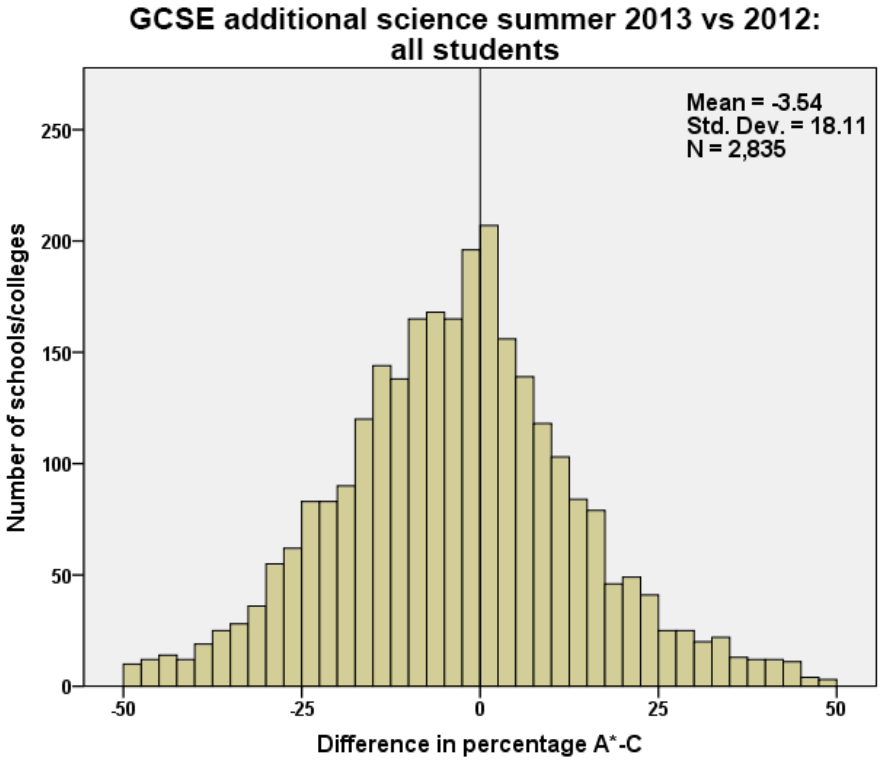

GCSE science summer 2013 vs 2012: all students
Mean = -9.43
Std. Dev. = 18.99
N = 3,089
Number of schools/colleges
250
200
150
100
50
0
-50
-25
0
25
50
Difference in percentage A*-C

Additional science

The graphs below suggest the level of variation is similar to 2014. This year, as last year, the average variation is close to zero, whereas in 2013 the variation was generally in a negative direction.

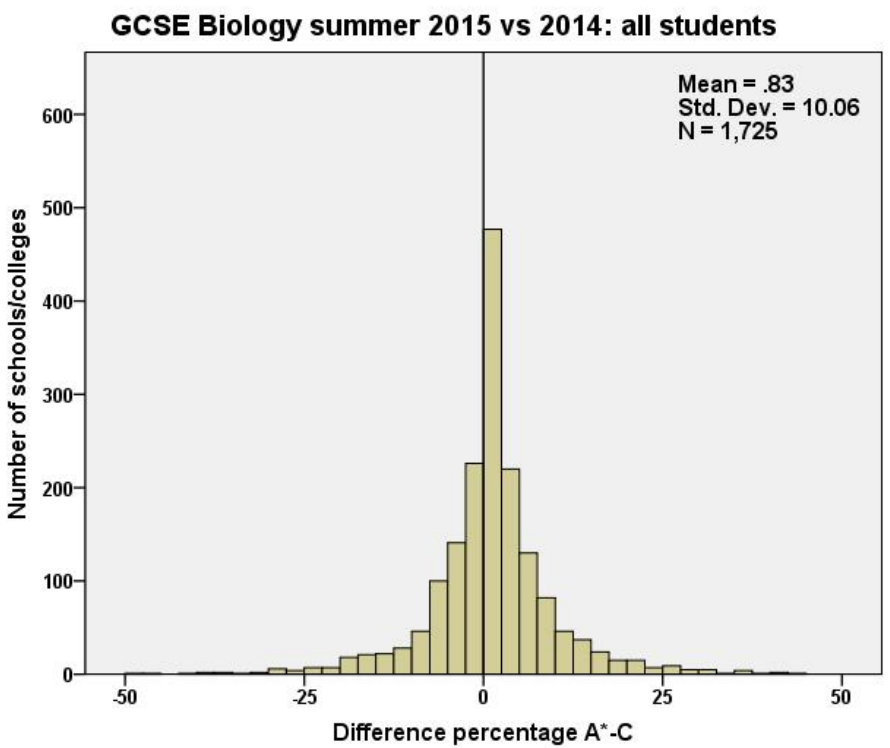


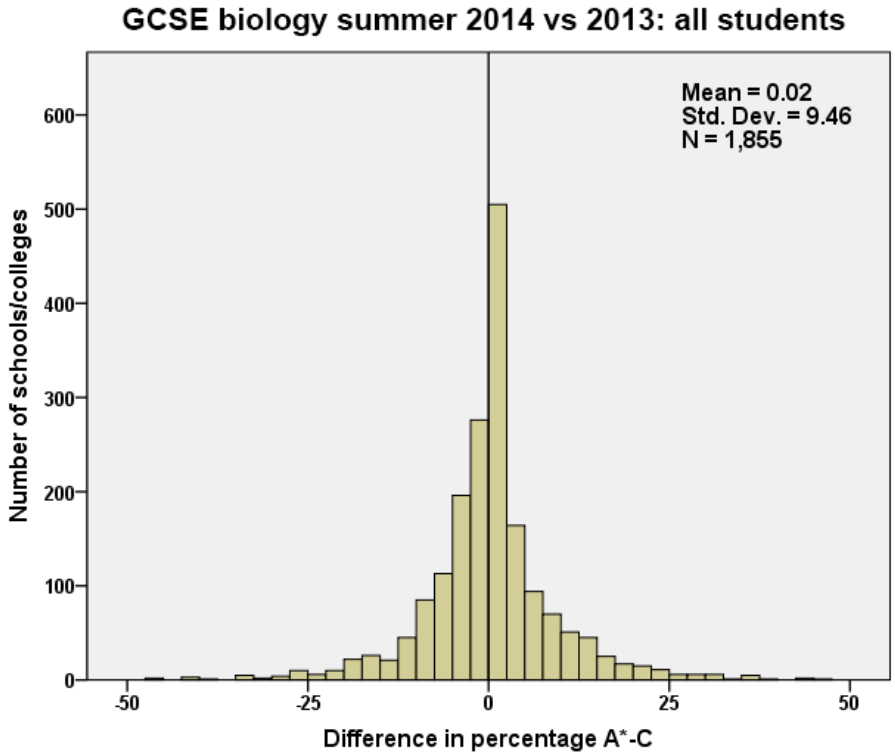


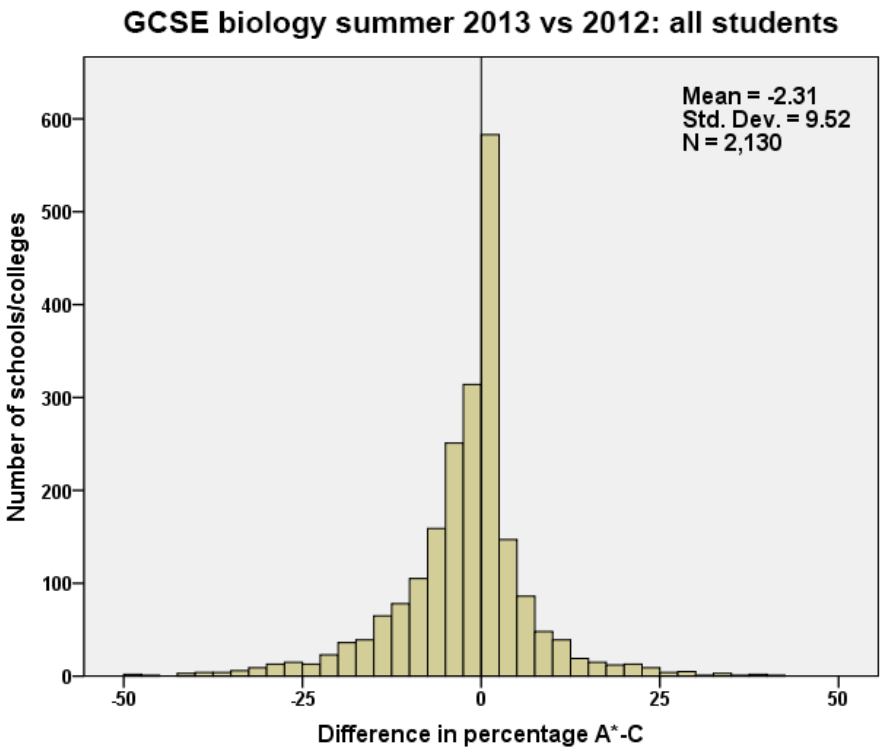

GCSE additional science summer 2013 vs 2012:
all students
Mean = -3.54
Std. Dev. = 18.11
N = 2,835
Number of schools/colleges
250
200
150
100
50
0
-50
-25
0
25
50
Difference in percentage A*-C

Biology

The graphs below suggest the level of variation is similar to 2014. This year, as last year, the average variation is close to zero, whereas in 2013 the variation was generally in a negative direction.

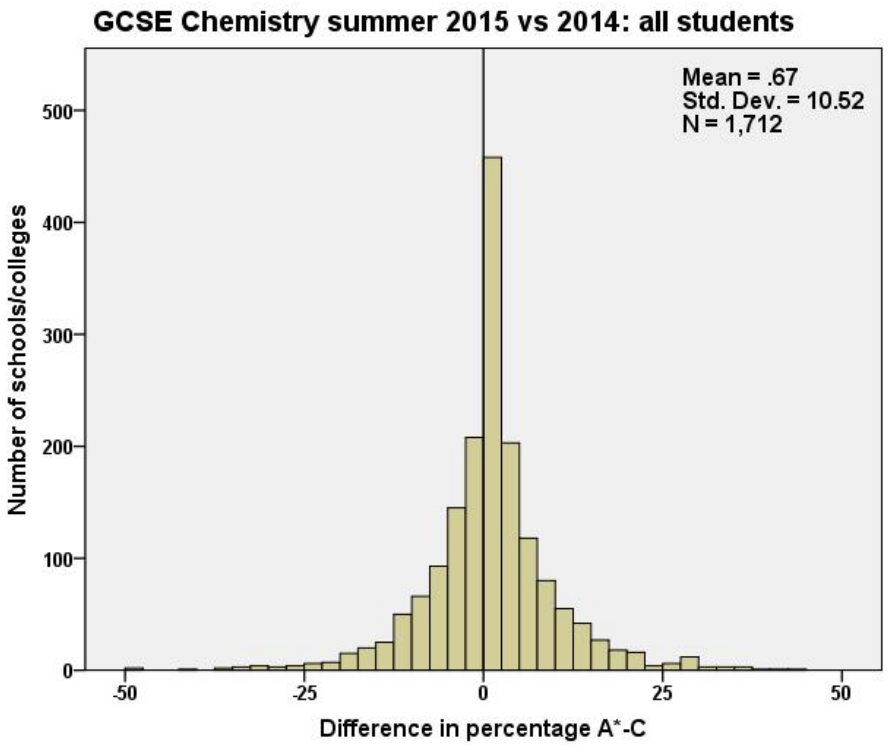


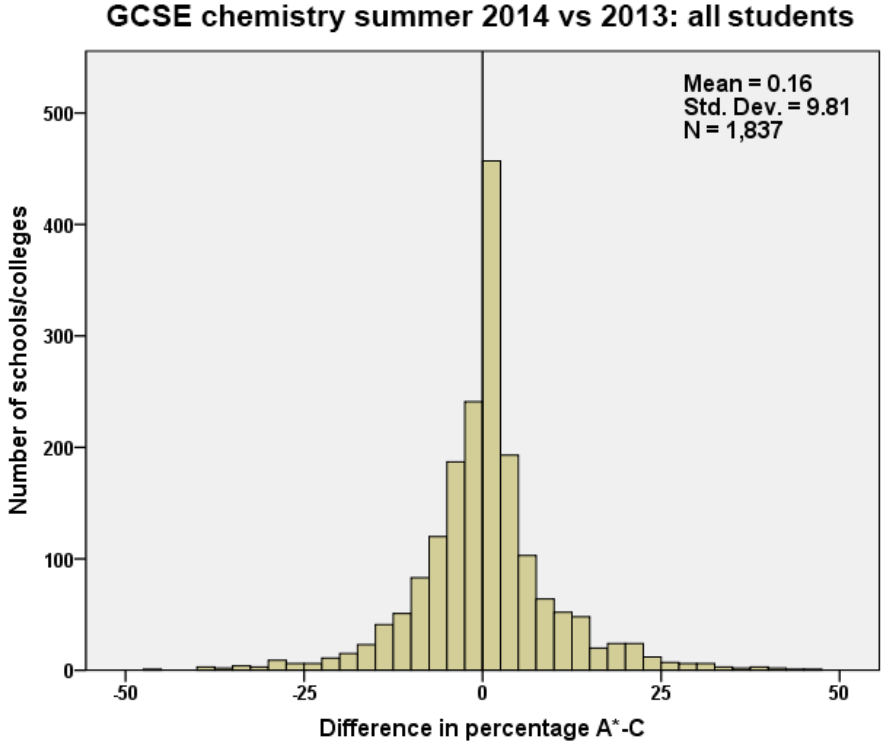


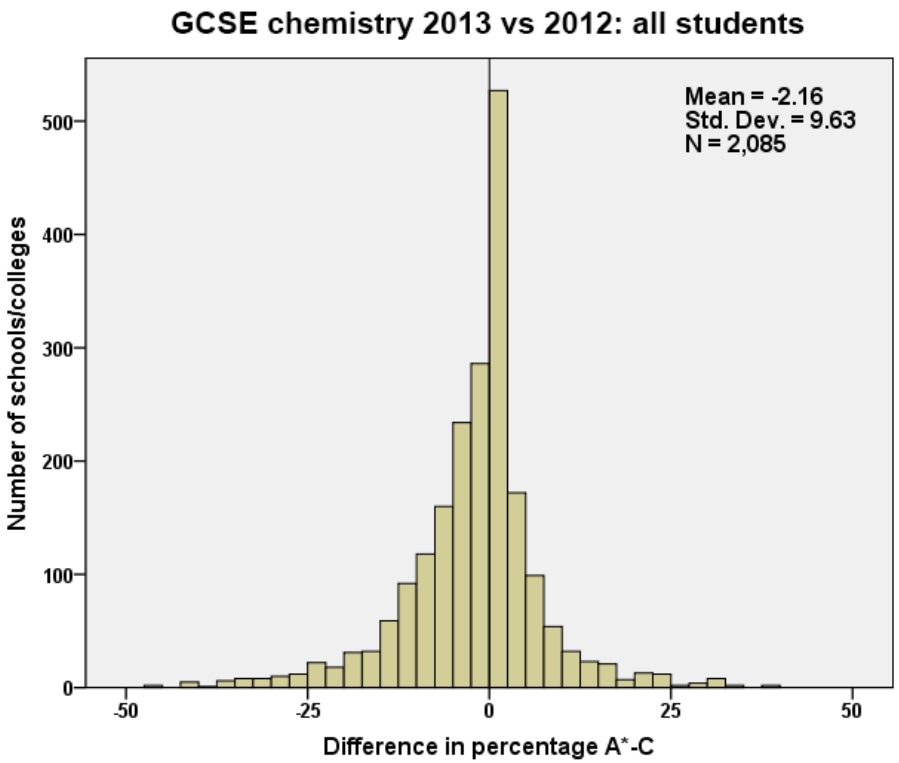

GCSE biology summer 2013 vs 2012: all students
Mean = -2.31
Std. Dev. = 9.52
N = 2,130
Number of schools/colleges
600
500
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

Chemistry

The graphs below suggest the level of variation is similar to 2014. This year the average variation is close to zero, whereas in 2013 the variation was generally in a negative direction.

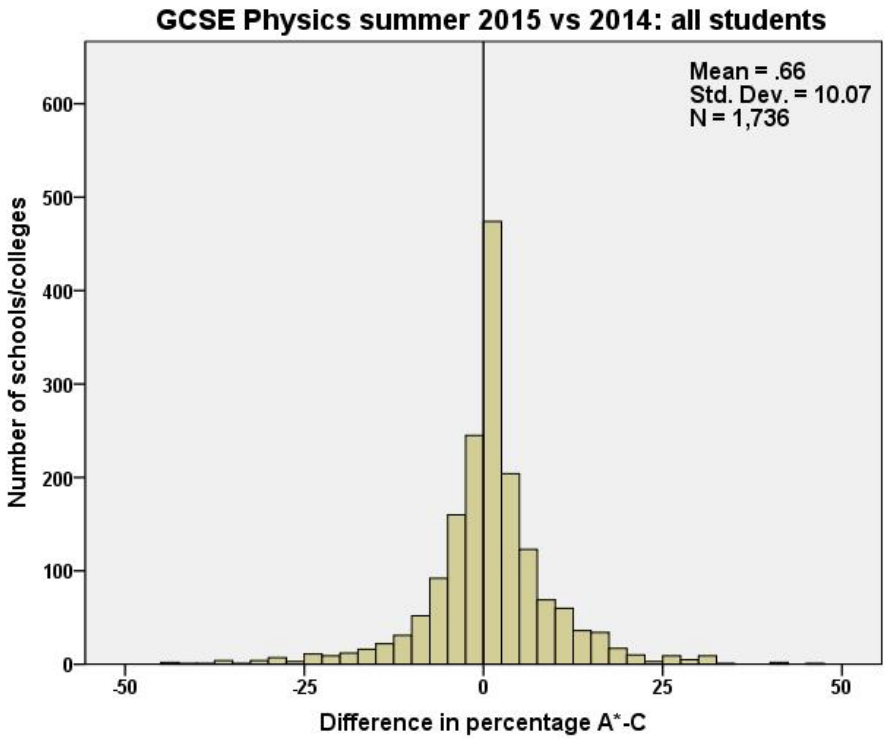


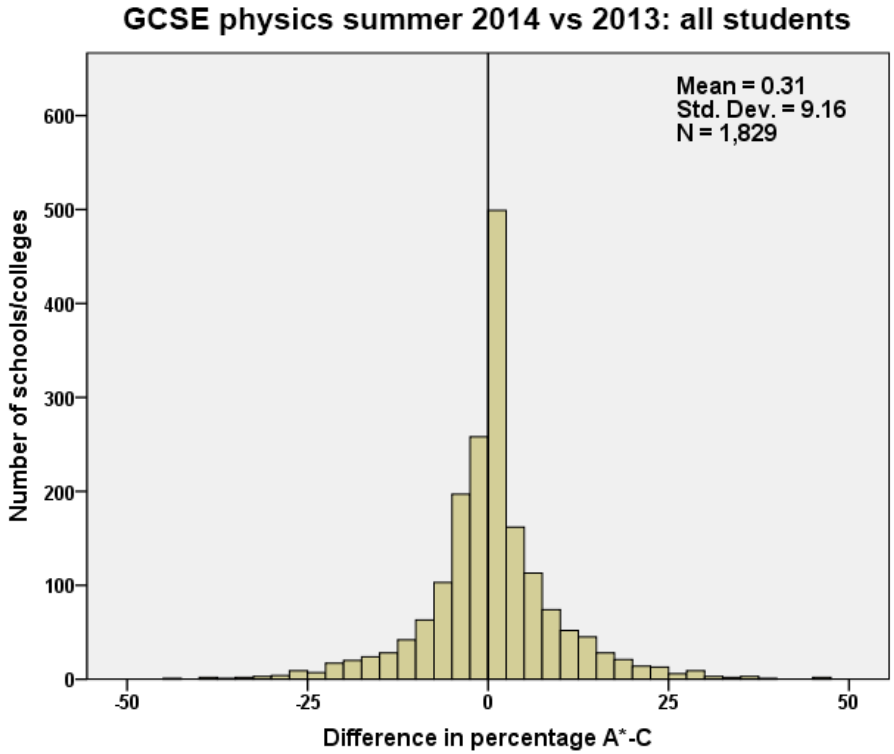


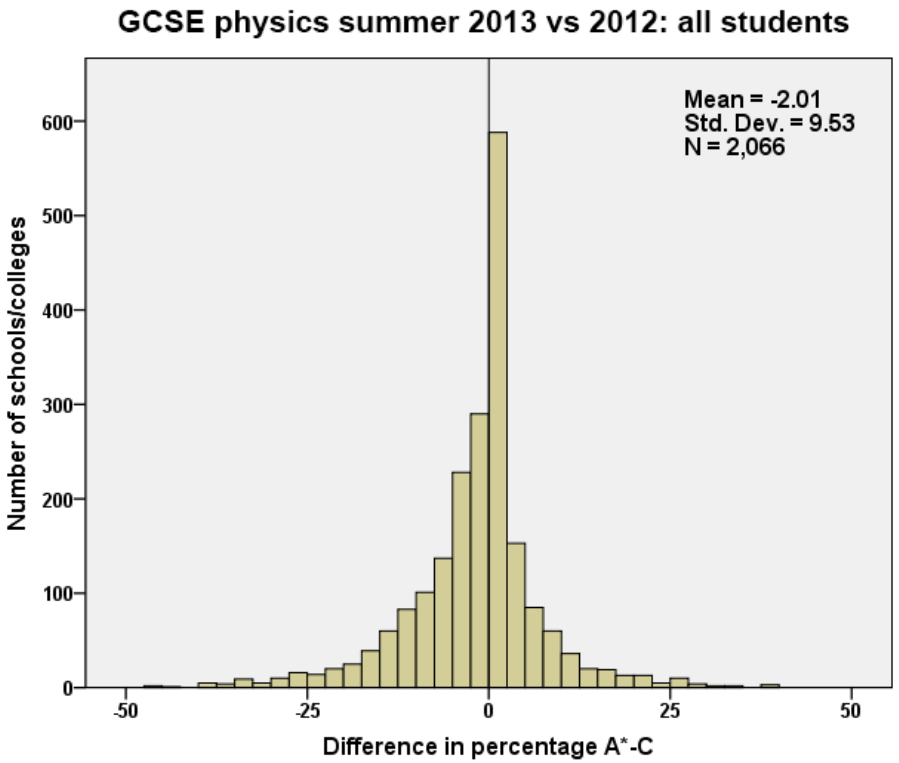

GCSE chemistry 2013 vs 2012: all students
Mean = -2.16
Std. Dev. = 9.63
N = 2,085
Number of schools/colleges
500
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

Physics

The graphs below suggest the level of variation is similar to 2014. This year, as in 2014, the average variation is close to zero, whereas in 2013 the variation was generally in a negative direction.

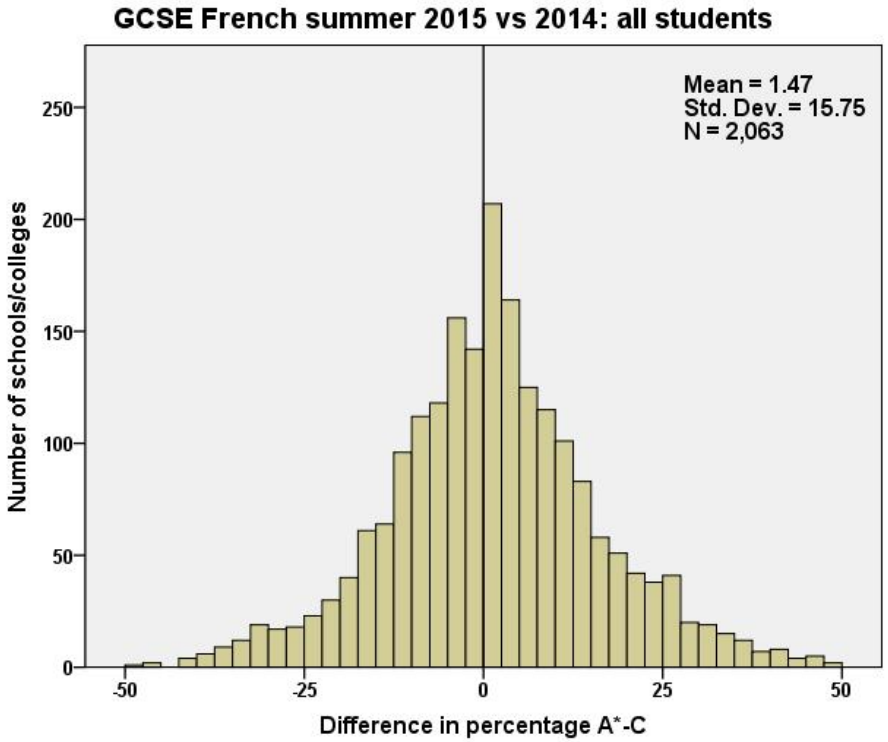


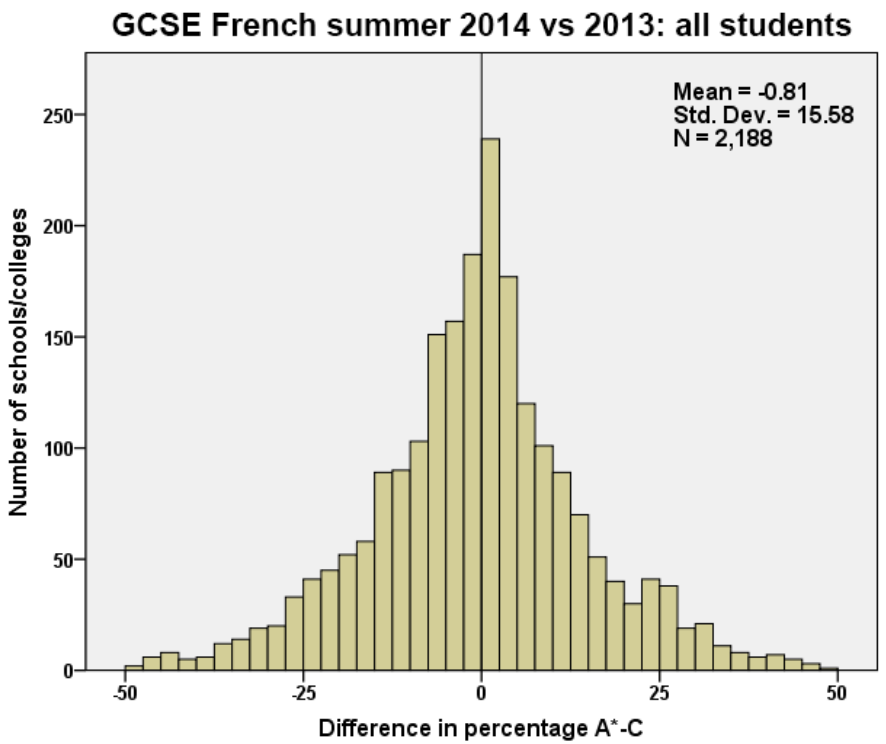


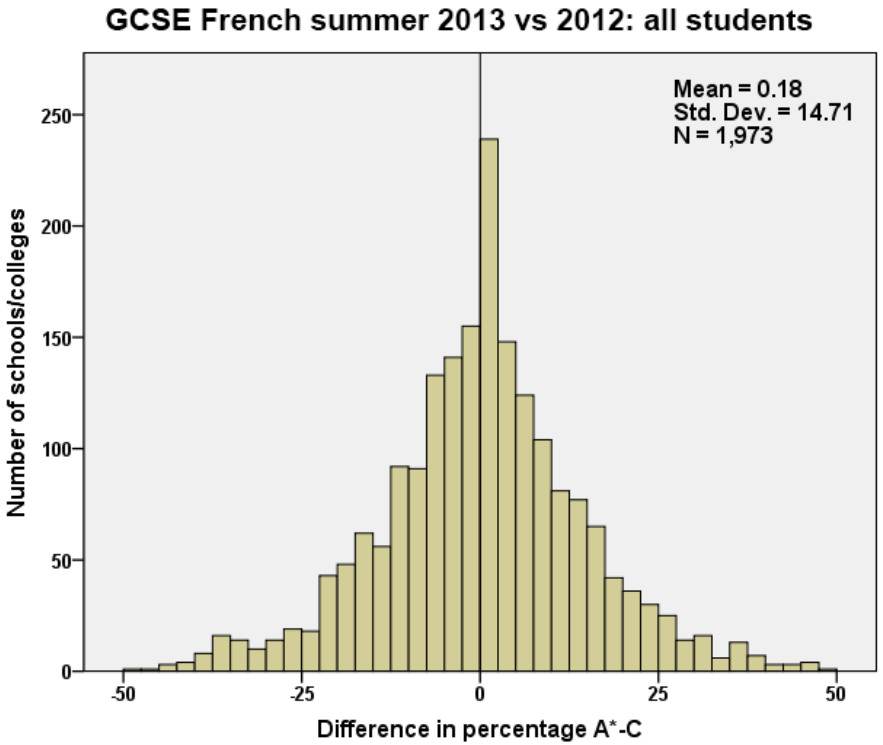

GCSE physics summer 2013 vs 2012: all students
Mean = -2.01
Std. Dev. = 9.53
N = 2,066
Number of schools/colleges
600
500
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

French

The graphs below suggest there is slightly more variation this year, and in a generally positive direction.

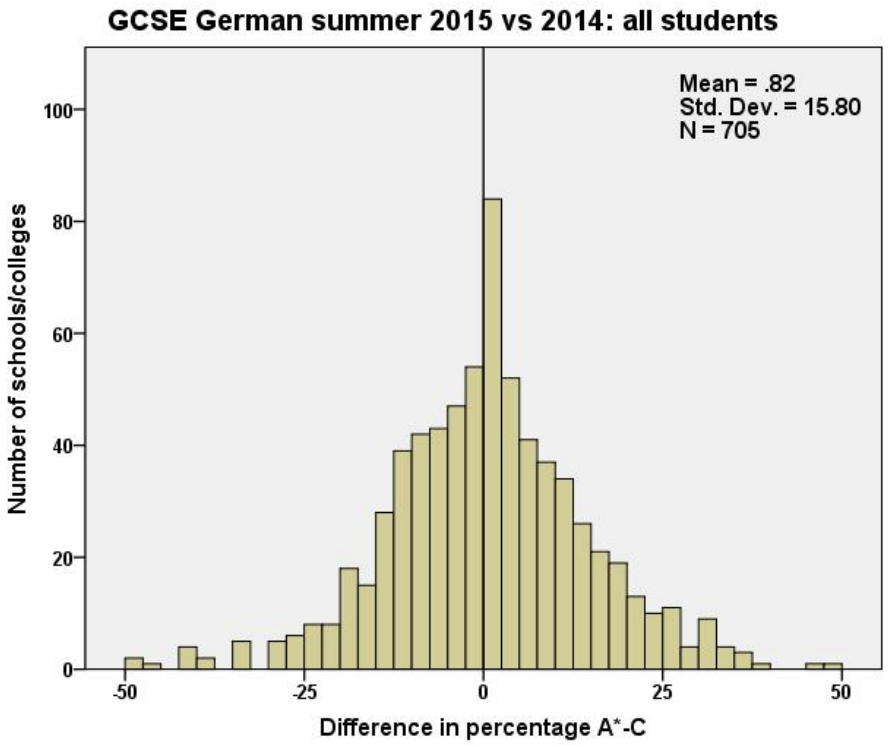


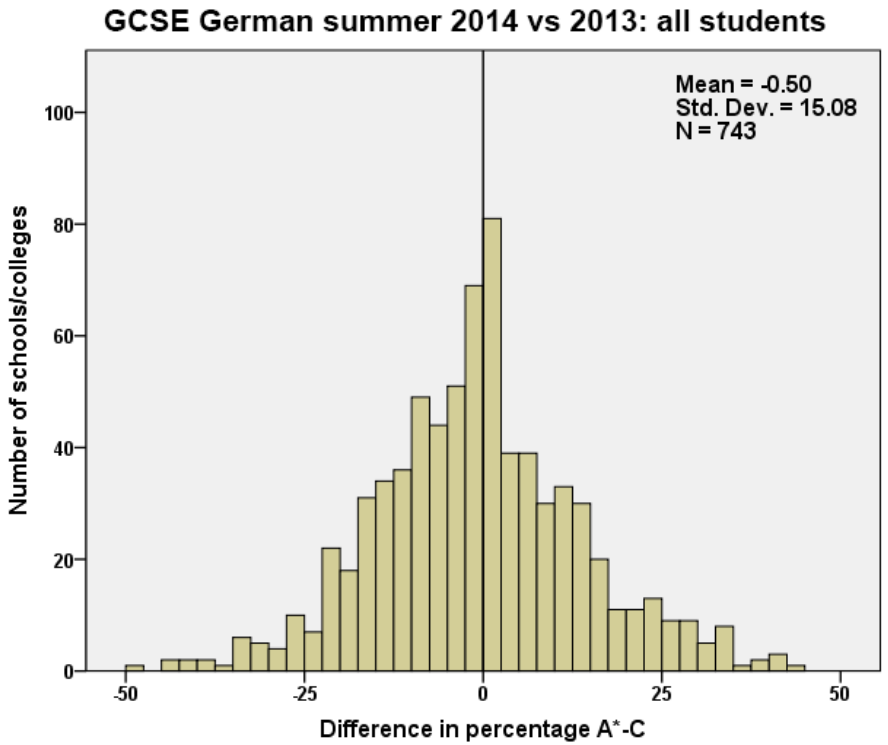


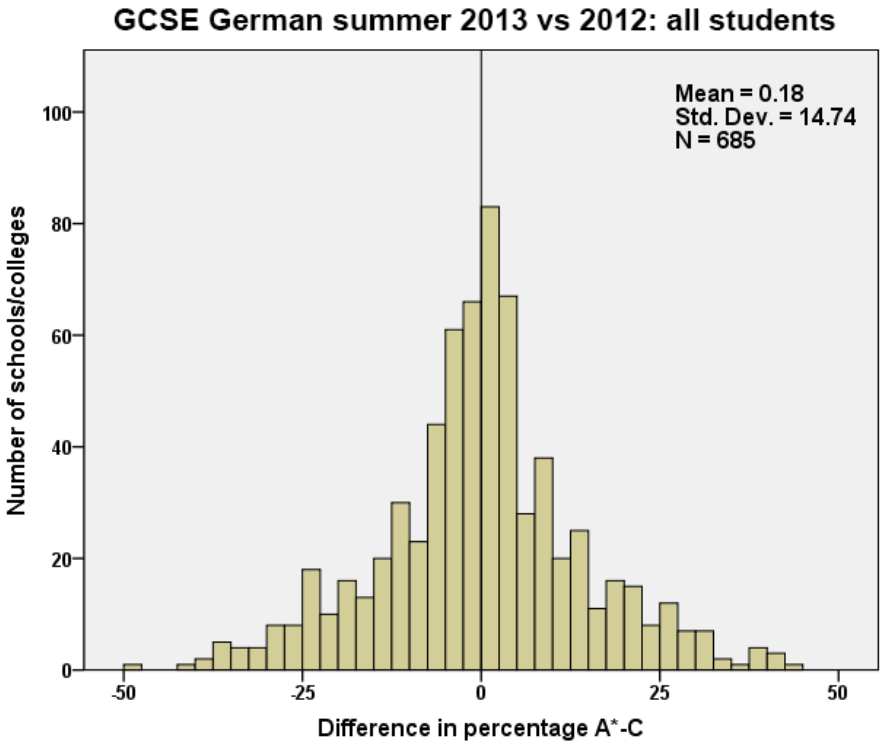

GCSE French summer 2013 vs 2012: all students
Mean = 0.18
Std. Dev. = 14.71
N = 1,973
Number of schools/colleges
250
200
150
100
50
0
-50
-25
0
25
50
Difference in percentage A*-C

German

The graphs below suggest the level of variation is very similar to previous years.

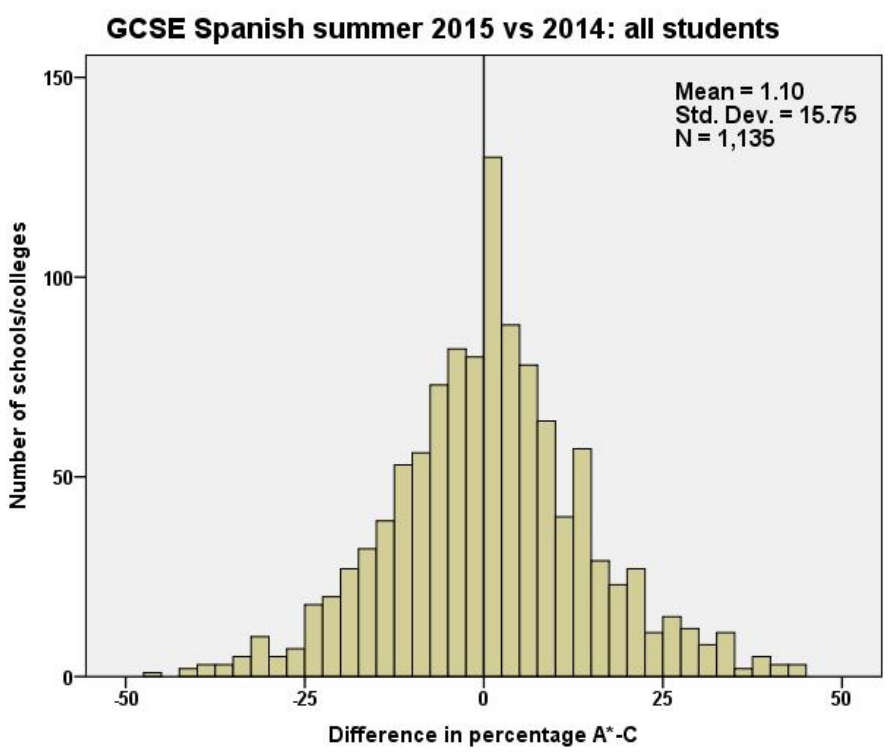


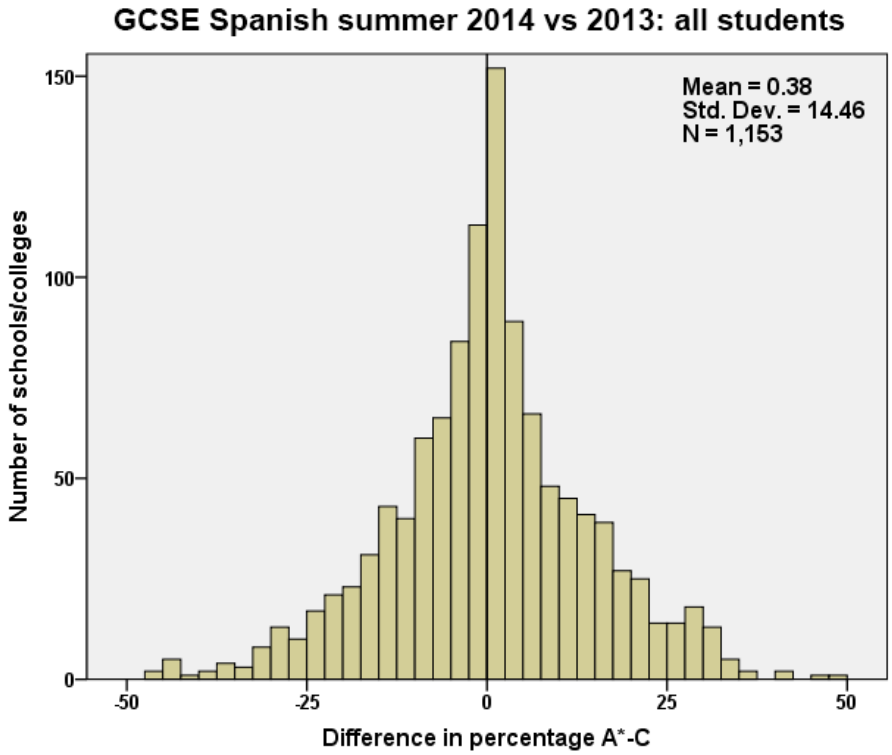


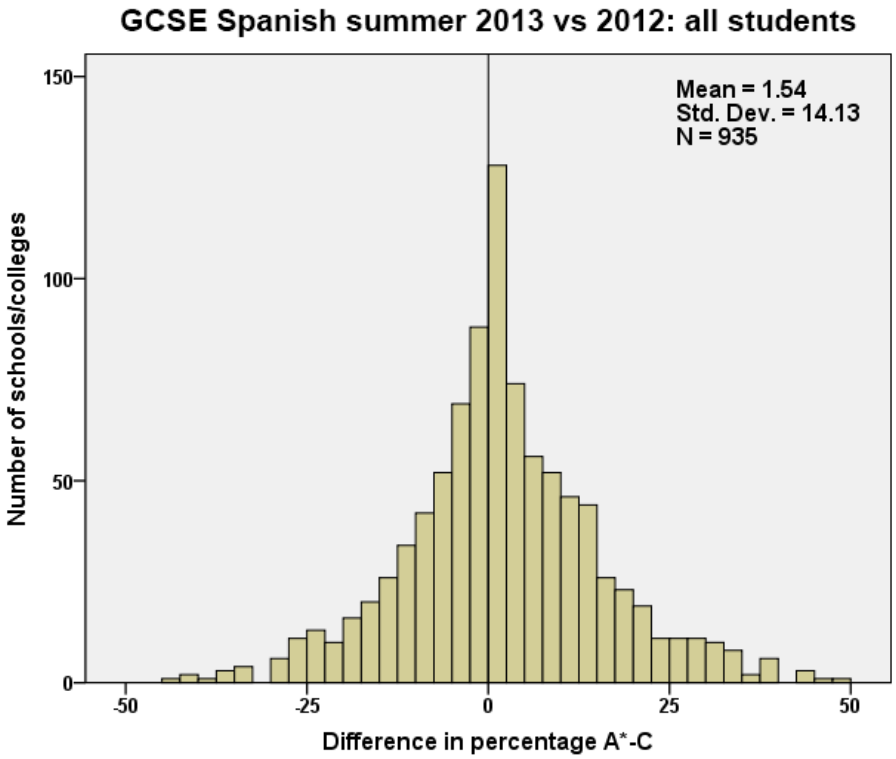

GCSE German summer 2013 vs 2012: all students
Mean = 0.18
Std. Dev. = 14.74
N = 685
Number of schools/colleges
0
20
40
60
80
100
-50
-25
0
25
50
Difference in percentage A*-C

Spanish

The graphs below suggest the level of variation is very similar to previous years.

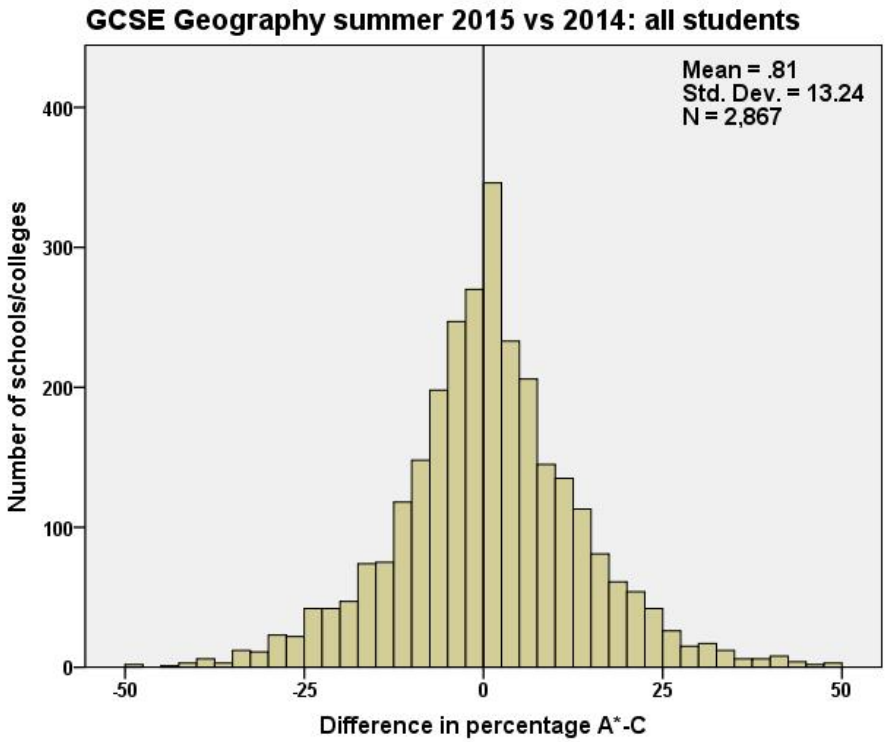


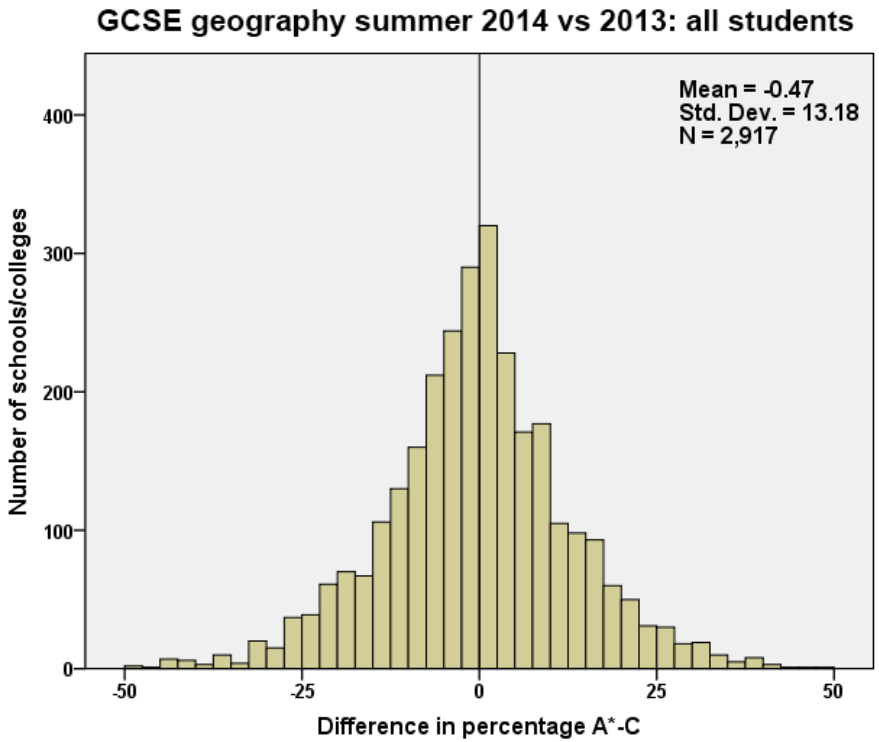


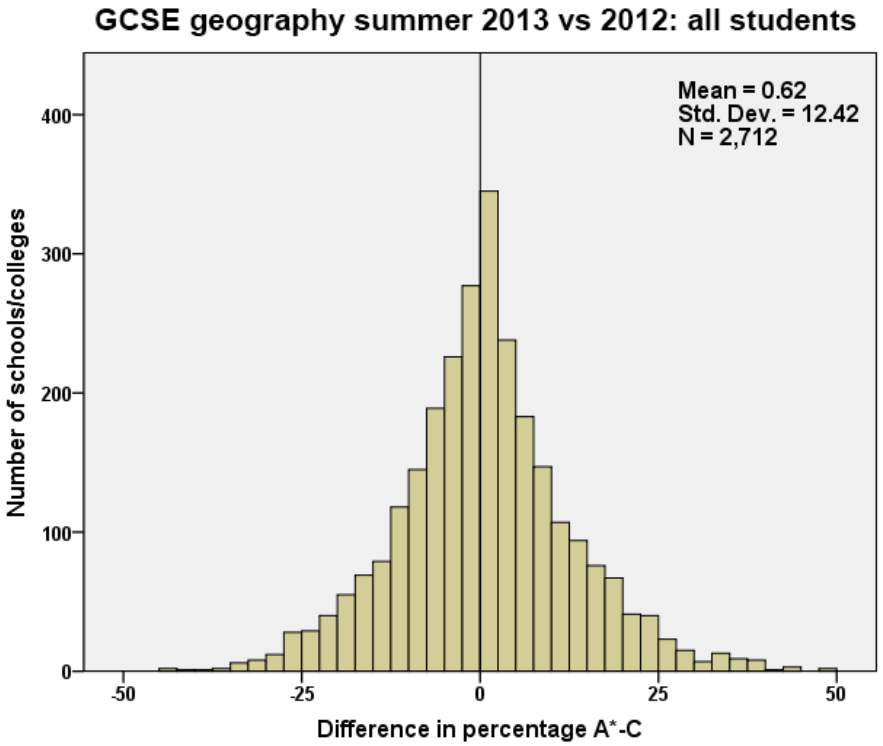

GCSE Spanish summer 2013 vs 2012: all students
Mean = 1.54
Std. Dev. = 14.13
N = 935
Number of schools/colleges
150
100
50
0
-50
-25
0
25
50
Difference in percentage A*-C

Geography

The graphs below suggest the level of variation is very similar to previous years.

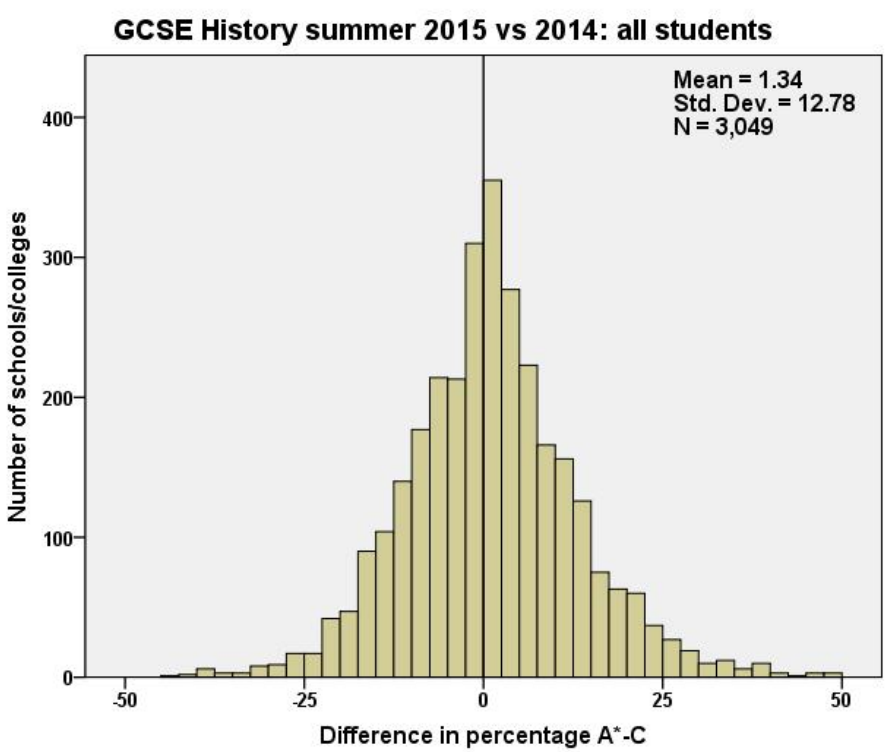


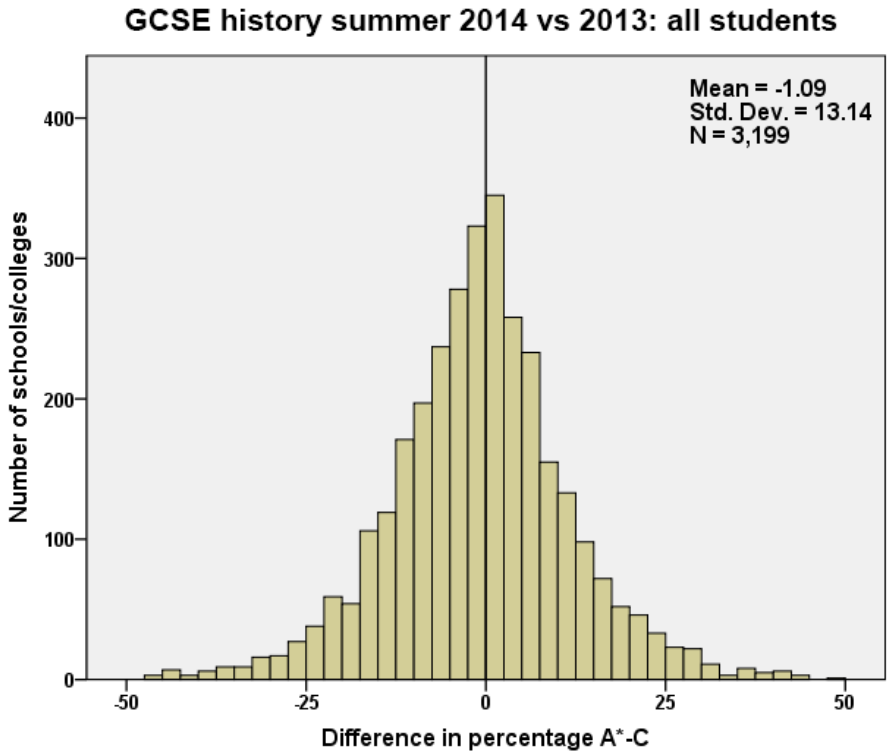


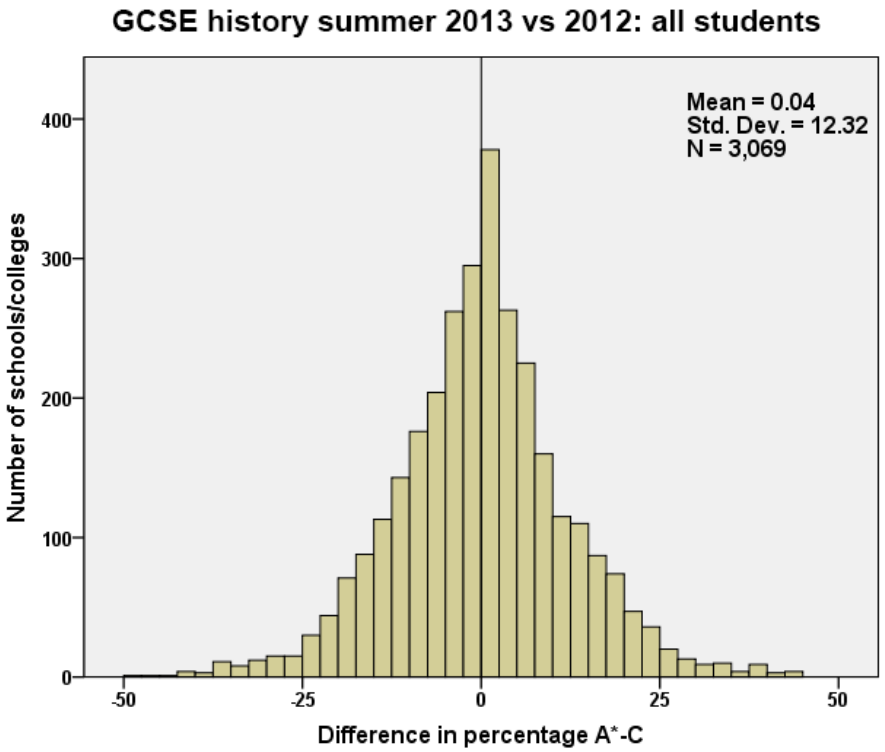

GCSE geography summer 2013 vs 2012: all students
Mean = 0.62
Std. Dev. = 12.42
N = 2,712
Number of schools/colleges
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

History

The graphs below suggest the level of variation is very similar to previous years.






GCSE history summer 2013 vs 2012: all students
Mean = 0.04
Std. Dev. = 12.32
N = 3,069
Number of schools/colleges
400
300
200
100
0
-50
-25
0
25
50
Difference in percentage A*-C

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