

Reviews of marking and moderation: subject level analyses

Summer 2016 exam series



July 2017

Ofqual/17/6255

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Introduction

Administrative error reviews, reviews of marking, and reviews of moderation are collectively referred to throughout this report as 'reviews'. Ofqual collects data on all reviews undertaken following summer exam series. Reviews are part of post-results services offered by exam boards offering GCSE, AS and A levels in England, Wales, Northern Ireland, other UK regions and overseas¹. These data are summarised in our reviews of marking and moderation official statistical release². This report expands upon the summer 2016 official statistical release, providing a more detailed analysis of the data, including breakdowns of review requests by subject and school³ type, and information on raw mark changes resulting from reviews. The analyses include all types of reviews requested from schools in England. The vast majority of reviews requested (98.7%) were reviews of marking. Analyses are presented for GCSE and GCE (AS and A level) separately.

The next section includes an overview covering all the subjects for which reviews were requested. The rest of the report focuses on English Baccalaureate (EBacc) subjects for GCSE and those subjects referred to by the Russell Group of Universities as 'facilitating subjects' for GCE⁴. These are, in the main, subjects which have the highest number of certificating students, accounting for 71% of all GCSE certifications and 55% of all GCE certifications.

There are many reasons for any differences in the numbers of reviews, grades challenged and grades changed across subjects, so great care should be taken when drawing any conclusions about the patterns reported here. As the analyses include all review types, numbers of grades challenged may be higher in subjects with non-exam assessment if a high number of reviews of moderation⁵ have been requested. This is because one review of moderation relates to the whole cohort of students in a school that have taken the assessment and so multiple grades are challenged through just one review.

The structure of the qualification may also impact on review requests and outcomes. A qualification comprises several assessments, and reviews are requested for individual assessments (known as units or components), or parts of an assessment (known as subcomponents), and not the qualification as a whole. The number of units/components that make up a qualification can differ across exam boards,

¹ AQA Education, Council for the Curriculum, Examinations and Assessment, Oxford Cambridge and RSA Examinations, Pearson Education Ltd., and WJEC-CBAC Ltd.

² For example, <https://www.gov.uk/government/statistics/reviews-of-marking-and-moderation-for-gcse-and-a-level-summer-2016-exam-series>

³ 'School' refers to both schools and colleges.

⁴ Please see the background notes section of this report for more information.

⁵ Reviews of moderation are available for non-exam assessment only. Reviews of marking and administrative error reviews are available for exam assessment only.

subjects and qualification levels, as does the type of assessment (exam or non-exam). Therefore the opportunity to request reviews and request different types of reviews does as well. Furthermore, some reformed qualifications have fewer components than the qualifications which they have replaced and this may impact on review figures over time.

It is also possible that teachers may have different approaches to requesting reviews which could vary across subjects and may be influenced by how high-stakes the subject is considered. Finally, the nature of the subject (eg, objective versus subjective) and assessment (eg, many small mark items versus few large mark items) may impact upon review requests and outcomes as may the proximity of the student's mark to the grade boundary.

Throughout the report, review figures from 2016 are compared with review figures from 2015. Ofqual collected these data for the first time in 2015 and therefore we do not know if any of the year-on-year trends seen are typical. They should therefore be interpreted with caution. Furthermore, between the summer 2015 and summer 2016 exam series, new rules relating to reviews were put in place by Ofqual which mean that marks should only be changed at review if an error has occurred⁶. These changes are likely to impact on review requests and outcomes, making comparisons between 2015 and 2016 difficult. This should be borne in mind when interpreting the data.

⁶ See the review of marking and moderation official statistical release for more information: <https://www.gov.uk/government/statistics/reviews-of-marking-and-moderation-for-gcse-and-a-level-summer-2016-exam-series>.

All subject overview

Figures 1 to 4 show the percentage of grades awarded in each GCSE (Figures 1 and 3) and GCE (Figures 2 and 4) subject that were challenged through the review process (blue bars) and changed (orange bars) as a result of reviews in 2016 (Figures 1 and 2) and 2015 (Figures 3 and 4). These figures are ordered from the subject with the lowest percentage of grades challenged, to the subject with the highest percentage of grades challenged.

Figures 1 and 2 show large variation in the percentage of grades challenged across subjects in 2016 (1.6% to 10.3% for GCSE and 0.5% to 11.6% for GCE). However, the percentage of qualification grades awarded that were changed following reviews is much more consistent across subjects, never rising above 2.5% of the total number of qualifications awarded (GCSE range: 0.4% to 2.1%, GCE range: 0.1% to 2.4%). This trend is similar to last year where the percentage of qualification grades challenged ranged from 1.7% to 13.4% for GCSE and 0.7% to 13.9% for GCE but the percentage of qualification grades changed was always below 3% across all subjects and qualification levels (GCSE range: 0.2% to 2.3%, GCE range: 0.3% to 2.6%). Across all subjects and both qualification levels, the percentage of qualification grades awarded that were challenged and changed was lower in 2016 compared to 2015. In 2015, 6.1% of all GCSE and 6.6% of all GCE qualifications awarded were challenged and 1.2% of all GCSE and 1.3% of all GCE qualifications awarded were changed. In 2016, 5.5% of all GCSE and 4.3% of all GCE qualifications awarded were challenged and 1.0% of all GCSE and 0.8% of all GCE qualifications awarded were changed.

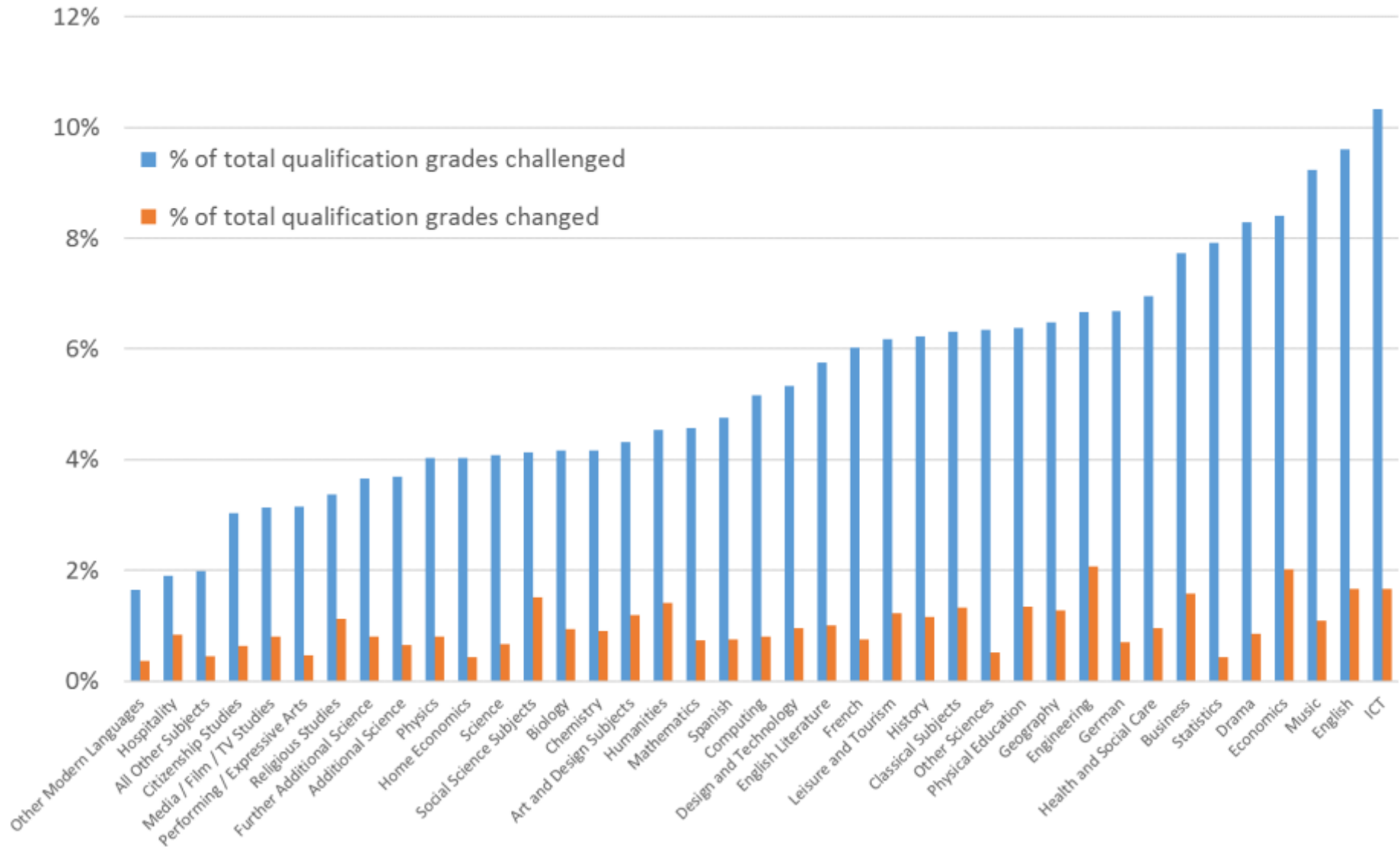


Figure 1. Percentage of GCSE grades challenged and changed for each subject, 2016

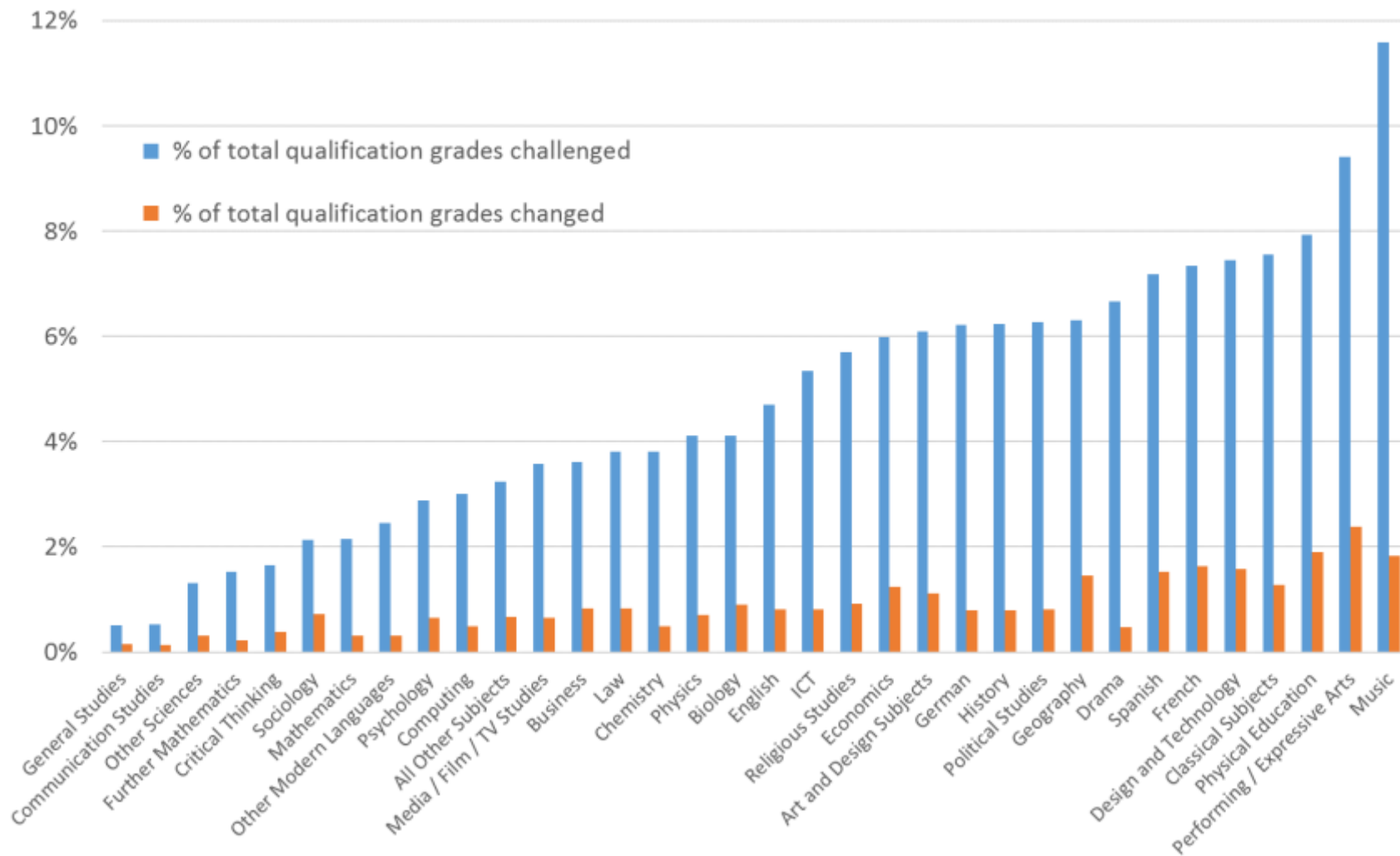


Figure 2. Percentage of GCE grades challenged and changed for each subject, 2016

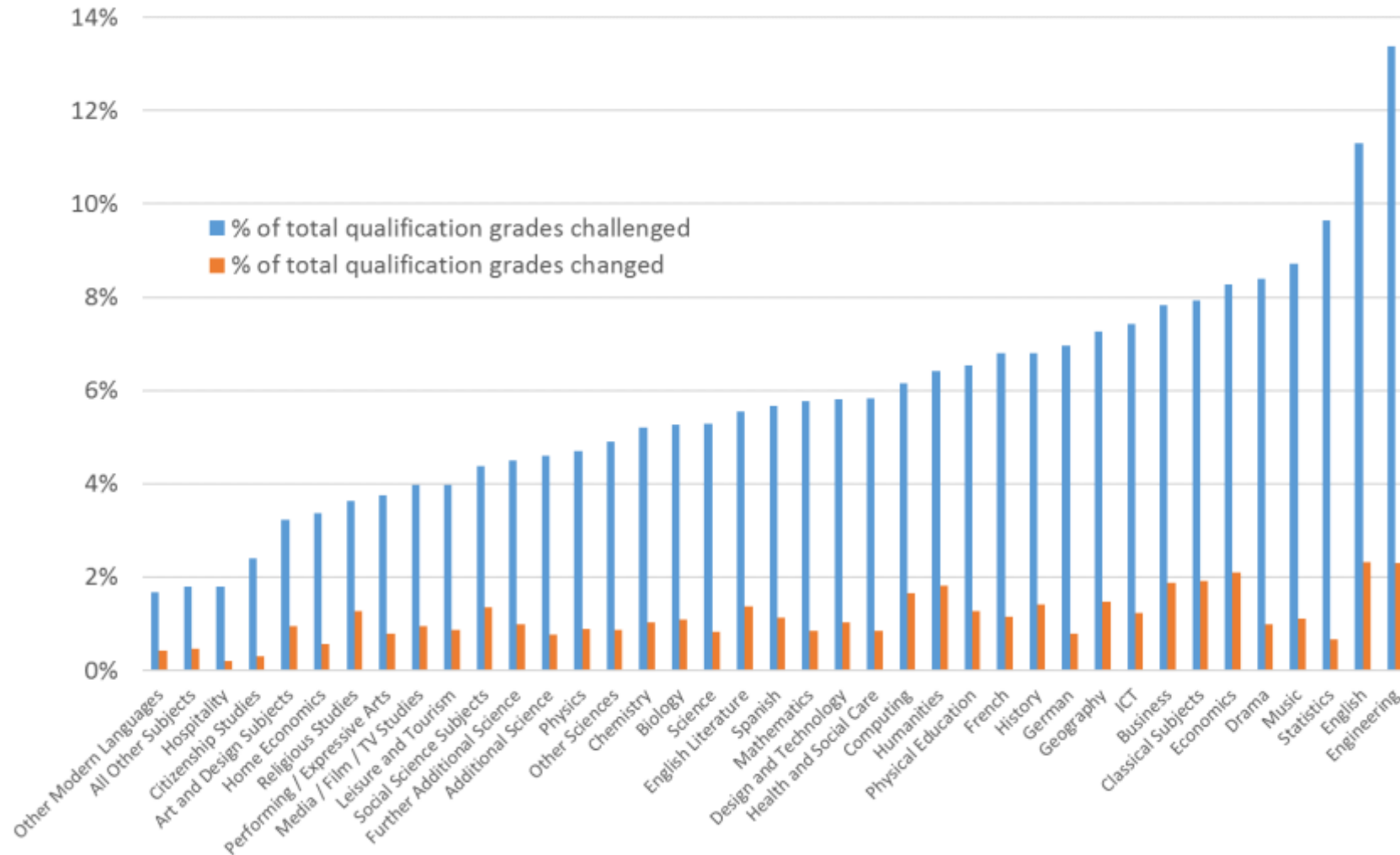


Figure 3. Percentage of GCSE grades challenged and changed for each subject, 2015

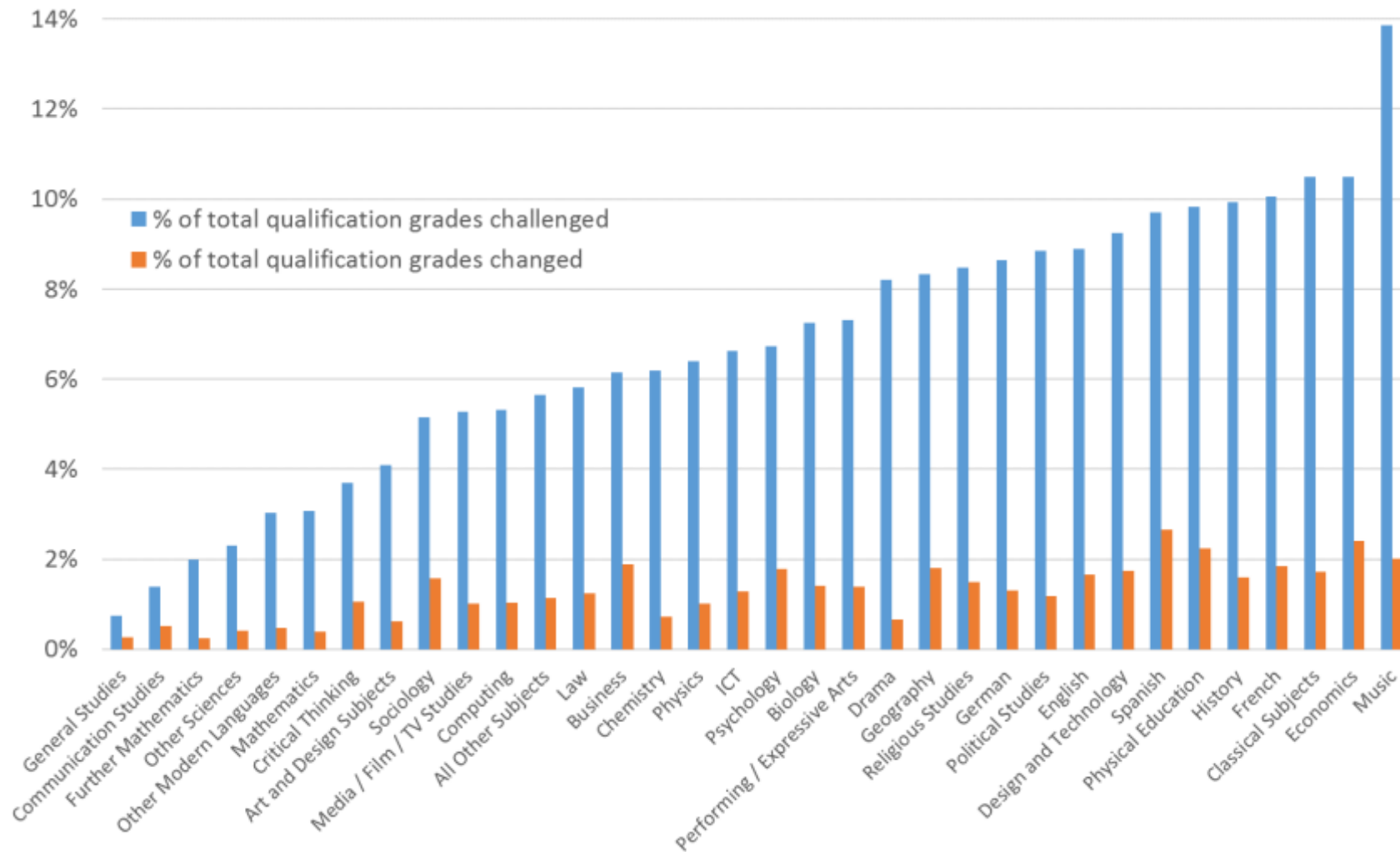


Figure 4. Percentage of GCE grades challenged and changed for each subject, 2015

Reviews, grades challenged and grades changed

Tables 1 and 2 show a breakdown of the number of reviews, grades challenged and grades changed across EBacc and facilitating subjects for GCSE and GCE, respectively. A review is often requested for more than one assessment that a candidate has taken as part of a single qualification. This is why, for most subjects in Tables 1 and 2, there are more reviews requested than there are grades challenged. However, there are some subjects (for example, GCSE French and German) where there are more grades challenged than there are reviews. This is because some reviews of moderation have been requested and one review relates to the whole cohort of students in a school that have taken the assessment. Therefore, with reviews of moderation, many grades are challenged through one review.

At GCSE, English⁷ had the highest percentage of grades awarded that were challenged followed by German, geography, history, French and English literature. Mathematics, the sciences and Spanish had the lowest percentages of grades challenged. A similar pattern is seen at GCE, with the languages, history and geography having the highest percentages of grades challenged, and the sciences and mathematics having the lowest. For GCE, English falls around the middle.

At GCSE, English had the highest percentage of grades that changed following review, followed by geography, history and English literature. This may be expected given that a higher percentage of grades were challenged in these subjects. It is therefore more meaningful to compare the percentage of grades challenged that were changed across subjects.

At GCSE, biology, chemistry, physics and geography had the highest percentages of grades that changed relative to grades challenged, and German, French and Spanish had the lowest percentages. English falls around the middle in terms of the percentage of grades challenged that were changed. This suggests that, although more grades are challenged in this subject relative to the number of qualifications awarded, there are not more grade changes when the volume of reviews requested is taken into account. At GCE, geography, French, biology and Spanish had the highest percentages of grades challenged that were changed and history, German and Spanish the lowest.

⁷ For GCSE, 'English' includes English and English language. For A level, 'English' includes English language, English literature and English language and literature – see background notes for more information.

Table 1. Number of GCSE reviews and grades challenged and changed relative to the total number of qualifications awarded, summer 2016⁸.

GCSE subject	Reviews	Grades challenged	Grades changed	Total qualifications awarded	% of total qualification grades challenged	% of total qualification grades changed	% of grades challenged that were changed
English/ English language	35,850	43,750	7,600	455,850	9.6	1.7	17.4
English literature	28,200	21,500	3,750	373,900	5.7	1.0	17.5
Mathematics	61,050	32,050	5,200	701,900	4.6	0.7	16.3
Biology	8,700	5,550	1,250	133,750	4.2	0.9	22.5
Chemistry	8,100	5,500	1,200	131,900	4.2	0.9	21.7
Physics	7,650	5,250	1,050	130,850	4.0	0.8	20.1
Science	24,250	15,400	2,550	377,600	4.1	0.7	16.5
Additional science	19,900	13,050	2,300	353,800	3.7	0.7	17.8
Geography	14,500	14,800	2,900	228,450	6.5	1.3	19.6
History	17,000	15,100	2,800	242,850	6.2	1.2	18.6
French	7,650	8,150	1,000	135,400	6.0	0.8	12.5
German	2,700	3,200	350	47,900	6.7	0.7	10.4
Spanish	4,300	4,150	650	87,600	4.8	0.7	15.7
Total	239,800	187,500	32,700	3,401,750	5.5	1.0	17.4

Note. Figures are rounded to the nearest 50.

Table 2. Number of GCE reviews and grades challenged and changed relative to the total number of qualifications awarded, summer 2016⁹.

GCE subject	Reviews	Grades challenged	Grades changed	Total qualifications awarded	% of total qualification grades challenged	% of total qualification grades changed	% of grades challenged that were changed
English	8,550	7,900	1,350	167,800	4.7	0.8	17.2
Mathematics	9,300	5,100	750	237,400	2.2	0.3	14.7
Further mathematics	1,000	600	100	40,600	1.5	0.2	14.1
Biology	8,150	5,550	1,200	134,900	4.1	0.9	21.9
Chemistry	7,250	4,350	550	114,500	3.8	0.5	13.0
Physics	5,400	3,350	600	82,100	4.1	0.7	17.4
Geography	6,900	5,200	1,200	82,850	6.3	1.5	23.2
History	6,100	6,500	850	104,100	6.2	0.8	12.7
Classical subjects	1,450	1,100	200	14,250	7.6	1.3	16.8
French	2,050	1,650	350	22,550	7.3	1.6	22.2
German	750	550	50	9,250	6.2	0.8	12.9
Spanish	1,800	1,450	300	19,900	7.2	1.5	21.3
Total	58,800	43,350	7,550	1,030,150	4.2	0.7	17.4

Note. Figures are rounded to the nearest 50.

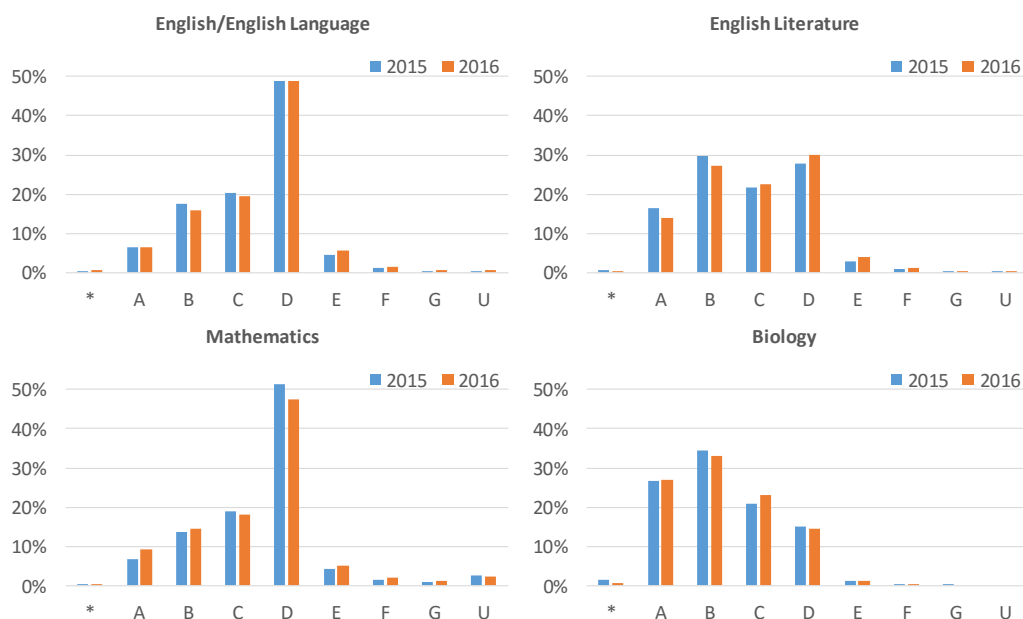
⁸The number of GCSE qualifications awarded in each subject is taken from the Joint Council for Qualification's (JCQ) GCSE results day report: <http://www.jcq.org.uk/examination-results/gcses/2016/gcse-and-entry-level-certificate-results-summer-2016>

⁹The number of GCE qualifications awarded in each subject is taken from the Joint Council for Qualification's (JCQ) AS and A level results day report: <http://www.jcq.org.uk/examination-results/a-levels/2016/a-as-and-aea-results>

Original qualification grades subject to review

The reviews of marking and moderation official statistical release showed that, for GCSE, schools requested more reviews for students whose original qualification grade was a D, than for any other grade in 2016. As Figure 5 shows, this trend is true for all EBacc subjects in 2016 apart from biology, chemistry, and physics, where more reviews were associated with an original qualification grade B. This is likely to reflect the ability profile of the students who typically take these subjects, over 70% of students in these subjects achieved a grade B or above and B was the most commonly awarded grade. This is very different to the other subjects where the percentage of students achieving a B or above is less than 49%.

Figure 5 also shows similar year-on-year trends regarding the percentage of reviews associated with each GCSE grade. In all subjects, apart from English and English literature, there is a small reduction in the percentage of students with an original qualification grade D between 2015 and 2016. There are also small increases across all subjects in the percentage of students with an original qualification grade of E, F and G. These differences may reflect usual year-on-year variation, or they could possibly be due to changes in key stage 4 accountability measures¹⁰, whereby emphasis has moved from the proportion of A* to C grades attained to achievement across the grade range.



¹⁰ Progress 8 and Attainment 8 are key measures of performance for all state funded secondary schools and those colleges that offer key stage 4 education in England from 2016 onwards. They have replaced the 5+ A* to C including English and mathematics headline measure, and the expected progress measures.

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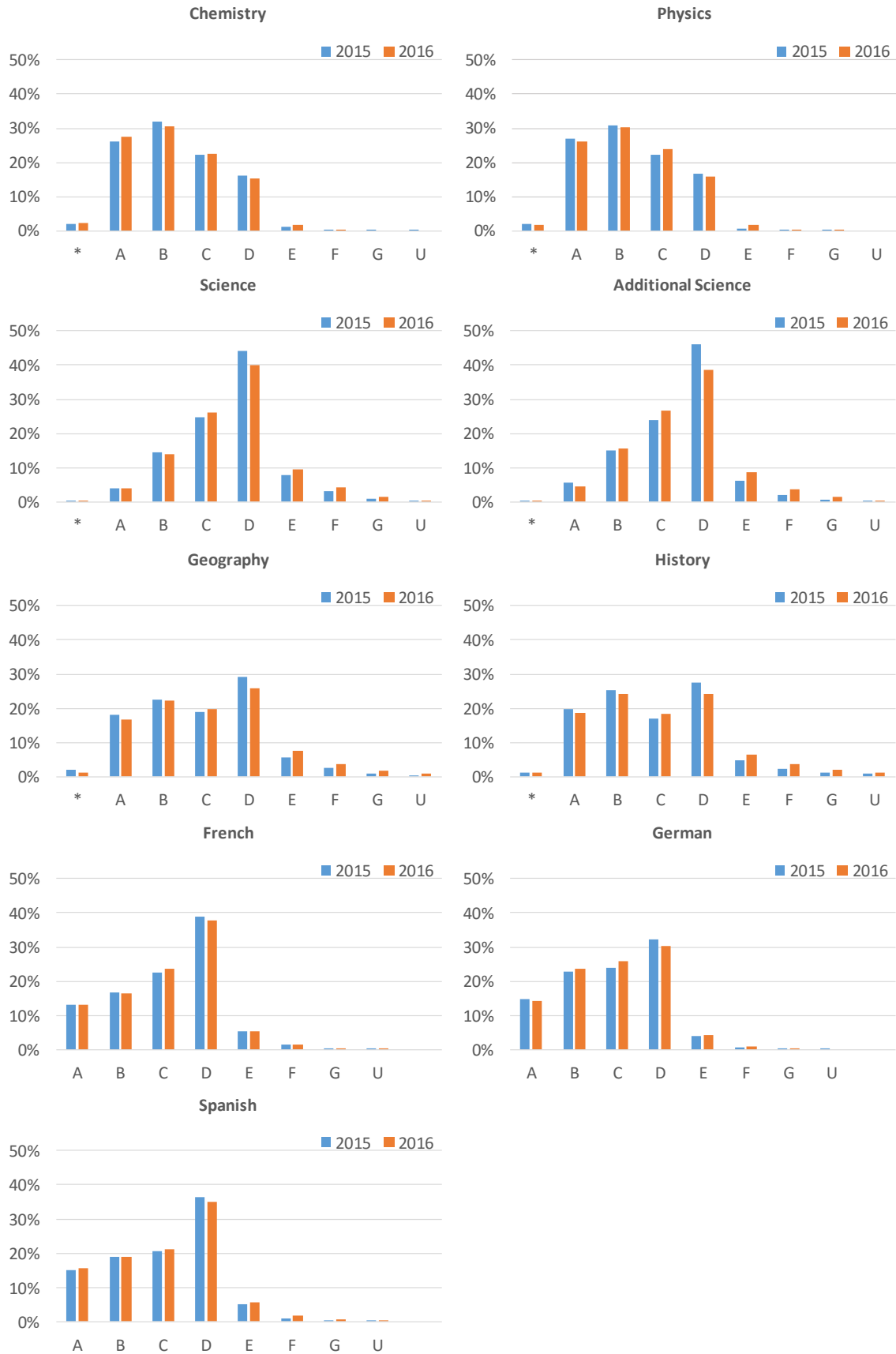
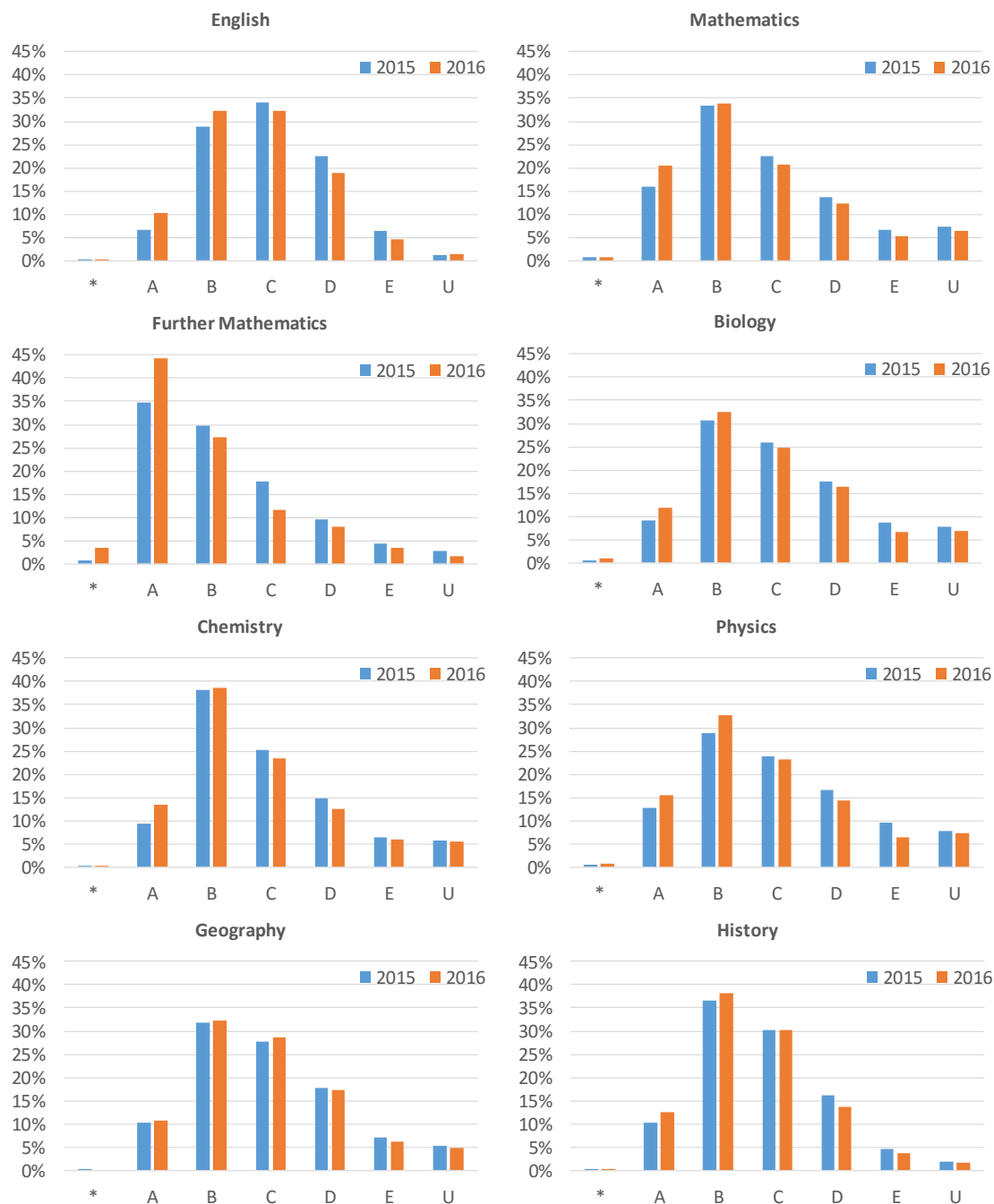


Figure 5. Percentage of reviews associated with each original GCSE qualification grade, 2015 and 2016.

At GCE, the reviews of marking and moderation official statistical release showed that schools requested more reviews for students whose original qualification grade was a B, than for any other grade in 2016. As Figure 6 shows, this trend is true for all facilitating subjects in 2016 apart from further mathematics, where more reviews were associated with an original qualification grade A. Again, this is likely to reflect the ability profile of the students who typically take this subject. At A level, 56% of students achieved an A* or A. Figure 6 also shows similar year-on-year trends regarding the percentage of reviews associated with each GCE grade.



*Reviews of marking and moderation:
Subject level analyses*

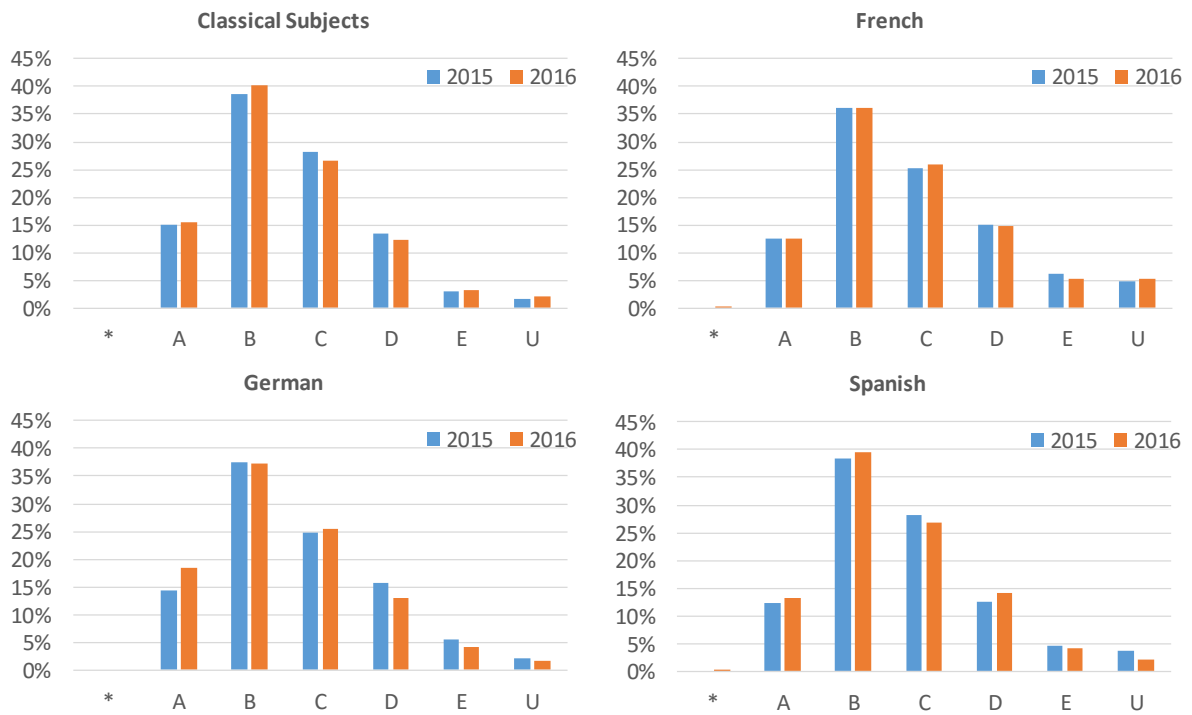


Figure 6. Percentage of reviews associated with each original GCE qualification grade, 2015 and 2016.

School type differences

Figures 7 and 8 show the percentage of GCSE (Figure 7) and A level¹¹ (Figure 8) qualification grades challenged (blue bars) and changed (orange bars), and the percentage of grades challenged that were changed (grey bars) in 2016, across the following school types:

- Secondary comprehensive, middle and modern schools,
- Secondary selective schools,
- Academies,
- Independent schools,
- Further education (FE) establishments, sixth form colleges, and tertiary colleges. This category also includes all 'other' schools including free schools, special schools, studio schools, and private students.

Tables 3 and 4 show the numbers behind Figures 7 and 8 respectively. It should be noted that, as this analysis is limited to certain subjects¹², due to limitations in data available¹³, the picture shown is not complete and this should be borne in mind when interpreting the results. To quantify this, the subjects included represent 70.6% of GCSEs awarded and 44.3% of A levels awarded in summer 2016.

Overall, independent schools tend to request reviews for a greater percentage of their qualification entries¹⁴ compared to other school types at both GCSE (8.1%) and A level (9.8%). The remaining school types requested reviews for 4.3% to 6.2% of their GCSE qualification entries, and 4.6% to 6.2% of their A level qualification entries. In other words, across all schools, reviews were requested for 1 in 18 GCSE entries and 1 in 16 A level entries. Independent schools requested reviews for 1 in 12 GCSE entries and 1 in 10 A level entries.

A greater percentage of qualification entries from independent schools receive grade changes following reviews compared to other school types at both GCSE and A level (both 1.7%). The remaining school types had 0.6% to 1.0% of their GCSE and A level grades changed. This is probably because independent schools request reviews for a greater percentage of their qualification entries than other school types.

¹¹ It was not possible to include AS in this analysis as we do not hold data on AS certifications by school type.

¹² GCSE subjects: English, English language, English literature, mathematics, biology, chemistry, physics, science, additional science, history, geography, French, German and Spanish. A level subjects: English literature, English language, English literature and language, mathematics, further mathematics, biology, chemistry, physics, French, German and Spanish.

¹³ For this analyses, total qualification entries were calculated according to student level data received from the exam boards at the beginning of August 2016 as this includes school type information which the JCQ results day reports do not. Ofqual receives data for certain subjects only.

¹⁴ i.e., an individual student taking an individual qualification, for example, GCSE biology.

It is therefore necessary to consider the percentage of grades challenged by each school type that were changed in order to be able to make meaningful comparisons. When taking into account the volume of reviews requested, independent schools and, at GCSE, secondary selective schools, have the highest percentage of grades changed compared to other school types. At GCSE, 20.9% of grades challenged by independent schools (and secondary selectives) were changed, at A level, 17.5% of grades challenged by independent schools were changed. In comparison, the percentage of grades challenged that were changed for the remaining school types was 12.9% to 17.5% at GCSE and 13.3% to 15.5% at A level.

Figures 9 and 10 replicate the above analyses using 2015 data. The pattern seen is largely similar, for both GCSE and A level, independent schools requested reviews for a greater percentage of their qualification entries, and a greater percentage of these entries received grade changes, than for other school types. However, at GCSE, secondary selective schools had the greatest percentage of grades changed relative to grades challenged (26.1%) although they were followed by independent schools (22.4%). Both were considerably higher than the other school types (16.9% to 18.8%). At A level, the percentages of grades challenged that were changed were more similar across the school types, ranging from 15.4% (FE, sixth form and tertiary colleges including other schools) to 17.2% (independent schools).

Table 3. *Number of GCSE grades challenged and changed relative to the total number of qualifications awarded, EBacc subjects only.*

	Secondary Comprehensive, Middle and Modern	Secondary Selective	Academies	Independent	FE, Sixth Form & Tertiary Colleges Including Others	All Schools
Qualification Grades Challenged	67,900	4,000	89,750	12,500	13,350	187,500
Qualification Grades Changed	11,750	850	15,750	2,600	1,750	32,700
Qualifications Awarded	1,218,900	64,250	1,635,700	153,950	307,650	3,380,500
% of Total Qualification Grades Challenged	5.6%	6.2%	5.5%	8.1%	4.3%	5.5%
% of Total Qualification Grades Changed	1.0%	1.3%	1.0%	1.7%	0.6%	1.0%
% of Grades Challenged Changed	17.3%	20.9%	17.5%	20.9%	12.9%	17.4%

Note. Figures are rounded to the nearest 50.

Table 4. *Number of A level grades challenged and changed relative to the total number of qualifications awarded, selected subjects only.*

	Secondary Comprehensive, Middle and Modern	Secondary Selective	Academies	Independent	FE, Sixth Form & Tertiary Colleges Including Others	All Schools
Qualification Grades Challenged	3,050	1,050	6,250	5,400	3,950	19,650
Qualification Grades Changed	450	150	950	950	550	3,050
Qualifications Awarded	64,250	18,750	100,600	55,000	84,900	323,450
% of Total Qualification Grades Challenged	4.7%	5.5%	6.2%	9.8%	4.6%	6.1%
% of Total Qualification Grades Changed	0.7%	0.8%	1.0%	1.7%	0.6%	0.9%
% of Grades Challenged Changed	14.5%	14.8%	15.5%	17.5%	13.3%	15.4%

Note. Figures are rounded to the nearest 50.

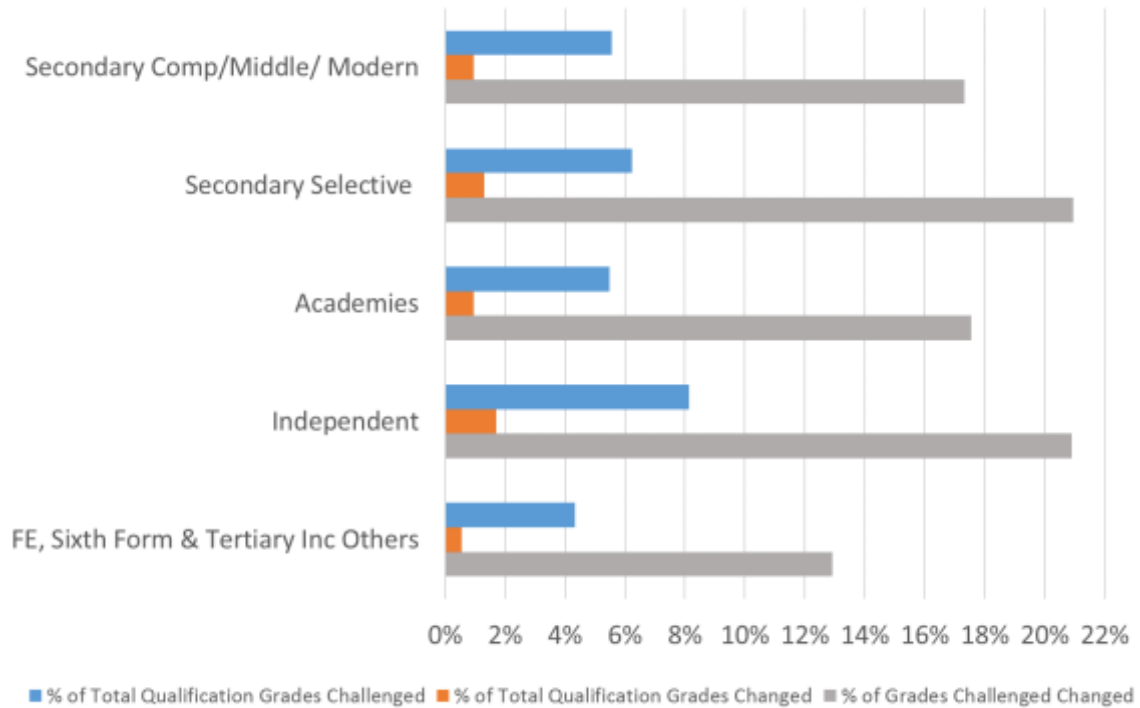


Figure 7. Percentage of GCSE grades awarded in EBacc subjects that were challenged and changed and the percentage of grades challenged that were changed across school types, 2016.

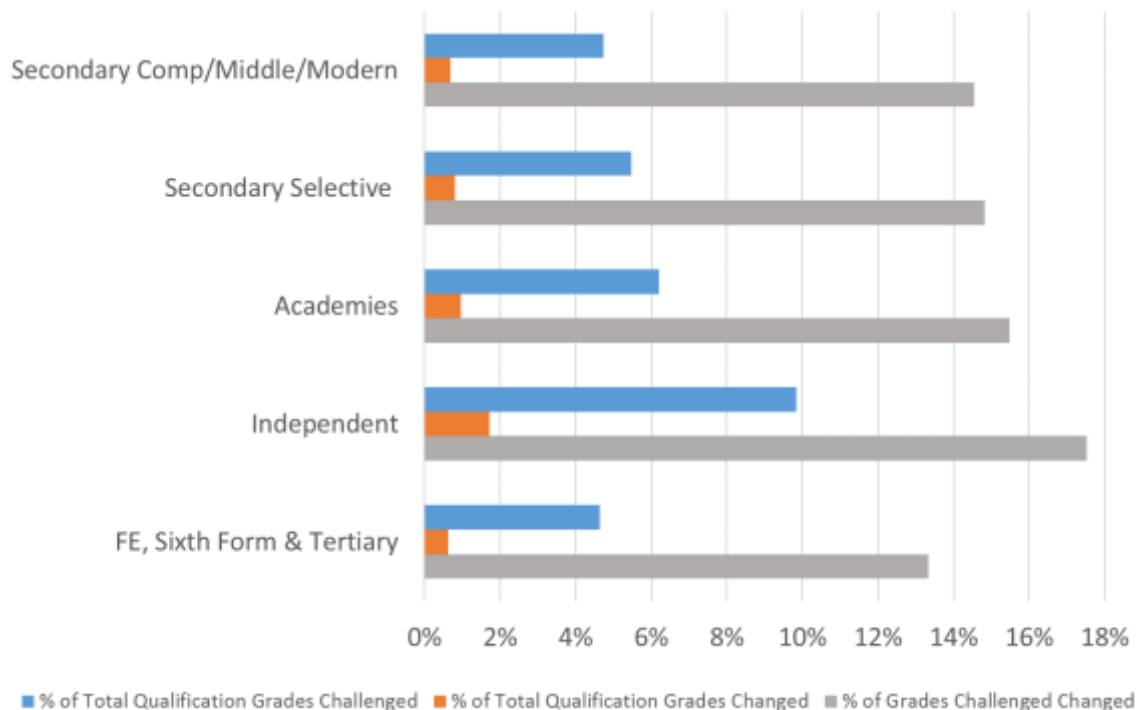


Figure 8. Percentage of A level grades awarded in selected subjects that were challenged and changed and the percentage of grades challenged that were changed across school types, 2016.

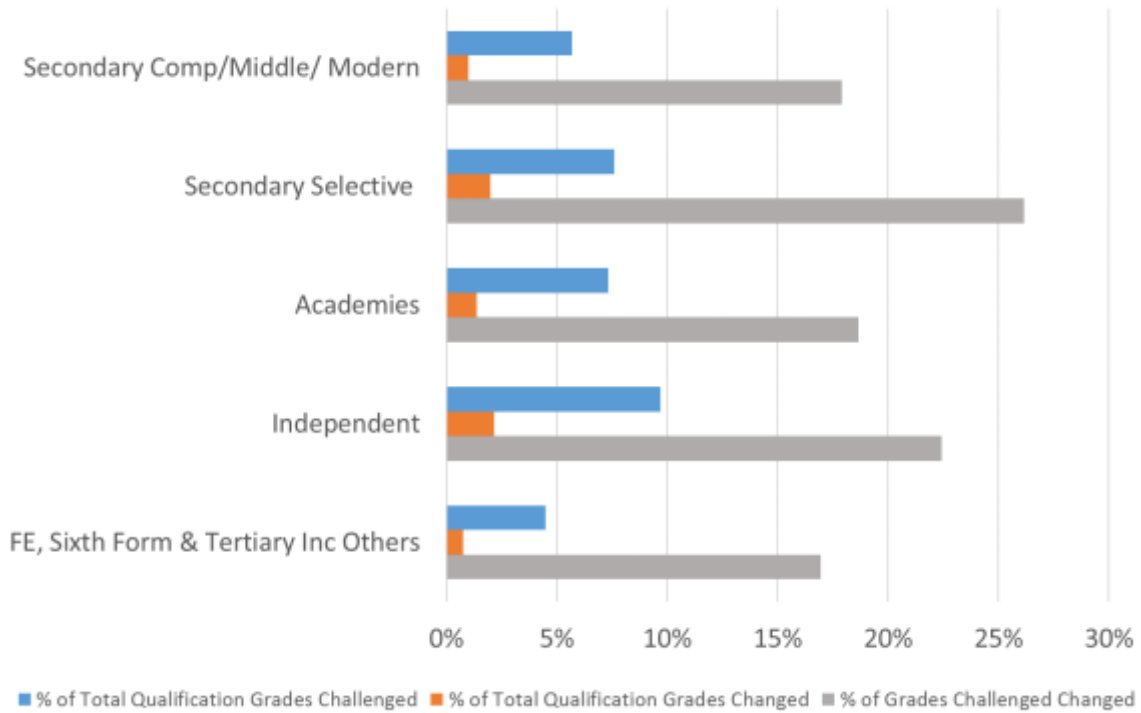


Figure 9. Percentage of GCSE grades awarded in EBacc subjects that were challenged and changed and the percentage of grades challenged that were changed across school types, 2015.

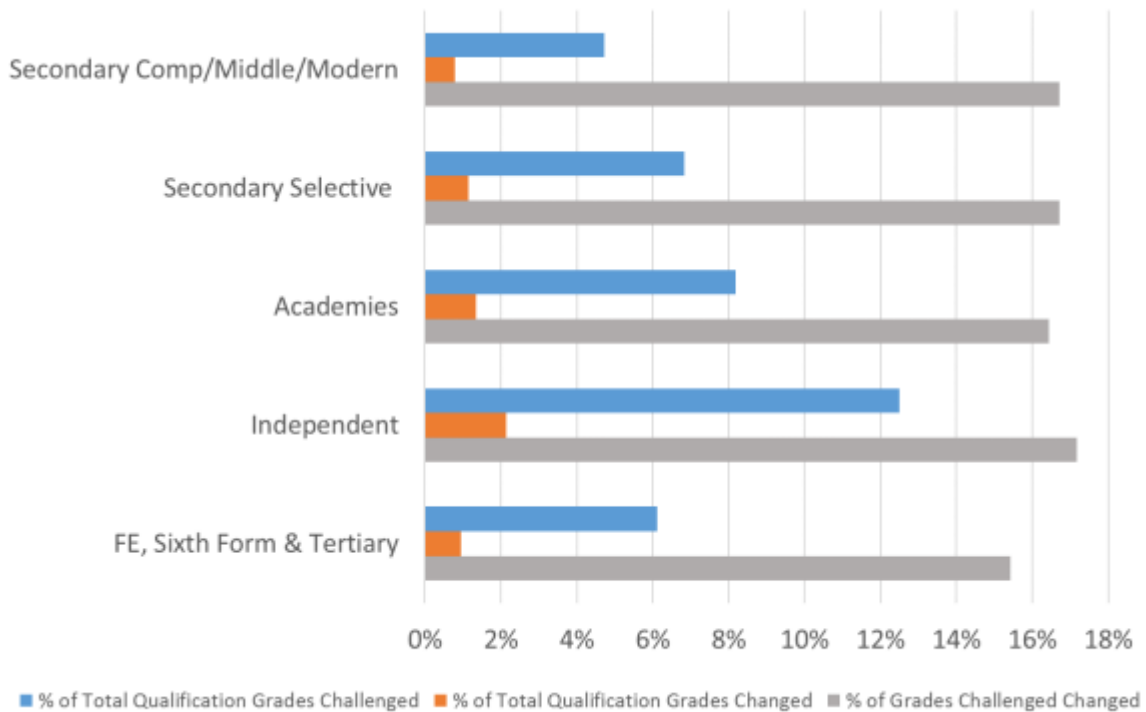


Figure 10. Percentage of A level grades awarded in selected subjects that were challenged and changed and the percentage of grades challenged that were changed across school types, 2015.

Given that the findings above may not be generalisable, it is useful to also consider school review behaviour at the subject level. Figures 11 to 16 show the percentage of GCSE and A level grades challenged (Figures 11 and 14) and changed (Figures 12 and 15), and the percentage of grades challenged that were changed (Figures 13 and 16), across school types and subjects. The coloured bar on each chart is the school type with the highest percentage. Each school type is coloured differently which allows overall trends to be identified more easily.

Figure 11 shows that, when considering GCSE reviews by subject and school type, independent schools had the highest percentage of grade challenges relative to grades awarded in 11 out of 13 subjects. In the other subjects (English and German), independent schools rank second highest in terms of the percentage of grades awarded that were challenged. Secondary selective schools had the highest percentage of grades challenged in English, and FE, sixth form and tertiary colleges had the highest percentage of grades challenged in German.

Although independent schools tend to request the most reviews (relative to their number of entries) for the majority of subjects, Figure 13 shows that independent schools only have the highest percentage of grades changed relative to grades challenged in 5 subjects (English, English literature, physics, science and geography). Secondary selectives have the highest percentage of grades changed relative to grades challenged in mathematics, history, French, German and Spanish, academies in biology and additional science, and FE, sixth form and tertiary colleges in chemistry.

Figure 14 shows that when considering A level reviews by subject and school type, independent schools had the highest percentage of grades challenged relative to grades awarded in all nine subjects. However, as Figure 16 shows, they only have the highest percentage of grades changed relative to grades challenged in 5 subjects – English, biology, chemistry, physics¹⁵ and French. Secondary comprehensive/middle/modern schools have the highest percentage of grades changed relative to grades challenged in further mathematics and German, academies in mathematics, and secondary selectives in Spanish.

¹⁵ In physics, FE, sixth form and tertiary colleges also have the same percent of grades challenged that were changed.

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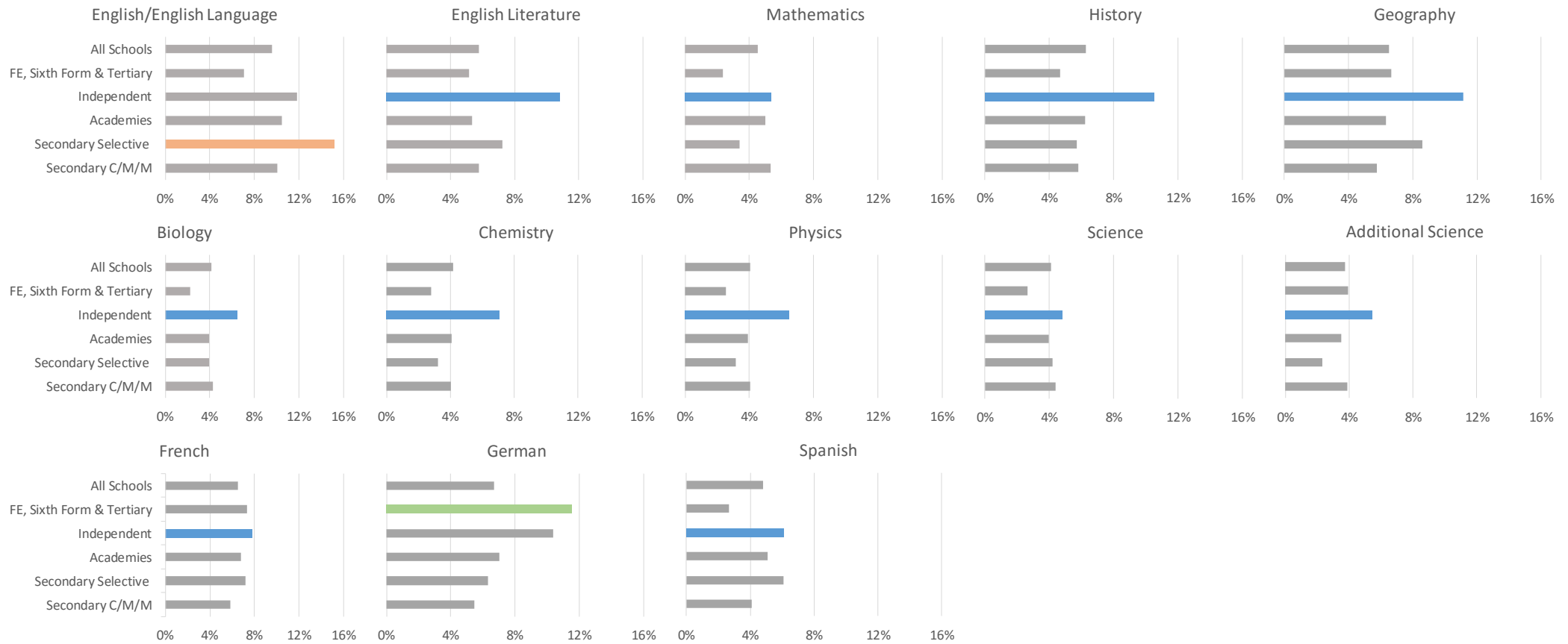


Figure 11. *Percentage of GCSE grades awarded that were challenged by school type and subject, 2016.*

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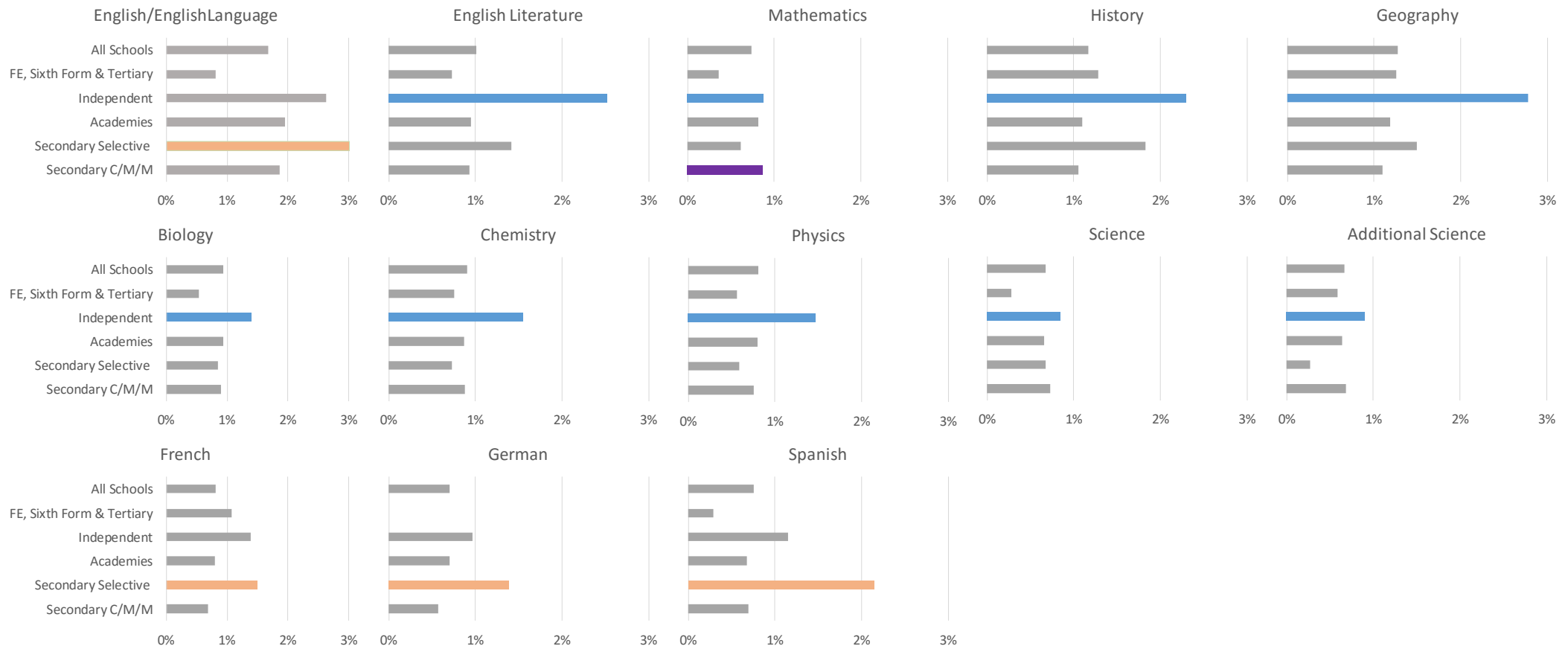


Figure 12. *Percentage of GCSE grades awarded that were changed by school type and subject, 2016.*

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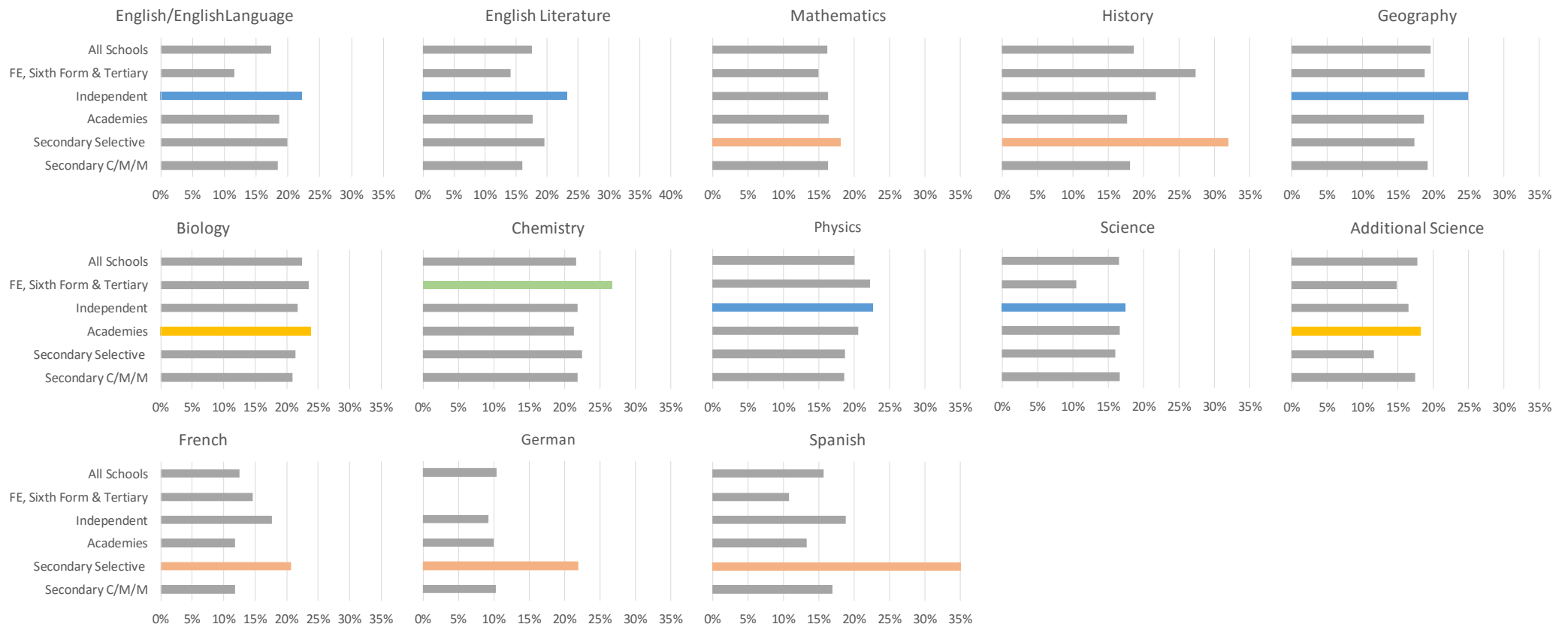


Figure 13. Percentage of GCSE grades challenged that were changed by school type and subject, 2016.

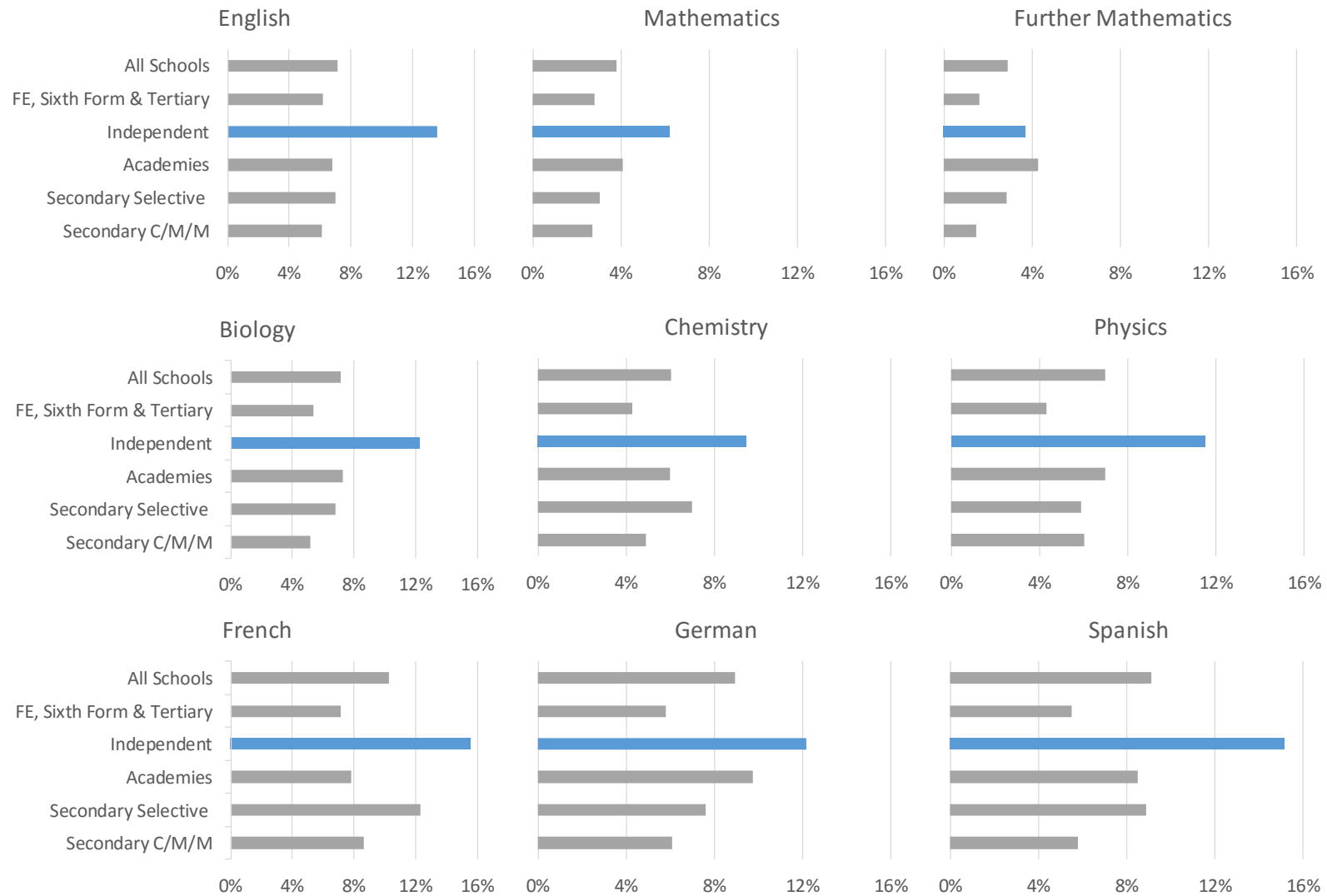


Figure 14. *Percentage of A level grades awarded that were challenged by school type and subject, 2016.*

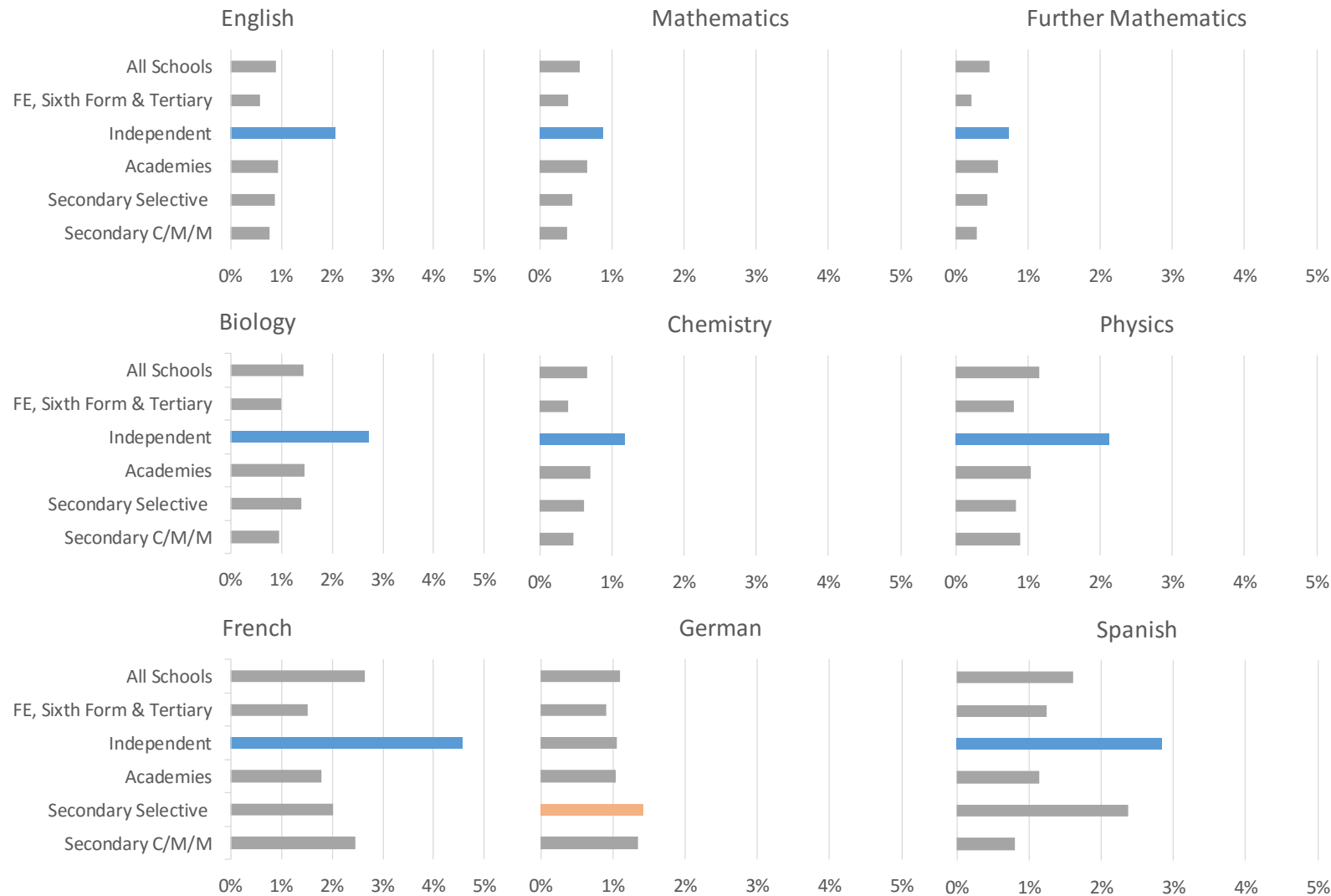


Figure 15. Percentage of A level grades awarded that were changed by school type and subject, 2016.

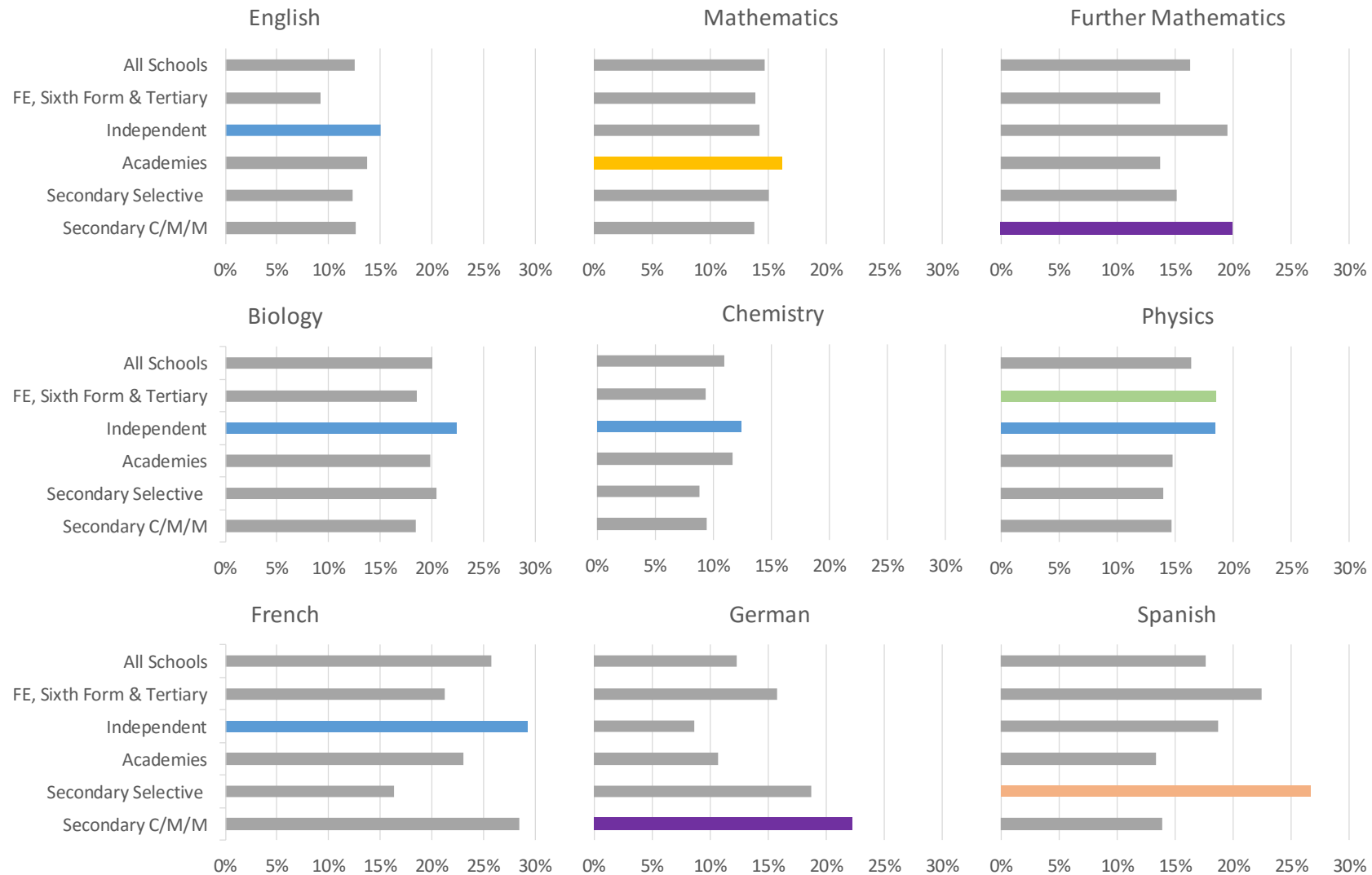


Figure 16. Percentage of A level grades challenged that were changed by school type and subject, 2016.

Raw mark changes

The raw mark changes described in this section relate to the difference in the mark given to a single unit, component or subcomponent before and after review. Table 5 shows the distribution of raw mark changes following the review process¹⁶ for all reviews requested following the 2016 summer series (not just GCSE EBacc and GCE facilitating subjects). As Table 5 shows, in the majority of cases (56.2%), there was no mark change. Three quarters (75.7%) of all reviews resulted in a mark change of one mark or less, and less than 6% of reviews resulted in a mark of change of 5 marks or more. When marks were changed, they were more likely to go up than down, with 70.6% of reviews resulting in a mark change receiving an increase in marks.

Table 5. *Number and percentage of reviews receiving each raw mark change following the review process.*

	Raw mark change										
	<=-5	-4	-3	-2	-1	0	1	2	3	4	>=5
GCSE	2,400	2,150	4,900	12,000	28,450	210,200	47,450	25,900	14,750	9,200	16,650
	0.6%	0.6%	1.3%	3.2%	7.6%	56.2%	12.7%	6.9%	3.9%	2.5%	4.4%
GCE	900	600	1,300	3,100	6,850	63,150	11,700	8,100	5,150	3,600	8,250
	0.8%	0.5%	1.2%	2.7%	6.1%	56.1%	10.4%	7.2%	4.6%	3.2%	7.3%
Total	3,250	2,800	6,200	15,100	35,350	273,350	59,150	34,000	19,900	12,800	24,900
	0.7%	0.6%	1.3%	3.1%	7.3%	56.2%	12.2%	7.0%	4.1%	2.6%	5.1%

Figures 17 and 18 show the percentage of all GCSE (Figure 17) and GCE (Figure 18) reviews resulting in each mark change in 2015 and 2016. This year there has been a small increase in the percentage of reviews receiving no mark change at both GCSE (5.1% increase) and GCE (5.6% increase). This may reflect changes to the review process that Ofqual put in place between the summer 2015 and 2016 exam series¹⁷. These changes mean that marks should only be changed at review if an error has occurred.

¹⁶ Reviews which had missing or inaccurate marks were removed before the analysis – see the background notes section for more information.

¹⁷ See the review of marking and moderation official statistical release for more information: <https://www.gov.uk/government/statistics/reviews-of-marking-and-moderation-for-gcse-and-a-level-summer-2016-exam-series>.

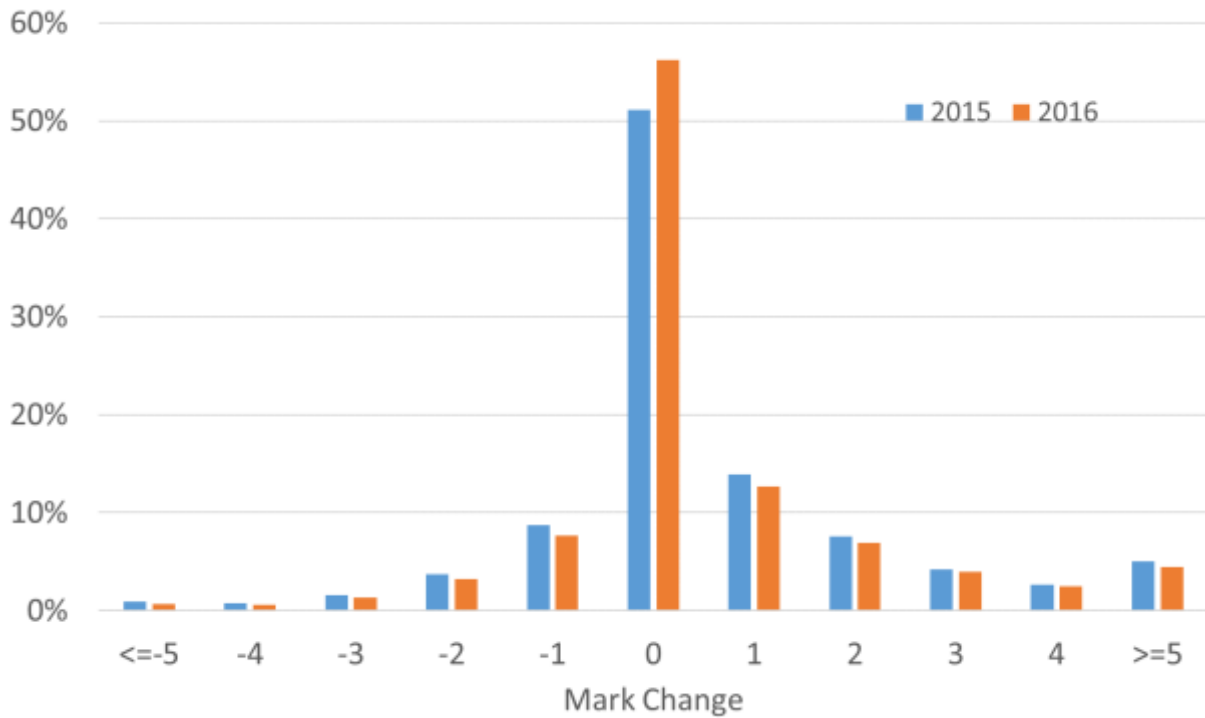


Figure 17. Percentage of all GCSE reviews receiving each raw mark change in 2015 and 2016.

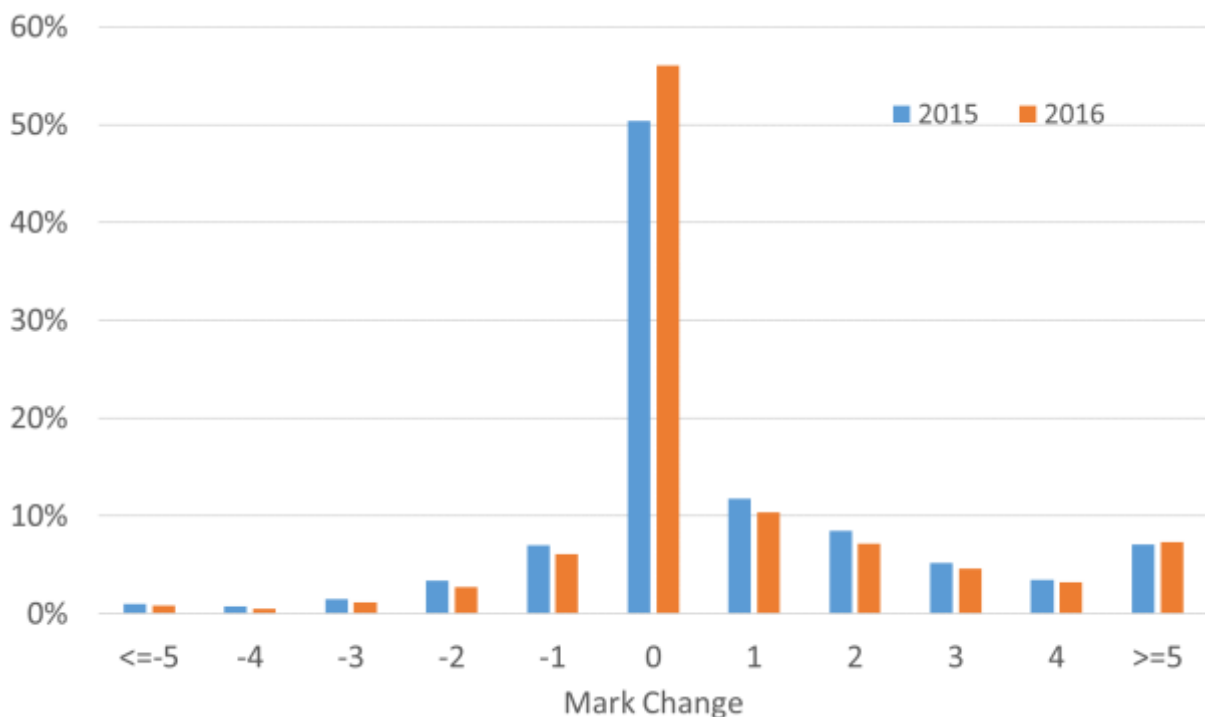


Figure 18. Percentage of all GCE reviews receiving each raw mark change in 2015 and 2016.

Figures 19 and 20 show the average absolute mark change¹⁸ across GCSE EBacc (Figure 19) and GCE facilitating (Figure 20) subjects for all reviews in 2015 and 2016. The average absolute mark change in 2016 was never greater than 2 marks across subjects and qualification levels. To put this in context, the average maximum mark for units, components and subcomponents that were reviewed across all subjects and qualification levels was 73.2 marks. Generally, Figures 19 and 20 show decreases in the average absolute raw mark changes across subjects in 2016 compared to 2015. This is possibly due to the increase in the percentage of reviews resulting in no mark change seen in 2016.

At GCSE, the average absolute mark change was highest in geography (1.25) and lowest in mathematics (0.54). There was not a great deal of variation in the average absolute mark change in the other subjects which ranged from 0.71 in German to 1.06 in English and English literature. There was more variation at GCE; the highest average absolute mark change was in English (1.71) and the lowest was in mathematics (0.72) and further mathematics (0.73). The humanities and languages (apart from German) had higher average absolute mark changes (range: 1.17 in classical subjects to 1.51 in geography) than the sciences and German (range: 0.77 in chemistry to 0.89 in German). This pattern may reflect the nature of the assessment which is more subjective in subjects like English and the humanities than in subjects like mathematics and the sciences.

¹⁸ By absolute mark change we mean the mark change expressed as a positive value. For example, a mark change of -3 has an absolute value of 3. Absolute values are used to calculate the average mark change to avoid positive and negative mark change values cancelling each other out.

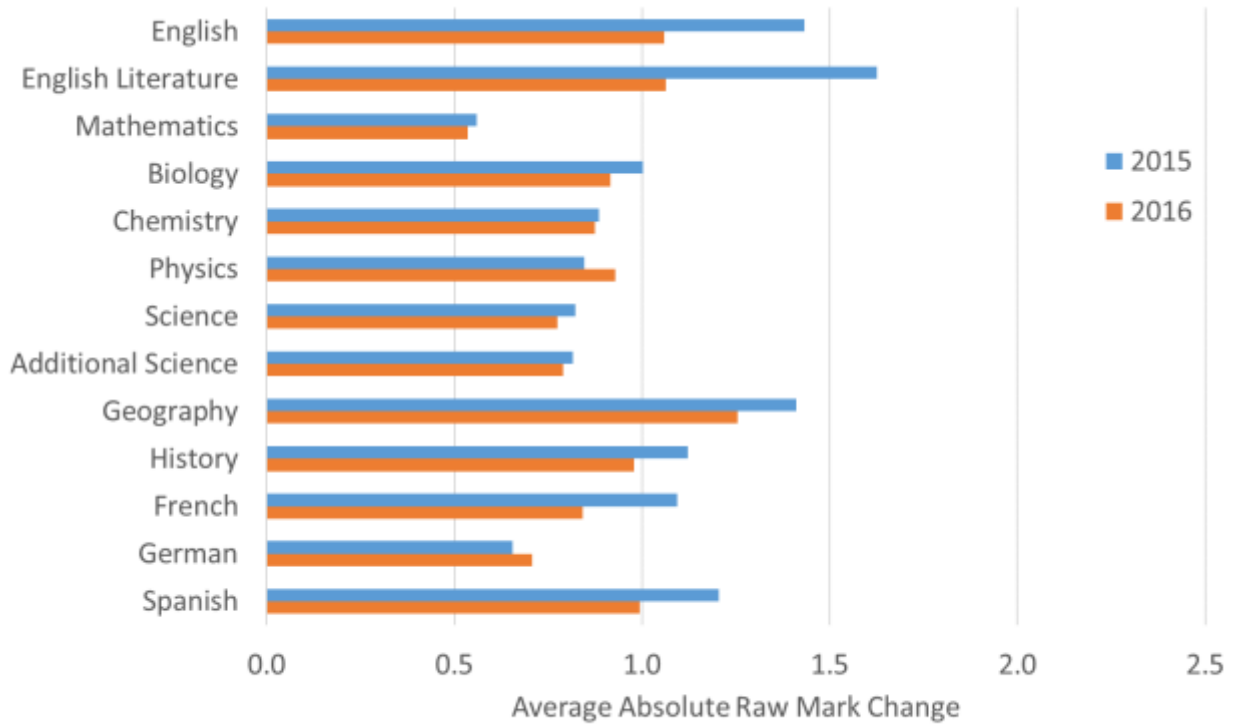


Figure 19. Average absolute raw mark changes for GCSE EBacc subjects, 2015 and 2016.

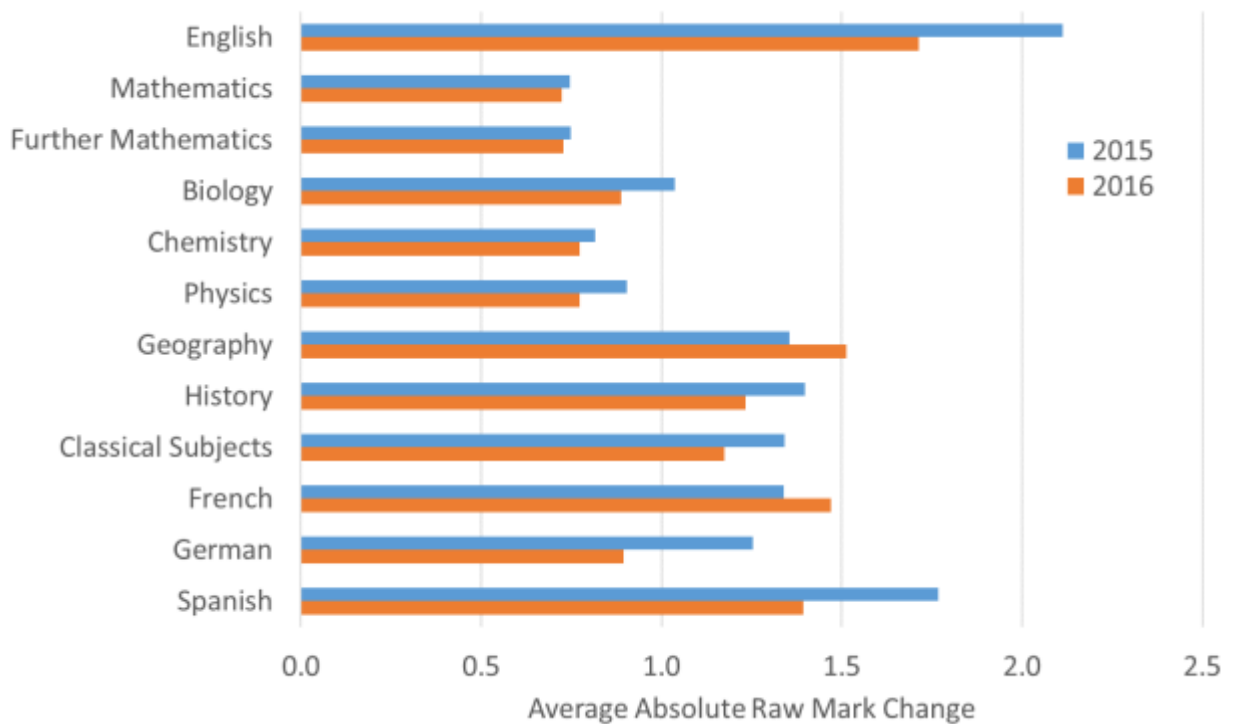


Figure 20. Average absolute raw mark changes for GCE facilitating subjects, 2015 and 2016.

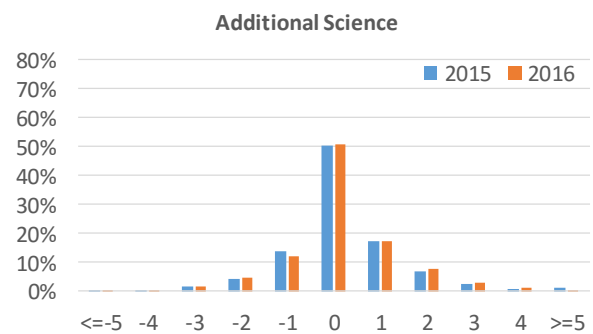
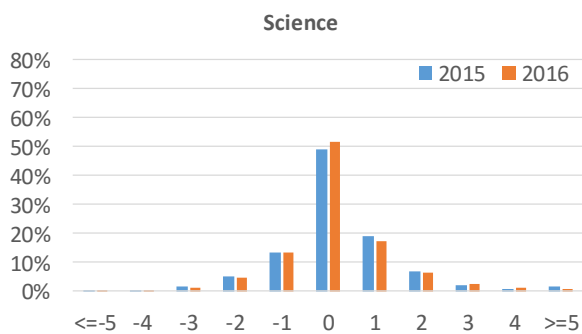
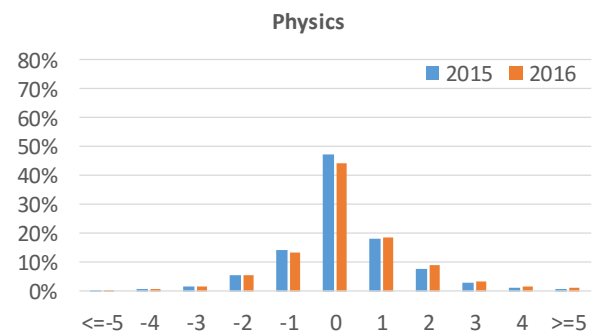
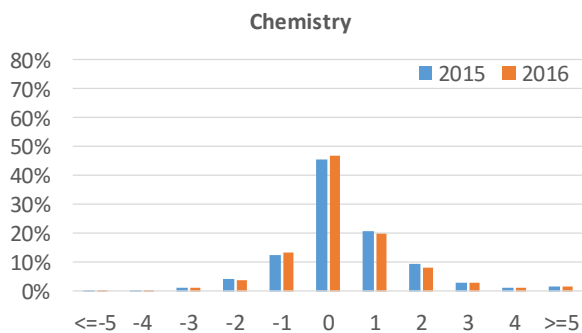
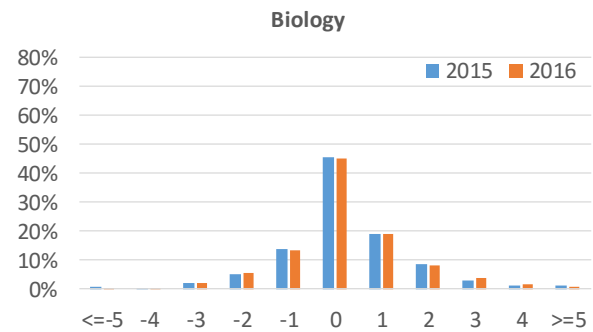
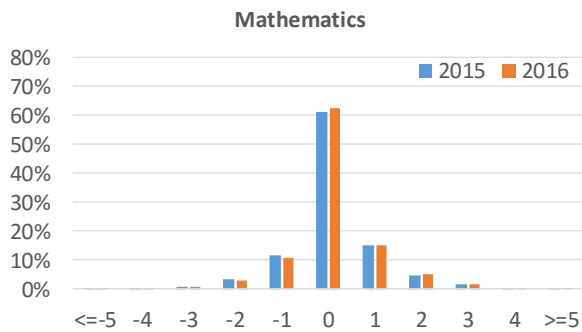
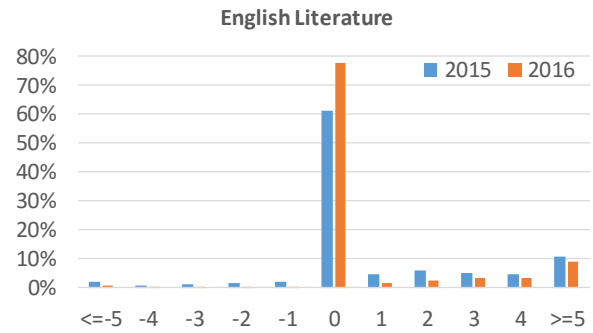
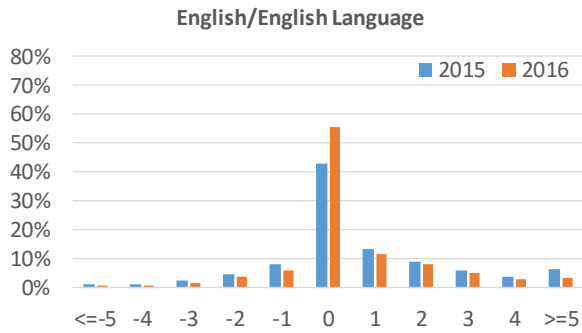
Full mark change distributions for each subject can be seen in Figure 21 (GCSE) and Figure 22 (GCE). As may be expected, the percentage of reviews resulting in no mark change tends to be highest in subjects which have the lowest percentage of grades changed relative to grades challenged (eg, languages at GCSE and history and German at GCE). The lowest percentage is in subjects which have the highest percentage of grades changed relative to grades challenged (eg, sciences at GCSE and biology and Spanish at GCE).

The exceptions to this are subjects that have few but large mark changes and those which have many small mark changes. For example, at GCSE, English literature has the highest percentage of reviews resulting in no mark change (77.8%) but does not have the lowest percentage of grades challenged that were changed – it ranks 7th lowest out of thirteen subjects (17.5%). This is because few mark changes are made in this subject but when they are made they tend to be large (possibly due to the subjective nature of the subject and there being questions with many marks available) and so are more likely to result in grade changes. Sixty percent of all mark changes in this subject were of 4 marks or more, the highest percentage across all subjects. At GCE, chemistry has the 3rd highest percentage of reviews receiving a mark change (51.0%) but the 3rd lowest percentage of grades challenged that are changed (13.0%). This is because the majority of mark changes made in this subject are changes of one mark (66.5%) which will often not be enough to change a grade¹⁹. Chemistry has the lowest percentage of mark changes of 4 marks or more (3.7%) across all GCE subjects.

When marks are changed following a review, there tend to be smaller mark changes in mathematics and the sciences than in English, languages and humanities, at both GCSE and GCE. The majority of all mark changes in mathematics and the sciences are one mark changes (GCSE range: 58.1% in physics to 69.7% in mathematics, GCE range: 57.8% in further mathematics to 66.5% in chemistry) whereas for the other subjects, the majority of mark changes are 2 marks or above. In the majority of subjects, the percentage of mark changes that are of 5 marks or more is less than 20% (GCSE range: 0.7% in mathematics to 16.3% in French, GCE range: 1.2% in chemistry to 19.7% in geography). The exception to this is English literature at GCSE (44.1% of mark changes were of 5 marks or more) and English (50.0%) and history (37.6%) at GCE. All these patterns are likely to reflect the nature of the subject with mathematics and the sciences being more objective than English, the humanities and languages.

¹⁹ Although this is also dependent on how close the student's overall mark is to the grade boundary and the distance between grade boundaries.

Reviews of marking and moderation:
Subject level analyses



*Reviews of marking and moderation:
Subject level analyses*

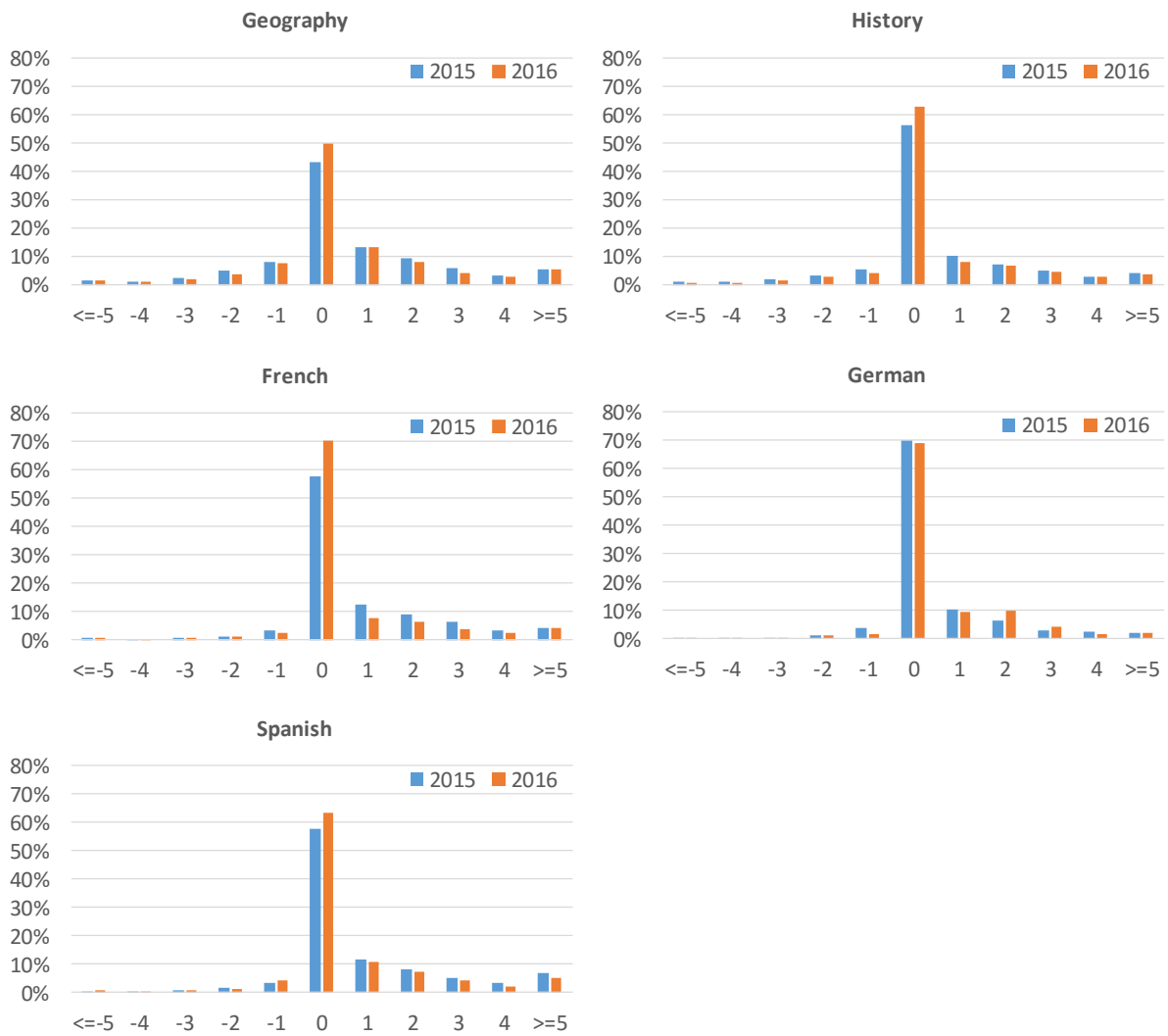
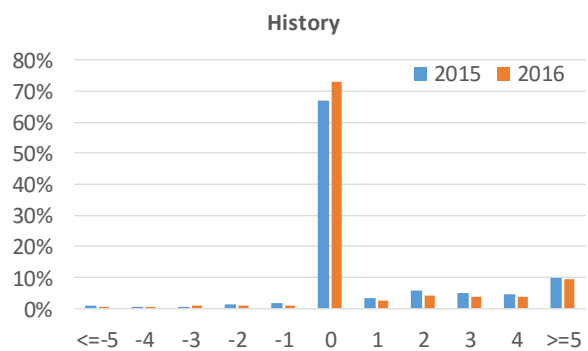
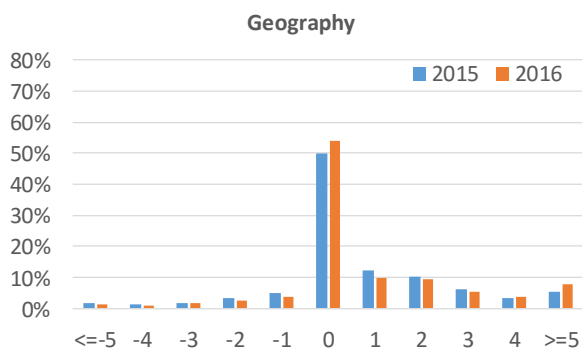
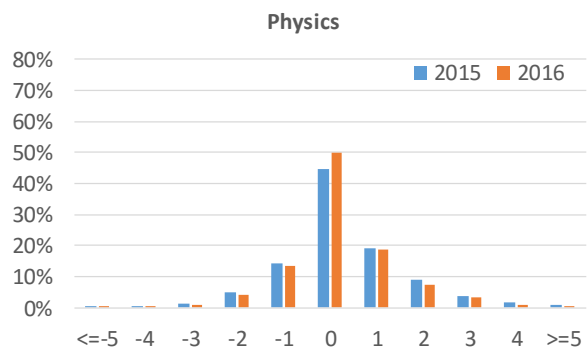
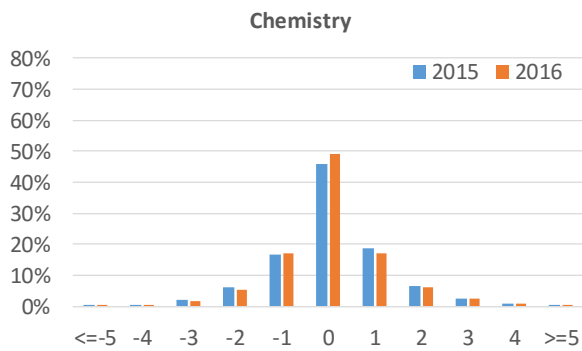
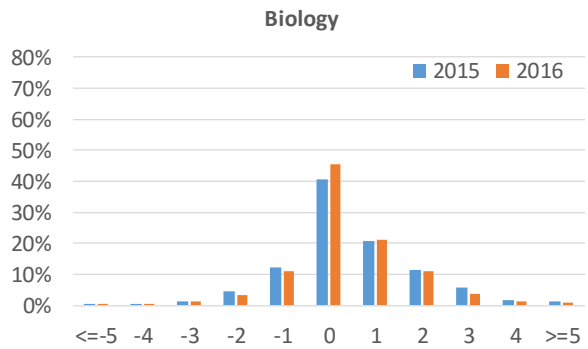
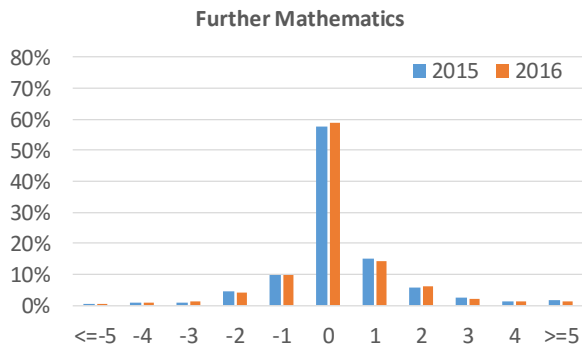
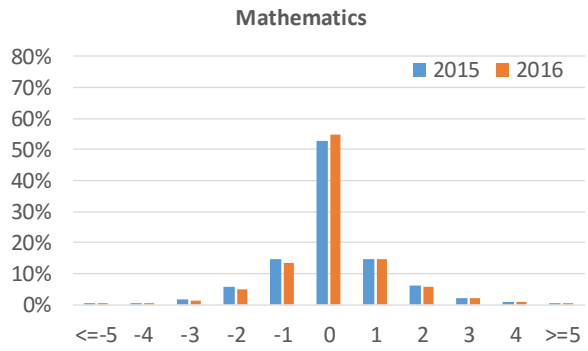
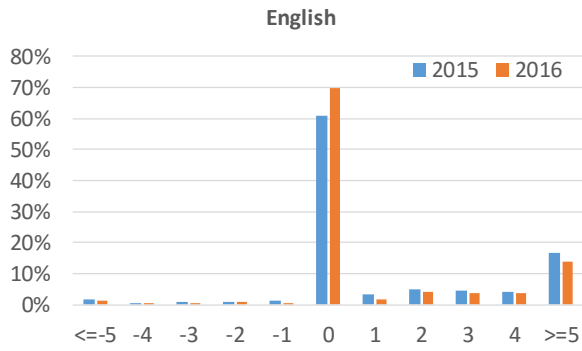


Figure 21. Percentage of GCSE reviews receiving each mark change by subject.

*Reviews of marking and moderation:
Subject level analyses*



Reviews of marking and moderation:
Subject level analyses

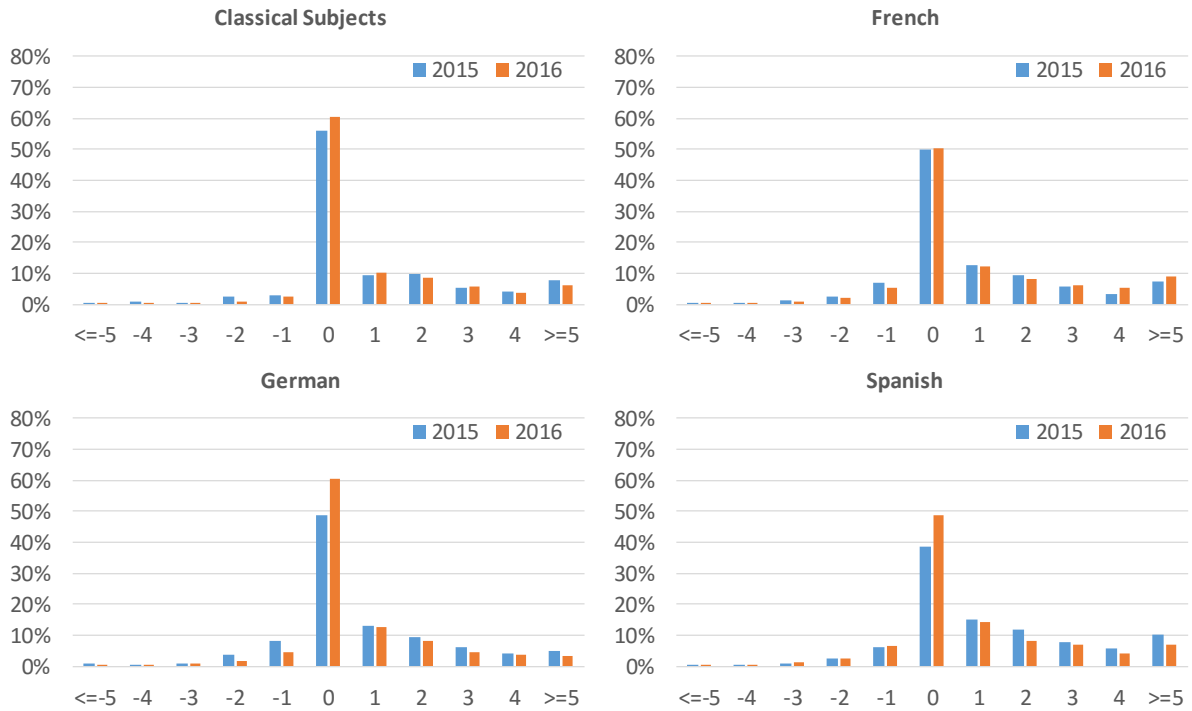


Figure 22. Percentage of GCE reviews receiving each mark change by subject.

Summary

This report supplements our official statistical release on reviews of marking and moderation for the summer 2016 GCSE and GCE exam series. It provides a breakdown of reviews across subjects and school types, and of review outcomes in terms of raw mark changes. Figures from 2016 are compared to those in 2015 but as data from these years only are available it is difficult to determine whether any year-on-year trends are typical and so they should be interpreted with caution.

The analyses showed that, in both 2016 and 2015, there was large variation in the percentage of qualification grades awarded that were challenged across subjects, but less variation in the percentage of qualification grades awarded that were changed. The percentage of qualification grades awarded that were challenged and changed was lower in 2016 compared to 2015. In both 2015 and 2016, the majority of reviews resulted in no mark change. There was a 5% increase in the percentage of reviews receiving no mark change in 2016 compared to 2015. This may be due to changes in the review process whereby marks should only be changed if an error has occurred. When marks are changed, they are most commonly changed by one mark (44% of all mark changes), only 13% of all mark changes were of five marks or more.

Looking at EBacc GCSE subjects and facilitating GCE subjects specifically, there was a general trend across both qualification levels such that the percentage of grades challenged was higher in subjects which are more subjective in nature (English, humanities and languages), than in subjects which are more objective in nature (mathematics and the sciences). Although the magnitude of mark changes tends to be higher in more subjective subjects, there are not necessarily more grade changes in these subjects as often there are fewer reviews resulting in a mark change. For example, although more grades are challenged in English (relative to the number of qualifications awarded) than in any other GCSE EBacc subject, and the majority of mark changes are of two marks or more, the majority of reviews do not result in a mark change meaning that English does not rank high in terms of the percentage of grades challenged that are changed. At GCSE, biology, chemistry and physics had the highest percentage of grades changed relative to grades challenged, and German, French and Spanish had the lowest. At GCE, geography, French, and biology have the highest percentages of grades challenged that were changed, and history, German and Spanish the lowest.

Overall, independent schools and secondary selectives tend to request reviews for a greater percentage of their entries, and receive a higher percentage of grade changes relative to the amount of grades challenged, than other school types. This is seen across years (2016 and 2015) and qualification levels. Despite this, independent schools do not necessarily have the highest percentage of grades challenged that were changed across individual subjects.

Background notes

Data

The figures in this report relate to reviews requested for students certificating in GCSE full course, AS and A level qualifications in England only. Reviews requested for non-certificating students or those certificating in GCSE short courses, Level 1/2 certificates, double, applied, or advanced extension awards were not included in the analyses.

Reviews were also excluded for certain analyses where they were missing data. For example, reviews that were not complete at the time of data collection were not included in any grade change analyses as final qualification grades were still to be determined. Similarly, reviews missing original and/or post review raw mark values were removed when conducting the analyses investigating changes in raw marks following reviews.

Subject classification

Qualifications have been categorised into subject groups using the Joint Council for Qualification's (JCQ) classification system. In most cases, the subject group reflects a single subject, for example, the GCSE history group includes all GCSE history qualifications offered by exam boards. However, there are some cases where multiple qualifications are grouped together and these are as follows:

- Classical subjects includes ancient history, classical civilisation, classical Greek, Latin, and Biblical Hebrew.
- GCSE English includes both English and English language qualifications.
- GCE English includes English language, English literature and English language and literature qualifications.
- GCSE mathematics includes mathematics, methods in mathematics, and applications of mathematics qualifications.
- GCE mathematics includes mathematics, pure mathematics, and statistics.
- GCSE performing/expressive arts includes performing arts, expressive arts, and dance.
- GCE performing and expressive arts include performing arts and dance.
- Social science subjects (GCSE only) includes law, psychology, and sociology.
- Other modern languages includes Dutch, Italian, Greek, Portuguese, Arabic, Bengali, Chinese, Gujarati, Japanese, Modern Hebrew, Panjabi, Polish, Russian, Turkish, Urdu, and Persian.
- GCSE other sciences includes human health and physiology, agriculture and land use, astronomy, electronics, environmental science, and geology.
- GCE other sciences includes electronics, environmental technology, geology, and science in society.
- Other technology (GCSE only) includes motor vehicle studies.

- GCSE all other subjects includes catering, general studies and journalism.
- GCE all other subjects includes home economics, environmental studies, world development, humanities, anthropology, archaeology, philosophy, citizenship studies, and accounting.

This report focuses on EBacc²⁰ subjects for GCSE and those subjects referred to by the Russell Group of Universities as ‘facilitating subjects’²¹ for GCE. GCSE EBacc subjects are as follows:

- English/English language
- English literature
- Mathematics
- Biology
- Chemistry
- Physics
- Science
- Additional science
- Geography
- History
- French
- German
- Spanish

GCE ‘facilitating subjects’ are as follows:

- English literature (here we include all qualifications in the JCQ ‘English’ category)
- Mathematics
- Further mathematics
- Biology
- Chemistry
- Physics
- Geography
- History
- Classical languages (here we include all qualifications in the JCQ ‘classical subjects’ category)
- French
- German
- Spanish

²⁰ <https://www.gov.uk/government/publications/english-baccalaureate-eligible-qualifications>

²¹ <https://www.russellgroup.ac.uk/for-students/school-and-college-in-the-uk/subject-choices-at-school-and-college/>

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