Cambridge Assessment

The impact of the introduction of Progress 8 on the uptake of qualifications in English schools – an update for 2016/17

Research Report

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Introduction

This report is an updated version of an analysis undertaken last year (Gill, 2017) which looked at the impact of the introduction of new accountability measures (Attainment 8 and Progress 8) on the qualifications and subjects taken by students at the end of Key Stage 4 (KS4). It adds in data from the 2016/17 academic year, which was the second year in which schools were subject to the new measures. An extra analysis was undertaken this year, looking at whether changes in uptake and provision were more pronounced in schools with lower Progress 8 scores.

The new measures – Attainment 8 and Progress 8

In October 2013, the Department for Education (DfE) announced that, from 2015/16, all schools would be subject to new accountability measures (known as Attainment 8 and Progress 8). These new measures replaced the previous headline measure (the proportion of students achieving five grades A* to C at GCSE including English and Maths) and were meant to overcome some drawbacks of this measure. In particular, it was felt that the old measure led to too much focus by some schools on students around the grade C boundary, possibly at the expense of other students. The new measures are based on performance (average grade) in the best eight qualifications, so should no longer be subject to this issue. Furthermore, the previous accountability measures took no account of the background of students in a school. Progress 8 is a value-added measure, so takes account of the prior attainment of the students entering the school. It is now the main measure by which schools are ranked in the league tables.

In order to calculate Progress 8 for a school it is first necessary to calculate the Attainment 8 measure for each student in the school. This is based on achievement in their best eight qualifications, across the following three elements:

1. EBacc qualifications in Maths and English
2. Three other EBacc subjects, from a choice of science subjects, Computer Science, History, Geography or languages[1]
3. Three 'other' qualifications, which can either be other EBacc qualifications, non-EBacc GCSEs or vocational qualifications[2] from a DfE approved list

Attainment 8 is the total points score from all qualifications taken that meet these criteria (up to a maximum of eight qualifications). Maths and English are double weighted in the calculation (although for English this is only the case if the student takes both English Language and English Literature, with the best grade double weighted). It is possible to take more than three EBacc subjects, with any over three being included in the 'other' element (if they are in the best eight grades). Points scores for GCSEs are on a 1 to 8 scale (1 = G, 8 = A*).

[1] For a full list of EBacc subjects and qualifications see https://www.gov.uk/government/publications/english-baccalaureate-eligible-qualifications

[2] For a full list of approved vocational subjects and qualifications see https://www.gov.uk/government/publications/technical-and-vocational-qualifications-for-14-to-19-year-olds

Progress 8 is calculated at student level by comparing achievement on the Attainment 8 measure with the average Attainment 8 score for students with the same prior attainment (as measured by the average Key Stage 2 (KS2) fine level for English and Maths). For example, if the mean Attainment 8 score for students with an average KS2 fine level of 5.1 was 59.3 points, then a student with a score of 67 would have a Progress 8 score of (67-59.3)/10 = 0.77. The total points score is divided by 10 to reflect the fact that Maths and English scores are double weighted[3]. A score of 0.77 means that the student achieved an average of three quarters of a grade better per subject than students with the same prior attainment. A school's Progress 8 score is just the average of their students' Progress 8 scores.

The floor standard, which is the minimum standard that schools should meet, is determined by the Progress 8 measure. A school with a Progress 8 measure of below -0.5 (and with the upper bound of the 95% confidence interval below 0) is deemed to be below the floor standard and may be subject to further scrutiny from Ofsted.

Other changes to accountability measures

The focus of this report is on changes to the uptake of qualifications and subjects since the introduction of Progress 8. However, to provide some context and to give an indication of long term trends, results will be presented for all years from 2007/08 onwards. This time period includes some other important changes to accountability measures, such as the introduction of the English Baccalaureate (EBacc) performance measure in 2010 and the change to eligibility of qualifications following the publication of the Wolf report of vocational education (Wolf, 2011).

Data and method

The data used in the analysis was mainly taken from the National Pupil Database (NPD) from each year between 2007/08 and 2016/17. The NPD is held by the DfE and consists of examination results for all students in all qualifications and subjects in schools and colleges in England, as well as student and school background characteristics such as age, gender, ethnicity and level of income-related deprivation. Only qualifications that were eligible for league tables were included in the analysis. Any re-sits in the same subject and qualification were excluded, as we were interested in changes to uptake (and provision) of qualifications and not how many times the qualifications were taken. Data from independent schools, FE colleges, sixth form colleges and special schools was excluded, as these schools were not subject to the same accountability measures (at the end of Key Stage 4) as state-maintained schools and therefore had less incentive to alter their behaviour following changes to league tables.

In the analysis, uptake of a qualification (or subject) was defined as whether a student who was at the end of KS4 in a particular year had taken the qualification at some point. Therefore, qualifications taken in previous years were counted. For example, if a student who was at the end of KS4 in 2016/17 took a GCSE in Core Science in year 10 (i.e., academic year 2015/16) then this counts as uptake in the 2016/17 data, rather than the 2015/16 data. This was for two reasons: First, students only appear in the NPD for a

[3] However many eligible qualifications are taken the total score is always divided by 10, so it pays for students to fill as many slots as possible.

particular year if they are at the end of KS4; secondly, this method mirrors the calculation of Progress 8, which uses performance of students at the end of KS4 (including qualifications taken in previous years).

Similarly, the provision of a qualification in a particular year was defined as the proportion of centres where at least one student who was at the end of KS4 in that year took the subject in question at some point.

As well as an overall analysis of changes to uptake and provision, this research also investigated changes in different groups of schools. For this analysis, schools were classified by school type, by attainment and by deprivation.

School type

Schools were classified using Edubase (the DfE's register of educational establishments) into three main categories in each year: comprehensive, secondary selective (grammar) and secondary modern. Schools which converted to an Academy (either before or during the period investigated) were included in their original categorisation because these retain their original admissions policies (e.g., Academies that were originally grammar schools still have a selective admissions policy).

Table 1 displays the number of schools (and students attending them) in each of the main three school types in 2016/17. The proportion of each school type was similar in each of the other years.

Table 1: Numbers of schools and students in each school type (all schools, 2016/17)

School type	No. of schools	% of schools	No. of students	% of students
Comprehensive	2,867	91.0	475,476	92.1
Secondary Selective	163	5.2	22,750	4.4
Secondary Modern	119	3.8	17,928	3.5

Thus, over 90% of the schools included were comprehensives and this accounts for 92.1% of students.

School attainment level

The average attainment of students within a school can be an important factor when decisions are made about which qualifications to offer. A school-level attainment variable was created by calculating the school mean of the students' KS4 mean points scores[4] (in each year). This was then used to classify schools (within each year) into one of three equally sized groups ('Low', 'Medium' or 'High').

Table 2 displays the number of schools, the number of students and the mean, minimum and maximum of the school average KS4 points score in each attainment group for the 2016/17 academic year.

[4] This is calculated by assigning a points score to the grade achieved in each qualification (e.g., for GCSEs, a grade A* is worth eight points, a grade A seven points and so on) and then averaging this score across all qualifications taken by a student.

Table 2: School attainment ranks (2016/17)

School attainment	No. of schools	No. of students	Mean	Minimum	Maximum
Low	1,044	147,173	3.7	0.0	4.1
Medium	1,053	180,074	4.4	4.1	4.6
High	1,048	188,880	5.3	4.7	10.8

School deprivation level

The Income Deprivation Affecting Children Index (IDACI) was used to infer the level of income deprivation experienced by students. This measure is reported for most students in the NPD and indicates the proportion of children living in the immediate neighbourhood who are in low-income families[5]. It varies between 0 and 1 and indicates how income deprived the area is that they live in (although it cannot tell us how income deprived the student actually is).

As with the attainment measure, this measure was recorded for each student and an average calculated for each school. Schools were then categorised into three equally sized groups ('Low', 'Medium' or 'High'). This measure was missing for some students and the school level measure was only calculated for schools where at least 50% of students did not have missing data.

Table 3 displays the number of schools, the number of students and the mean, minimum and maximum of the school average deprivation score in each attainment group for the 2016/17 academic year.

Table 3: School deprivation ranks (all schools, 2016/17)

School deprivation	No. of schools	No. of students	Mean	Minimum	Maximum
Low	1,044	186,875	0.11	0.01	0.15
Medium	1,045	169,894	0.19	0.15	0.24
High	1,043	159,324	0.31	0.24	0.61

In the following analysis, changes to the overall volumes of qualifications over time will be presented to give some context. However, the main interest was in changes to qualifications eligible for the Progress 8 measure. This focus was on qualifications eligible for each of the three groups that comprise the Progress 8 measure (English and Maths, EBacc qualifications and 'other' qualifications) and also on qualifications which are not eligible for Progress 8.

An additional analysis was undertaken on the changes to uptake and provision following the publication of the first Progress 8 scores in 2014/15. It was hypothesised that schools with lower Progress 8 scores in 2014/15 would be more motivated to increase uptake of qualifications eligible for Progress 8, and that by 2016/17 these changes might be evident. However, it was only possible to undertake this analysis for the subset of schools which

[5] The definition of low income includes people who are out of work, but also those in work with low earnings. For further information on IDACI calculation, including definitions of children, families, and income deprivation, see https://www.gov.uk/government/publications/english-indices-of-deprivation-2015-technical-report

chose to opt in' to the measure a year early (i.e., 2014/15 rather than 2015/16), as the Progress 8 scores for the other schools were not available. In all, there were 327 schools choosing to opt in early. These schools were split into five (approximately) equally sized groups based on their Progress 8 score, and changes to uptake and provision of various qualifications and subjects between 2014/15 and 2016/17 were calculated.

Table 4 presents descriptive data on the groups. This shows that overall the opt-in schools had a higher mean Progress 8 score than all schools, with the mean for the middle group being 0.21 (compared with around 0 for all schools together).

Table 4: Opt in schools by P8 score in 2014/15

P8 score group	No. of schools	Mean P8 score (2014/15)	Minimum P8 score (2014/15)	Maximum P8 score (2014/15)
1	63	-0.35	-1.15	-0.11
2	64	0.02	-0.10	0.10
3	61	0.21	0.11	0.31
4	65	0.42	0.32	0.54
5	64	0.70	0.55	1.63

Results

Uptake of qualifications and subjects

Figure 1 presents the average number of qualifications (eligible for inclusion in league tables) taken by students between 2007/08 and 2016/17. This is measured in two different ways: first, a raw count of qualifications taken; secondly, a sum of qualifications in terms of GCSE sizes (e.g., a BTEC equivalent to three GCSEs).

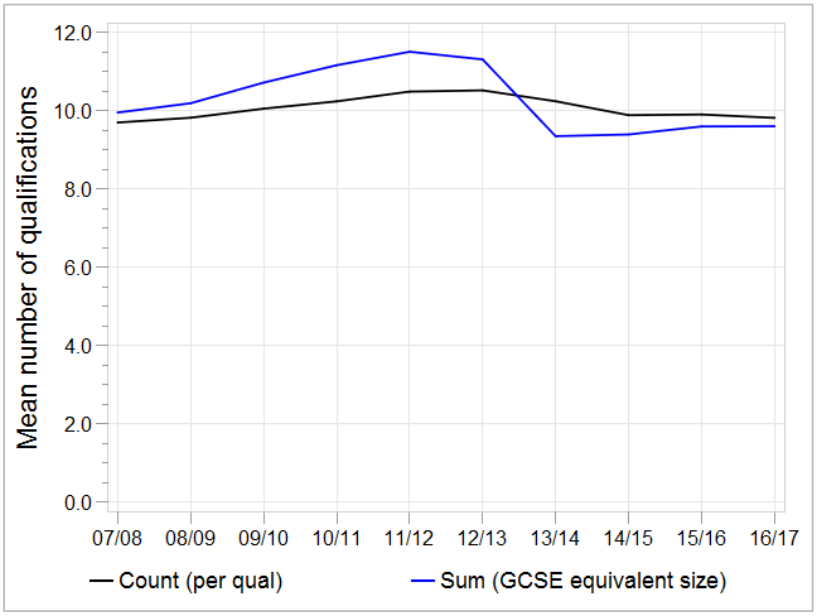


Figure 1: Mean number of qualifications taken (2007/08 – 2016/17)

This shows a steady increase in the average number of qualifications taken between 2007/08 and 2012/13, followed by a fall in the last four years. The average was highest in 2012/13 (10.5), but fell to 9.8 in 2016/17. This fall is likely to be mainly due to the outcomes of the Wolf report, with many vocational qualifications being excluded from league tables. Note also the much larger fall in the average number in terms of GCSE equivalents. This is again due to the Wolf report, with no qualifications permitted to be equivalent to more than one GCSE from 2013/14 onwards.

These volumes can be broken down further into types of qualifications. The uptake of GCSEs, which make up a large majority of the qualifications, is shown in Figure 2. The mean number of GCSEs amongst all students fell between 2007/08 and 2010/11 before increasing somewhat in more recent years. There was a slight increase in 2015/16, and a larger increase in 2016/17 (from 8.0 to 8.7), which may both be related to Progress 8, as all GCSEs are eligible for the measure and several are eligible for the EBacc slots.

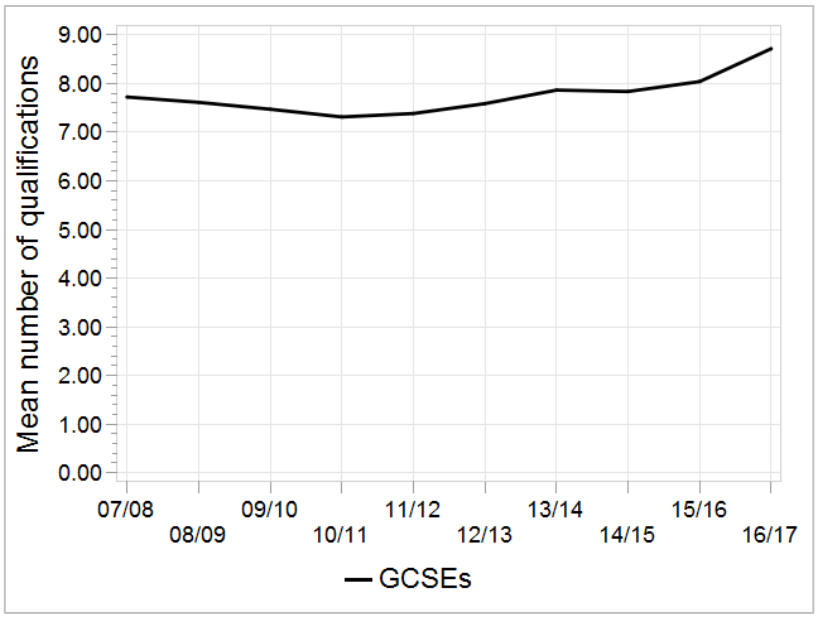


Figure 2: Mean number of GCSEs taken (2007/08 – 2016/17)

Figure 3 presents the uptake of the main other qualifications which at some point in the period were eligible for league tables, although only some of these were eligible for inclusion in Progress 8. The qualifications were classified using NPD categorisations, with one exception: BTECs and OCR or Cambridge Nationals were combined into one category. This was to ensure that no qualifications that were only available from one exam board could be identified separately.

The biggest change in the last year was the large reduction in the number of International GCSEs, which was likely to be because these qualifications in English and Maths became no longer eligible for Progress 8.

Several other qualifications had big falls in uptake in recent years, particularly BTEC / OCR / Cambridge Nationals and GCSE Short Courses. These are likely to be partly a response to the league table changes following the Wolf report, which led to a big reduction in

qualifications eligible for league tables. The decline in these qualifications continued in 2016/17, but without any evidence that they have been affected by Progress 8.

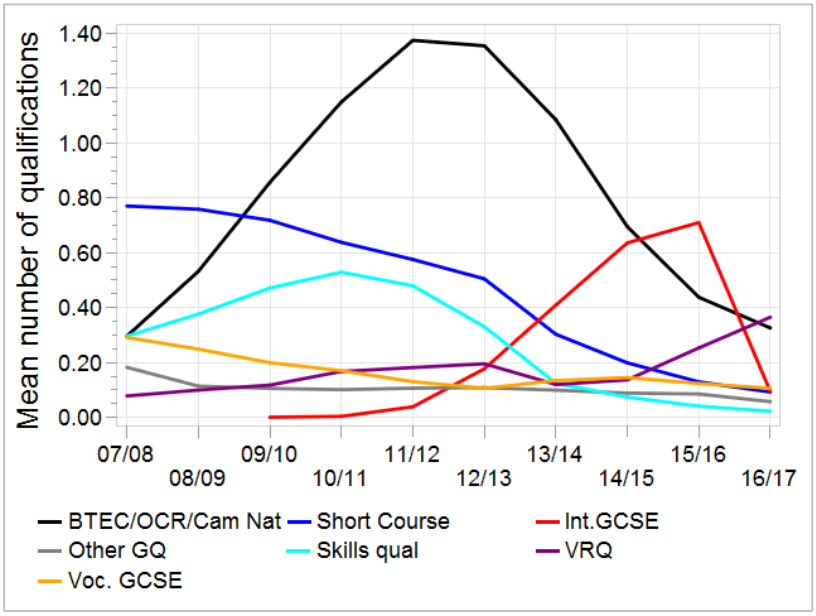


Figure 3: Mean number of non-GCSEs taken (2007/08 – 2016/17)

There was a continued rise in entries to VRQs (Vocationally Related Qualifications) in 2016/17. On further inspection, the increase was found to be mainly in qualifications in digital literacy known as the European Computer Driving Licence (ECDL). These are controversial qualifications which some schools were apparently teaching to students in just a few days (Schools week, 2015). These have been dropped from inclusion in league tables from 2018/19 onwards, so we expect uptake of them to fall.

Progress 8 qualifications

Figure 4 shows the percentage of students who took the required number of each type of qualification for the full Progress 8. This shows that, from 2010/11 onwards, the percentage increased quite steadily, which is likely to be partly due to the introduction of the EBacc performance measure. The biggest increase was, as expected, in the first year of Progress 8 in 2015/16. However, there was also a big increase in 2016/17 (up from 80.6% in 2015/16 to 87.5%). This suggests that schools were still getting used to the new measure in 2016/17.

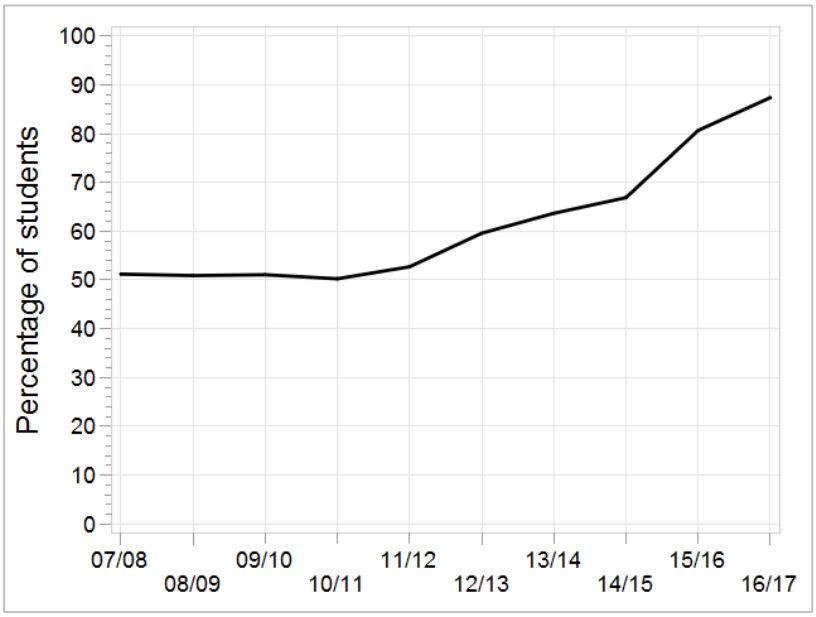


Figure 4: Percentage of students filling all Progress 8 slots (2007/08 – 2016/17)

Looking in more detail at the students who did not fill all their slots in 2016/17, Table 5 presents the numbers filling or not filling either the EBacc slots or the 'Other' slots. The total number was just below 65,000, compared with around 103,000 in 2015/16.

Table 5: Students not filling all their Progress 8 slots

	Filled 'Other' slots		
Filled EBacc slots?	No	Yes	Total
No	13,994	45,221	59,215
Yes	4,816	610	5,426
Total	18,810	45,831	64,641

Almost all (92%) of these students failed to fill all of their EBacc slots, of which about 24% also failed to fill their 'Other' slots. About 7% did fill all their EBacc slots, but failed to fill all their 'Other' slots (with the remaining 610 not filling either their English or maths slot). Thus, most students were short of EBacc qualifications, rather than 'Other' qualifications.

Around 65% of these students were only short of filling all their slots by one EBacc qualification. In other words, there were a lot of students who could have increased their Progress 8 scores by entering one more EBacc qualification (as long as they achieved a grade higher than 'U').

The remainder of the analysis compares the uptake of qualifications in the three Progress 8 groups (English and Maths, other EBacc and 'other') and uptake of qualifications not eligible for Progress 8.

English and Maths qualifications

As the National Curriculum already requires schools to offer English and Maths qualifications to all students, we expected the proportion of students taking these qualifications to change

very little with the introduction of Progress 8. However, within English subjects there was some choice in 2016/17, with students able to take either or both of English Language and English Literature. There was an incentive to take both qualifications so that the English element was double weighted (with the highest grade counting). If only one of these were taken, then it would not be double weighted. The eligibility rules may therefore have had an impact on uptake.

Figure 5 presents the percentage of students taking each of the different English qualifications (eligible for Progress 8). This shows that in the last four years there has been a steady increase in uptake of both English Literature and English Language and a steady decrease in uptake of the combined qualification. The fact that in 2016/17 almost all students took both English Language and English Literature may be partly due to the introduction of Progress 8. Previously, lower ability students would have been more likely to take either the combined qualification or English Language only.

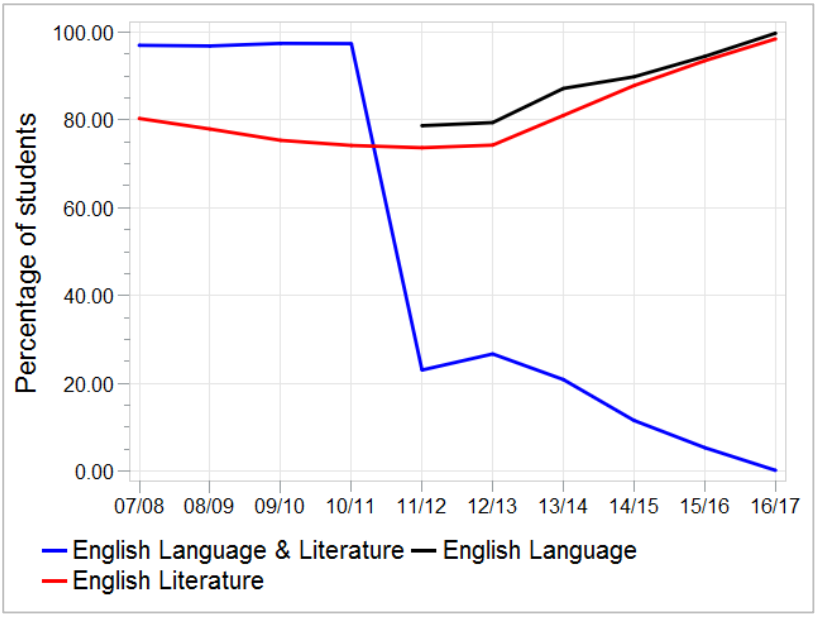


Figure 5: Mean number of English qualifications taken (2007/08 – 2016/17)

EBacc, 'Other' qualifications and non-eligible qualifications

Figure 6 presents the mean numbers of qualifications: i) eligible for the EBacc slots (excluding English and Maths); ii) eligible for the 'other' slots and; iii) not eligible for Progress 8. The average number of EBacc qualifications continued to increase in 2016/17, which is likely to be due to Progress 8. Meanwhile, the mean number of qualifications eligible for the 'Other' slots levelled off, after falling in the previous two years. This suggests that students were generally already taking enough 'Other' qualifications to fill the Progress 8 slots, but were short of EBacc qualifications.

The uptake of qualifications not eligible for Progress 8 has been falling since 2010/11 (likely to be due to previous changes to league tables). This trend continued following the introduction of Progress 8, and was very close to zero in 2016/17.

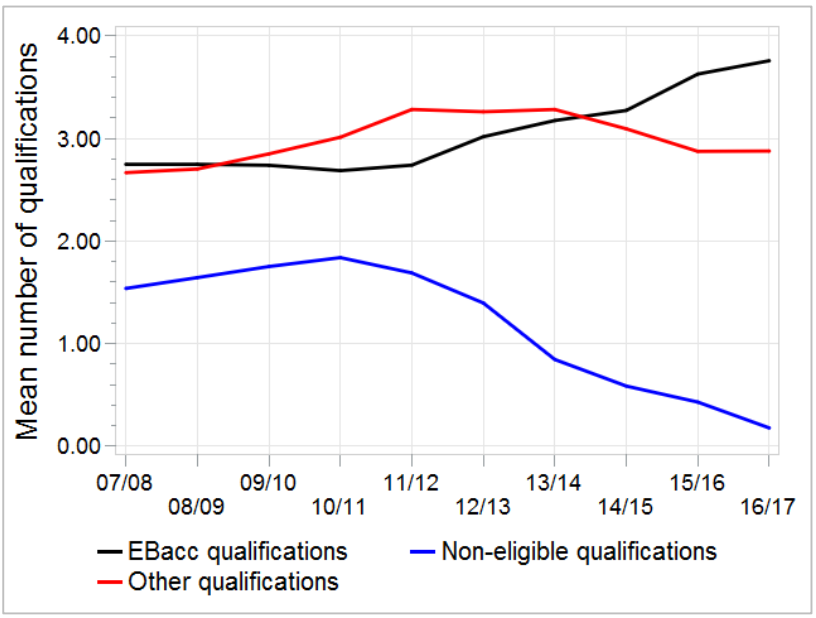


Figure 6: Mean number of qualifications taken, by qualification type (2007/08 – 2016/17)

Given that the Progress 8 measure requires students to take at least three EBacc subjects (excluding English and Maths), it is interesting to consider how many of these subjects students take. Figure 7 presents the percentage of students taking each number of EBacc qualifications.

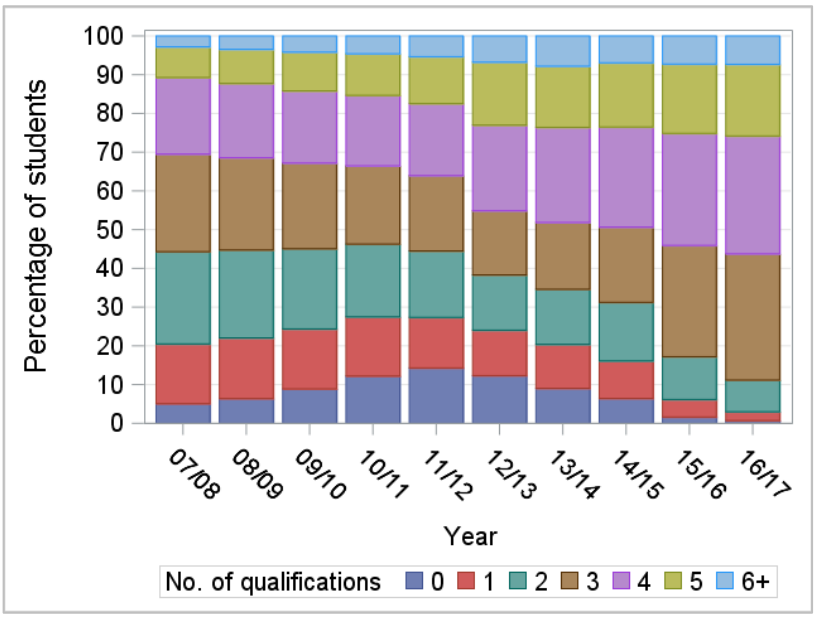


Figure 7: Distribution of the number of EBacc qualifications taken, excluding English and Maths (2007/08 – 2016/17)

The trend since 2010/11 is for increasing numbers of students taking at least three EBacc subjects, probably due to the introduction of the EBacc performance measure and the outcomes of the Wolf report. However, there was also a clear jump up in 2015/16 and 2016/17, with 88.8% taking at least 3 in 2016/17, compared with 68.8% in 2014/15. This is

likely to be a consequence of Progress 8. Around 11% of students did not take the required number of EBacc qualifications in 2016/17.

Figure 8 presents the percentage of students taking the most popular EBacc subjects (all GCSEs). For the separate sciences, only Biology is included, as uptake of Chemistry and Physics were almost identical (i.e., if you take one you are very likely to take all three). Since 2012/13 uptake of EBacc qualifications in Core and Additional Sciences, Computer Sciences, History and Geography have been increasing. Each of these seemed to have an extra boost in 2015/16, which is likely to be due to the introduction of Progress 8, but this has now levelled off somewhat in 2016/17. Interestingly, there was only a very small increase in uptake of separate sciences and falls in uptake of French and German. The fact that these have not increased, whilst other EBacc subject have, may be due to the perception that they are harder than many other GCSEs (e.g., Cuff, 2017; Tinsley & Board, 2017). Unlike the EBacc performance measure, there is no requirement to enter for a language to fill the EBacc slots in Progress 8.

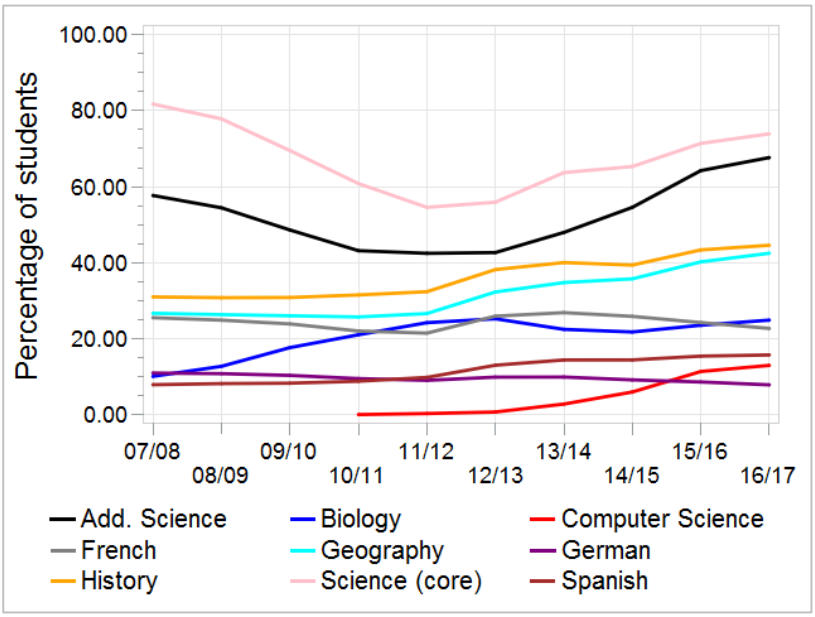


Figure 8: Percentage of students taking EBacc subjects (2007/08 – 2016/17)

Progress 8 allows for three non-EBacc qualifications to be counted. Therefore, the introduction of Progress 8 may have affected uptake of qualifications eligible for the 'Other' category. However, it should be noted that for many students some of the three spaces would be taken up by EBacc qualifications anyway.

Figure 9 presents the distribution of the number of 'other' qualifications eligible for inclusion in Progress 8. English qualifications for students taking both English Language and English Literature are not included in this figure. As mentioned in the introduction, students taking both English Language and English Literature can only count the best grade as part of the English and Maths slot, but are allowed to include the other English qualification as part of the 'other' slot.

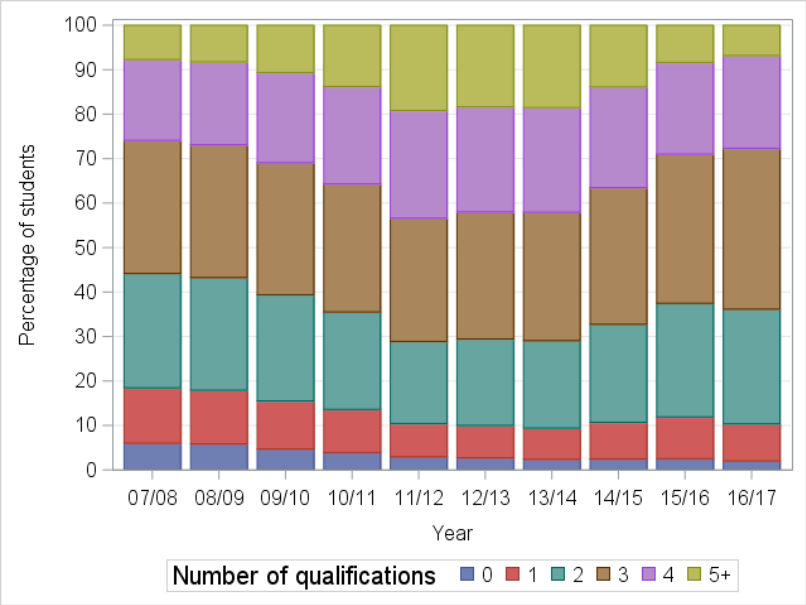


Figure 9: Distribution of the number of 'Other' qualifications taken (2007/08 – 2016/17)

In 2016/17 there was a further fall in the proportion of students taking five or more of these qualifications, which may be in part due to the increase in uptake of EBacc qualifications. However, there was a small increase in those taking 3 or more from 62.5% in 2015/16 to 63.9% in 2016/17.

The most popular subjects eligible for the 'Other' slots were mainly non-EBacc GCSEs. Figure 10 presents uptake of the six most popular of these qualifications.

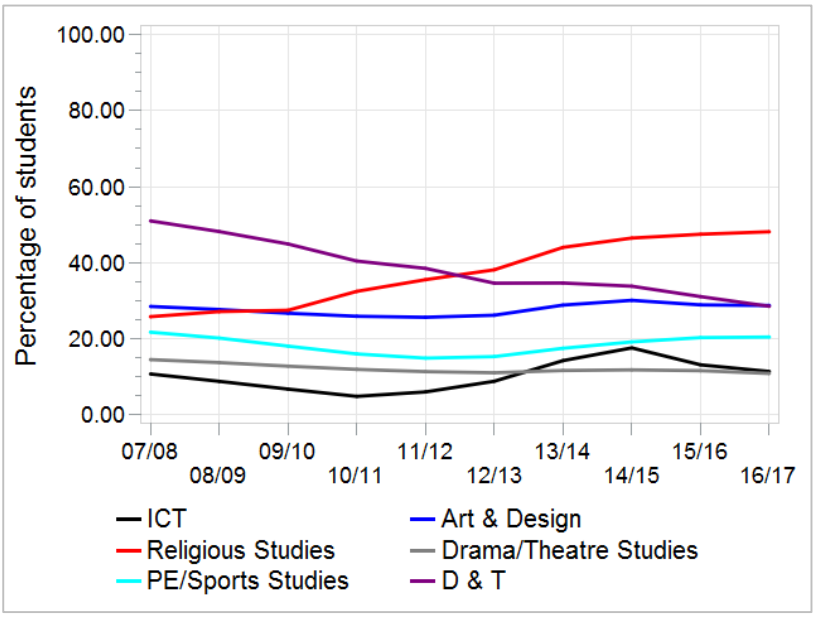


Figure 10: Percentage of students taking non-EBacc GCSEs (2007/08 – 2016/17)

For most of these subjects there was little change in uptake in 2016/17. The uptake of GCSE religious studies increased steadily over the period, whilst uptake of D & T declined throughout. The subject that seemed to be most affected by Progress 8 was GCSE ICT,

which had increasing uptake until 2014/15 before a big decrease in 2015/16 and a smaller fall in 2016/17. This may be because there is an alternative GCSE in Computer Science which is now eligible for the EBacc slots. There was an increase in entries in this subject in 2016/17 (see Figure 8).

Uptake by school factors

Figure 11 presents the percentage of students achieving full Progress 8 entries, by school type.

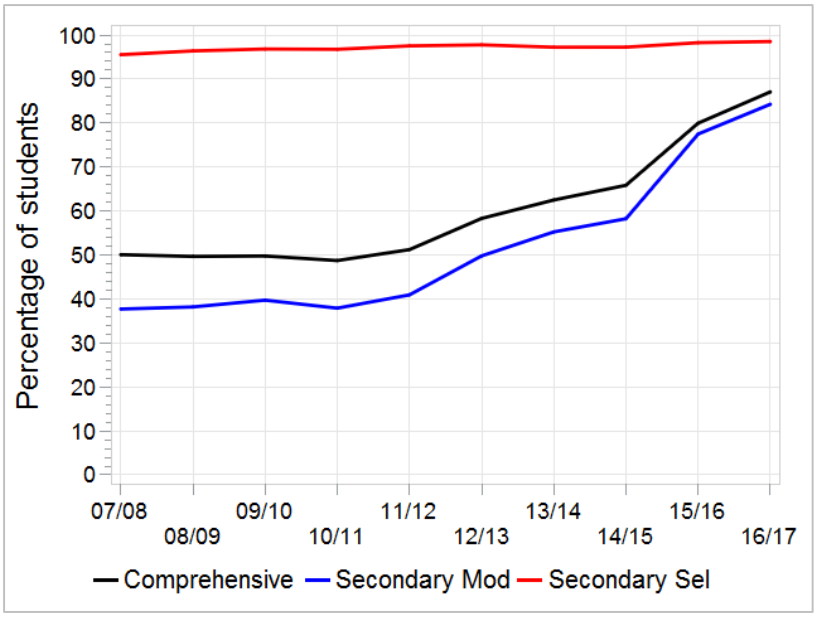


Figure 11: Percentage of students achieving full Progress 8 entries, by school type (2007/08 – 2016/17)

This shows that that almost all selective schools students would have taken the required qualifications to fill their Progress 8 slots in each year. In contrast, the percentages for comprehensive or secondary modern school students were much lower at the start of the period before increasing since 2010/11. The increase in percentage of comprehensive or secondary modern school students in 2016/17 was substantial, although smaller than the increase in 2015/16.

Figure 12 presents the average number of EBacc and 'Other' qualifications taken by students in different school types. The overall increase in uptake of EBacc qualifications in 2016/17 was all in comprehensive and secondary modern schools, with uptake in secondary selective schools not changing. Again, this is likely to be because most selective school students take the required number of EBacc qualifications already. In terms of the uptake of 'Other' subjects, these fell in 2016/17 in secondary modern schools only. Students in selective schools took many more EBacc qualifications on average and slightly fewer other subjects.

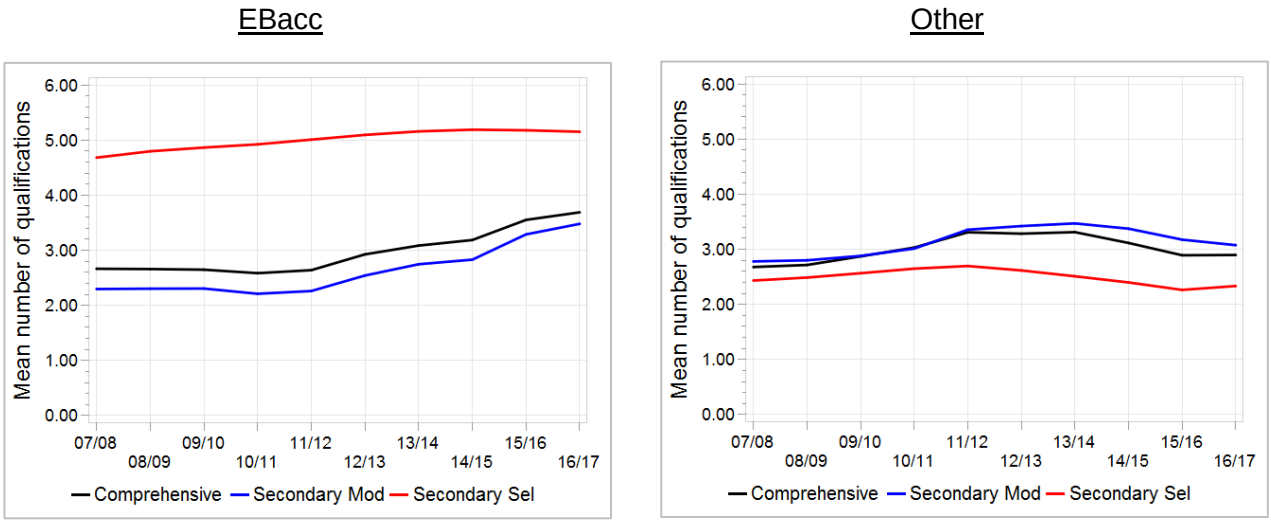


Figure 12: Mean number of EBacc and 'Other' qualifications taken, by school type (2007/08-2016/17)

Figure 13 presents the percentage of students with full Progress 8 entries, by school attainment group. All three groups show an increase in 2016/17, but as with 2015/16, this is larger in the low- and medium-attaining schools. This may be because the percentages were lower in these schools in previous years than in high-attaining schools. In 2016/17, students in high-attaining schools were still most likely to enter for the full eight qualifications, probably reflecting the fact that students who are more able tend to take more qualifications (and are more likely to take several EBacc qualifications). The difference between the percentage in the high-attaining group (91.4%) and the low-attaining group (82.4%) was 9 percentage points.

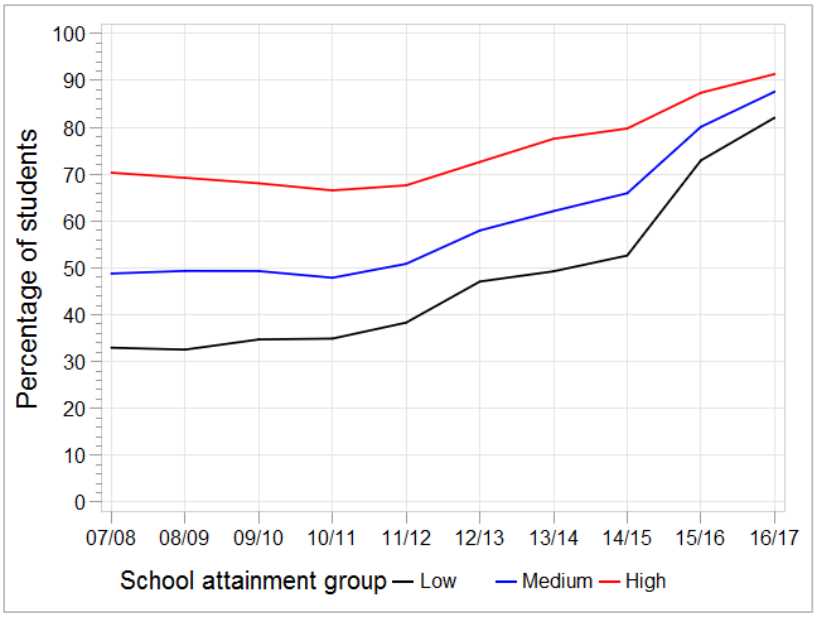


Figure 13: Percentage of students achieving full Progress 8 entries, by school attainment group (2007/08 – 2016/17)

Figure 14 presents the mean number of qualifications eligible for the EBacc and 'Other' slots taken by students, by school attainment group. Uptake of EBacc qualifications increased very slightly more in low- and medium-attaining schools than in high-attaining schools in 2016/17. Uptake of qualifications eligible for the 'Other' slots remained stable in 2016/17 in all school attainment groups, with students in schools in the low- and medium-attaining groups having the highest mean in 2016/17.

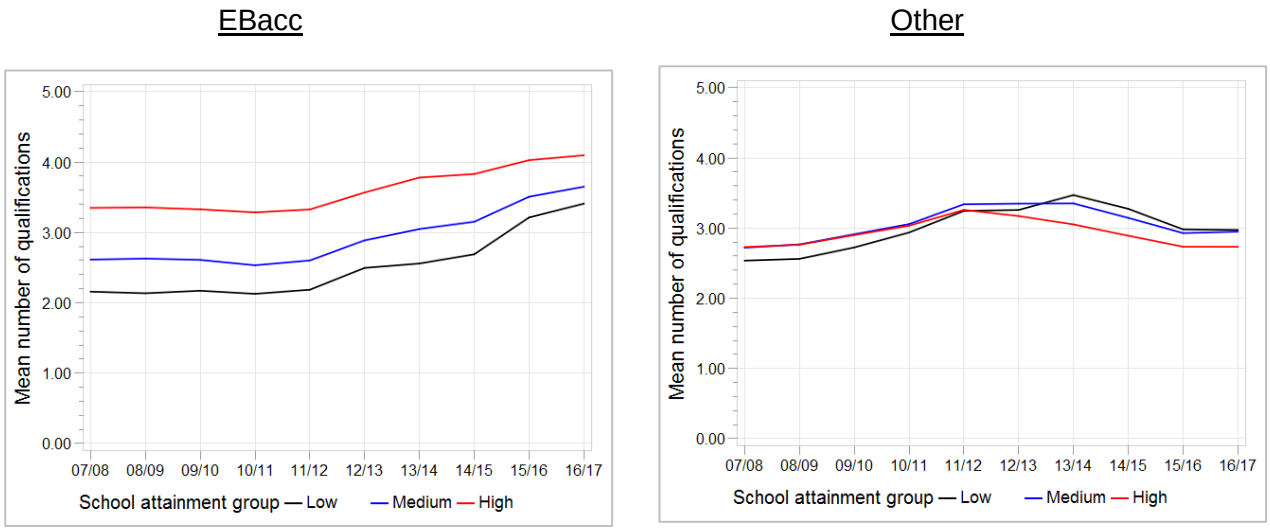


Figure 14: Mean number of EBacc and 'Other' qualifications taken, by school attainment group (2007/08 – 2016/17)

Figure 15 presents the percentage of students with full Progress 8 entries, by school deprivation group.

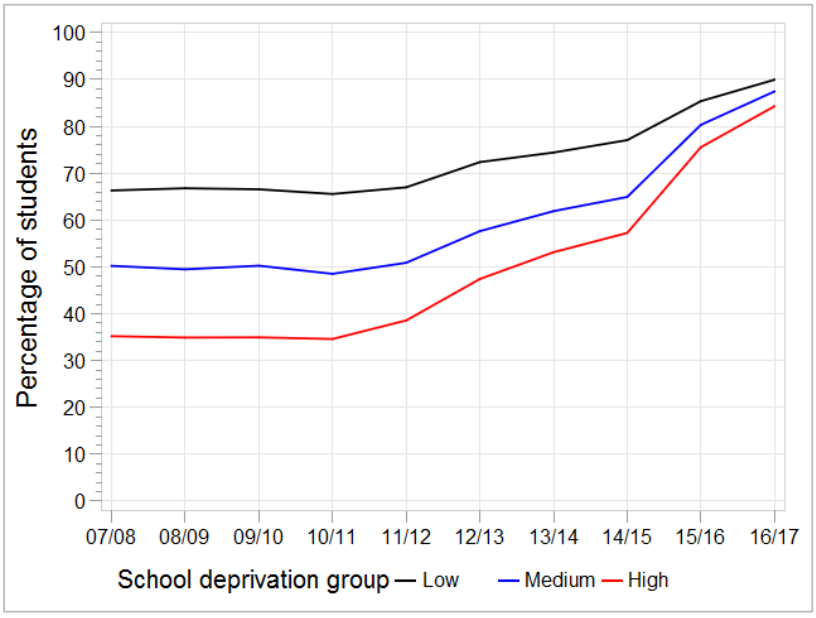


Figure 15: Percentage of students achieving full Progress 8 entries, by school deprivation group (2007/08 – 2016/17)

The increase in percentage seen in 2016/17 was larger in the medium- and high-deprivation groups than in the low-deprivation group. This is because schools with students experiencing higher levels of deprivation tend to be those with lower attainment levels.

Figure 16 presents the numbers of EBacc and 'Other' qualifications taken by students, by deprivation group. This shows a small increase in uptake of EBacc qualifications in 2016/17 in all three groups. Students in the least deprived schools tended to take more EBacc qualifications on average, whilst those in the most deprived schools took the fewest. Uptake of 'Other' qualifications fell slightly in 2016/17 in schools with the lowest levels of deprivation, but remained the same in more deprived schools.

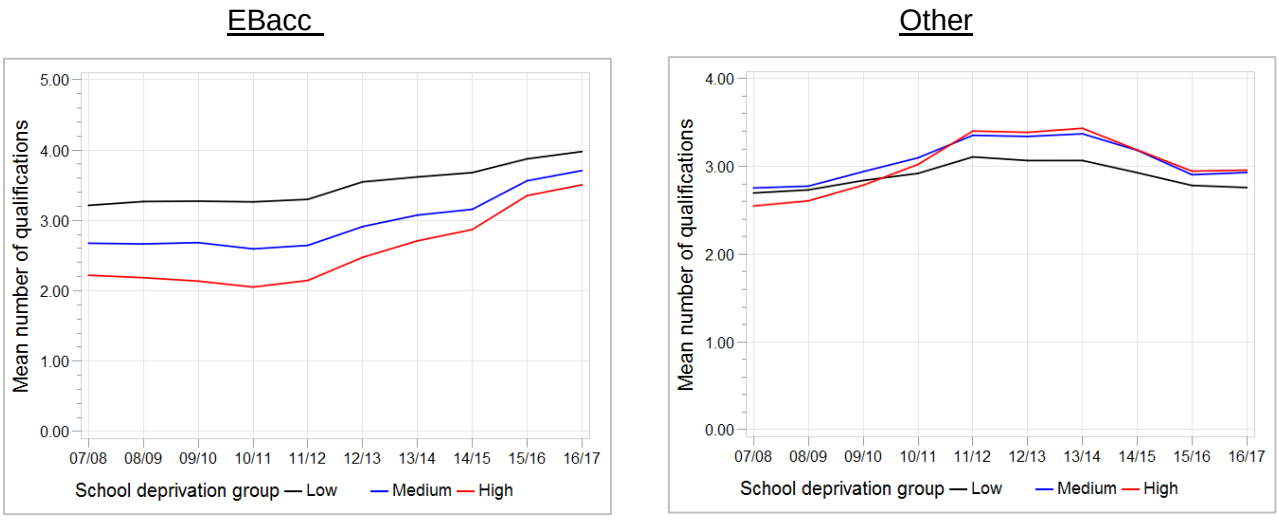


Figure 16: Mean number of EBacc and Other qualifications taken, by school deprivation group (2007/08 – 2016/17)

Provision of qualifications and subjects

The introduction of Progress 8 will have impacted on provision as some schools decide to drop some qualifications that are not eligible for the performance measure. They may also decide to switch from non-eligible to eligible qualifications.

As before, the following analyses exclude special schools, colleges and independent schools. The number of schools included was fairly consistent between years, varying between 3,055 (in 2012/13) and 3,146 (in 2007/08).

In each year, virtually all schools offered at least one GCSE, so there is no need to present this data here. Figure 17 presents the percentage of schools offering non-GCSE qualifications. Provision of BTEC / OCR / Cambridge Nationals qualifications fell in the last two years, which may be partly due to changes in league table eligibility of some of these qualifications after the introduction of Progress 8. Provision of GCSE Short Courses and Skills qualifications have both declined significantly in recent years. Provision of International GCSEs increased until 2015/16, before falling dramatically in the last year, as English and Maths were not eligible for Progress 8. There was a substantial increase in provision of VRQs in 2016/17, which was mainly due to increased provision of the ECDL.

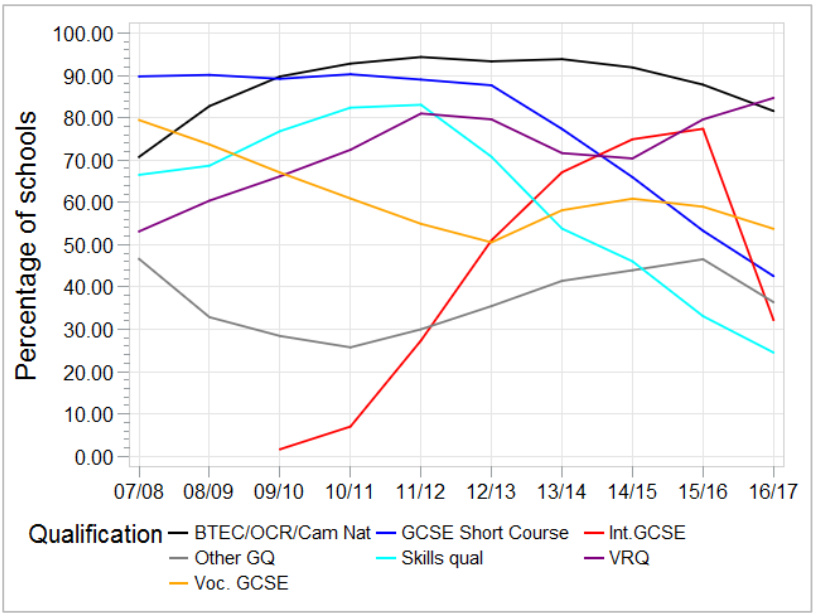


Figure 17: Provision of non-GCSE qualifications (2007/08 – 2016/17)

EBacc and 'Other' qualifications

Figure 18 presents the distribution of the number of EBacc qualifications (including English and Maths) offered by schools.

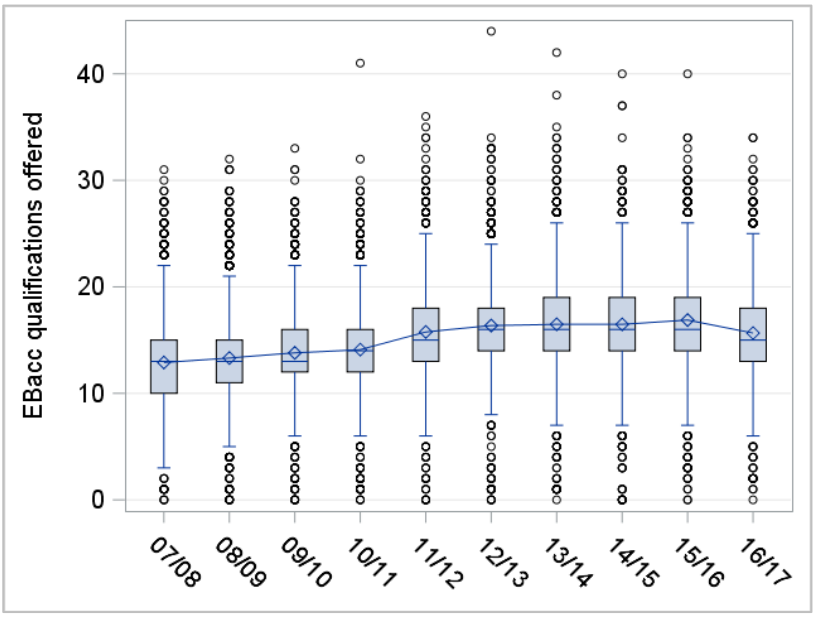


Figure 18: Distribution of no. of EBacc subjects offered by centres (2007/08 – 2016/17)

For the purpose of this analysis, different subjects in the same qualification (e.g., GCSEs in History and Geography) are counted as separate qualifications. The figure shows an increase in the average number offered by schools between 2010/11 and 2012/13. This is probably at least partly due to the introduction of the EBacc performance measure. There was also a small increase in 2015/16, which is likely to be due to Progress 8. However, this was followed by a decrease in 2016/17, from a mean of 16.9 to 15.7. This may be a consequence of English and Maths International GCSEs no longer being eligible for

Progress 8 and therefore being dropped by many schools (International GCSEs and GCSEs are counted as separate qualifications in this analysis, even if in the same subject).

Figure 19 presents the percentage of centres offering each of the most popular EBacc subjects, excluding English and Maths (all GCSEs).

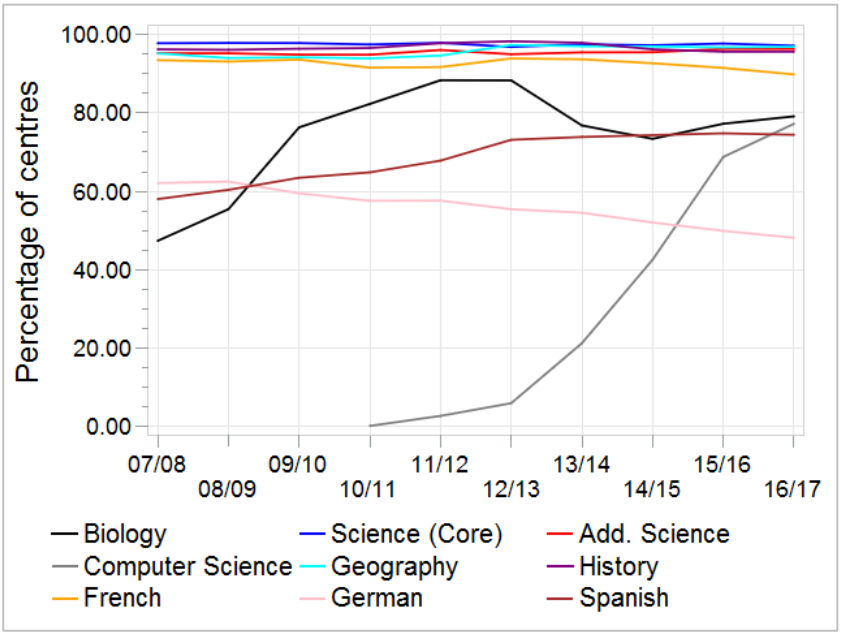


Figure 19: Provision of EBacc subjects offered by centres (2007/08 – 2016/17)

In recent years, there has been a big increase in provision of Computer Science, which is likely to be because the qualification became eligible for the EBacc. For the most popular subjects (sciences, history and geography), over 90% of schools offered the subject before the introduction of Progress 8, so there was little scope for increases in provision. However, there were small increases in provision of Biology in the last two years, following a significant fall in the three previous years. In recent years, there were falls in the provision of French and German.

Figure 20 presents the distribution of the number of qualifications eligible for the 'Other' slots. The average number of qualifications offered varied between around 11 and 14. Centres tended to increase their provision of these qualifications up until 2013/14. There was a reduction in the mean in 2014/15 and 2015/16, perhaps because of Progress 8 if schools moved over from 'Other' qualifications to EBacc qualifications. There was almost no change in 2016/17.

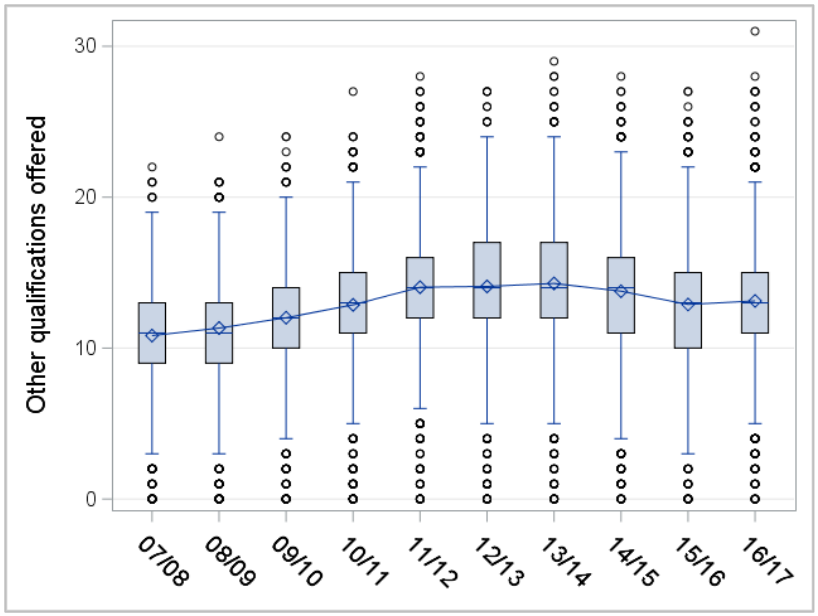


Figure 20: Distribution of no. of 'Other' subjects offered by centres (2007/08 – 2016/17)

Figure 21 presents the percentage of centres offering the most popular (in terms of uptake) non-EBacc GCSEs. Most of the non-EBacc subjects had a slight fall in provision in 2016/17, which may be related to the fact that these were not eligible for the EBacc part of Progress 8.

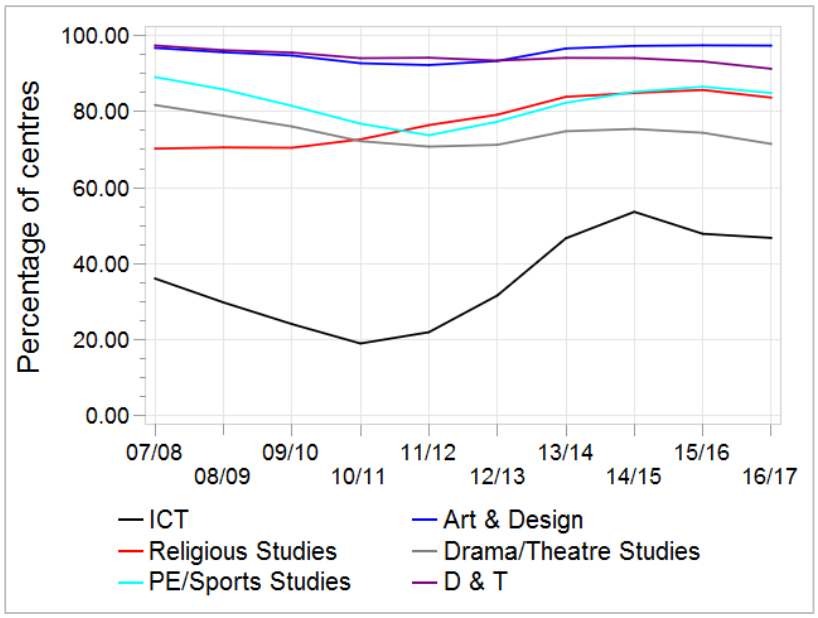


Figure 21: Provision of most popular non-EBacc GCSE subjects offered by centres (2007/08 – 2016/17)

Provision by school factors

Figure 22 presents the mean number of EBacc and 'Other' qualifications offered by schools of different types.

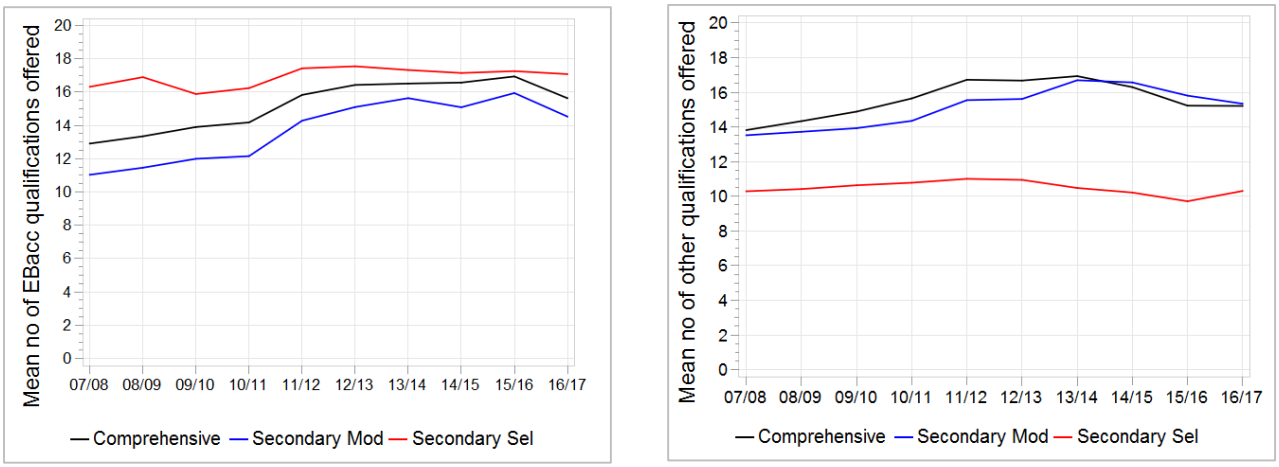


Figure 22: Mean number of EBacc and 'Other' qualifications offered, by school type (2007/08 – 2016/17)

This shows that the reduction in provision of EBacc qualifications in 2016/17 was only in comprehensives or secondary moderns. For comprehensive schools, this follows several years of increased provision. In terms of other qualifications, there was increased provision in selective schools in 2016/17, with a fall in secondary modern schools. However, secondary selective schools still offered far fewer of these qualifications on average than comprehensives or secondary modern schools.

Figure 23 presents the mean number of EBacc and 'Other' qualifications, by school attainment category. This shows steady increases in the mean number of EBacc qualifications offered by schools in all three groups up until 2015/16, followed by a fall in 2016/17. The size of the fall was very similar in all three groups. In terms of 'Other' qualifications, there was a slight fall in provision in low-attaining schools, but no change in medium- or high-attaining schools.

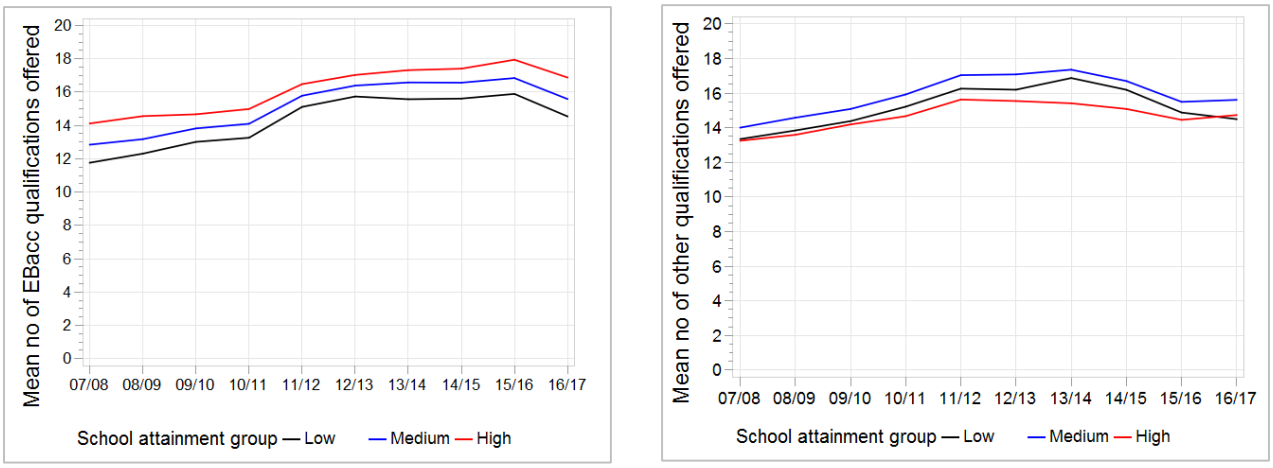


Figure 23: Mean number of EBacc and 'Other' qualifications offered, by school attainment group

Finally, Figure 24 presents the same data by school deprivation group.

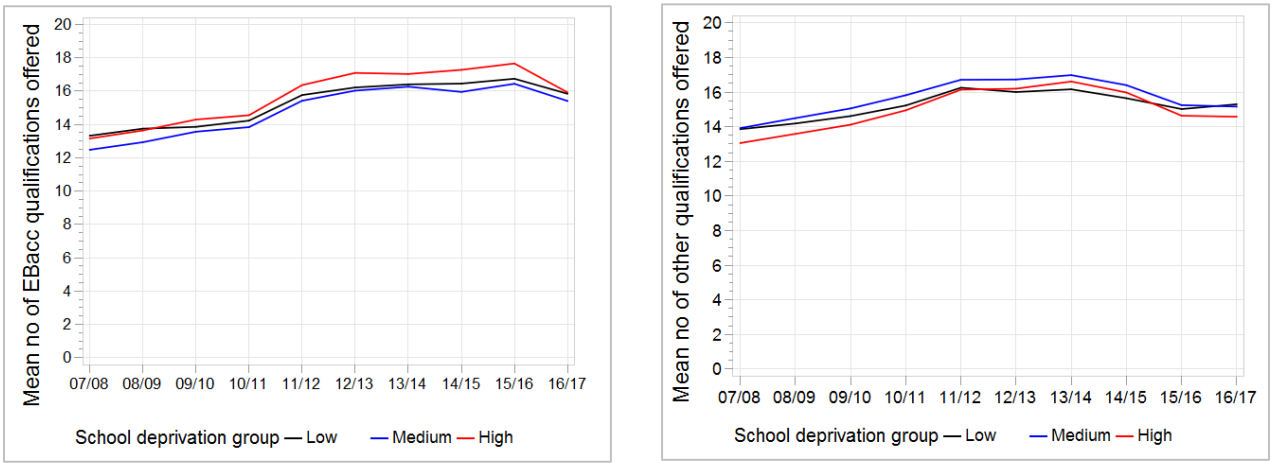


Figure 24: Mean number of EBacc and 'Other' qualifications offered, by school deprivation group (2007/08 – 2016/17)

The fall in the mean number of EBacc qualifications offered in 2016/17 was found in all three deprivation groups, but was particularly large for schools in the high deprivation group. In terms of provision of 'Other' qualifications there was very little change in any of the groups in 2016/17.

Analysis of changes to uptake / provision, by P8 score in 2014/15

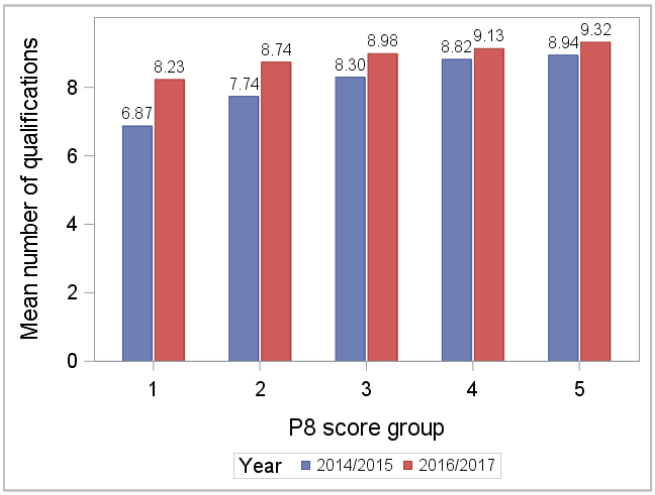
Changes to the uptake and provision amongst the schools choosing to opt in to Progress 8 a year early are presented in this section.

Changes to uptake

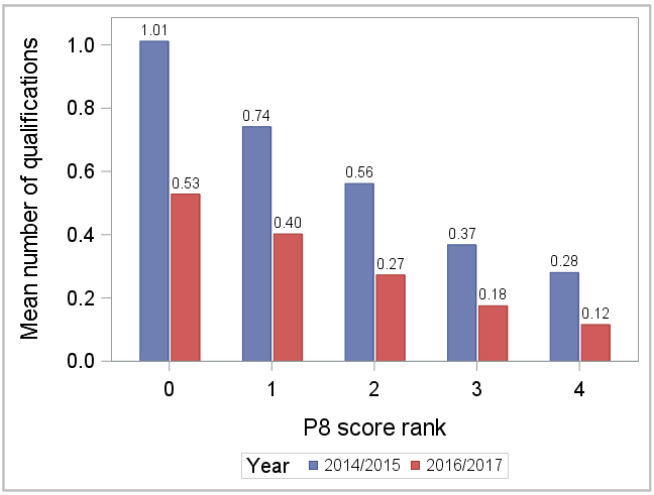
Figure 25 presents the mean number of different qualifications taken by students in the opt in schools in 2014/15 (the first year in which these schools were subject to Progress 8) and 2016/17, broken down by P8 score group (with group 1 consisting of centres with the lowest P8 scores and group 5 the centres with the highest P8 scores). Only qualifications with substantial differences between groups, in terms of changes to uptake, are presented.

Each of these presents evidence that schools with lower Progress 8 scores were more likely to increase uptake of qualifications eligible for Progress 8 (or for the EBacc slots) and reduce uptake for non-eligible qualifications. The mean number of GCSEs increased considerably more in the lowest Progress 8 group (from 6.87 to 8.23) than in the highest group (8.94 to 9.32). Uptake of BTECs and Cambridge Nationals fell more in the lowest Progress 8 group than in any other group. Uptake of International GCSEs disappeared almost completely in the bottom three Progress 8 groups, and approximately halved in the top two groups. The reason for such a big fall may be that English and Maths International GCSE became ineligible for Progress 8 from 2016/17 onwards. Finally, there was a much bigger increase in uptake of VRQs in the bottom group than in any other groups. This was mainly due to the large increase in the ECDL.

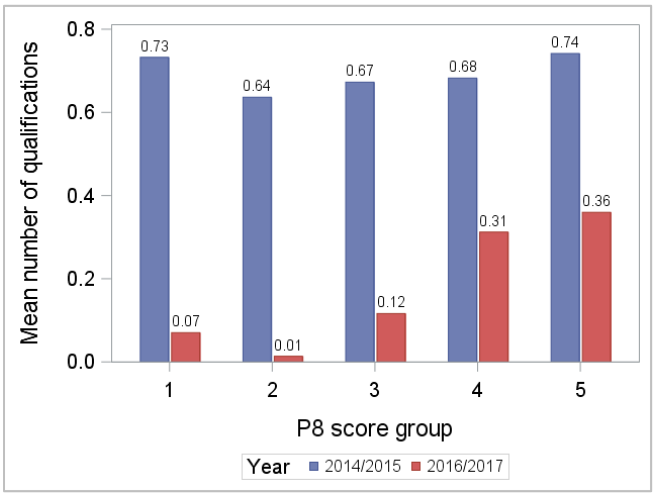
GCSEs



BTEC / Cambridge Nationals



International GCSEs



VRQs

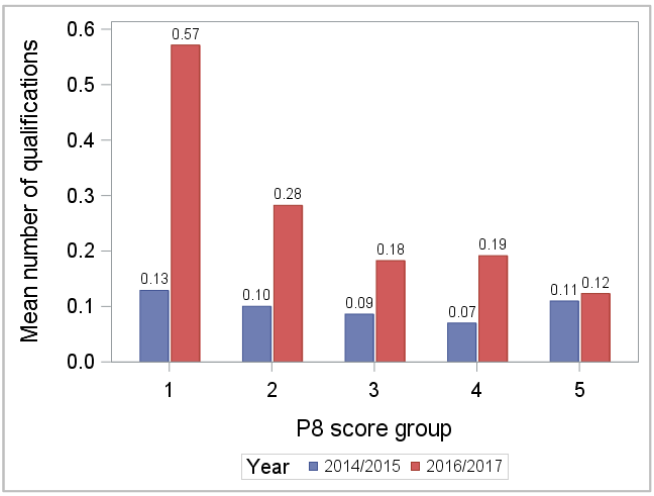
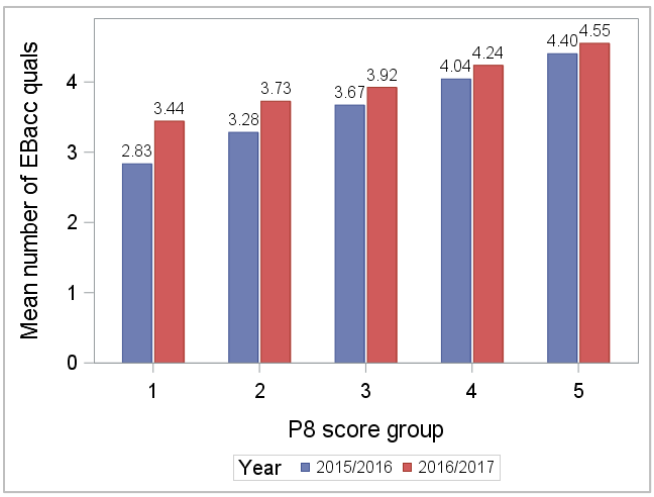


Figure 25: Changes to uptake levels in various qualifications (2014/15 – 2016/17)

Figure 26 presents the uptake of EBacc qualifications, by Progress 8 group. The graph on the left shows the mean number of EBacc qualifications taken, whilst the one on the right shows the percentage of students taking at least three EBacc qualifications.



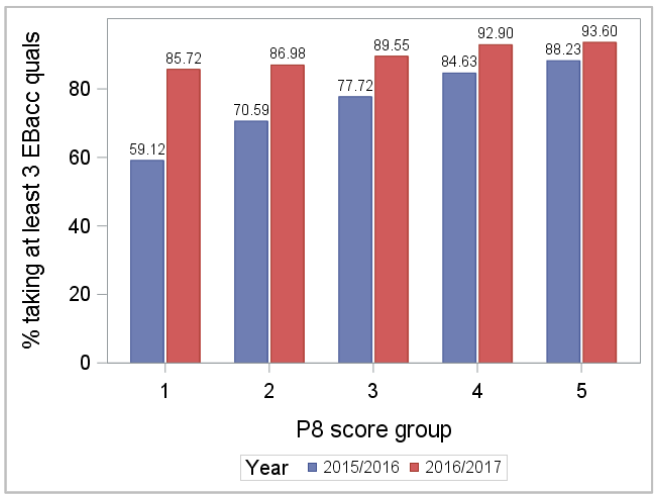


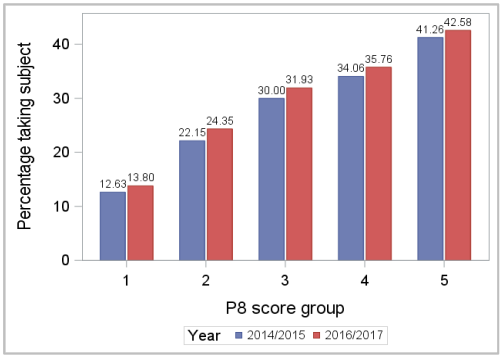
Figure 26: Changes to uptake levels in EBacc qualifications (2014/15 – 2016/17)

Both of these show a clear pattern, with uptake of EBacc qualifications increasing more in the groups with lower Progress 8 scores. For example, the percentage of students taking at least three EBacc qualifications increased from 59.12% to 85.72% in the lowest group, compared to an increase from 88.23% to 93.60% in the highest group.

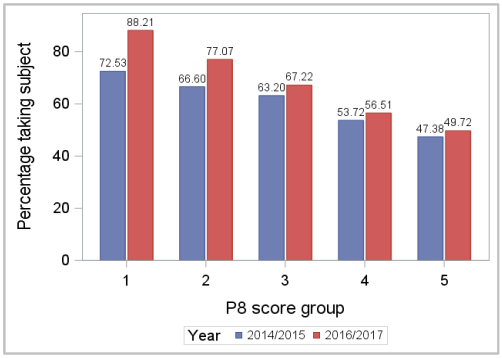
In terms of individual subjects, Figure 27 presents uptake of each EBacc subject, by Progress 8 group. Uptake of Biology had almost no change in any group. However, there were some substantial differences in Core Science and Additional Science, with uptake increasing much more in the lower Progress 8 groups. For example, uptake of Additional Science in the bottom group increased from 60.67% to 70.75%, compared with an increase from 42.17% to 45.12% in the top group. This was also the case for Geography and History, although to a lesser degree. In terms of Computer Science, uptake increased in all the groups, but there were bigger increases in the bottom two groups. There were almost no differences between groups in the changes to French uptake (and similar results for German and Spanish). This may be due to a perception that languages are harder than the other EBacc subjects.

In terms of the changes to uptake of other GCSEs, there were very few differences between the groups, so the results are not presented here. This was also the case for most of the popular subjects eligible for the ‘other slots’.

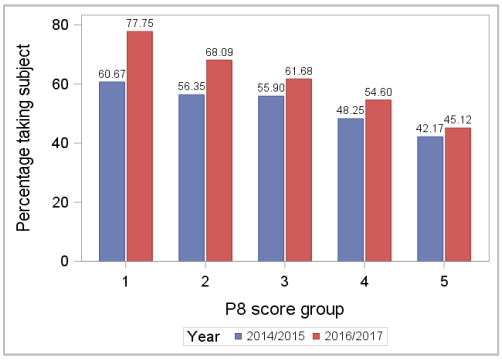
Biology



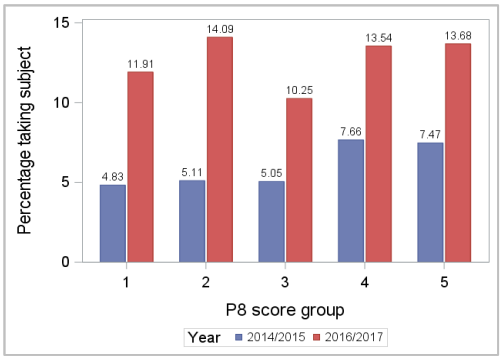
Core Science



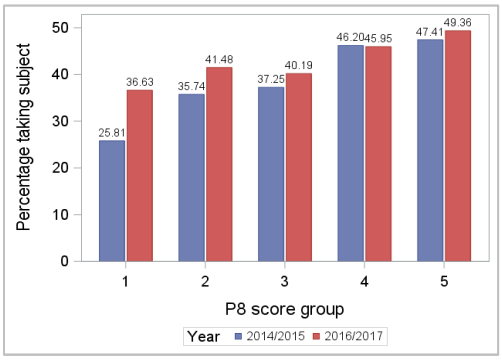
Additional Science



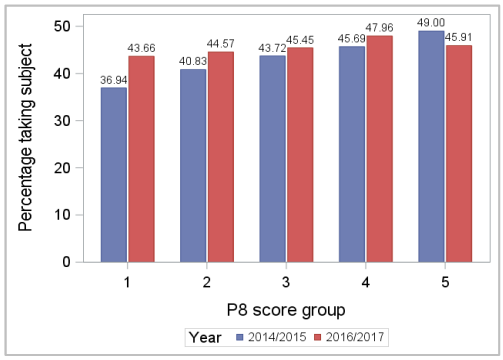
Computer Science



Geography



History



French

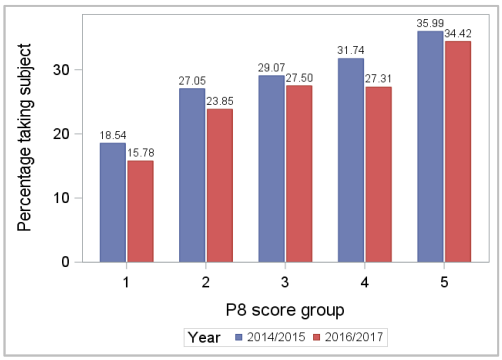


Figure 27: Changes to uptake levels in EBacc subjects (2014/15 – 2016/17)

Changes to provision

Figure 28 presents a breakdown of the number of EBacc qualifications and the number of qualifications eligible for the 'Other' slots offered by schools in 2014/15 and 2016/17, broken down by P8 score group.

EBacc qualifications *'Other' qualifications*

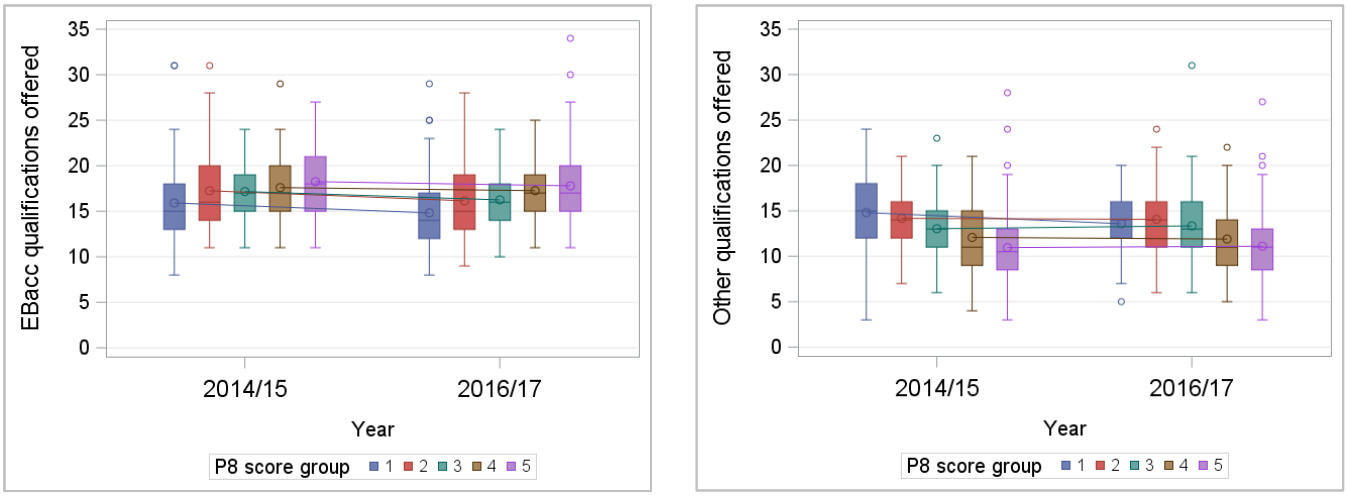


Figure 28: Provision of EBacc and 'Other' qualifications, by P8 score rank (2014/15 – 2016/17)

There were small differences in changes to EBacc provision between the Progress 8 groups. For example, there was a slightly larger fall in the mean number of subjects offered by the bottom group (from 15.9 to 14.8) than the top group (from 18.3 to 17.8). Similarly, there was a reduction in the mean number of 'Other' subjects in the bottom group (from 14.8 to 13.6), but a small increase in the top group (from 11.0 to 11.1).

Changes in the provision of each EBacc subject were investigated, but it was found that there were very few differences between groups, so the results are not presented here.

Conclusion

The results presented here suggest that the introduction of Progress 8 continues to have an impact on uptake and provision of qualifications. There were substantial increases to the average number of GCSEs taken by students in 2016/17, and decreases in the average number of other qualifications (with the exception of VRQs). The biggest decrease in uptake was in International GCSEs, which was mainly due to decreasing uptake of English and Maths, as these were made ineligible for Progress 8 from 2016/17.

There was also an increase in the average number of EBacc qualifications taken by students in 2016/17 and most of the subjects eligible for the EBacc saw increases in uptake. The exceptions to this were the three main modern foreign language subjects (French, German and Spanish) which were either static or had falling uptake. This pattern was also seen in 2015/16, and it may be that these subjects (in contrast to other EBacc subjects) did not show an increase because of a perception that they are 'harder' than other GCSEs (e.g., Cuff, 2017; Tinsley & Board, 2017). Furthermore, the increase in EBacc subject uptake was

larger amongst lower ability students (see Figure 14), who are less likely to take languages at GCSE (Carroll & Gill, 2017).

The increase in uptake of EBacc qualifications meant a further increase in the percentage of students who filled all their EBacc slots (up to 88.8%). It also helped increase the proportion of students who took the required number of different types of qualifications to fill all their Progress 8 slots (from 80.6% to 87.5%). The majority of those failing to fill all of their slots were short of EBacc qualifications, which suggests that there may be some scope for further increases in uptake of these qualifications in future years. This is particularly the case when you consider that the majority of students (65%) who were short of EBacc qualifications were only short by one. However, for schools there is always likely to be a trade-off between improvement in their league table position and ensuring that they do what is in the best interests of their students. It may be better for some low-attaining students to concentrate their efforts on fewer qualifications than the eight required to fill all Progress 8 slots[6].

The mean number of qualifications eligible for the 'Other' slots did not change in 2016/17, which suggests that uptake of these was less affected by Progress 8.

The analysis of uptake by school type showed a similar pattern to last year, with the increased uptake of EBacc qualifications in 2015/16 almost all in comprehensives and secondary moderns. Differences were also found between schools grouped by attainment or by deprivation. Students in low- and medium-attaining schools had slightly bigger increases in uptake of these qualifications in 2016/17 than students in high-attaining schools. Similarly, students in more deprived schools had slightly bigger increases in uptake in 2016/17 compared with students in less deprived schools.

In terms of provision, the average number of EBacc subjects offered by schools fell markedly in 2016/17, perhaps a consequence of International GCSE English and Maths no longer being eligible. The vast majority of schools already offer all of the most popular EBacc subjects, so provision of these changed little. The exception to this was provision of Computer Science GCSE, which has been increasing significantly for several years due to it becoming eligible for the EBacc measure. Several of the non-EBacc GCSEs saw falls in provision, although these were all quite small.

The analysis of changes to uptake and provision by 2014/15 Progress 8 scores generated some interesting findings. Schools with lower P8 scores had large increases in uptake of GCSEs on average and the largest increase in uptake of EBacc qualifications. However, as these schools had the lowest EBacc uptake to begin with, there was more scope for them to increase uptake. Schools in the lowest P8 group also had the largest increase in uptake of VRQs and the largest fall in BTEC / Cambridge National uptake. Most of the increase in VRQ uptake was in the ECDL course, which suggests that schools with lower P8 scores may have been trying to boost their scores by entering many students for this qualification with a reputation for quick delivery.

In terms of changes to subject uptake, there was evidence of increased uptake for schools in the lowest Progress 8 group in some subjects. These tended to be the EBacc subjects with

[6] These students will still get a Progress 8 score, based on the total points score from the reduced number of qualifications, divided by 10.

a reputation for being the least ‘difficult’ (i.e., not the separate sciences or modern foreign languages).

These differences were likely to be due to schools in the lower Progress 8 groups wanting to improve their league table position. This shows that the measure is performing to some degree as the government would want it to, with those schools where uptake of EBacc subjects is lowest increasing their uptake the most. This was the first year for which the opt-in schools could realistically have reacted to their league table position by making the changes to uptake and provision. Therefore, there may be further changes in future years, and in all centres, not just those choosing to opt-in early. In particular, there may be increased uptake of EBacc subjects (and perhaps those eligible for the ‘Other’ slots) amongst schools with the lowest Progress 8 scores.

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