

Analysis to accompany Insight brief #13:

Schools, attainment and the role of higher education

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Summary

1. This note presents new analysis of the link between attainment at GCSE and entry to higher education for young people with different background characteristics.
2. Over the past decade the proportion of young people entering higher education has generally increased year on year, regardless of background. Despite this the gaps in access between groups such as those who were eligible for free school meals (FSM) and others, male and female pupils, and other characteristics, have changed very little.¹
3. One of the principal factors associated with access to higher education is prior academic attainment. Most people take GCSE exams at the end of Key Stage 4, and therefore GCSE attainment is a useful context for understanding the gaps in access to higher education.
4. Using individualised results data from schools, linked to the higher education student record, we have compared the chances of entering higher education by GCSE attainment for pupils from different backgrounds.
5. Assuming patterns of access by GCSE attainment remained the same if attainment at GCSE was equalised between different groups of pupils shows that:
 - a. Almost all the difference in access between pupils who were eligible for FSM and those who were not is related to attainment at GCSE.
 - b. About two-thirds of the access gap between male and female pupils is related to attainment at GCSE.
 - c. When we use a measure that simultaneously considers multiple characteristics, Association between Characteristics of Students (ABCS) Access,² just over half of the gap in access between the 20 per cent of young people most underrepresented in higher education and the 20 per cent most represented is related to attainment at GCSE.

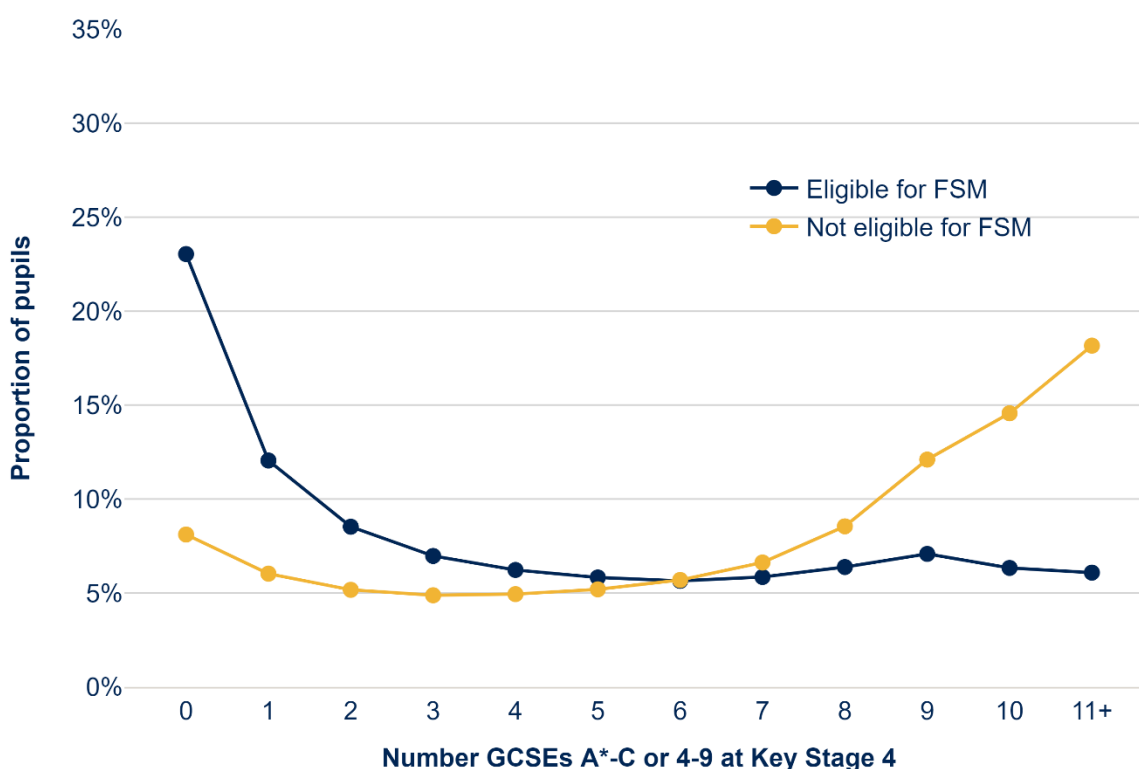
¹ Department for Education, Widening Participation in Higher Education 2019-20 <https://explore-education-statistics.service.gov.uk/find-statistics/widening-participation-in-higher-education/2019-20>.

² See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/access-to-higher-education/.

How does school attainment relate to higher education participation for FSM eligible pupils?

6. In the latest year of published data, young people attending state schools who were not eligible for FSM at age 15 were 70 per cent more likely to enter higher education by age 19 than those who were eligible. The proportion of FSM pupils accessing higher education by age 19 was 26.6 per cent compared with 45.7 per cent of non-FSM pupils, a gap of 19.1 percentage points.³
7. There are marked differences in GCSE attainment between FSM and non-FSM pupils. Using the number of GCSEs at grade C or above (or grade 4 or above for reformed GCSEs) as the measure of GCSE attainment, Figure 1 shows the GCSE attainment for those eligible and those not eligible for FSM.
8. The chart shows that:
 - a. 23 per cent of pupils who were eligible for FSM were not awarded any GCSEs at grade C and above or grade 4 and above, whereas only 8 per cent of other pupils have the same outcome.
 - b. At the other end of the attainment range, 18 per cent of pupils not eligible for FSM attain 11 or more higher grade GCSEs, compared with only 6 per cent of FSM pupils.

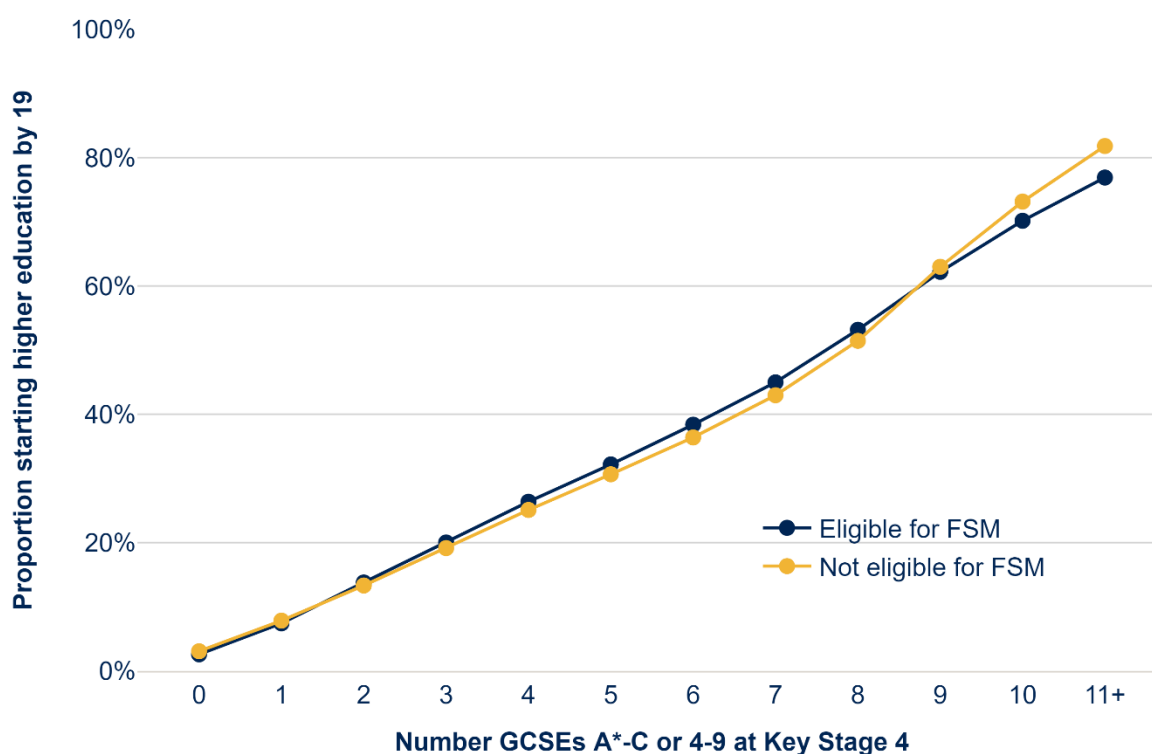
Figure 1: GCSE attainment by free school meal status



³ <https://explore-education-statistics.service.gov.uk/find-statistics/widening-participation-in-higher-education/2019-20>.

9. This is important because the chance of entering higher education by the age of 19 is strongly associated with GCSE attainment.
10. Figure 2 shows the proportion of young people entering higher education by 19 against the same GCSE attainment measure shown in Figure 1. It confirms that as the number of higher grade GCSEs awarded increases, the likelihood of entering higher education increases.
11. For pupils awarded the same number of higher grade GCSEs, the chance of entering higher education is almost the same whether they were eligible for FSM or not.

Figure 2: Proportion entering higher education by 19, by GCSE attainment and free school meal status



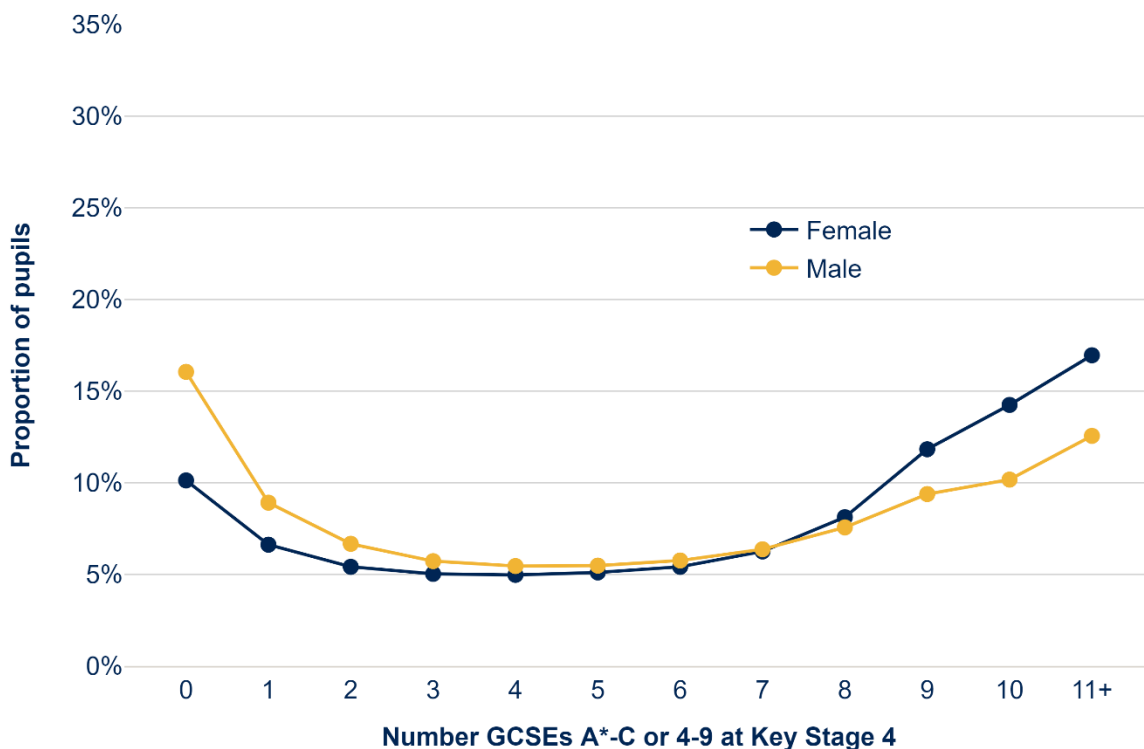
12. This means that the participation gap between these two groups is almost entirely explained by prior attainment at KS4. To estimate what the participation gap might be if attainment was the same between FSM and non-FSM pupils, we took the following approach:
 - a. Apply the proportion of non-FSM pupils recorded with each number of higher grade GCSEs, as shown in Figure 1, to the total number of FSM pupils. This results in an estimate of the number of FSM pupils with each number of higher grade GCSEs if the attainment profiles were equal.
 - b. Apply the observed proportion of FSM pupils entering higher education by 19 in Figure 2 to this new estimated number of FSM pupils. This results in an estimate of the number of FSM pupils who would have entered higher education by 19 if the attainment profiles were equal.
 - c. Calculate the new overall access rate by summing across the GCSE attainment profile and dividing by the total number of FSM pupils.

- d. Calculate a new estimated participation gap between FSM and non-FSM pupils using this estimated proportion of FSM pupils and comparing with the observed proportion of non-FSM pupils.
13. This method suggests that the gap could reduce by 95 per cent if the profile of attainment (as shown in Figure 1) for FSM pupils had been the same as non-FSM pupils. This method assumes that those pupils whose attainment would be raised would not disproportionately face additional barriers to entering higher education.

Closing the GCSE attainment gap would reduce the access gap between male and female students by around two-thirds

14. Gender is another characteristic that is associated with a stubborn access gap. In the latest year of published data, 48.9 per cent of female pupils entered higher education by 19 compared with 37.6 per cent of male pupils, a gap of 11.4 percentage points.⁴
15. Figure 3 shows the GCSE attainment profile of male and female pupils. The difference in attainment is not as large as the difference by FSM status (Figure 1), but it is clearly important. Boys are more likely than girls to be not awarded any higher grade GCSEs and less likely to be awarded nine or more higher grade GCSEs.

Figure 3: GCSE attainment by gender

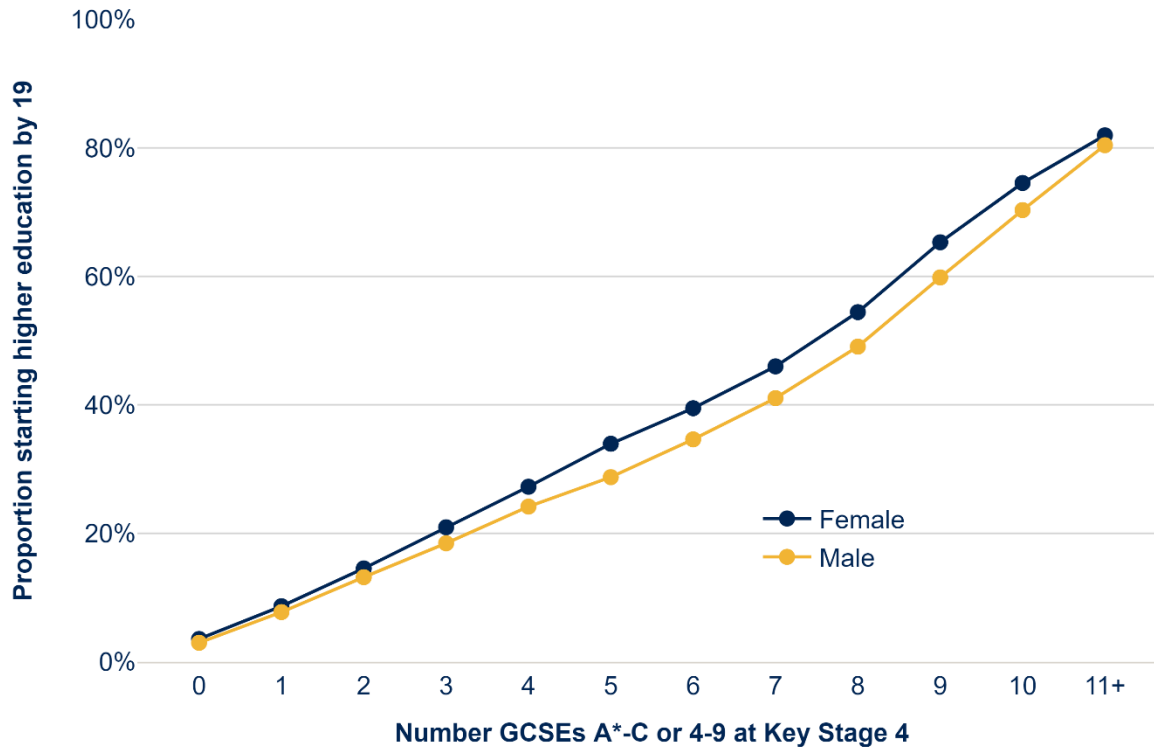


16. However, Figure 4 shows that the chances of entering higher education are not the same for males and females at the same level of GCSE attainment. Female pupils are more likely to enter higher education than males when they have been awarded between four and 10 higher-

⁴ <https://explore-education-statistics.service.gov.uk/find-statistics/widening-participation-in-higher-education/2019-20>.

grade GCSES. This means that not only do boys have lower GCSE attainment, but also that for the same level of attainment they are less likely to enter higher education.

Figure 4: Proportion entering higher education by 19, by GCSE attainment and gender



17. Estimating the proportion of male pupils who would have entered higher education if their profile of attainment (as shown in Figure 3) had been the same as female pupils, using the same method that we used for FSM pupils, suggests that the access gap would reduce by around two-thirds.

When multiple factors are considered together

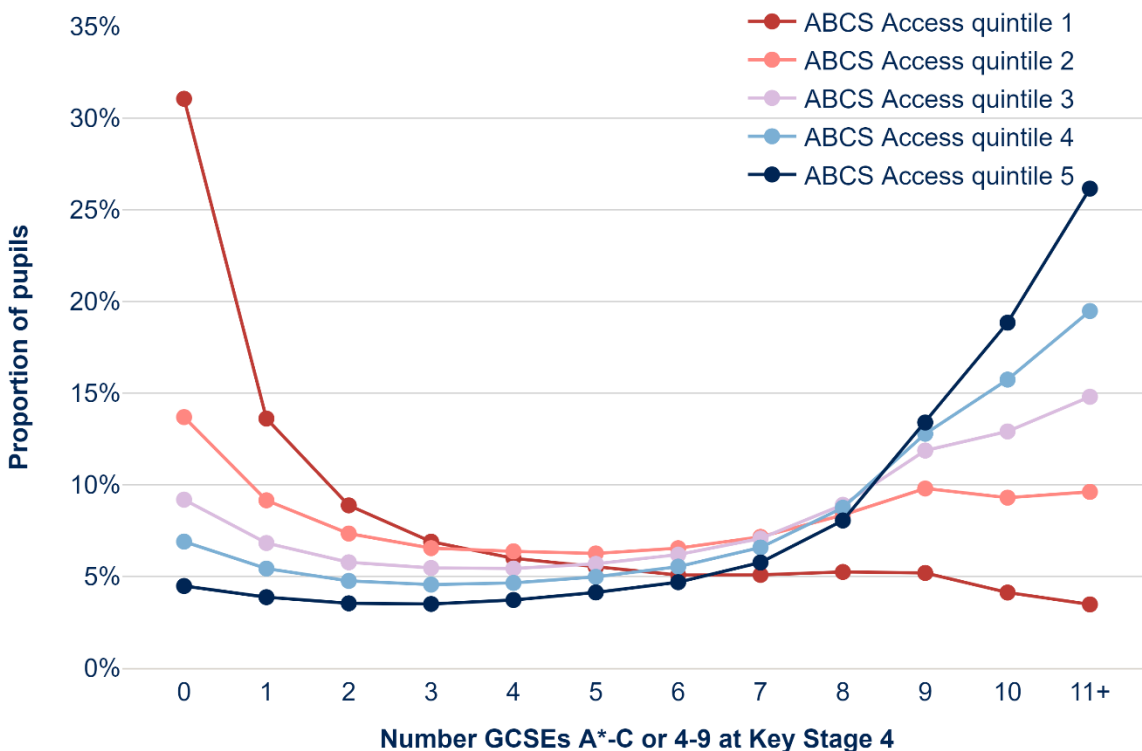
18. ABCS Access identifies groups of young people by how likely they are to access higher education based on multiple characteristics. It enables combinations of characteristics to be considered together.⁵ Each person belongs to one of five groups based on their likelihood to enter higher education. ABCS Access quintile 1 is the group with the lowest modelled rate of entry to higher education and ABCS Access quintile 5 has the highest rate of entry. The factors that contribute to ABCS Access are FSM, gender, ethnicity, and three area-based measures of background: TUNDRA (tracking underrepresentation by area) Income Deprivation Affecting Children Index (IDACI) and Index of Multiple Deprivation (IMD).⁶

⁵ See www.officeforstudents.org.uk/data-and-analysis/associations-between-characteristics-of-students/access-to-higher-education/.

⁶ For TUNDRA, see www.officeforstudents.org.uk/data-and-analysis/young-participation-by-area/about-tundra/ For IDACI and IMD, see <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>.

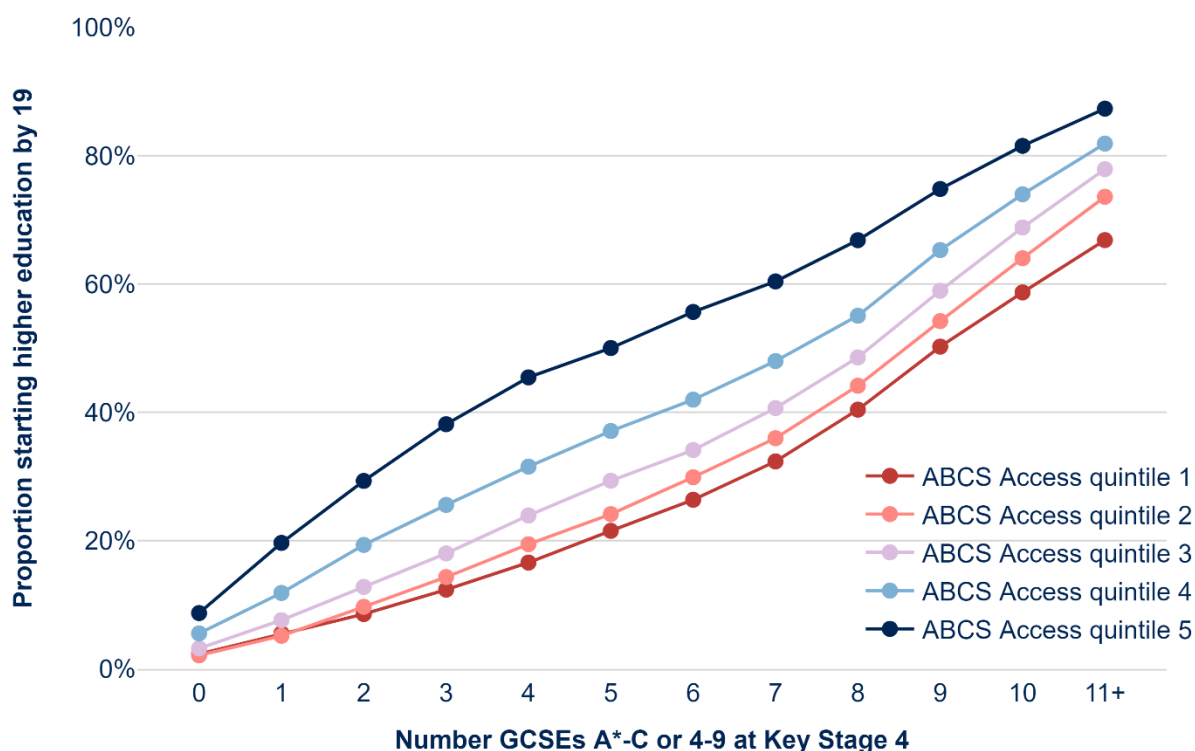
19. The gap in likelihood of entering higher education between ABCS access quintile 1 and quintile 5 is wider than other gaps that we measure. We calculate that for the cohort who would have entered higher education in 2019-20 aged 18, 19.3 per cent of those from ABCS access quintile 1 entered higher education by 19, compared with 68.2 per cent of those from quintile 5 – a gap of nearly 50 percentage points (48.9).
20. Figure 5 shows that prior attainment varies between pupils from each of the ABCS Access quintiles. Pupils from ABCS Access quintile 1 have the lowest GCSE attainment and pupils from ABCS Access quintile 5 have the highest GCSE attainment.
21. The chart shows that:
- Over 30 per cent of the lowest participation group (quintile 1) were recorded as having been awarded no higher grade GCSEs at the end of Key Stage 4, compared with less than 5 per cent of the highest participation group (quintile 5).
 - The lowest participation group (quintile 1) have an unusually high proportion of pupils with no recorded higher grade GCSEs compared with the other groups. It is higher than the proportion for FSM shown in Figure 1 (23 per cent). These pupils may have held other Level 2 qualifications that have not been captured in this analysis.
 - Pupils in the highest participation group (quintile 5) were most likely to have been awarded the highest number of higher grade GCSEs. More than 25 per cent were awarded 11 or more, compared with fewer than 4 per cent of the lowest participation group (quintile 1).

Figure 5: GCSE attainment by ABCS Access quintile



22. Figure 6 shows the proportion entering higher education by 19 against GCSE attainment level for each of the five ABCS Access quintiles. It shows that there are large gaps between the quintiles even when their GCSE attainment is the same.
23. Because there is a clear relationship between prior GCSE attainment and participation in higher education, raising attainment for pupils in ABCS Access quintile 1 would close some of the access gap between these groups.
24. However, differences in entry to higher education remain between these groups of pupils even when they attain the same GCSE results.
25. Estimating the proportion of ABCS access quintile 1 pupils who would have entered higher education if their profile of attainment (as shown in Figure 5) had been the same as quintile 5 pupils, using the same method that we used for FSM pupils, suggests that the access gap would be halved.

Figure 6: Proportion entering higher education by 19 by GCSE attainment and ABCS Access quintile



26. We also calculated the attainment profiles and access rates for the other characteristics in ABCS Access: ethnicity, TUNDRA, IMD and IDACI. The data for these characteristics can be found in the data file that accompanies this analysis note.

Data notes

Data sources

27. This analysis uses individualised results data from schools, linked to the higher education student record.

28. The school data is from the National Pupil Database (NPD) and relates to the record held at the end of Key Stage 4 (KS4).⁷ We use records of pupils recorded in English state-funded maintained schools only (defined by the NPD field KS4_NFTYPE) and those age 15 at the start of the academic year. Individuals may be awarded additional GCSE qualifications between the end of KS4 and entering higher education that are not recorded in this data.
29. The higher education data is sourced from the Higher Education Statistics Agency's (HESA's) Student record, HESA's Student Alternative record (formerly known as the Alternative Provider record) and the Education and Skills Funding Agency's individualised learner record. An individual is recorded as having entered higher education by 19 if they are linked to a higher education record three or four academic years after their KS4 academic year.
30. This analysis used five cohorts of young people. They were at the end of KS4 in the academic years 2012-13 to 2016-17. Those in the first cohort were at the end of KS4 in 2012-13 and were recorded as entering higher education by 19 if they were linked to a higher education record in either 2015-16 or 2016-17. Those in the fifth cohort were at the end of KS4 in 2016-17 and were recorded as entering higher education by 19 if they were linked to a higher education record in either 2019-20 or 2020-21.

Definitions of characteristics used

31. FSM eligibility indicates whether the student was ever recorded as being eligible to receive free school meals in the six years prior to the March census date in their final year of KS4. Note that the figures quoted from the Department for Education Widening participation in higher education release⁸ are based on eligibility in the KS4 year only.
32. Gender is recorded from the 'KS4_GENDER' field in the NPD. The allowed values in this field are male and female. It should be self-declared and recorded according to the wishes of the parent or pupil. Individuals are free to change the way their gender is recorded. If the pupil doesn't want to be known by either gender the field will be left uncompleted.
33. ABCS Access identifies groups of young people by how likely they are to access higher education based on multiple characteristics. It enables combinations of characteristics to be considered together. Each person belongs to one of five groups based on their likelihood to enter higher education. ABCS access quintile 1 is the group with the lowest modelled rate of entry to higher education and ABCS access quintile 5 has the highest rate of entry. The factors that contribute to ABCS access are FSM, gender, ethnicity, and three area-based measures of background, IDACI and IMD. In this analysis the ABCS access quintiles were derived from KS4 data held on the NPD.

⁷ The Department for Education does not accept responsibility for any inferences or conclusions derived from the NPD data by third parties.

⁸ <https://explore-education-statistics.service.gov.uk/find-statistics/widening-participation-in-higher-education/2019-20>.



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