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Beyond teacher assessed grades:

Post 16 education choices and COVID-19

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April 2026

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Acknowledgements

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds and undertakes rigorous research, encourages innovation and supports the use of sound evidence to inform social and economic policy, and improve people's lives. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. This project has been funded by the Nuffield Foundation, but the views expressed are those of the authors and not necessarily the Foundation.

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The authors would like to thank the members of the project advisory group for providing helpful comments and feedback.

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Executive Summary

The study choices students make from age 16 shape their long-term opportunities: the qualifications they complete, the courses and institutions they access, and their eventual pathways into higher education and skilled employment.

The COVID-19 pandemic reshaped the educational trajectories of students completing their GCSEs and 16-19 qualifications in 2020 and 2021. With examinations cancelled and grades determined by Centre Assessed Grades (CAGs) and Teacher Assessed Grades (TAGs), more GCSE students met the entry requirements for level 3[1] study, and more sixth form and colleges students met the entry requirements for their preferred higher education destinations. This report provides the most comprehensive assessment to date of how these changes influenced student choices and retention outcomes and the mismatch between students' prior attainment and the programmes they pursued. These insights are central to current policy debates on qualification reform, accountability, support for vulnerable learners and the provision of high-quality careers guidance.

Drawing on national administrative datasets spanning key stages 2 & 4, 16-19 study and higher education records, the new analysis presented in this report examines:

1. How enrolment to post 16 pathways changed for pandemic-affected cohorts.
2. How these shifts interacted with students' ability to complete their courses; and
3. Which students tend to select 16-19 or higher education courses that are more or less demanding[2] than we might expect given their prior attainment, how these patterns evolved during the pandemic and interacted with retention and attainment outcomes.

Key findings

- Students' 16-19 study programmes were becoming increasingly diverse. Prior to the pandemic, the proportion of students studying towards vocational or applied level 3 qualifications was rising, as was the proportion of students mixing these qualifications with A levels. Meanwhile, the proportion of students studying *only* A levels was decreasing, dropping to 31 per cent in 2019.

- For the students awarded CAG and TAG GCSEs during the pandemic, the proportion that went on to study level 3, 16-19 qualifications increased by 4 percentage points. This represents a shift from students who would otherwise likely have chosen an apprenticeship or studied level 2 or below qualifications, for which uptake fell by 1.4 and 2.5 percentage points respectively in 2020. The decline in apprenticeship take up will have

[1] A level and equivalent level study

[2] Our methodology creates a proxy for course difficulty based on the prior attainment of students entering each qualification. It is not a perfect assessment of exactly which courses are more demanding or stretching than others

been affected by business closures and economic factors, not just the impact of grading arrangements.

- The increase in level 3 enrolments in the 16-19 phase was seen across all student characteristic groups and school types attended, but did not occur equally. Increased level 3 study was not quite as prominent for disadvantaged students, even after adjusting for prior attainment and other characteristics. The shift towards level 3 study was also more pronounced in London and the North East compared to elsewhere in England, and for students in UTCs and Studio Schools.

- Course completion rates for students studying level 3 programmes in the 16-19 phase fell for the year groups awarded CAG/TAG GCSEs. This suggests that students able to access level 3 study due to the higher GCSE grades awarded under CAGs/TAGs, may have struggled. However, prior lost learning and other residual disruption from the pandemic may also have played a role and complicates comparisons between years. When looking at the level 3 students with the lowest prior attainment (most likely to be those newly meeting the entry criteria) completion rates were above two thirds (67.5 per cent), suggesting that many, although not all, of these students were capable of level 3 study.

- There were substantial gaps in retention rates by student characteristics, for example economically disadvantaged students starting level 3 programmes in 2019 were 8 percentage points less likely than their peers to complete their study. However, these gaps do not appear to have been exaggerated by the changing entry patterns following CAG and TAG GCSEs, and in many instances narrowed slightly.

- When examining which students choose 16-19 courses that are more (overmatch) or less (undermatch) challenging than their prior attainment would typically predict[3], we find clear and systematic patterns. High-attaining male students are more likely to overmatch than similarly attaining female students. Students in London, and those attending free schools or selective schools, are also more likely to overmatch. In contrast, White students and students in sponsored academies are more likely to undermatch. These patterns may reflect differences in guidance, expectations and local provision.

[3] Some 'mismatch' is both expected and desirable. For an individual student, a 'mismatched' course may be the best option for their preferred career pathway and goals. However, systematic differences in mismatch by socio-economic background or school type suggest that some groups face structural barriers.

- Although the pre-existing pattern of mismatch in the 16-19 system is strongly structured by student and provider characteristics, baking existing inequalities into the system, we do not find strong evidence that mismatch patterns varied substantially in 2020 and 2021. As noted earlier, disadvantaged students were slightly less likely than their non-disadvantaged peers to switch onto level 3 study programmes following the pandemic. In our mismatch analysis, this greater tendency toward undermatching was partly offset by increased overmatching *within* qualification types, where disadvantaged students were slightly more likely to choose more demanding subjects.

- Significant pre-pandemic inequalities in higher education course access persist across students from different socioeconomic backgrounds, of different genders, and from different school types, with private school students accessing courses ranked around 10 percentiles above their state-school peers of equal ability; male students similarly outperform female peers by up to 5 percentiles, while free school meal (FSM) students are disadvantaged and ethnic minority students tend to access better-ranked courses than their white peers. This suggests pre-existing inequalities are deeply embedded in the wider admissions system (including the applications system).

- Grade inflation resulting from exam cancellations in both 2020 and 2021 resulted in widening inequalities for some students**,** slightly exacerbating the private/state school gap while narrowing the gender gap. This reinforces the message that external exams are the fairest and most equitable way to assess students.

In light of these findings, we make the following policy recommendations:

- Our research supports the introduction of V levels. The growing demand for 16-19 programmes that combine A levels with vocational or technical options aligns with this direction, and previous evidence showing that T levels are not suitable for all learners reinforces the need for more flexible mixed pathways.

- Where mixed programmes reflect genuine demand and lead into high value progression routes, they should be reflected in the accountability system and other published data sources. Current reporting focuses on A levels and other level 3 qualifications separately. With the introduction of V levels, which are designed to support flexibility, it would be beneficial to regularly report on the attainment, retention and destination outcomes of those studying mixed programmes. Standardised grading is a key feature of V levels, this means more meaningful reporting across subjects should be possible, compared to the current accountability metrics for vocational qualifications.

- Although our regional findings, such as the higher prevalence of overmatching in London, do not provide direct evidence that a greater concentration of providers automatically leads to more stretching choices, they do highlight a broader structural point: sufficiency of local post 16 provision is a necessary pre-requisite for well-matched choices. This is

reinforced by previous EPI research, which shows that students with similar prior attainment are more likely to study at level 3 if they attend a school sixth form.[i] The government and education providers need to ensure that students are able to choose appropriately demanding academic, applied or technical pathways within a realistic travel area, and careers advice should be connected to local and sectoral provision.

- Retention rates are substantially lower for economically disadvantaged students and those with special educational needs, highlighting the need for more systematic and proactive support if the worrying increase in students not in education or training is to be reversed. The current funding system creates a cliff edge at age 16, with disadvantaged students attracting less support despite evidence that attainment gaps continue to widen during the 16-19 phase. To address this, we reiterate our call for a dedicated student premium for the 16-19 phase, mirroring the pupil premium in schools. This would give colleges the resources needed to provide structured academic, pastoral and transition support to the students most at risk of disengagement.

- Although the government provides vulnerability data to providers through the Get Information About Pupils (GIAP) service, this information is often uploaded too late for effective early intervention and is inconsistently accessed by colleges. Ensuring providers receive timely data, alongside expectations for its routine use, would enable earlier identification of at risk learners and more targeted retention strategies.

- Maintain level 3 entry requirements to ensure course integrity, but encourage providers to use flexible, evidence-based discretion where students narrowly miss criteria. Promote stepped pathways (e.g. using post 16 level 2 qualifications as initial stepping stones) to support students who could succeed at level 3 with targeted preparation. The government's proposals in response to the consultation on post 16 level 3 and below pathways appears consistent with this approach.

- Our findings regarding mismatch in higher education suggest more needs to be done by policymakers, UCAS and schools to reduce inequalities in the courses that students from different schools and backgrounds can access. This could encompass a wide range of activities such as information, advice and guidance on how to choose well matched courses, as well as encouraging schools and universities to target foundation years courses at disadvantaged students. UCAS have recently added a "match tool" to their website, which allows users to see the actual grades held by previously accepted students (2022–2024), rather than just the official published requirements, and shows what proportion of students with your grades were made an offer.

- The widening of these inequalities following exam cancellations reinforces the message that external exams are the fairest and most equitable way to assess students.

Introduction

Introduction

At the height of the COVID-19 pandemic, school and college closures disrupted the education of most children and young people. There were direct, detrimental impacts including lost learning time, damage to mental health, wellbeing and social development.

Summer examinations were cancelled in 2020 and 2021 and replaced with centre and teacher assessed grades (CAGS/TAGs) respectively. Higher grades were awarded under CAGs/TAGs compared to exams, so despite the additional challenges faced, many students who finished their study in these years received better than expected results.

This was the unusual context in which those finishing school, sixth form or college in 2020 and 2021 had to choose what they did next. Some would have had more options open to them as higher grades meant they met entry criteria for more demanding courses. However, not all students benefitted equally from higher grades, and remote learning may have left some students feeling less engaged with the education system.

Our new research sheds light on the choices these students made, both at a national level and disaggregated by region, student and education provider characteristics. For those finishing key stage 4, we observe how entry patterns to different types of post 16 qualifications changed in the wake of the pandemic and how these changes interacted with course completion rates.

For those at the end of their 16-19 study in 2020 and 2021, we examine their progression to higher education (HE) by extending the existing 'mismatch' methodology developed by CEPEO, to cover these cohorts.[ii] This allows us to identify changes in the prevalence of over/undermatch, whereby students select onto courses that are more/less challenging[4] than their previous exam results suggest they may have been capable of.

We go on to adapt the mismatch methodology employed for HE progression to cover transitions from key stage 4 to 16-19 study. As well as allowing us to identify differences in the years affected by the pandemic, this fills a key evidence gap by quantifying the mismatch that exists in a typical year in the 16-19 phase, and by identifying the characteristic student groups for which it appears most pronounced.

Some 'mismatch' is both expected and desirable, as perceived difficulty or prestige of a course should not be the sole driver of students' choices. For an individual student, a 'mismatched' course may be the best option to ensure that their study programme aligns with their interests, preferred career pathway and goals. However, systematic differences in mismatch by socio-economic background or school type suggest that some groups face structural barriers, for example unequal access to guidance or differences in expectations or support.

[4]Our methodology creates a proxy for course difficulty based on the prior attainment of students entering each qualification. It is not a perfect assessment of exactly which courses are more demanding or stretching than others

Overall, this research provides new evidence relevant to policy spanning Careers Education, Information, Advice and Guidance (CEIAG), course entry criteria, assessment approaches, and identifying the student groups that may need greater support. We present our research questions, methodology, findings, policy implications and conclusions in the sections that follow.

Research Questions and Methodology

Research Questions and Methodology

We set out to answer three distinct Research Questions (RQs).

Research Questions:

RQ1: How did enrolment to the available 16-19 pathways vary for those that had their GCSE results affected by the pandemic, compared to previous years, and between student groups?

RQ2: How did the changes in entry patterns observed in RQ1 interact with course retention rates for these students?

RQ3: Are certain student groups likely to opt for more/less demanding courses than those with similar grades to them? How did this 'mismatch' vary throughout the pandemic and interact with retention and attainment outcomes, in the 16-19 phase and continued FE/HE study?

Data sources

We use administrative datasets to identify the grades students were awarded, their post 16 study choices and background characteristics.

Namely, we use:

- The National Pupil Database (NPD) and school census to identify student characteristics, key stage 2 and GCSE results
- Post 16 Learning Aims, and Individualised Learner Records to identify the qualifications that students began studying towards in their first year of post 16 study
- Higher Education Statistics Agency (HESA) data to identify the undergraduate degrees students enrolled to after their 16-19 education

Methodology

16-19 study programme enrolment

For **RQ1**, we identify the cohort of students in state funded schools finishing key stage 4 study in each year (2015-2023). For each student, we match to data showing their learning aims at the beginning of the following academic year.

Post 16 study programmes are diverse and differ through time as students adjust their subject choices, type of qualifications entered, or even provider attended. We therefore choose a snapshot in time to define students' 16-19 study programmes, looking at aims that were active on the 31st of October in the academic year after students completed key stage 4. This is long enough into the Autumn term that students have had opportunity to make initial changes to their study programme, as is common practice, but still reflects their early choices. I.e. rather than changes to study programmes later in the academic year as a result of falling behind.

We group qualifications/study aims into four broad categories:

- A levels or AS levels
- Applied and vocational level 3 qualifications
- Level 2 and below qualifications (excluding English and maths resits)
- Apprenticeships or traineeships

We then define a student's study programme based on the combination of active study aims they had across these categories. For example, a student entering a combination of A levels and applied level 3 qualifications would be classified as 'mixed level 3'. We also consider whether students were studying towards an English or maths resit qualification alongside each of these pathways.

16-19 study programme retention

For **RQ2**, we define a measure to establish which students completed their post 16 study. As students' study programmes vary greatly in breadth and can be adapted through time, we opt for a measure which requires students to complete the majority of their study programme, rather than each individual aim.

We consider a student as 'retained' if they completed qualifications equivalent in size to at least 60 per cent of their initial study programme.

For instance, we define a student that started three A levels as having completed their study if the data showed they completed two A levels, within three years of study.

The 60 per cent threshold deliberately allows for this as it is still a positive outcome and does not equate to dropping out of a study programme. The exact cut off is somewhat arbitrary, but we have completed testing to demonstrate that although absolute retention rates vary, the trends through time are not overly sensitive to this assumption.

This threshold is applied to all qualification pathways, and we further cap the size of study programmes entered at three qualifications, which is considered a typical full time study programme.

Where students have multiyear aims, their active aims on the 31st of October in their first year of post 16 study are likely to be representative of their full, planned study programme. Where aims are due to conclude within a single year, we double their size when calculating 'aims started' as used in the threshold calculation. This is based on the assumption that students' second year study programme will be at least as many learning hours as their first.

We allow level 3 qualifications to count towards completion of level 2 pathways, as students that begin level 2 courses may progress to level 3 study.

For RQ1 and RQ2, we build on the descriptive statistics by developing a regression framework that can separate genuine changes in outcomes from shifts in who enters each pathway. This enables us to understand, for example, whether retention rates improved or worsened for particular

groups of students across years. Specifically, we estimate pathway-specific logistic regression models with interaction terms between cohort year and each student characteristic. These interactions adjust for compositional changes across cohorts and allow us to identify how retention patterns differed for students awarded CAG/TAG GCSEs. Full model estimates are presented in Annex A.

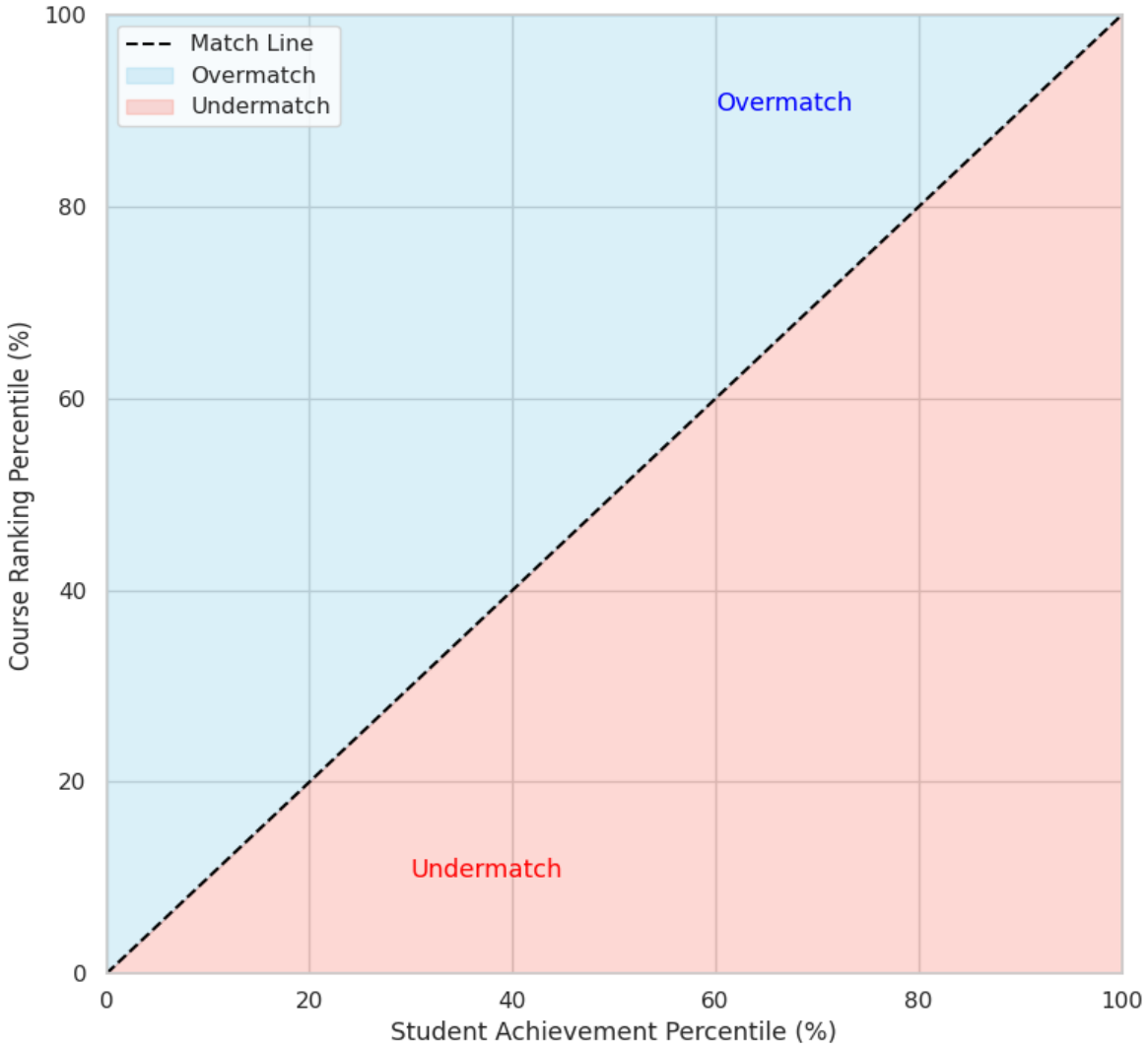
Student to course mismatch

For **RQ3** we extend the mismatch methodology developed by CEPEO to cover HE transitions for the cohorts finishing 16-19 study in the 2018/19 – 2021/22 academic years.[iii]

We further adapt this methodology to measure mismatch in transitions between key stage 4, and the 16-19 phase of education.

For transitions at both stages of education, we create a percentile rank for each student based on their own position in the prior attainment distribution. We also create a percentile rank for each course or qualification that students could have entered. This allows us to plot charts, as per the example below, which show the discrepancy (or mismatch) between student's prior ability, and the courses they choose to progress to.

Figure M1: Mismatch illustration



The approach for assigning percentile ranks to students and courses, differs by phase of education.

For key stage 4 to 16-19 mismatch:

We define 16-19 courses entered at a granular level. We consider any distinct combination of subject (Ofqual subject sector area classification), qualification type (level 3 BTEC diploma, A level, GCSE etc), and provider type (school sixth form vs FE or sixth form college) as a separate course.

This differs from the HE transitions methodology as we do not include individual provider as part of the classification. This is because 16-19 qualifications are regulated by Ofqual, so the content and difficulty does not vary based on the provider attended. We differentiate by provider type as school sixth forms and colleges are very distinct learning environments, and selection effects mean that the student composition between them will be quite different. We have completed robustness checks which confirm that in practice, whether or not you differentiate by provide type in the qualification rankings does not make a meaningful difference to the results.

For each student we calculate three standardised prior attainment measures based on:

- Key stage 4 Attainment 8 scores,
- KS2 attainment (SATs fine grade or scaled scores dependent on the year),
- A combination of two (the first principal component).

For each analysis we choose the most suitable of these for the comparison we are making. In each case we specify which measure we are using.

Ideally, we would use Attainment 8 scores throughout as this is the most accurate way to benchmark students at the point they transition to post 16 study. However, the difference in grading in 2020 and 2021 means that even standardised scores are not totally comparable.

Key stage 2 results for these cohorts took place between 2015 and 2016, so were completely unaffected by the pandemic. However, they do not capture the relative progress made by students throughout their secondary education. There are further comparability issues at the point the assessments switched from levels to scaled scores.

Taking the first principal component of attainment measures at key stage 2 and key stage 4 does not solve these issues completely, but aids comparability by utilising information from both points in time condensed into a single measure.

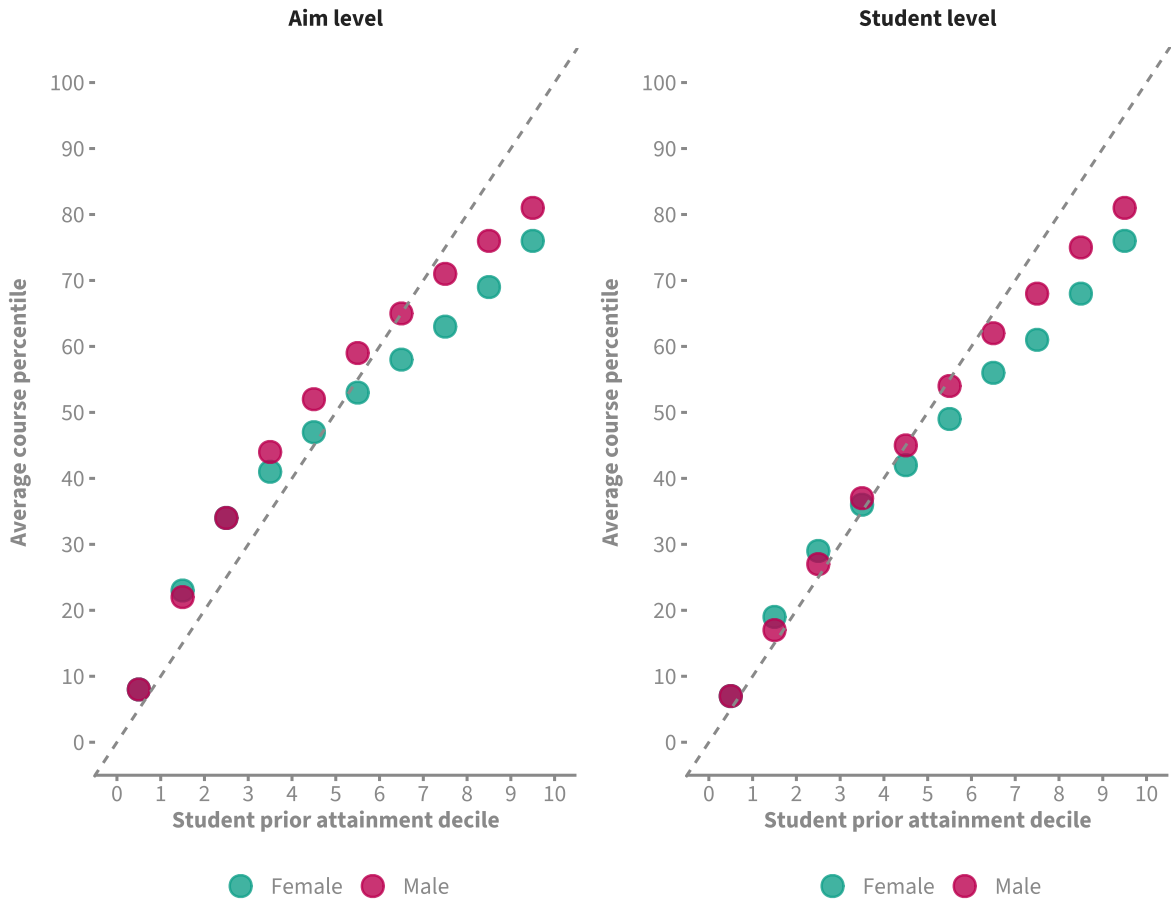
To define a 16-19 mismatch measure we first focus on each qualification aim. Each aim in the data is assigned a percentile rank, based on the median prior attainment of the students studying towards it.

Similarly, students within a year group are assigned a percentile rank based on their own prior attainment. For each aim, we calculate mismatch as the difference between these percentile ranks.

This results in each student having multiple mismatch indices, one for each qualification that they started studying towards. It is possible to analyse results at the aim level, however for simplicity we create a student level measure by taking a weighted average of students' mismatch at aim level. For instance, if a student had one qualification aim that was very overmatched and a similar sized one that was very undermatched, they would still appear well matched on the weighted average measure.

For ease of interpretation, we present characteristic breakdowns and modelled analysis based on the weighted average, student level measure only. The overall trends were not sensitive to which methodology was used, as demonstrated for gender in the chart below.

Figure M2: Aim and student-level mismatch by gender, 2023 GCSE cohort, Attainment 8 methodology



For transitions between 16-19 study and higher education:

We percentile rank students nationally based on their end of secondary school qualifications, GCSEs (specifically we use their Attainment 8 score). We use GCSEs as these were not impacted by exam cancellations during the C-19 pandemic for these cohorts (except 2021/22), while 16-19 qualifications were cancelled in 2020 and 2021 (and were affected by the "glidepath" in 2022[5]). We also percentile rank degree courses nationally, according to the Attainment 8 score of the median student on each course, defining a course as a subject-institution pair. As we want to study how mismatch is affected by this change in assessment, we fix course rankings in 2019 so that these assessment changes do not affect the ranking of courses, isolating the effect on changing assessment on the sorting of students to course (We do not take this approach in our 16-19 mismatch measure, as there is greater inconsistency in the courses available year on year). Nevertheless, we verify that course rankings remain relatively stable across this period. Note also that subjects are differentiated at the CAH1 level to minimise courses appearing or disappearing

[5] While exams were in place in 2022, the high grades given out during the pandemic meant a transition was needed back to pre-pandemic grading. The glidepath was designed by Ofqual to bring grades down in phases, with 2023 marking the return to normal grading in England.

from year to year. This means mathematics degrees at different institutions are classified as different courses, as are mathematics and chemistry degrees at the same institution; but (for example) chemistry and physics degrees at the same institution are classified as the same course (as these are only differentiated at CAH2 level).

We create our measures of match by taking the difference between the percentile ranking of student and their course (so that $mismatch = course\ percentile - student\ percentile$). A negative match index means that a student is undermatched (they are on a course that with a lower selectivity rank than their own attainment rank), while a positive index means they are overmatched (they are on a course with a higher selectivity rank than their own attainment rank). We are primarily interested in the extent to which pupils were able to access higher-ranked courses as a result of receiving centre- or teacher-assessed, rather than exam, grades.

To understand the impact of the exam cancellations on student to course mismatch, we first compare the extent of mismatch in the 2018/2019 academic year (the year before the pandemic, in which exams took place) to the COVID-impacted 2019/20 and 2020/21 academic years, and first post-COVID year with exams, 2021/22. We use our match measure to compare inequalities in match across years – focusing on four comparisons: i) students with low versus high socio-economic status (SES), measured using free-school meal (FSM) status; ii) students from different school types; iii) male versus female students; and iv) students from different ethnic groups.

We first present graphical evidence of mismatch. We produce plots of students' achievement decile (x-axis) against the average ranking of the course enrolled in, for students in that decile. These are illustrated in Figure M1 previously. If all students are perfectly matched to the degree course they have enrolled in, then this would be represented by a 45-degree line. Any variation above this line represents overmatch on average, and any variation below the line represents undermatch. We produce these plots for students from different groups to show inequalities in mismatch, and for different years, to illustrate how this changed over the pandemic.

To test these inequalities more formally, we regress our mismatch index (described above) on indicators for each of our student groups (school type in one model, and ethnicity, gender and FSM in another) to formally estimate conditional match gaps, separately for each academic year. We stop here with our school type model as there is generally limited information available for private school students. To the other model, which focuses exclusively on students in state schools, we add other demographic controls and prior attainment (SEN, English as a first language, region, KS2 attainment), to see if our gaps still hold even after controlling for these factors.

Findings

Research Question 1: How did enrolment to 16-19 pathways vary for those awarded CAG/TAG GCSEs?

For Research Question 1, we explore how students' enrolment onto different 16-19 pathways varied for the CAG and TAG cohorts, compared to pre-COVID years.

The full methodological approach is discussed in the Research Questions and Methodology section. In short, we identify student cohorts at the end of key stage 4 in state funded schools, and match to data showing their learning aims at the beginning (31st October) of the following academic year.

A student's study pathway is based on the combination of these learning aims across four broad categories, giving seven potential 16-19 pathways – A level only (from this point onward referred to simply as A levels), mixed level 3, other level 3[6], mixed level 2/3, apprenticeship (including internships), level 2 or below, and no substantial qualifications. We present the proportion of students awarded CAG and TAG GCSEs that chose each pathway compared to prior and subsequent cohorts, as well as any variation by student characteristics.

Alongside descriptive analysis, we use regression modelling to identify whether CAGs and TAGs affected the likelihood of enrolment onto certain pathways for specific groups of students. The model allows us to account for differences in student characteristics, prior attainment and compositional changes across post 16 pathways (Full regression outputs are included in Annex A).

Overall changes in 16-19 enrolment patterns

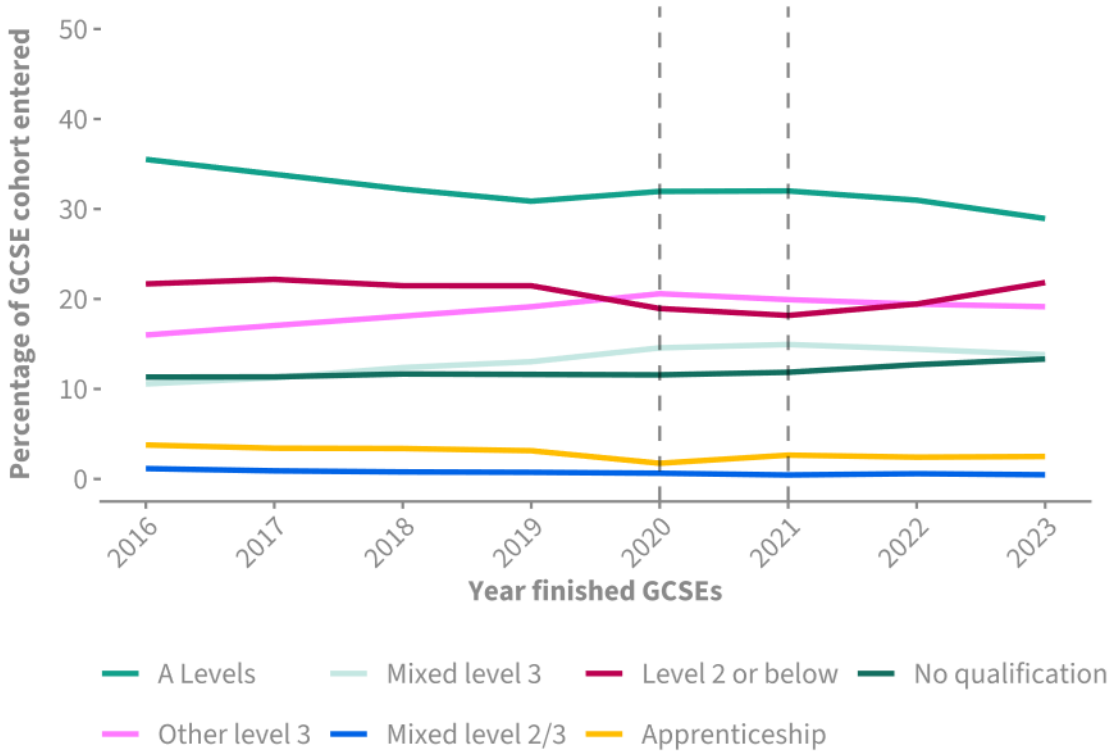
Figure 1.1a presents the proportion of students studying towards different 16-19 pathways by year. There had been a steady decline in A level enrolment since 2017, mirrored by an increase in enrolments across other level 3 qualifications, and students studying A levels alongside vocational or technical qualifications.

There was a marked increase in enrolment to level 3 courses in 2020 and 2021. As a consequence, we see a decrease in the proportion of students entering level 2 or below qualifications; down 2.5 percentage points between 2019 and 2020, and a further 0.8 percentage points in 2021.

By 2023, enrolment patterns had largely returned to their pre-pandemic norms. The concerning exception to this, was the increase in the proportion of students not studying towards any substantial qualification post 16.

[6] Including all non-A level qualifications students were studying towards. For example: applied general, vocational, and other applied and technical level 3 qualifications

Figure 1.1a: Take up of 16-19 study programmes by year



Note: Dashed lines show when CAG/TAG GCSEs were awarded

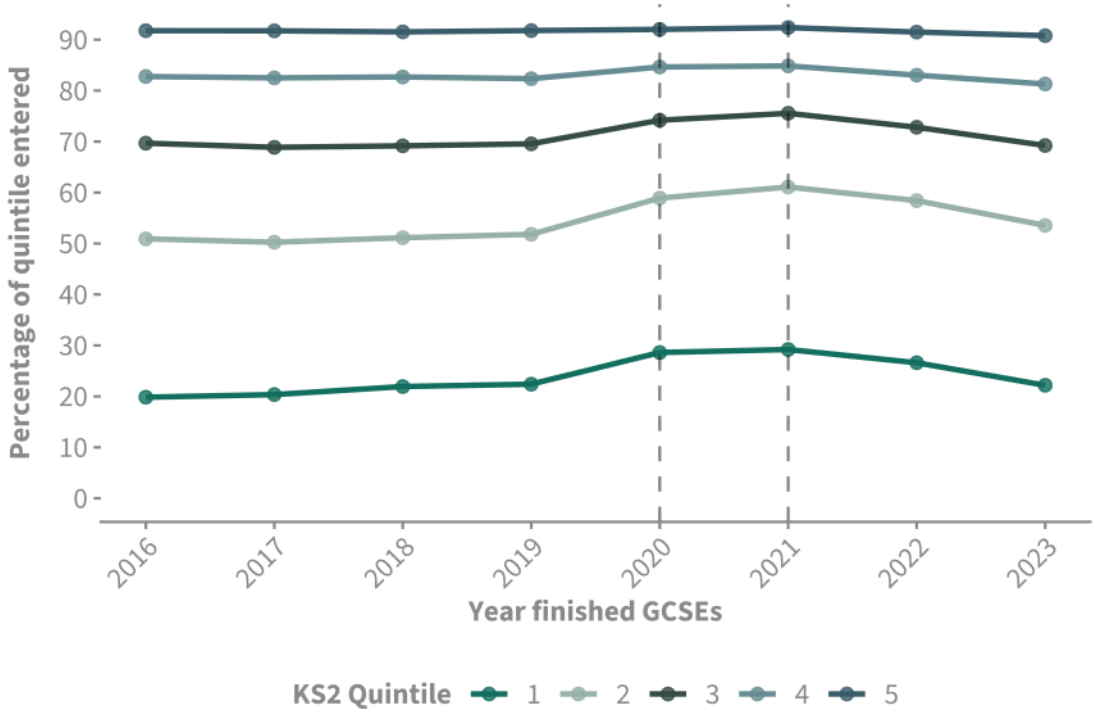
The shift towards level 3 study was driven almost entirely by students in the lower and middle key stage 2 (KS2) prior attainment quintiles. We use key stage 2 prior attainment for this analysis across years, as it was not affected by the pandemic.

Figure 1.1b shows the percentage of students from each cohort entering level 3 qualifications by KS2 quintile.

There was little change in the proportion of level 3 learners amongst the highest attaining students. This represents a ceiling effect, as these students were already likely to meet level 3 entry requirements, so the transition to CAG and TAG grading had less effect on their post 16 trajectory.

As Figure 1.1b shows, between 2019 and 2021, enrolment to level 3 pathways grew most sharply across KS2 quintiles 1, 2 and 3.

Figure 1.1b: Percentage of student studying towards level 3 qualifications by KS2 quintile



Note: Dashed lines show when CAG/TAG GCSEs were awarded

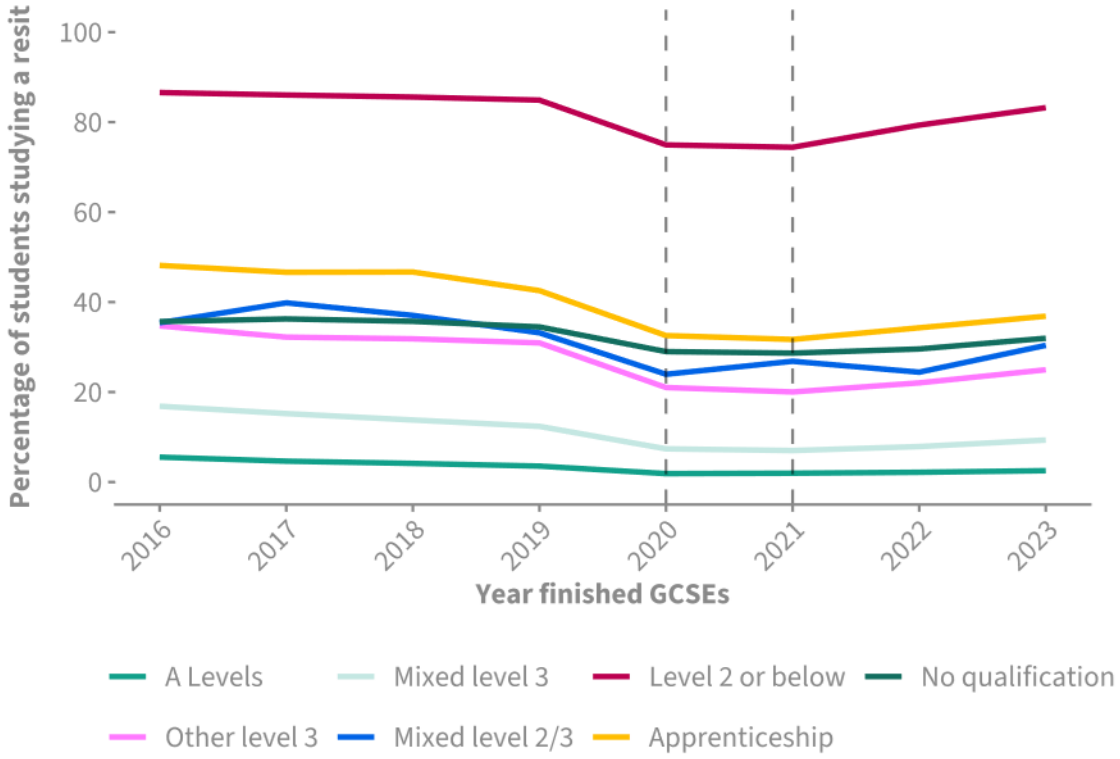
Figure 1.1c shows the proportion of students studying towards an English or maths resit, alongside their main post 16 study programme.

The vast majority of students studying at level 2 or below were also working towards an English and maths resit, having not previously achieved grade 4.

Conversely, English and maths GCSE results appear to act as a barrier to A level study. The proportion of A level students studying towards a resit did not increase at all in 2020 and 2021. This implies that the increase in A level study shown in previous charts came almost entirely from students who achieved grade 4 in English and maths, who likely wouldn't have done in a usual year.

While English and maths GCSEs were acting as a barrier to A level enrolment, other level 3 qualifications appear far more accessible, with almost 40 per cent of entrants also working towards a resit prior to the pandemic.

Figure 1.1c: Percentage of students on each pathway also studying towards a resit



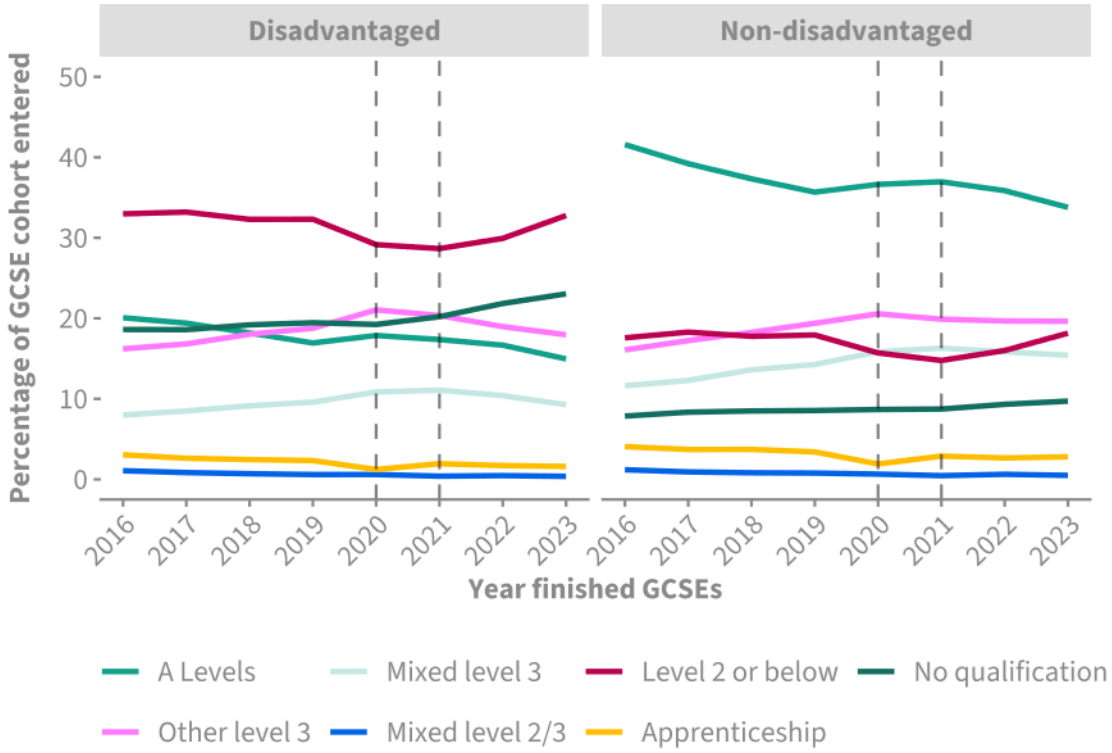
Note: Dashed lines show when CAG/TAG GCSEs were awarded

Disadvantage students

Figure 1.2a shows that between 2015 and 2019, the proportion of disadvantaged (claimed free school meals within the last 6 years) students on level 2 or below study programmes remained consistently high at around 32 per cent.

Following CAG/TAG GCSEs, there was a reduction in the proportion of disadvantaged students starting level 2 or below study programmes, and a corresponding increase in those studying towards level 3 qualifications, and those not studying towards any substantial qualifications.

Figure 1.2a: Proportion of GCSE cohort enrolling in available 16-19 pathways by disadvantage status



Note: Dashed lines show when CAG/TAG GCSEs were awarded

While these descriptive statistics show a move towards level 3 qualifications and away from lower-level qualifications, our logistic regression analysis indicates that CAG and TAG GCSEs may have benefited non-disadvantaged students more.

After controlling for prior attainment, demographic and provider level factors, the odds of a disadvantaged student compared to a non-disadvantaged student enrolling on a level 2 or below study programme were 2 per cent higher in 2020 and 6 per cent higher in 2021, relative to 2019.

Conversely, the odds of a disadvantaged student compared to a non-disadvantaged student studying towards any level 3 pathway, reduced by around 2 per cent since 2019.

Gender

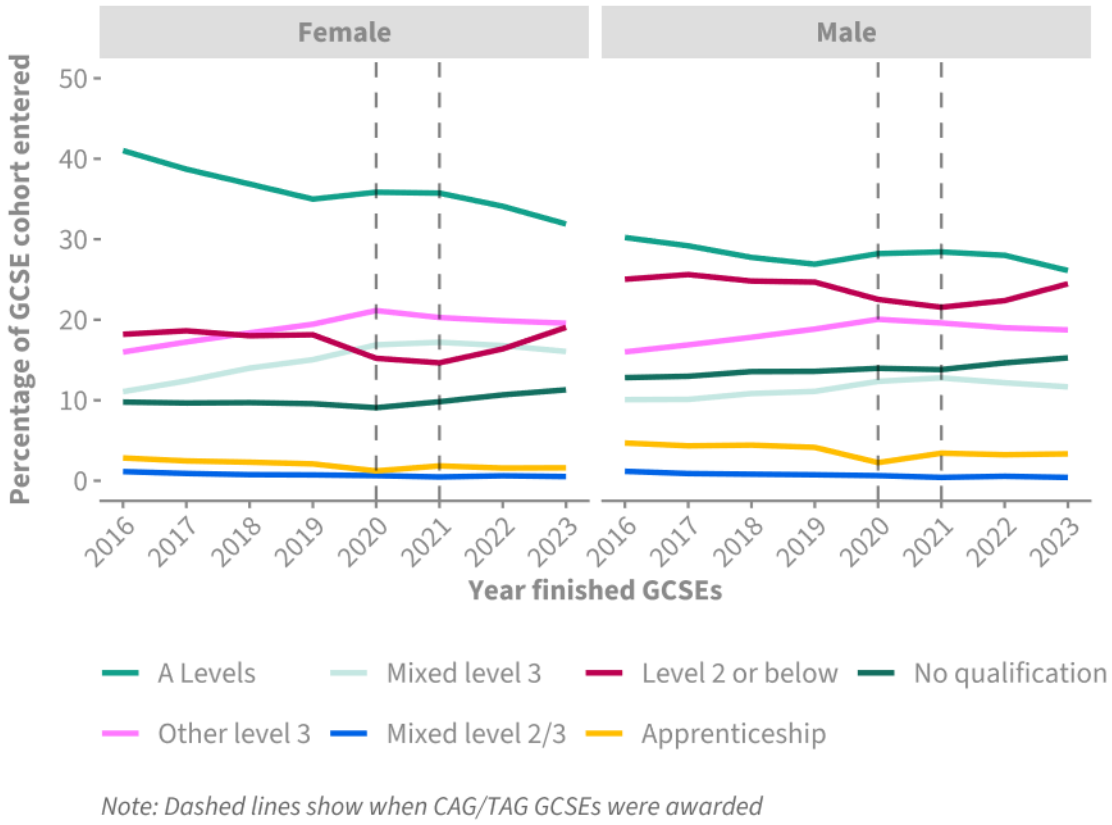
Figure 1.3a shows that following GCSEs awarded in 2020 and 2021, a higher proportion of both male and female students enrolled onto level 3 pathways, and less were studying towards level 2 or below qualifications. However, the increase was not uniform.

Male students experienced a slightly stronger and more sustained increase in A level enrolment, while girls were slightly more likely to move into vocational level 3 routes.

Before the pandemic, female students consistently had higher A level enrolment than males, although both groups were experiencing a gradual decline (see Figure 1.3a). CAG and TAG GCSE grading briefly reversed this trend, with male enrolment increasing to 28.4 per cent in in 2021.

Regression estimates show that although female students were still more likely to enter A levels, the relative odds of a female (compared to a male) student entering A levels significantly reduced in 2020 and 2021, relative to 2019.

Figure 1.3a: Proportion of GCSE cohort enrolling in available 16-19 pathways, by gender



Note: Dashed lines show when CAG/TAG GCSEs were awarded

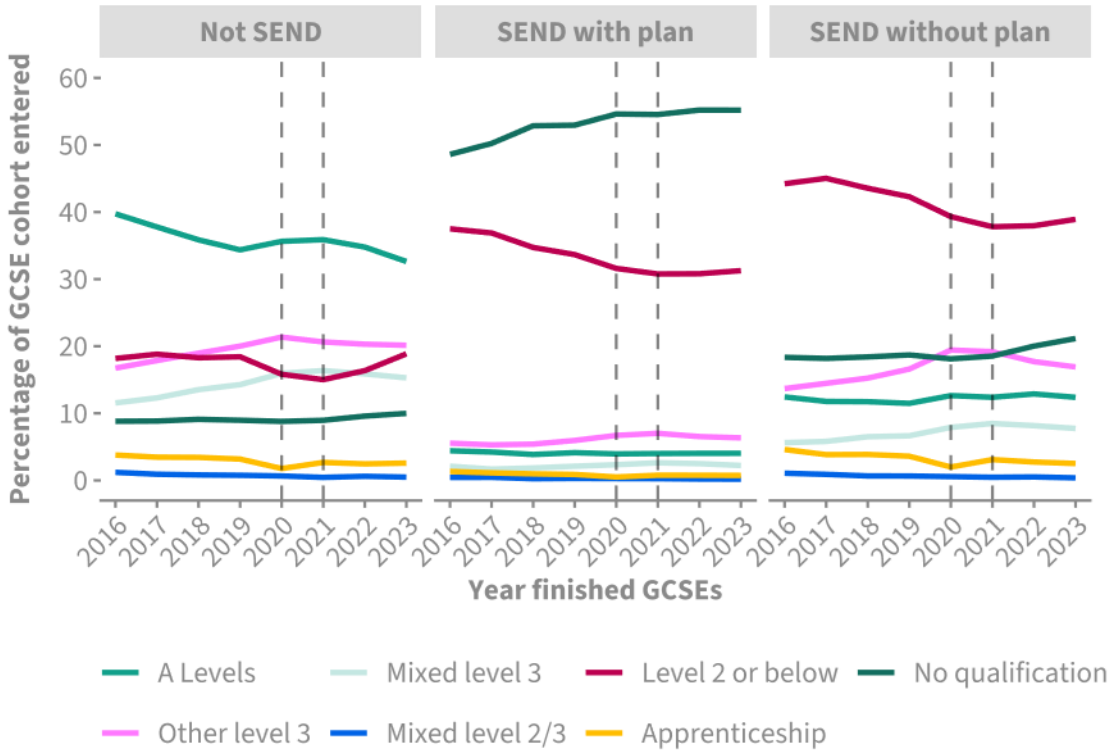
Apprenticeship enrolments also fell temporarily in 2020, likely due to pandemic related workplace disruptions and economic uncertainty. The decrease was greater for male students but recovered for both genders in 2021.

Special Educational Needs and Disability (SEND)

Figure 1.4a shows that for students awarded CAG and TAG GCSEs, those with special educational needs and disability (SEND) without a plan, had a temporary shift toward higher-level study.

However, this pattern was not shared by students with an Education, Health and Care (EHC) plan, who became increasingly less likely to enter any substantial qualifications (54.6 per cent).

Figure 1.4: Proportion of GCSE cohort enrolling in available 16-19 pathways, by SEND status



Note: Dashed lines show when CAG/TAG GCSEs were awarded

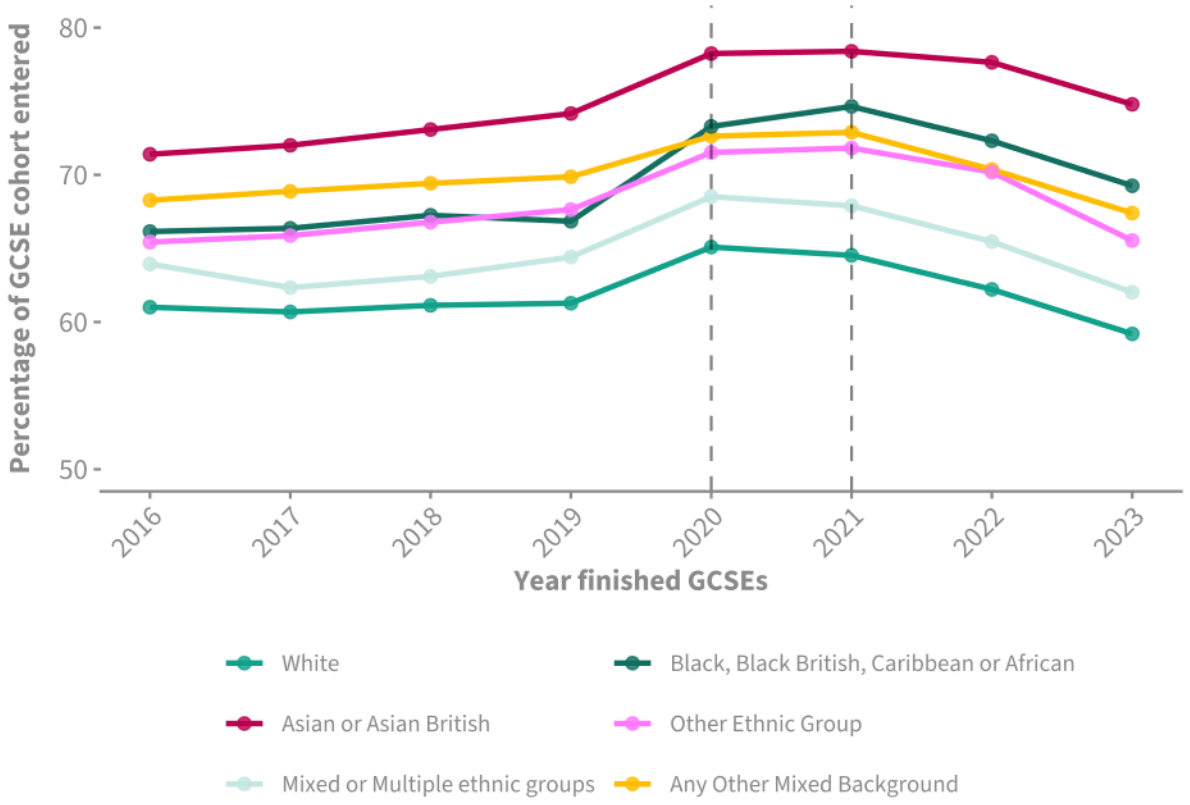
Notably, the CAG GCSE year marked the only time where vocational or applied level 3 study for SEND students without a plan, exceeded the rate of those studying towards no substantial qualifications.

Ethnicity

Figures 1.5a illustrates the proportion of students from a given GCSE cohort studying towards level 3 qualifications by ethnic background. These figures show that following the CAG and TAG GCSE's, students from a Black British, Caribbean, or African background saw marked increases in enrolments to level 3 courses.

While White students' enrolments onto level 3 qualifications increased during the pandemic, coupled with a decrease in level 2 or below study, their level 3 enrolments overall remained lower than every other ethnic group.

Figure 1.5a: Proportion of GCSE cohort enrolling in level 3 pathways across ethnic groups

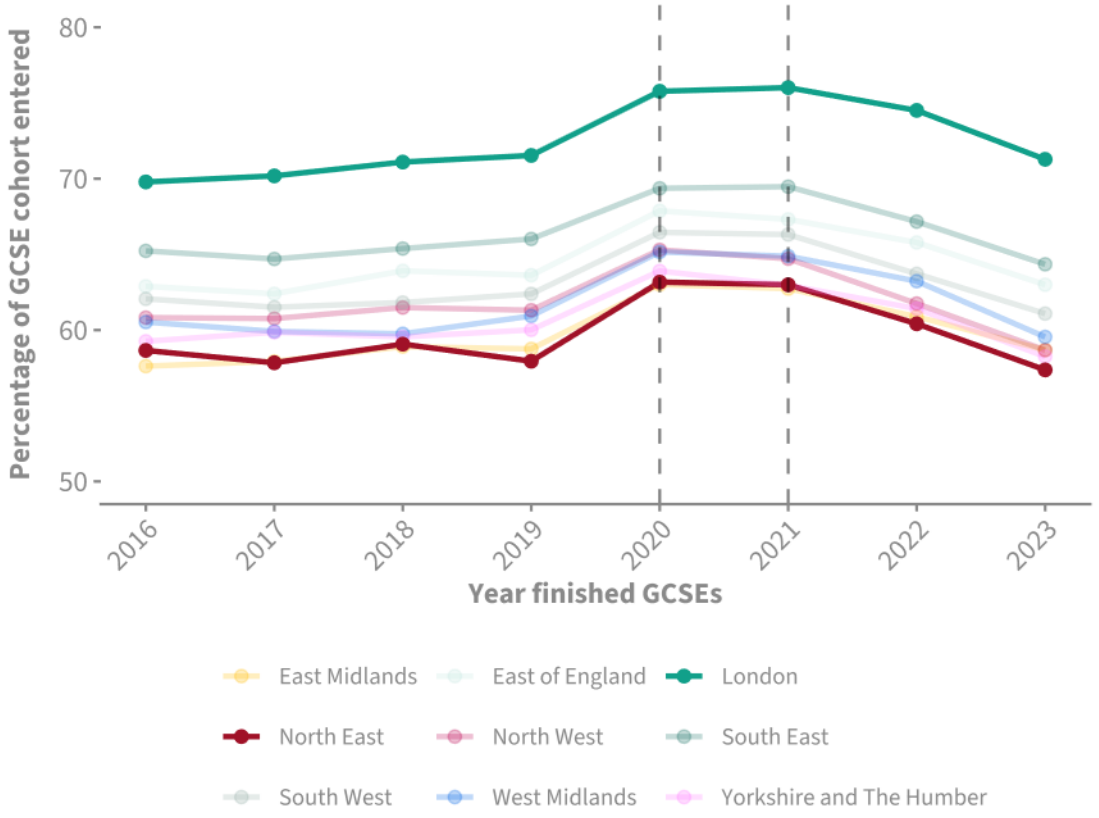


Note: Dashed lines show when CAG/TAG GCSEs were awarded

Region

Figure 1.6 shows that geography played a role in how, and to what extent, CAG and TAG arrangements affected post 16 study choices. While all regions saw a temporary shift in student enrolment from level 2 or below qualifications into level 3 study, the boost to level 3 pathways was strongest and most sustained in London and North East.

Figure 1.6: Percentage of GCSE cohort in each region enrolling in level 3 qualifications.



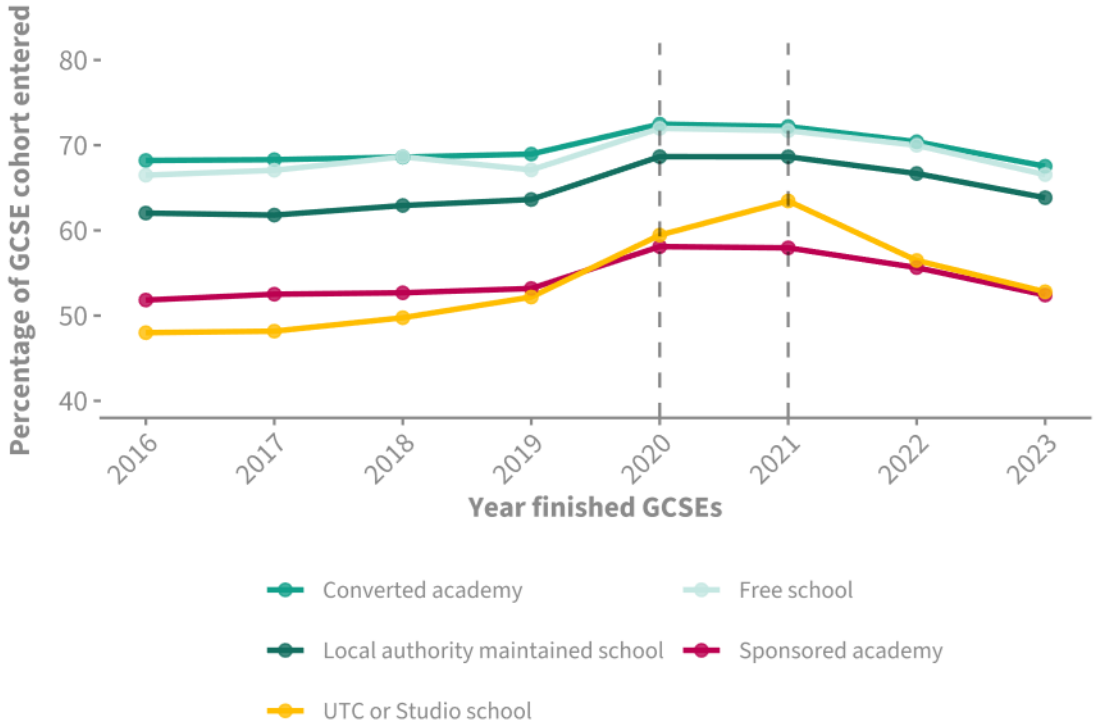
Note: Dashed lines show when CAG/TAG GCSEs were awarded

School Type

Figure 1.7 shows that, during the CAG and TAG GCSE years there was an increase in students enrolling in level 3 qualifications across most KS4 school types However, trends were not uniform; sponsored academies and UTC and studio schools saw greater increases in level 3 enrolment.

Students attending special schools continued to enrol into level 3 qualification in very small numbers so have not been included on Figure 1.7. However, these students also saw an increase of 1.8 percentage points in the proportion progressing to no substantial qualification between 2019 and 2021.

Figure 1.7: Proportion of GCSE cohort enrolling in level 3 pathways across KS4 school type



Note: Dashed lines show when CAG/TAG GCSEs were awarded. Special schools not included due to low percentages.

Research Question 2: How did changing entry patterns interact with course retention rates?

Research Question 1 shows that following the awarding of Centre and Teacher Assessed Grades (CAG/TAGs) for GCSEs in 2020 and 2021, more students began studying towards level 3 qualifications than in a usual year. In Research Question 2, we present descriptive statistics and regression findings to explore how the 16-19 course retention rates differed for these students.

Our full methodology is detailed in the Research Questions and Methodology section. To summarise, our analysis uses a threshold measure to define study programme completion. Given that post 16 study programmes vary in breadth and change through time, we define a student as retained if they completed at least 60 per cent of their initial study programme within three years.

Alongside descriptive analysis, we use regression modelling to identify whether retention rates improved or worsened for specific groups of students. This modelling allows us to account for differences in student characteristics, prior attainment and compositional changes across post 16 pathways.

All students

Findings from Research Question 1 showed that the CAG and TAG GCSE grading reversed the pre-COVID trends across several qualification types and there was a marked increase in the proportion of students enrolling onto level 3 qualifications. This shift was driven almost entirely by students in the lower to middle key stage 2 (KS2) prior attainment quintiles.

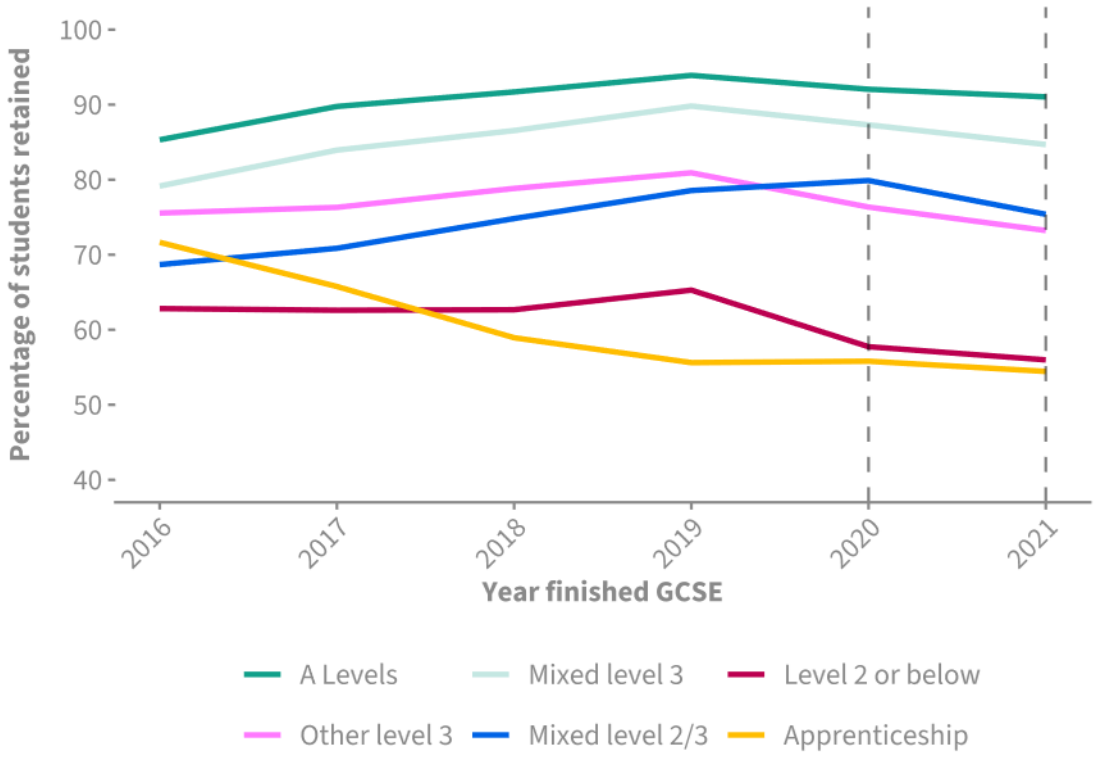
Figure 2.1a presents the retention (course completion) rates by 16-19 pathway since 2015.

When looking at 16-19 retention, we can only measure up to the 2021 GCSE year, as we allow three years for students to complete their course, and data is not yet available beyond 2023/24.

The graph shows a drop in retention rates across all qualification types for the cohorts awarded CAG and TAG GCSEs. However, for students who entered A level and mixed level 3 courses, retention rates dropped marginally, whilst for those studying vocational or applied level 3 courses, we saw steeper drops.

This suggests that some students who moved to level 3 study following CAG/TAG GCSEs struggled to complete their courses. This could be because the courses were too stretching, but it is not possible to separate this from the ongoing, disruptive effects of the pandemic and previous lost learning. Students finishing their GCSEs in 2018 and 2019 will also have had their post 16 education disrupted by the pandemic, which will have interacted with their retention rates. This will affect the interpretation of all the characteristic charts in this section. However, a clear majority of students who began post 16 study in 2020 and 2021 were still able to successfully complete their level 3 courses.

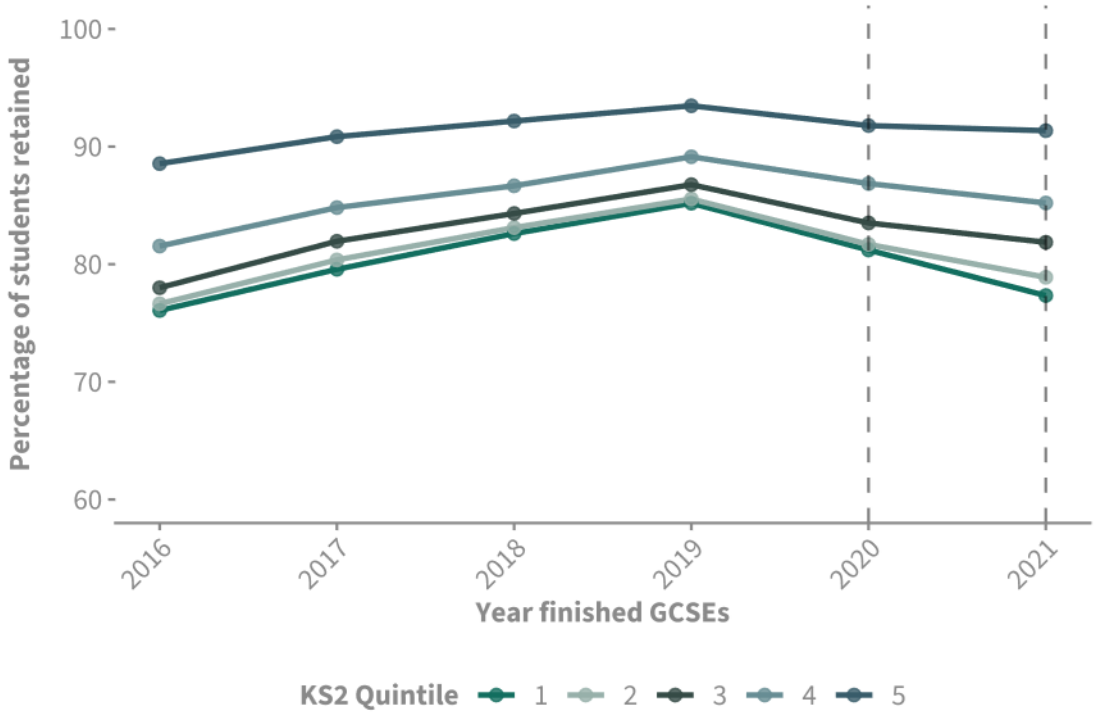
Figure 2.1a: Percentage of students retained across 16-19 pathways and GCSE cohorts.



Note: Dashed lines show when CAG/TAG GCSEs were awarded

Figure 2.1b illustrates the completion rates for level 3 qualifications across different KS2 prior attainment quintiles. Although retention fell for all quintiles, the decline was steepest for lower-attaining students.

Figure 2.1b: Percentage of students completing level 3 pathways by KS2 prior attainment quintile



Note: Dashed lines show when CAG/TAG GCSEs were awarded

To further test the extent to which students newly opting for level 3 courses were able to finish their study programmes, we attempt to proxy this group for 2020 and 2021 GCSE finishers. We assume that on average, most of the 'new' level 3 students will have lower prior attainment than the 'existing' level 3 students. We therefore select the level 3 students with the lowest prior attainment in 2020 and 2021, as a proxy. We create this group to be equal in size to the level 3 cohort growth since 2019 and look specifically at their retention rates.

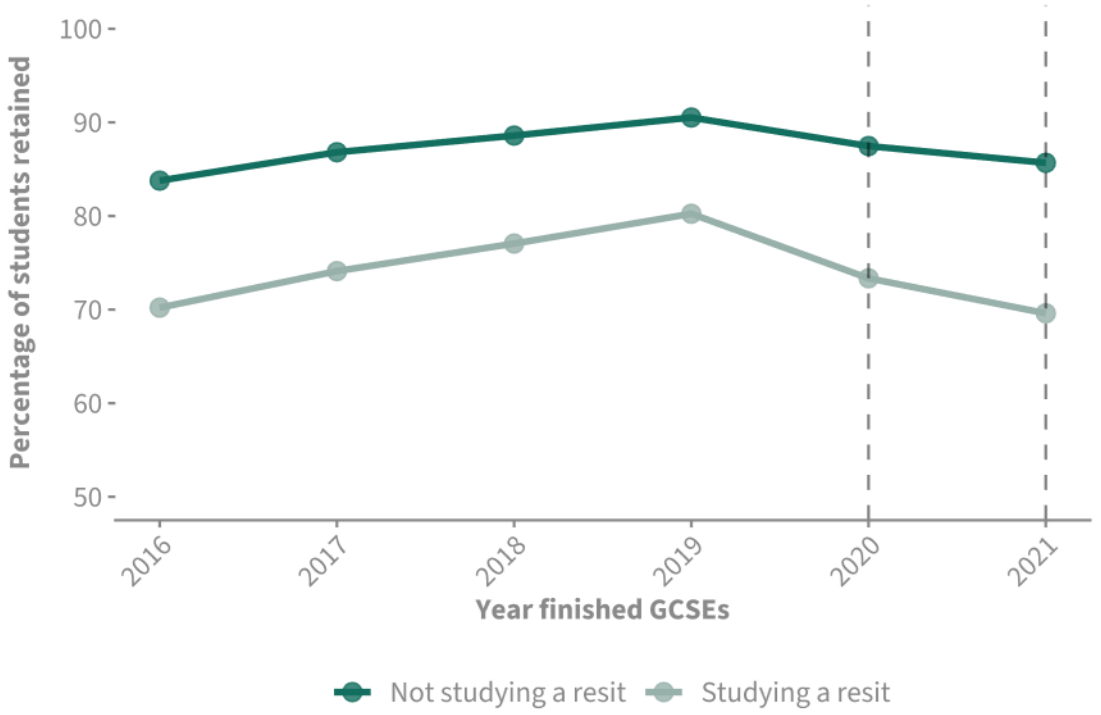
We find that a clear majority of these students were still able to complete their courses (over 67.5 per cent for both of the approximated cohorts).

These findings suggest that prior attainment alone does not determine a student's ability to succeed at level 3. The pandemic likely placed additional pressure on those with lower prior attainment, leading to the faster drop in retention compared to high-attaining peers. However, the fact that the majority still finished their courses indicates that many students were still able to succeed in level 3 programmes, even if they may not have been permitted to enter them in a standard year.

Furthermore, findings from Research Question 1 suggested that students studying towards a resit were often enrolled in vocational or applied qualification pathways alongside their resit studies. Figure 2.1c shows that prior to the pandemic, most students studying at level 3 alongside a resit successfully completed their main study programme.

While completion rates declined during 2020 and 2021, they remained around 70 per cent. This shows that even with the combined pressure of resits and pandemic-related disruption, more students than not were able to complete their level 3 study programmes.

Figure 2.1c: Percentage of students completing level 3 pathways by resit status



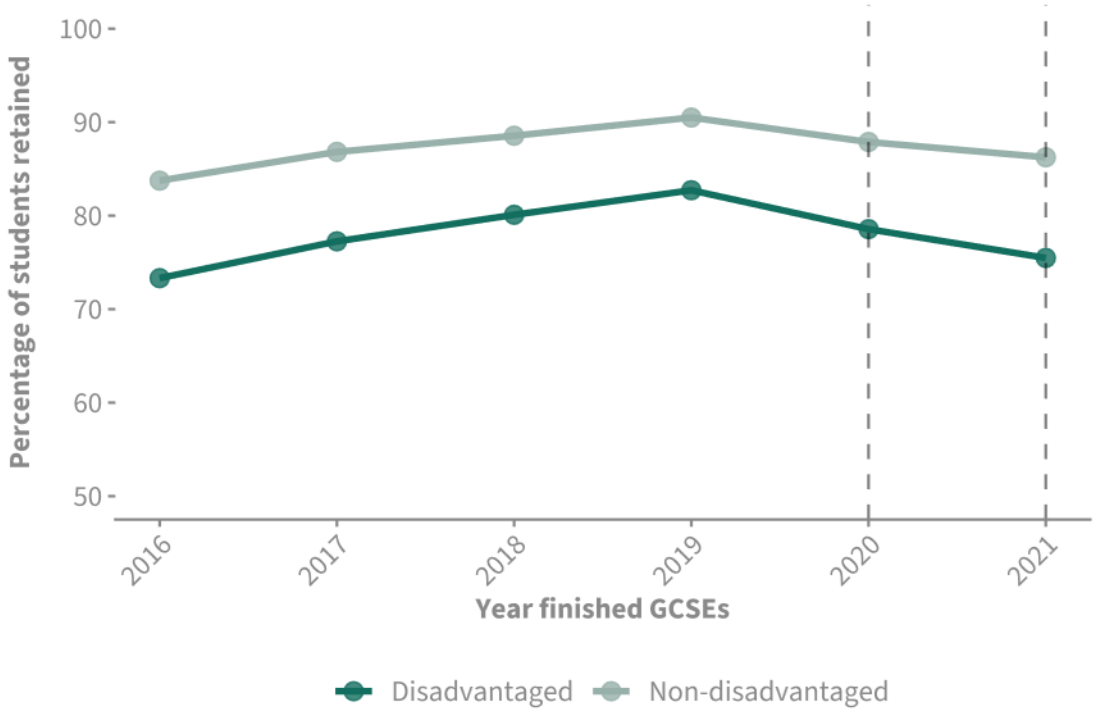
Note: Dashed lines show when CAG/TAG GCSEs were awarded

Disadvantage

The CAG and TAG GCSE cohorts saw a higher proportion of students entering level 3 qualifications, regardless of their disadvantage status.

Figure 2.2 presents the completion rates for disadvantaged and non-disadvantaged students across level 3 qualifications. Across all cohorts we see that disadvantaged students are consistently less likely to complete their courses than their more advantaged peers. Whilst both disadvantaged and non-disadvantaged students experienced a decline in overall retention rates during the CAG and TAG years, the reduction was marginally more pronounced for disadvantaged learners.

Figure 2.2: Percentage of students completing level 3 pathways by disadvantage status



Note: Dashed lines show when CAG/TAG GCSEs were awarded

These descriptive figures suggest that disadvantaged students were more likely to struggle with level 3 study, yet regression analysis provides a more nuanced picture. When controlling for prior attainment, student characteristics and cohort compositions, the underlying retention gap between disadvantaged and non-disadvantaged students did not widen for the CAG and TAG GCSE cohorts.

Instead, this gap very slightly narrowed. Specifically, the odds of disadvantaged students compared to non-disadvantaged students completing their level 3 courses increased by 2.0 per cent in 2020 and 2.7 per cent in 2021, relative to 2019.

This suggests that while disadvantaged students faced greater barriers to completing their level 3 study programmes than their non-disadvantaged peers, the retention gap between them was not particularly affected by the changing entry patterns.

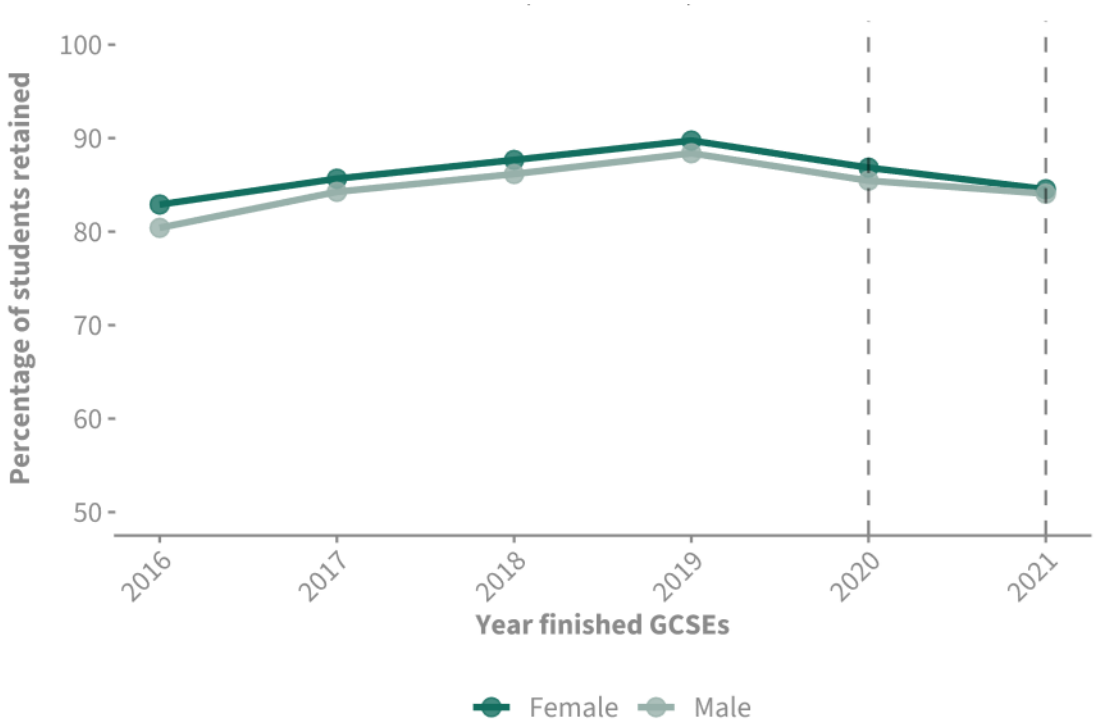
Gender

Findings from Research Question 1 showed an increase in both male and female students enrolling onto level 3 pathways; male students experienced a slightly steeper and more sustained increase into A level enrolment, whilst female students were a little more likely to move into vocational level 3 routes.

Descriptive statistics initially suggest that the retention gap between male and female students virtually disappeared during the pandemic. Figure 2.3 presents the percentage of male and female students who completed their level 3 study programmes.

Before the pandemic, female students consistently completed their courses at higher rates than their male peers. While both groups of students experienced a decline in overall retention rates following CAG/TAG GCSEs, the drop was slightly more pronounced for female students.

Figure 2.3: Percentage of students completing level 3 pathways by gender



Note: Dashed lines show when CAG/TAG GCSEs were awarded

Regression analysis confirms these descriptive findings, showing a reduction in the relative odds of female students completing their courses for the pandemic cohorts.

Specifically, when controlling for prior attainment, student characteristic and cohort composition, the relative odds of girls completing level 3 study were 3.6 per cent lower for the CAG (2020) cohort and 10 per cent lower for the TAG (2021) cohort compared to 2019.

It is unlikely that grading changes and enrolment shifts alone influenced female students' completion rates during this time. Students entering post 16 pathways during COVID experienced significant disruptions and loss of learning throughout their qualifications.[iv] This, coupled with evidence suggesting a significant decline in young females' mental health since the pandemic, points towards a range of factors driving declining retention rates.[v]

Special Educational Needs and Disability (SEND)

The CAG and TAG GCSE years saw an increase in vocational or applied level 3 study for SEND students without an Education, Health and Care (EHC) plan. Significantly, 2020 marked the only

year where vocational level 3 enrolment for this group exceeded the rate of those studying towards no substantial qualifications.

Figure 1.4 shows the percentage of students who completed their level 3 qualifications by SEND status. While average 16-19 retention rates reduced universally for those awarded CAG and TAG GCSEs, students without identified SEND consistently completed their courses at higher rates than students with identified SEND.

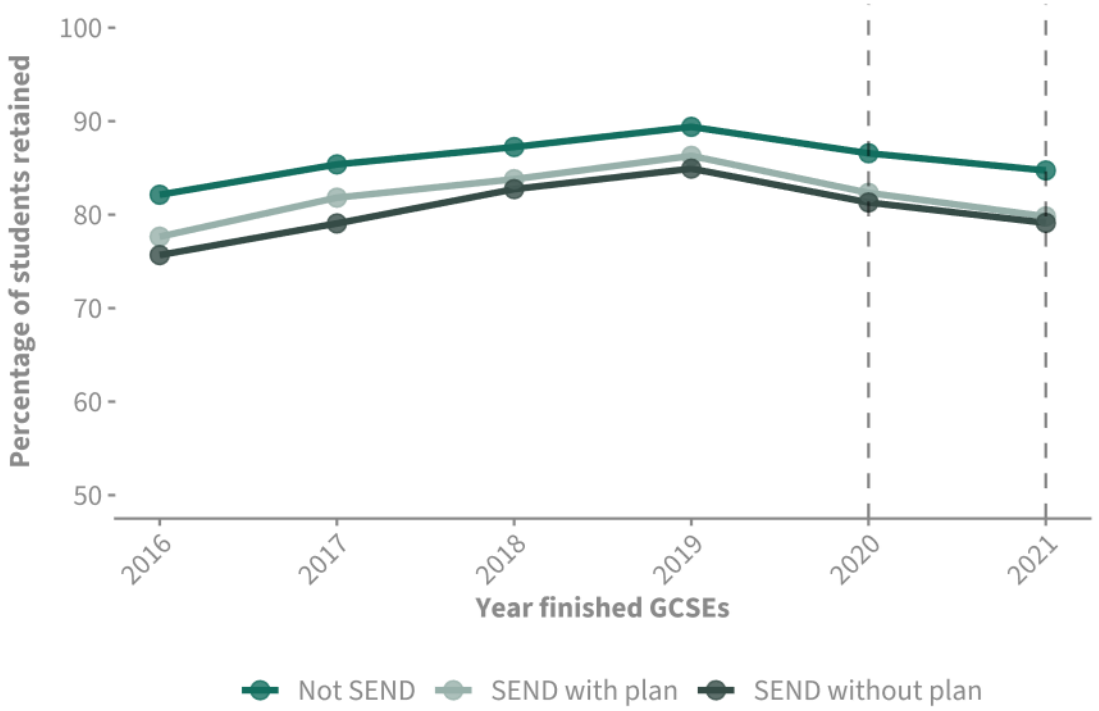
The findings from Figure 2.4 show a slight widening of the retention gap, between SEND students without an EHC plan and their non-SEND peers.

Regression estimates, however, show that once we control for prior attainment, student characteristics and cohort compositions, the retention gap actually narrowed slightly for those awarded CAG and TAG GCSEs: the relative odds of completing a level 3 study programme for SEND students without a plan increased by 6.0 per cent in 2020 and 11.9 per cent in 2021, compared to the 2019 cohort and their non-SEND peers.

Students with more severe needs (those with an EHC plan) had higher or near similar retention rates to SEND students without an EHC plan. This likely points to a selection effect and the small sub-group of SEND students with an EHC plan that go onto study at level 3.

Regression estimates confirm that the few EHCP students that study at level 3 have high retention rates. Accounting for prior attainment and other background characteristics, there was no significant difference in the underlying retention gaps between students with no identified SEND, and SEND students with a plan studying towards a level 3 qualification.

Figure 2.4: Percentage of students completing level 3 pathways by SEND status and across GCSE cohorts



Note: Dashed lines show when CAG/TAG GCSEs were awarded

Ethnicity

Students from any ethnic background awarded CAG and TAG GCSEs were more likely to enrol in level 3 qualifications. This was particularly notable among Black (African, Caribbean, or Black British) students, who saw a marked boost in enrolments.

In contrast, White students - whose 16-19 pathways were already far more diversified before the pandemic - experienced much subtler changes to their enrolment patterns.

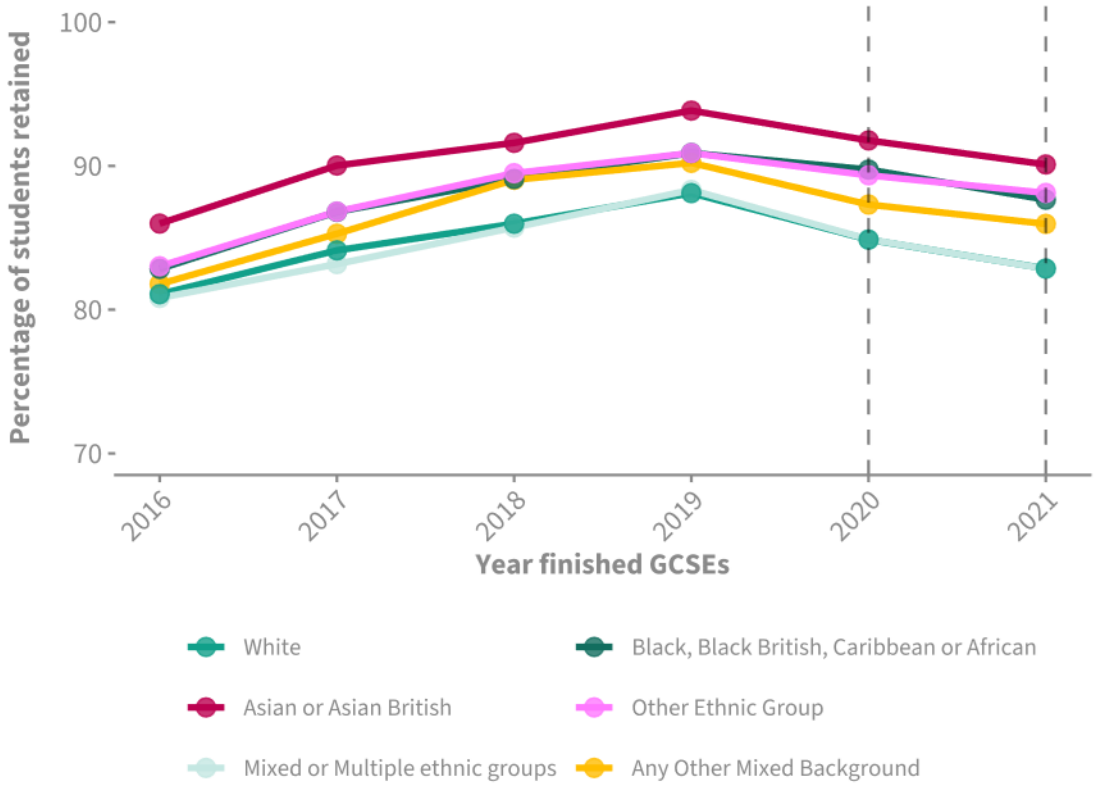
Figure 2.6 shows that across all ethnic groups, White students and Mixed ethnicity students, had consistently lower retention rates than other ethnic groups across level 3 qualifications in any given year.

Completion rates fell for every ethnic group starting their post 16 courses between 2019 and 2021 and were steepest for White and Mixed ethnicity students. For instance, White students' level 3 retention rates dropped by 5.2 percentage points for students awarded TAG GCSEs in 2021, and mixed ethnic students by 5.5 percentage points.

In contrast, students from an Asian or Asian British background were consistently more likely to complete their level 3 study programmes than any other ethnic group. Although their retention rates still dropped for those awarded CAG/TAG GCSEs, these drops were relatively modest compared to the wider population.

Our regression analysis shows that the underlying gap remained largely unchanged for cohorts finishing their GCSEs in 2020 and 2021, with two exceptions: the retention gap between White students and their Asian and Mixed ethnic peers narrowed slightly.

Figure 2.6: Percentage of students completing level 3 pathways by ethnic background and across GCSE cohorts.



Note: Dashed lines show when CAG/TAG GCSEs were awarded

Region

CAG and TAG GCSEs led to more students studying towards level 3 qualifications across all regions; however, these increases were particularly steep and sustained in London. Outside London, the North East saw the most marked disruptions to pre-pandemic trends and the greatest increase in students studying at level 3.

Descriptive findings show that pre-pandemic, a higher percentage of students studying level 3 qualifications in London completed their courses compared to all other regions in England.

Figure 2.7 illustrates the completion rates for level 3 study programmes by region. While London consistently saw a higher percentage of students complete their courses, the North East had the lowest percentage of students retained at level 3, and this gap widened for those finishing their GCSEs in 2020 and 2021.

For 2019 GCSE finishers, retention rates for level 3 study programmes in the North East were 6.9 percentage points lower than in London. This disparity grew for the cohorts awarded CAG/TAG GCSEs, the North East's retention rates fell more rapidly, extending the gap to 9.7 percentage points lower than London.

Figure 2.7: Percentage of students completing level 3 pathways in London and the North East, across GCSE cohorts

Note: Dashed lines show when CAG/TAG GCSEs were awarded

These findings are confirmed by the regression analysis. When controlling for differences in prior attainment alongside student characteristics and cohort composition, estimates confirm the widening of the regional retention gap.

Specifically, there was a 4.1 per cent decrease in the relative odds of students in the North East completing their level 3 courses in 2020, compared to the 2019 baseline, and students in London.

Regression estimates indicate that students in the North East had a 2.9 per cent decrease in their relative odds of completion in 2021, compared to London and the 2019 baseline.

These differences are unlikely to be driven by adapted grading alone. Evidence has shown regional disparities in loss of learning during the pandemic and ultimately, the patterns we see here will reflect multiple regional factors influencing students' completion rates during the 16-19 phase.[vi]

Research Question 3: Are certain student groups likely to opt for more/less demanding courses and how did this vary through the pandemic?

16-19 mismatch: Descriptive analysis

Differences in how students with similar prior attainment sort into post 16 courses are important for their future educational outcomes. While individual choices may reflect informed preferences or career goals, systematic differences between groups may indicate unequal access to guidance, expectations or local provision. Research Question 3 examines these patterns of over- and undermatch in 16-19 study and higher education, first describing how they vary across student and school characteristics in a typical year, and then assessing whether these patterns changed for cohorts affected by the pandemic.

Full methodological details are provided in the Research Questions and Methodology section. In summary, each student is assigned a percentile rank within the prior attainment distribution of their cohort. Similarly, each 16-19 course is assigned a percentile rank based on the median prior attainment of students who entered it within each academic year. As students typically enter multiple 16-19 courses, we summarise their course ranks into an overall ranking using a weighted average. For each student, a 'match index' is created by taking the difference between their own percentile rank, and the percentile rank of the courses they entered.

How to read mismatch charts

Students are given a percentile rank based on their prior attainment. For simplicity of the charts below, this is further aggregated to deciles. For all students within the same prior attainment decile, we plot the average percentile rank of the post 16 courses they started studying towards.

If students are well matched, their course ranking will be close to their prior attainment rank. For example, we would expect the average percentile rank of students within the 5th prior attainment decile to be somewhere between 40 and 50. The 45-degree line illustrates 'perfect' matching as a point of comparison.

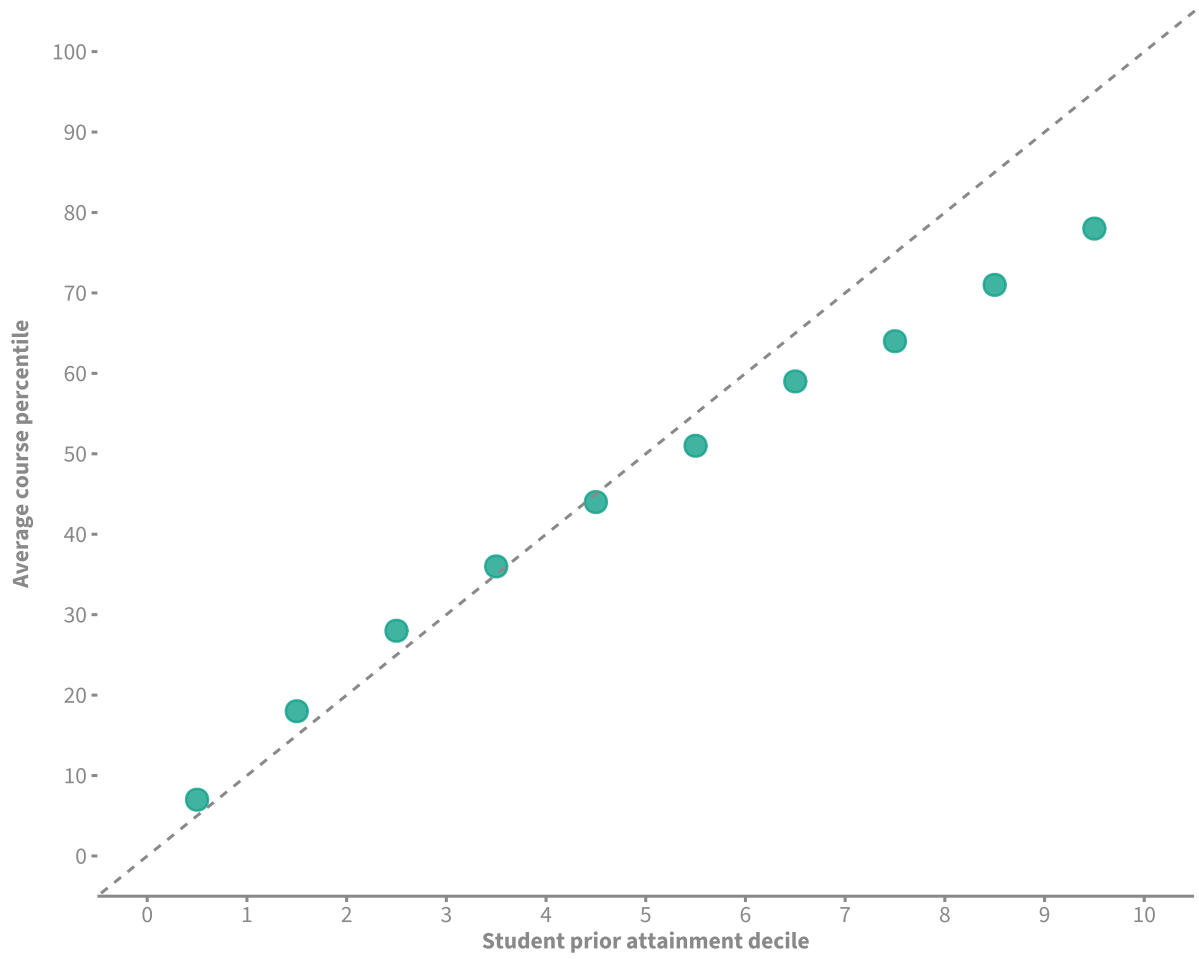
If students overmatch, they choose courses that tend to attract higher-attaining students than themselves (above the 45-degree line).

If students undermatch, they choose courses that tend to attract lower-attaining students (below the 45-degree line).

We use Attainment 8 as the measure of prior attainment in Figure 3.1 and wherever possible, as it provides the strongest indication of students' academic performance at the end of key stage 4. We use alternate measures when making comparisons across the cohorts that received CAG/TAG GCSEs to aid consistency.

Overall patterns of 16-19 mismatch

Figure 3.1: Student level mismatch, 2023 GCSE cohort, Attainment 8 methodology



We observe that students in the lower half of the prior attainment distribution are more likely to overmatch, while those in the upper half are more likely to undermatch. This is expected as a result of the methodology implemented; the highest-attaining students have limited scope to choose courses where they are not among the highest-attaining entrants, and vice-versa. For this reason, it is the relative differences in mismatch between characteristics, rather than the absolute level of mismatch, that provide the most meaningful insight.

16-19 mismatch by gender

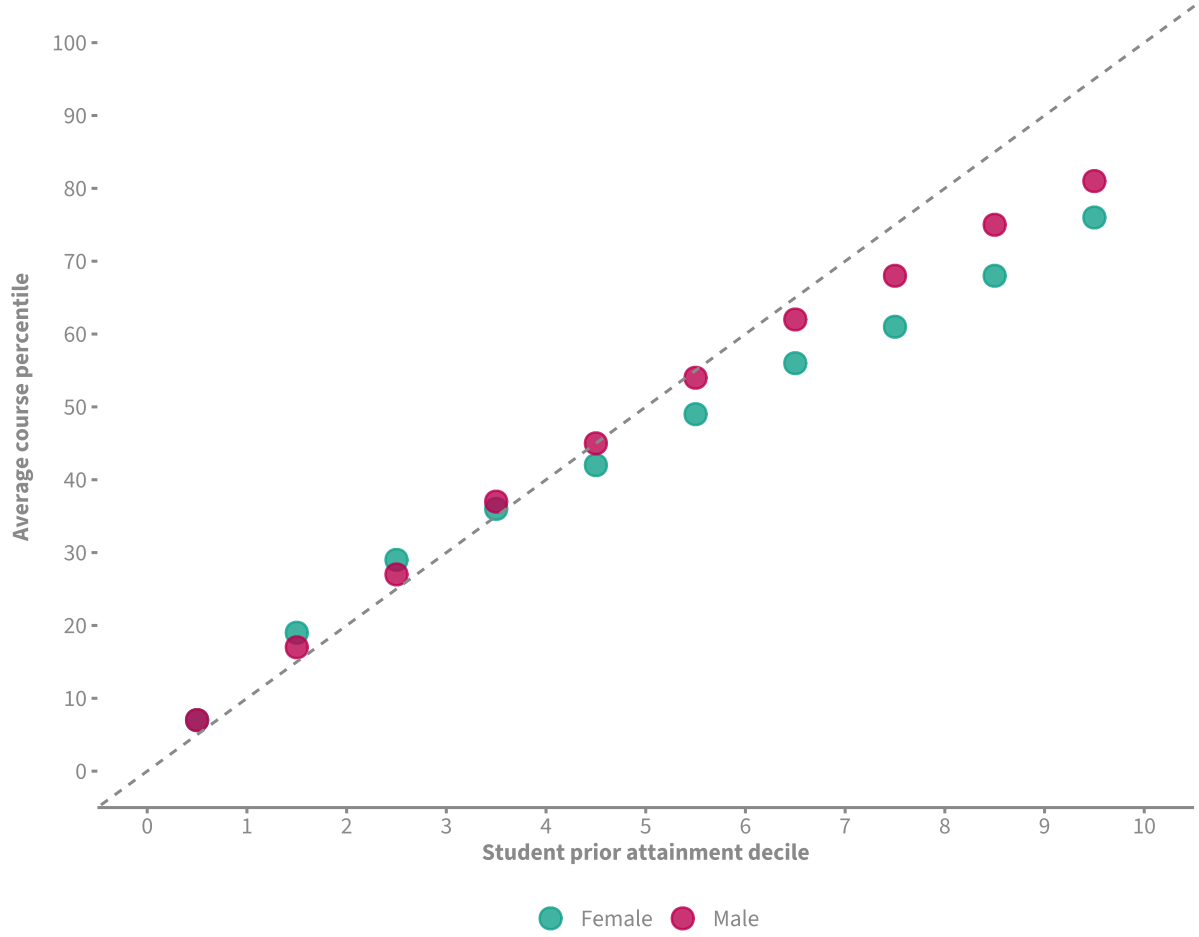
Figure 3.2 compares mismatch for male and female students. The chart shows that towards the lower end of the attainment distribution; male and female students display similarly matched 16-19 study choices. However, as prior attainment rises, a gap emerges, with male students becoming

increasingly likely to select more demanding[7] courses than their female peers, despite having similar prior attainment. This implication of this, is that many 16-19 courses will feature lower attaining male students studying alongside higher attaining female students.

These gender patterns are consistent with wider evidence on post 16 decision making. Several factors may contribute to the emerging gap at higher levels of prior attainment. First, research suggests that male students often report greater confidence in their academic ability, even when attainment is similar, which may encourage them toward more demanding or traditionally high-status courses.[vii] Female students, by contrast, may be more influenced by perceptions of preparedness, subject interest, or the learning environment, leading to choices that are more closely aligned with their demonstrated attainment.[viii] Second, subject composition plays a role. Higher attaining male students are more likely to enter courses such as mathematics, physics or computing, which tend to be ranked more highly on our measure due to the prior attainment profile of their entrants. Female students with similar attainment may gravitate toward subjects with more diverse entry profiles, narrowing the scope for overmatch at the top of the distribution.

[7] Our methodology creates a proxy for course difficulty based on the prior attainment of students entering each qualification. It is not a perfect assessment of exactly which courses are more demanding or stretching than others

Figure 3.2: Student level mismatch by gender, 2023 GCSE cohort, Attainment 8 methodology



16-19 mismatch by disadvantage status

Figure 3.3 presents the same student-level mismatch measure, disaggregated by whether students had received free school meals at any point in the six years prior to completing key stage 4 (subsequently referred to as disadvantaged students). This serves as a proxy for identifying students from lower socioeconomic, or 'disadvantaged', backgrounds.

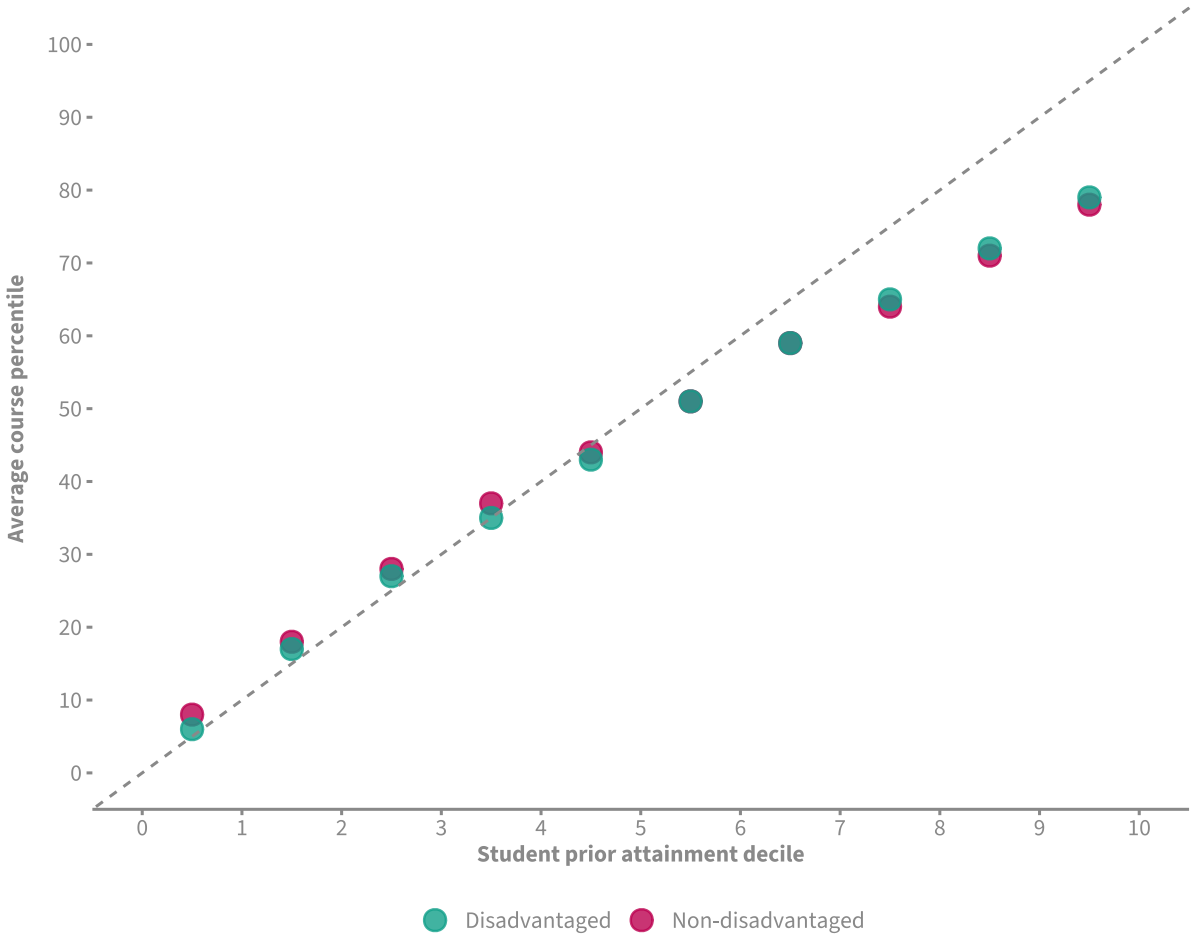
The gaps by disadvantage status are less pronounced than those observed by gender. Among students with higher prior attainment, disadvantaged students tend to make slightly more ambitious qualification choices than their non-disadvantaged peers, but these differences are modest. At the lower end of the attainment distribution, disadvantaged students are marginally more likely to choose less demanding courses than their peers with similar prior attainment.

It is important to recognise that disadvantaged students are disproportionately represented in the lower end of the prior-attainment distribution. This means that overall, disadvantaged students are more likely to undermatch than similarly attaining non-disadvantaged students. We explore these patterns further in the modelled analysis presented in the following section.

Differences in access to high quality Careers Education, Information, Advice and Guidance (CEIAG) may be playing an important role. Research shows that disadvantaged students tend to receive

less personalised or less informed guidance about post 16 routes, which can limit their awareness of the full range of academic and vocational pathways available to them.[ix] This may contribute to lower attaining disadvantaged students opting for less demanding courses than their attainment might permit. However, there is also research to show that good careers education can have greater impact for disadvantaged students, and that schools with more disadvantaged intakes are more likely to meet the Gatsby benchmarks.[x] [xi]

Figure 3.3: Student-level mismatch by disadvantage status, 2023 GCSE cohort, Attainment 8 methodology



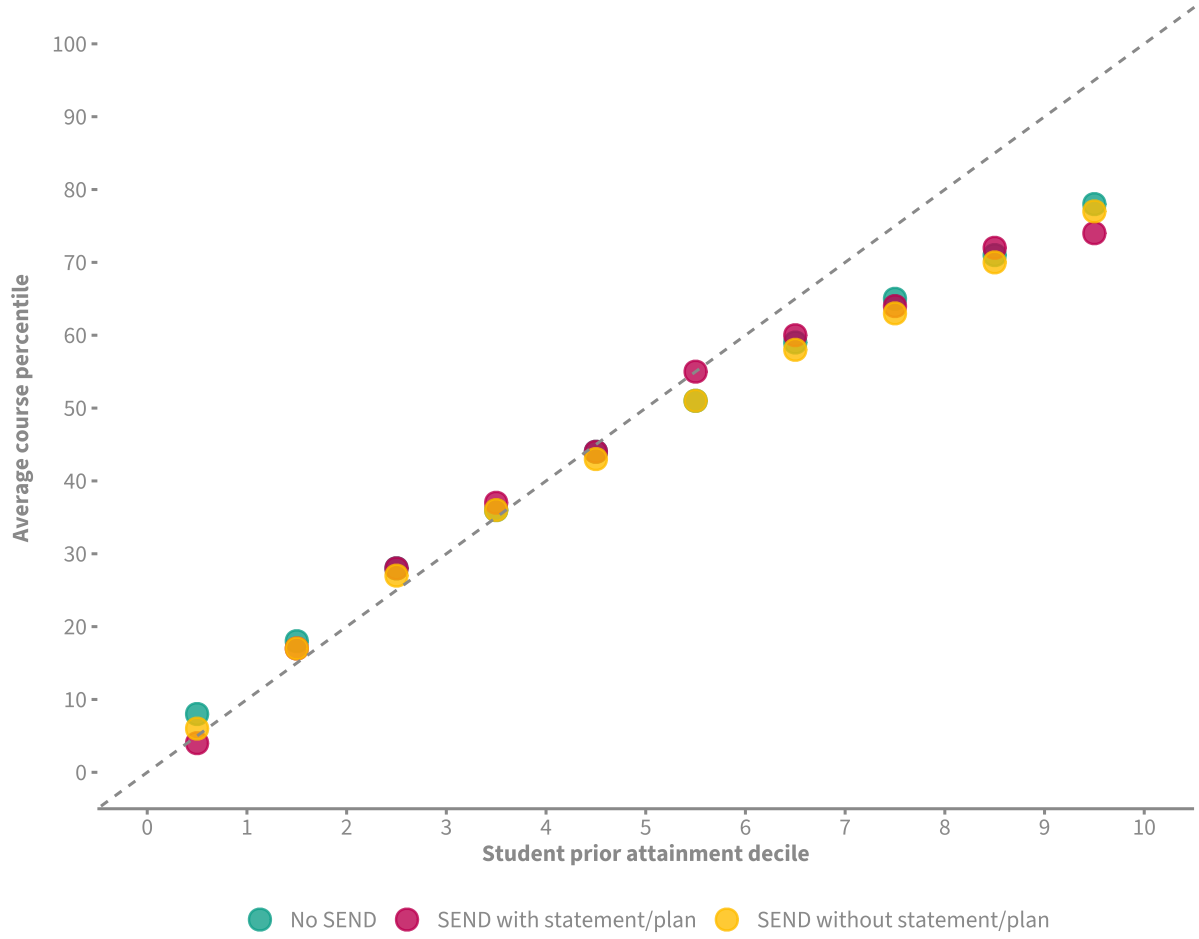
16-19 mismatch by Special Educational Needs or Disability (SEND) status

Figure 3.4 presents student-level mismatch by SEND status, distinguishing between students with and without an Education, Health and Care Plan (EHCP). As with the disadvantage breakdown, students with identified SEND who are at the top end of the prior attainment distribution are slightly more likely to overmatch than those with no recorded SEND. However, this reflects a very small share of the SEND population, meaning these estimates are based on limited student numbers and should be interpreted with caution.

Students with SEND, whether or not they have an EHCP, fall within the lower deciles of the prior-attainment distribution on average. Within this group, students with an EHCP are more likely to undermatch, while students with no identified SEND are the most likely to overmatch.

This may reflect several factors: for example, restricted course availability in local providers, the prioritisation of pathways perceived as more supportive or accessible, or a lack of tailored guidance that fully reflects students' academic potential.[xii]

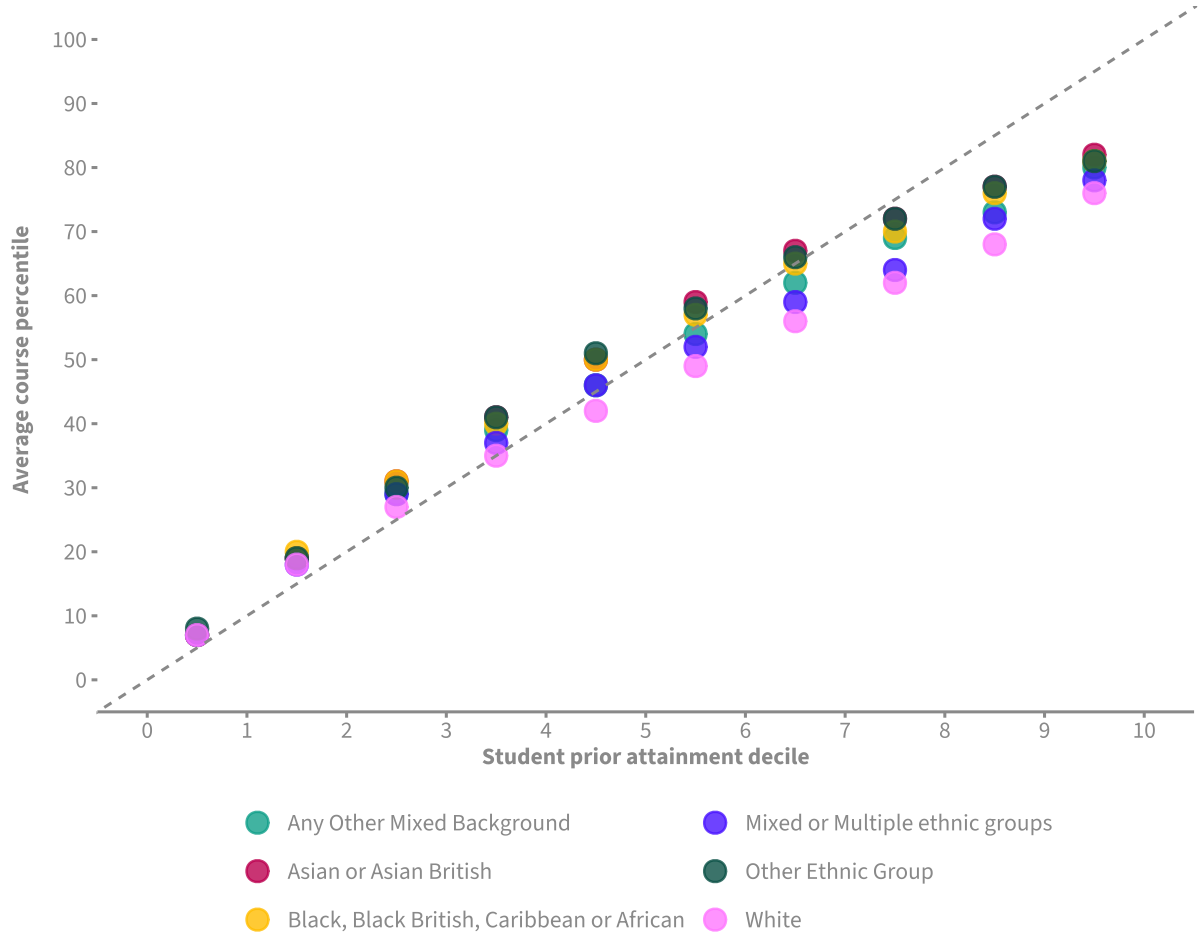
Figure 3.4: Student-level mismatch by SEND status, 2023 GCSE cohort, Attainment 8 methodology



16-19 mismatch by ethnicity

Figure 3.5 shows mismatch patterns across by ethnic group. A clear and consistent pattern emerges with white students most likely to undermatch, making less ambitious post 16 course choices at all points of the prior attainment distribution. Asian and Asian British students were more likely to overmatch than other ethnic groups as you move up the prior attainment distribution. At the lowest levels of prior attainment, all ethnicities experience similar levels of matching.

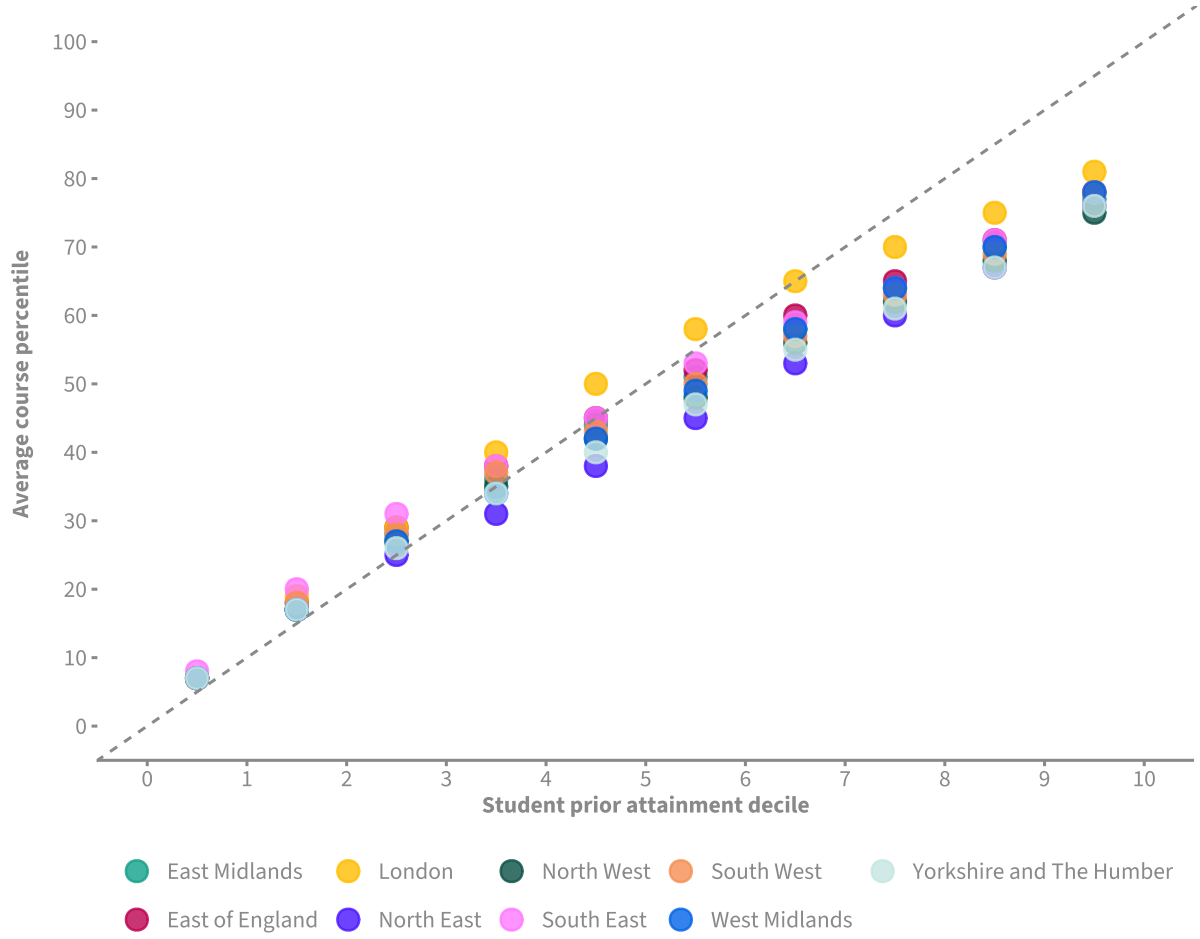
Figure 3.5: Student-level mismatch by ethnicity, 2023 GCSE cohort, Attainment 8 methodology



16-19 mismatch by region

Figure 3.6 breaks mismatch down by region. Students in London and the South East are more likely to overmatch than students in most other regions, particularly among those with mid-to-high prior attainment. This may reflect the denser concentration of sixth form and further education providers in these regions, offering students a wider range of more demanding pathways. Higher levels of competition and stronger institutional performance across London's post 16 sector may also contribute.[xiii]

Figure 3.6: Student-level mismatch by region, 2023 GCSE cohort, Attainment 8 methodology



16-19 mismatch by school type

Figure 3.7 compares mismatch by the type of school students attended at key stage 4. Students from sponsored academies were more likely to undermatch regardless of where they were in the prior attainment distribution. Student from Free Schools or UTCs were more likely to overmatch, while those attending converter academies and local authority maintained schools (the two largest categories) generally fall between these extremes.

Figure 3.7: Student-level mismatch by school type, 2023 GCSE cohort, Attainment 8 methodology

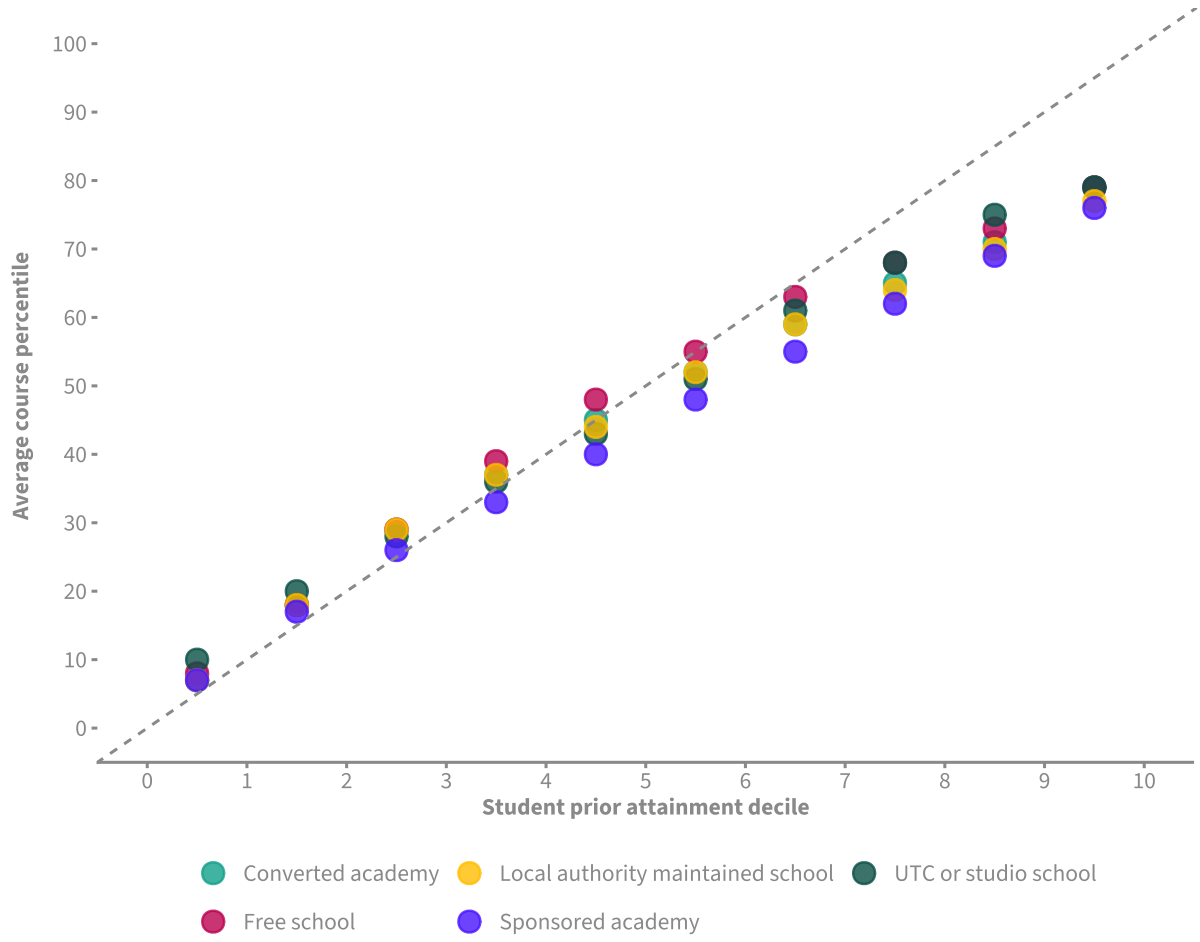
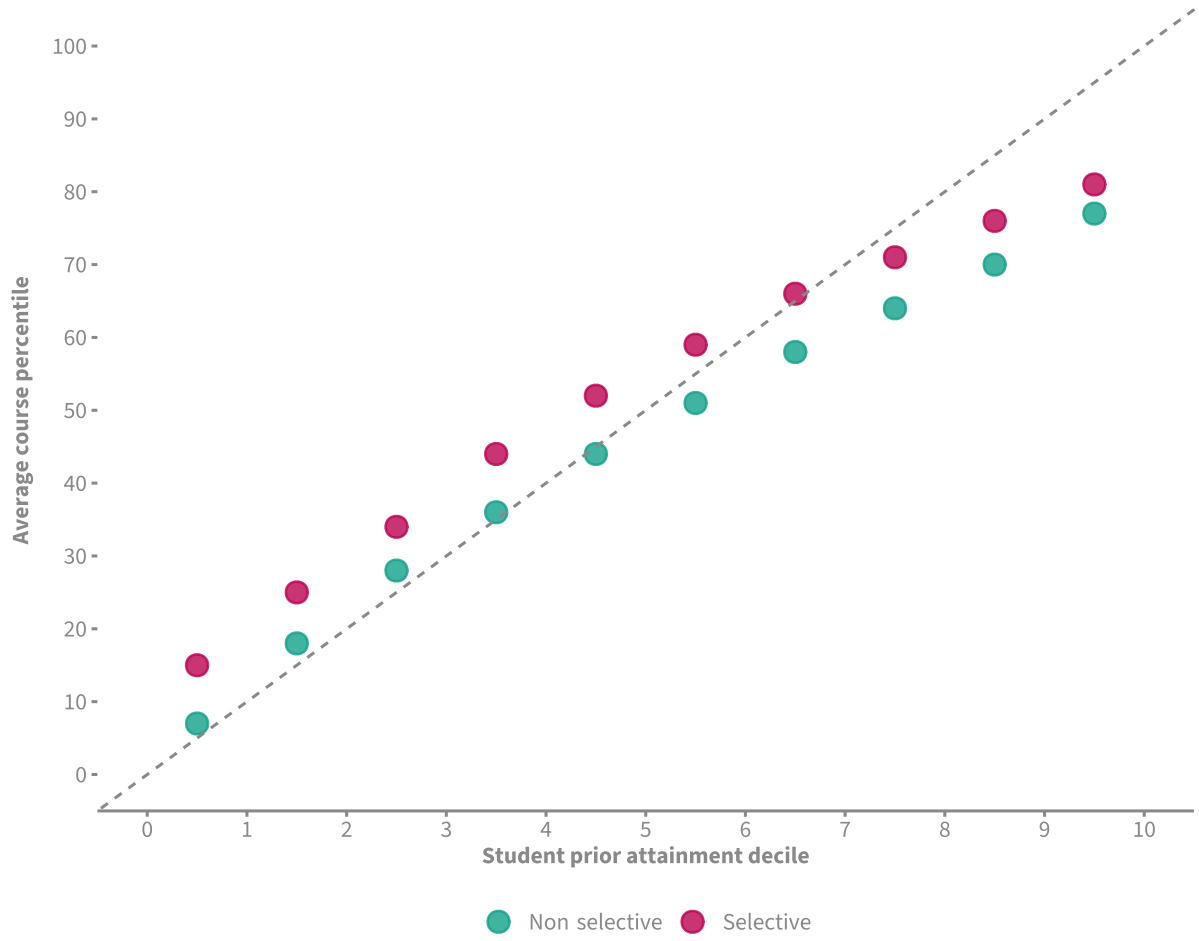


Figure 3.8 shows mismatch patterns by school admissions policy. Students attending schools with selective admissions overmatch by around 10 percentiles across most of the prior attainment distribution, relative to students in non-selective schools. Note that at the low end of the prior attainment distribution, the student counts in selective schools are very low as entry criteria generally prevent these students from attending selective schools.

The results suggest that admissions policies, and the broader school environments they create, play a role in shaping students' confidence and their access to more demanding post 16 pathways.

Figure 3.8: Student-level mismatch by admissions policy, 2023 GCSE cohort, Attainment 8 methodology



As part of Research Question 3, we set out to determine how patterns of mismatch changed in the years affected by the pandemic, specifically whether the different enrolment patterns seen among those awarded CAG and TAG GCSEs interacted with mismatch patterns.

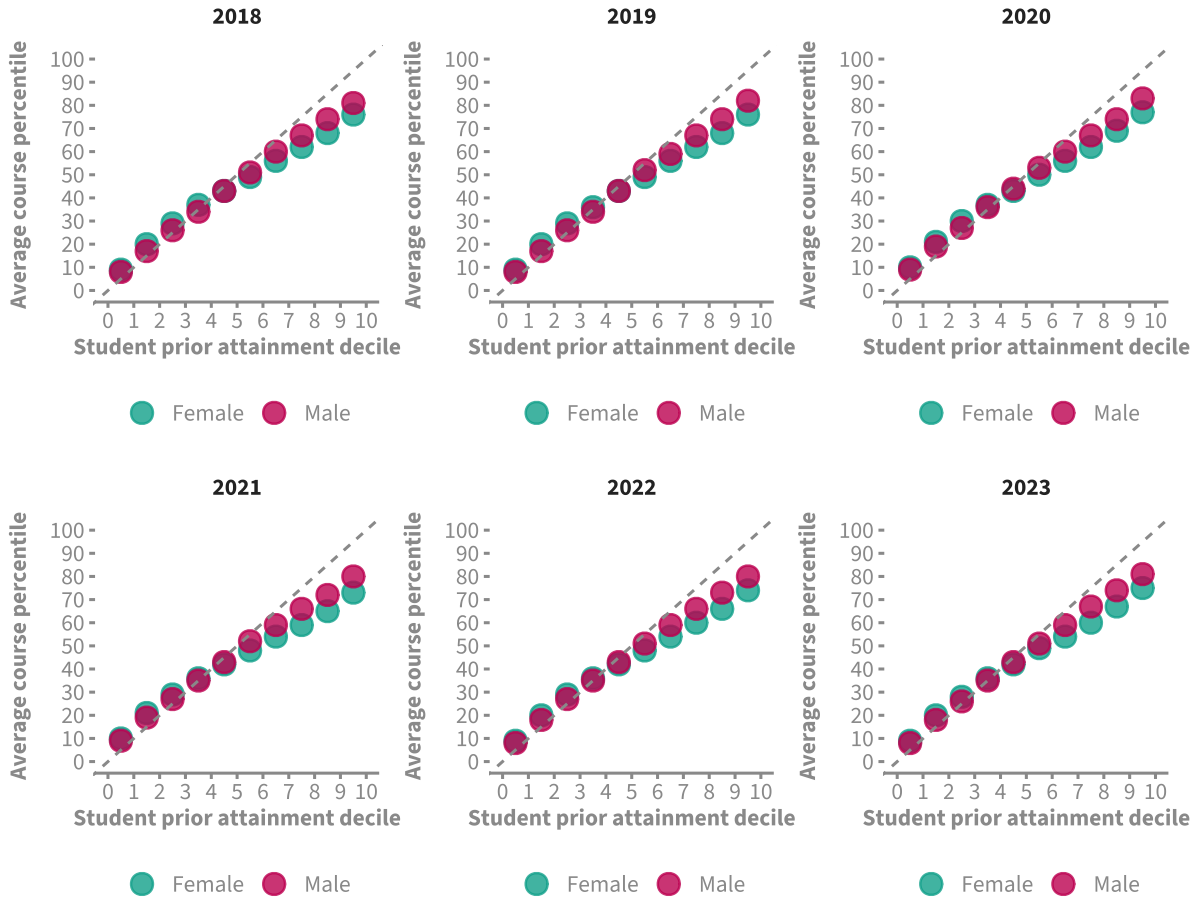
The analysis presented up until this point has focussed on mismatch using Attainment 8 scores as the prior attainment measure. The ranking methodology largely smooths out overall differences in the grades awarded between years. However, CAGs and TAGs did not benefit all students equally, meaning differences in prior attainment rankings by characteristic may occur purely as a result of awarding processes.

We experimented with using attainment data from key stage 2 instead, which was unaffected by the pandemic for the cohorts of interest. However, using key stage 2 prior attainment cannot account for the differential progress students make throughout secondary school, leading to overstated mismatch for some characteristic groups, for example those from disadvantaged backgrounds. We therefore opt to use the first principal component of KS2 results and Attainment 8 scores. For each student, this uses information from both phases of education. Although it is not

perfect, we consider it the optimal approach when making comparisons across the years when CAGs and TAGs were awarded.

Figure 3.9 shows the overall mismatch curve for 2018 through to 2023 GCSE cohorts split by gender. Although there are minor differences throughout – the charts do not provide evidence that levels of mismatch in 16-19 study choices were fundamentally different in the years affected by the pandemic

Figure 3.9: Student-level mismatch 2018-2023 GCSE cohorts by gender, principal component methodology



We see similarly consistent patterns across the suite of characteristics presented previously.

It is challenging to identify differences during the pandemic from purely descriptive statistics, especially when year on year variation is minor as in the charts above.

In the section that follows we therefore present a modelled analysis which allows for more direct comparisons. The modelled analysis has been run on a dataset pooled across years. This allows us to identify the extent of mismatch that exists within each characteristic group, while adjusting for prior attainment and other background characteristics. Furthermore, our approach allows us to assess whether certain characteristic groups experienced notable changes in mismatch between years.

16-19 mismatch: Modelled analysis

In the previous sections, we showed that the extent of mismatch varies across student and school characteristics. However, although the descriptive patterns may reflect genuine differences in matching behaviour, they will also be influenced by underlying differences in prior attainment, other background characteristics, school type, and regional composition. The modelled analysis isolates these influences, allowing us to estimate how much mismatch is associated with each characteristic once these other factors are taken into account.

In this section, we first present the baseline gaps for the 2019 (pre-COVID) cohort, then examine how these changed for specific groups during the pandemic affected years. To do this, we include interaction terms between each characteristic and cohort year, enabling us to identify whether mismatch gaps widened or narrowed relative to 2019, when student choices were unaffected by the pandemic.

As outlined in the Methodology section, we use the principal component prior attainment measure to support comparability across years, and define the mismatch index at student level.

Figure 3.10: Raw vs modelled mismatch gap by characteristic, 2019 GCSE cohort

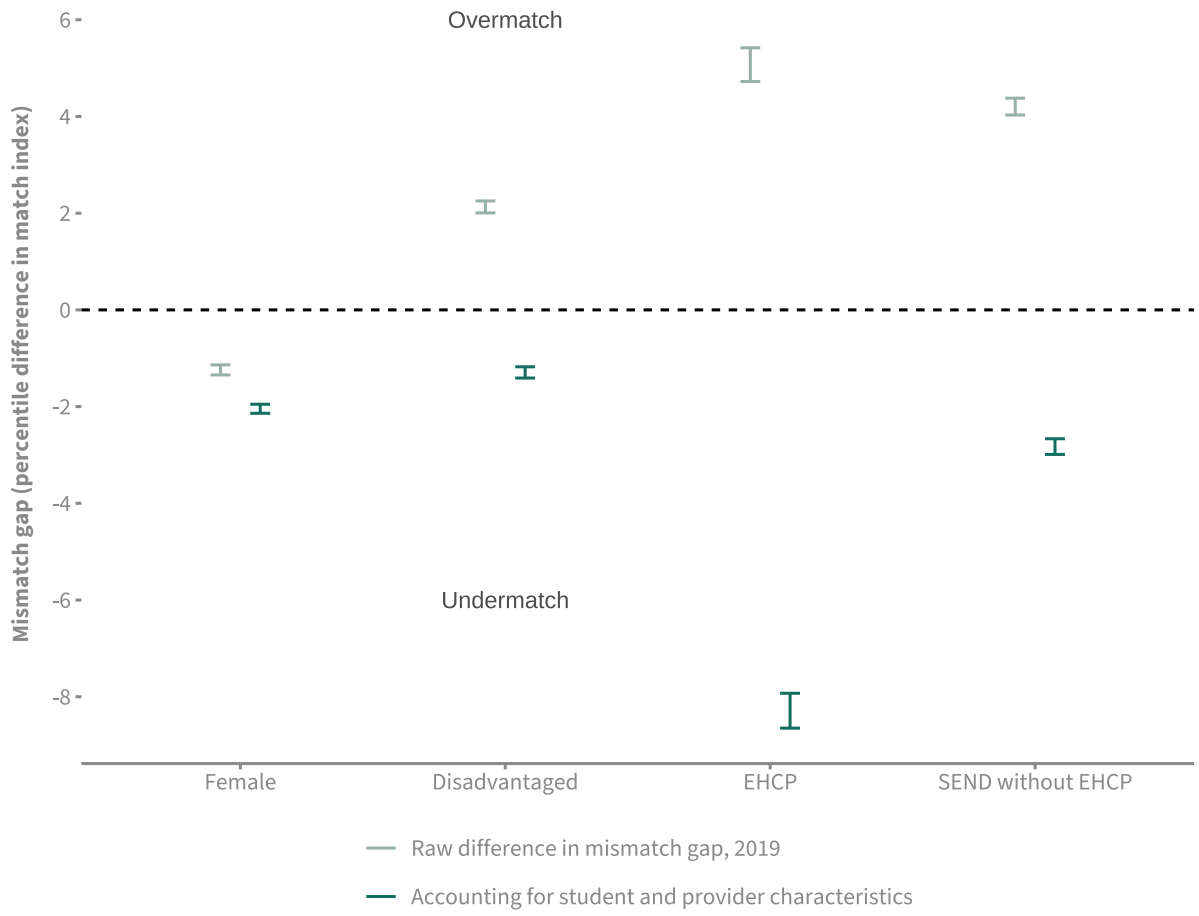


Figure 3.10 shows the raw and adjusted[8] mismatch gaps for the 2019 cohort; the y axis reflects the average mismatch gap in percentiles for each characteristic, relative to the reference group[9].

A negative modelled gap indicates that after adjusting for student background, the group tended to select courses ranked lower than those chosen by similarly attaining students in the reference group (i.e., they were more likely to undermatch). A positive gap indicates the opposite.

Once we account for background characteristics, mismatch gaps generally narrow or become more negative across all groups. However, as shown in the descriptive analysis, lower attaining students are more likely to overmatch and higher attaining students more likely to undermatch. Because many student characteristics are strongly correlated with prior attainment, raw gaps largely capture these attainment differences rather than true differences in matching behaviour. To illustrate this more clearly, we also present results separately for the lowest and highest prior attainment quintiles.

[8] The student and provider characteristics controlled for throughout are gender, SEND status, disadvantage status, ethnicity, English as an additional language, region, key stage 2 and key stage 4 standardised prior attainment and school type.

[9] Reference categories are male students, non-disadvantaged students, students with no identified special educational needs or disability, respectively

Figure 3.11: Raw vs modelled mismatch gap by characteristic, 2019 GCSE cohort, prior attainment quintile 1 and 5

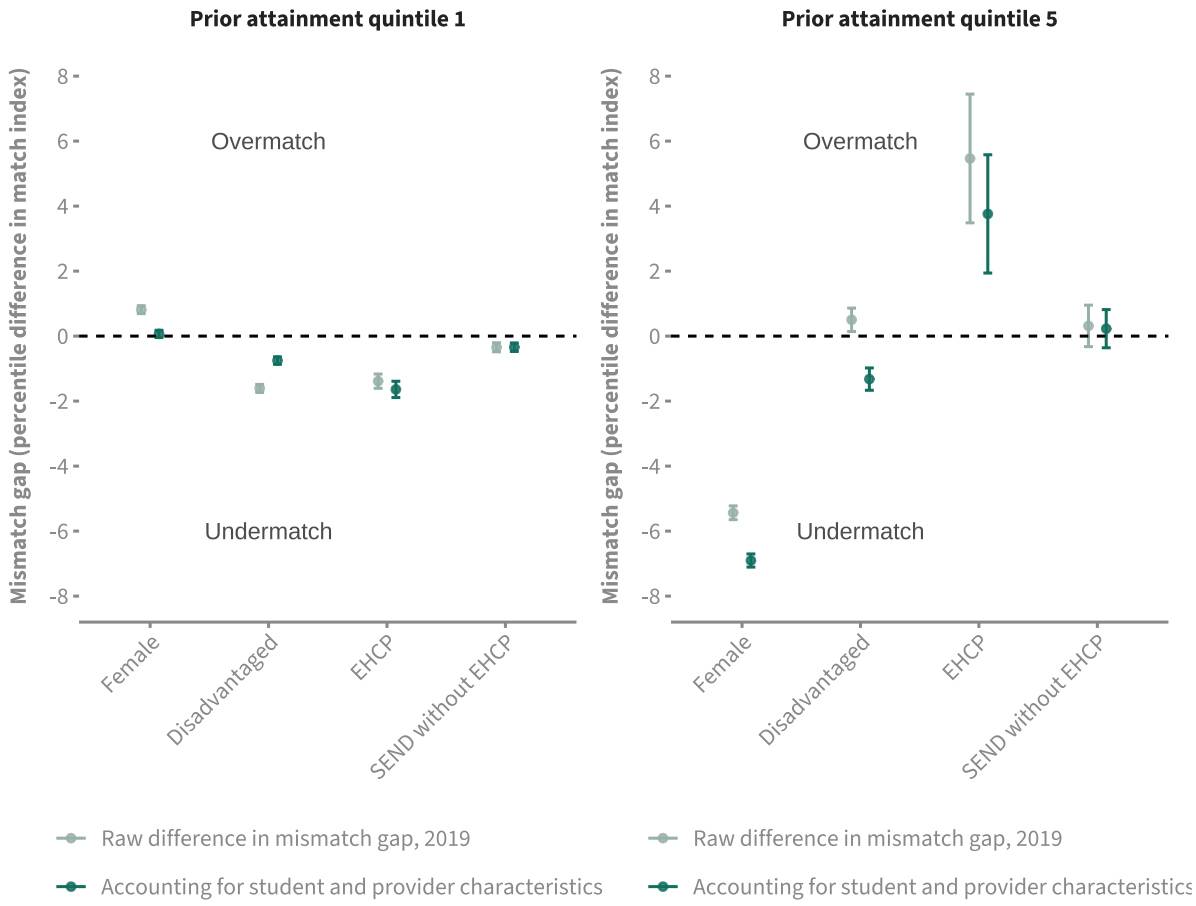
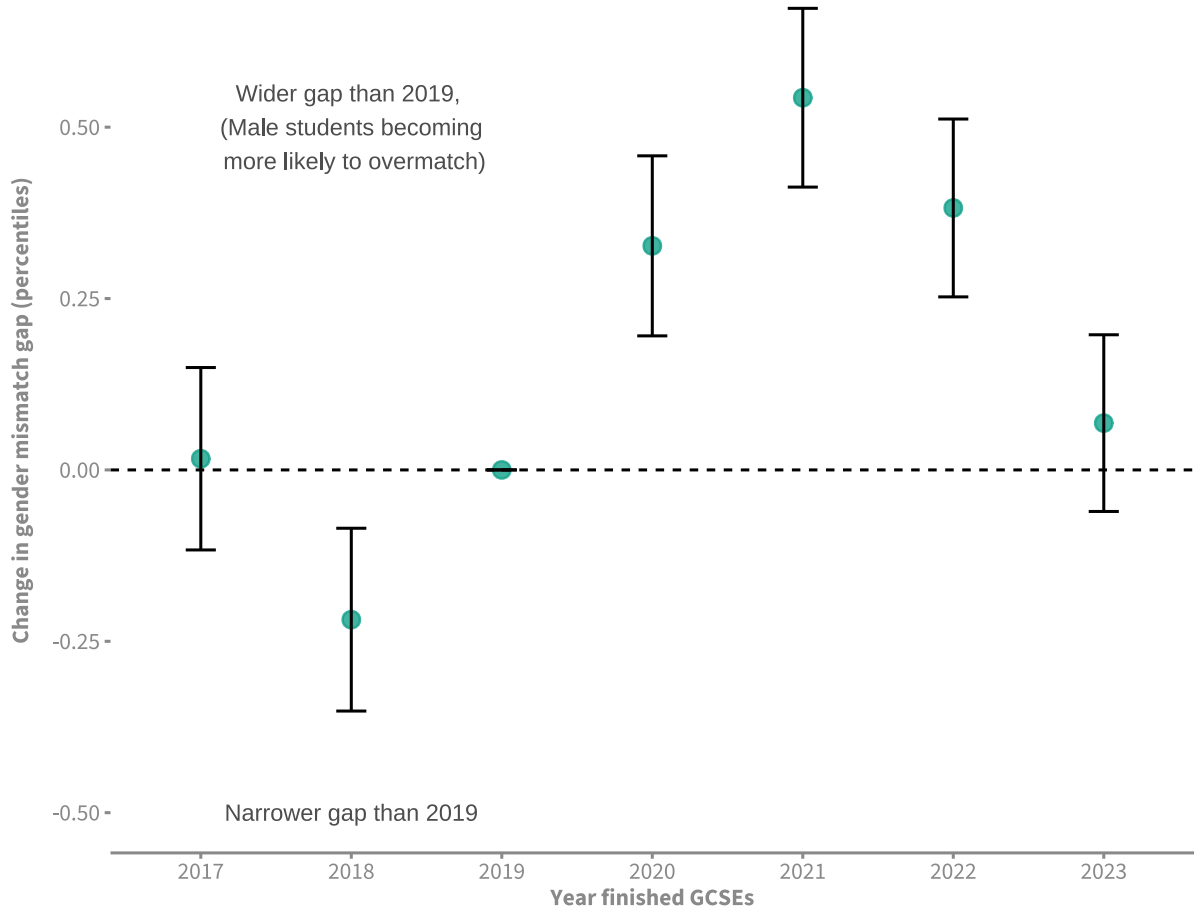


Figure 3.11 shows that the broad trends we observed in the descriptive statistics still hold when accounting for student background and provider characteristics. For gender, this supports the earlier descriptive findings, confirming that high-attaining male students disproportionately select more demanding pathways.

Most other gaps are quite modest, excepting high attaining students with an EHCP, who form a very small subgroup of the wider EHCP population.

Figure 3.12: Change in gender mismatch gap relative to 2019, accounting for student characteristics and compositional changes between years



While Figure 3.11 showed the size of the gender mismatch gap in 2019, Figure 3.12 illustrates how the modelled gap (accounting for characteristics and compositional differences between years) changed beforehand and subsequently. Positive values indicate that the modelled gender gap widened in favour of male students relative to 2019, while negative values indicate a narrowing. Having accounted for changes in student and provider characteristics, the gap widened slightly in 2020 and 2021 (male students becoming relatively more likely to overmatch and vice versa), before gradually returning to its 2019 level. However, at around half a percentile difference at its maximum, this change was not substantial.

Figure 3.13: Change in disadvantage mismatch gap relative to 2019, accounting for student characteristics and compositional changes between years

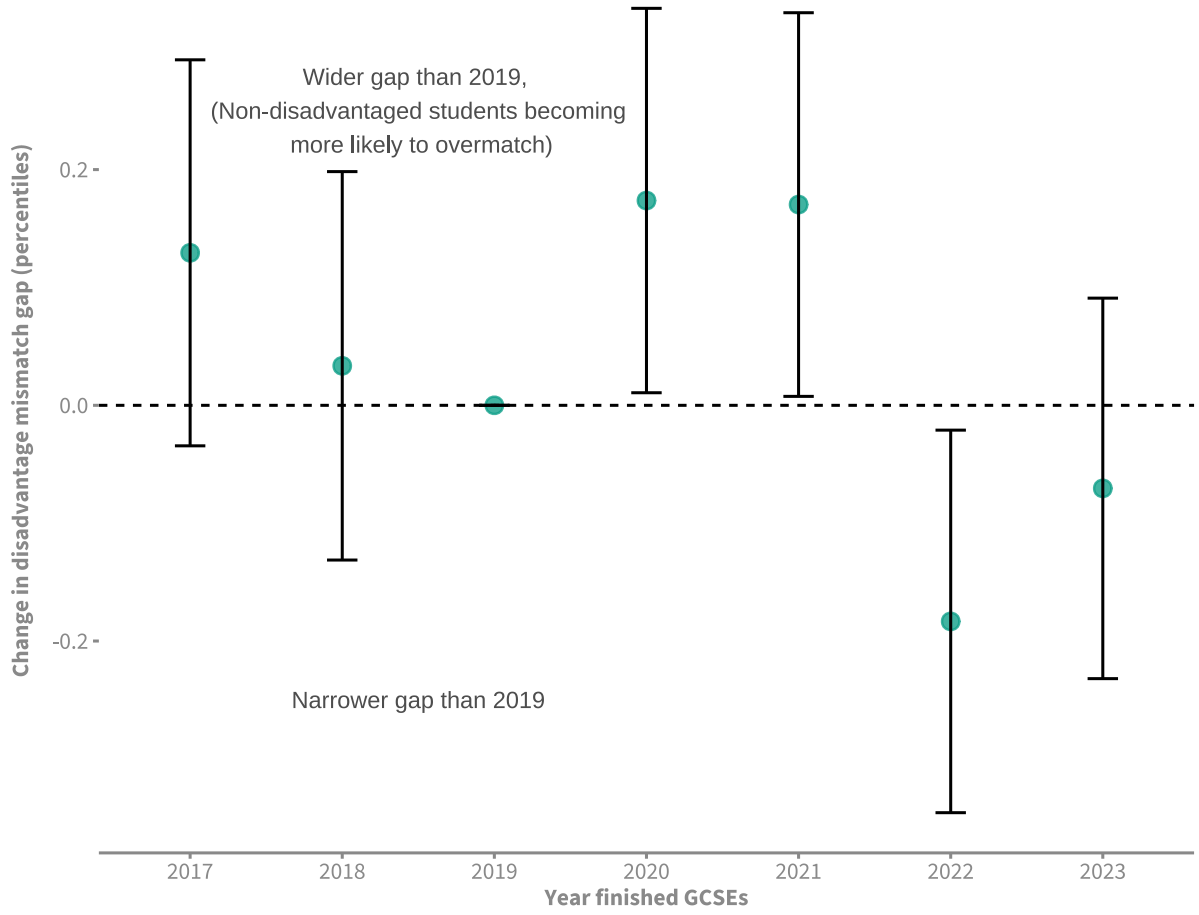
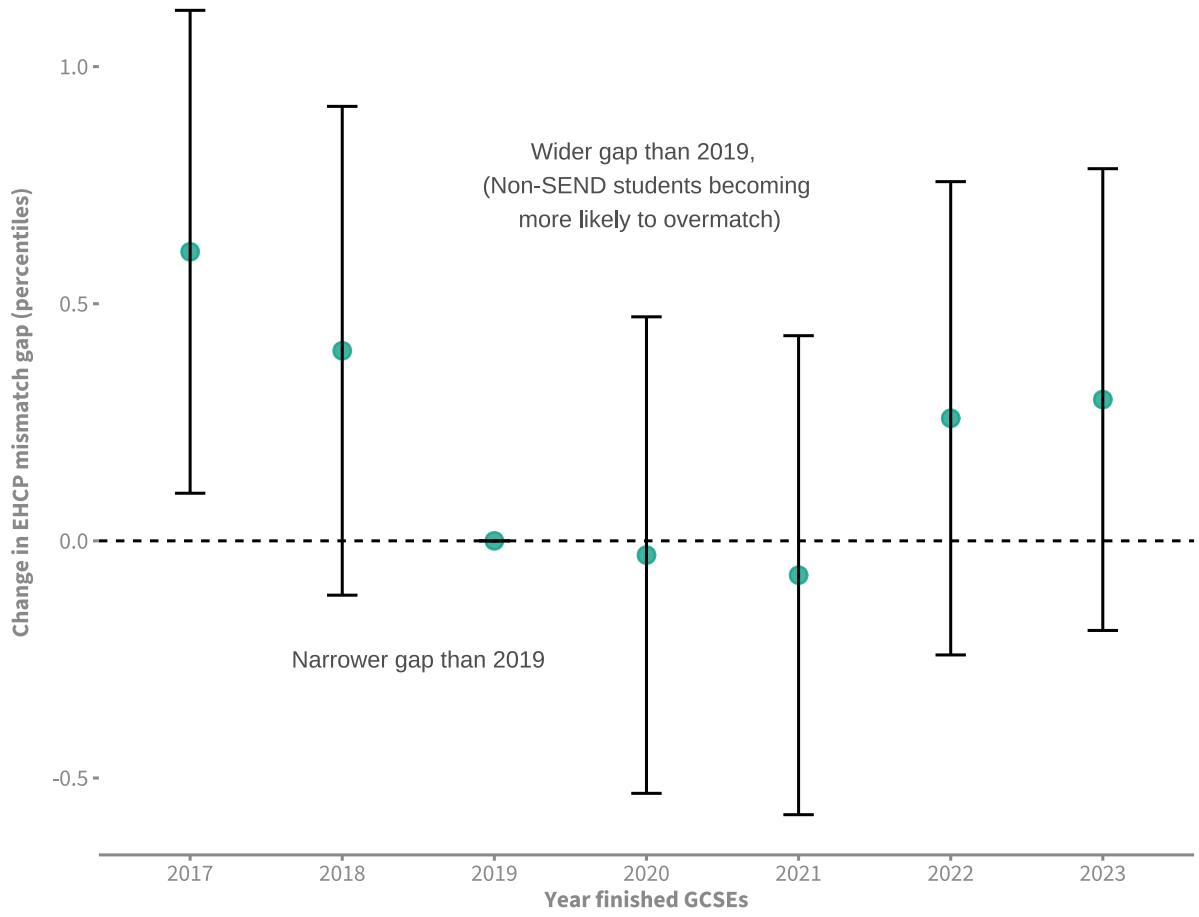


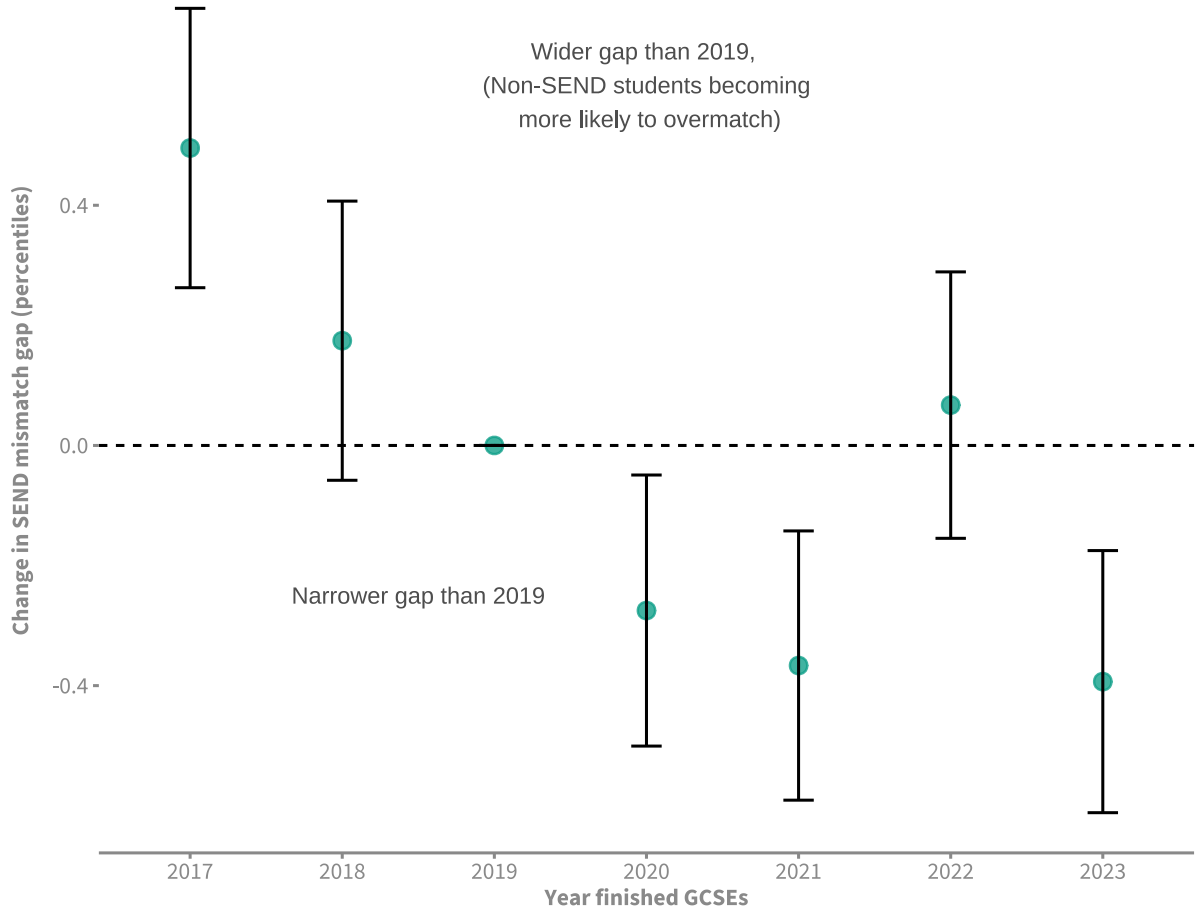
Figure 3.13 shows how the modelled, disadvantage mismatch gap changed relative to 2019. Prior to the pandemic, year on year changes in the modelled gap were not statistically significant. Although the shifts in the gap for the 2020 and 2021 GCSE cohorts were significantly different from 2019, the magnitude of these changes was very small and difficult to distinguish from normal year to year variation.

Figure 3.14: Change in EHCP mismatch gap relative to 2019, accounting for student characteristics and compositional changes between years



Having controlled for background characteristics, Figure 3.11 shows that there was a statistically significant mismatch gap between students with an EHCP and those with no identified needs in 2019. Figure 3.14 confirms that relative to 2019, this gap has remained relatively stable as changes through time were not statistically significant.

Figure 3.15: Change in mismatch gap for SEND students with no EHCP, relative to 2019, before and after accounting for changes in student composition



For SEND students without an EHCP, changes relative to 2019 were similarly small. The narrowing of the modelled gap for those taking GCSEs in 2020 and 2021 was statistically significant, but not beyond the level of year on year variation observed generally.

For region, school type and ethnicity, there are multiple categories (i.e. 9 English regions), so it is not possible to show a headline mismatch gap or changes through time as neatly on a chart.

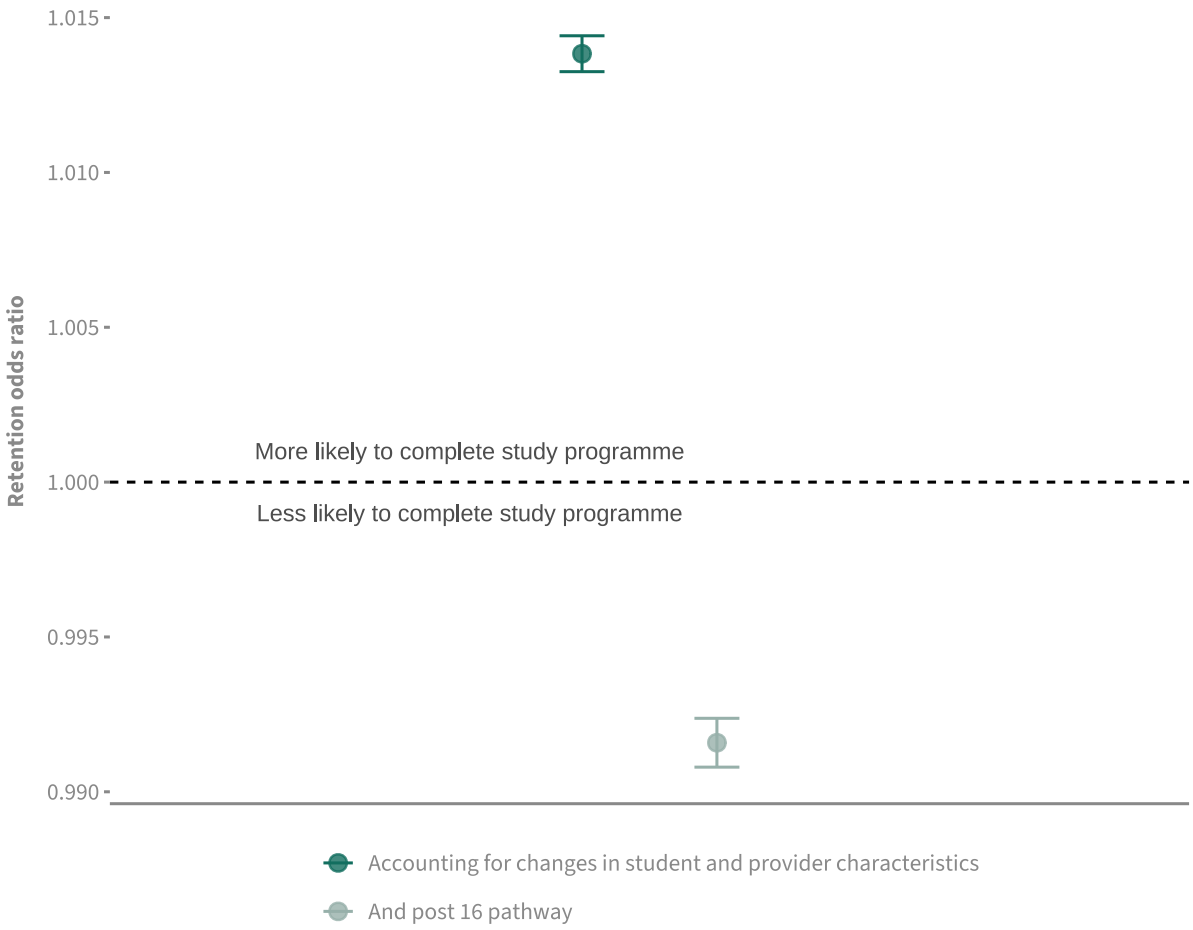
The full regression model coefficients in Annex C show that the descriptive statistics still hold, although become a little less pronounced once we account for background student and provider characteristics. Specifically, once background characteristics are held constant, students in all regions still undermatch relative to London, students in Sponsored Academies are still more likely to undermatch than all other mainstream school types, and students in all harmonised ethnic groups still overmatch relative to White students.

There was also little change in mismatch for the cohorts awarded CAG/TAG grades relative to 2019 GCSE finishers. For region and school type, all changes were less than 1 percentile, having accounted for compositional differences. By ethnicity, Black and Asian students became a little more likely to overmatch, relative to White students.

Retention and attainment models

We now examine how mismatch itself relates to retention and attainment outcomes in the 16-19 phase. The retention outcome is binary, so we estimate a logistic regression model. Further details are provided in the Research Questions and Methodology section, and full model outputs are included in Annex D.

Figure 3.16: Retention odds ratio associated with overmatching by one percentile, 2019 GCSE finishers



In Figure 3.16, the value above the dotted line suggests that overmatching (choosing more demanding courses) is associated with better course retention rates. This is counter-intuitive: overmatched students are enrolled on courses that are more demanding relative to their prior attainment, so we might expect them to have *lower* chances of completing their study programme.

However, when we further adjust for the type of post 16 study programme selected (A levels, other level 3, mixed level 3, etc.) this trend reverses.

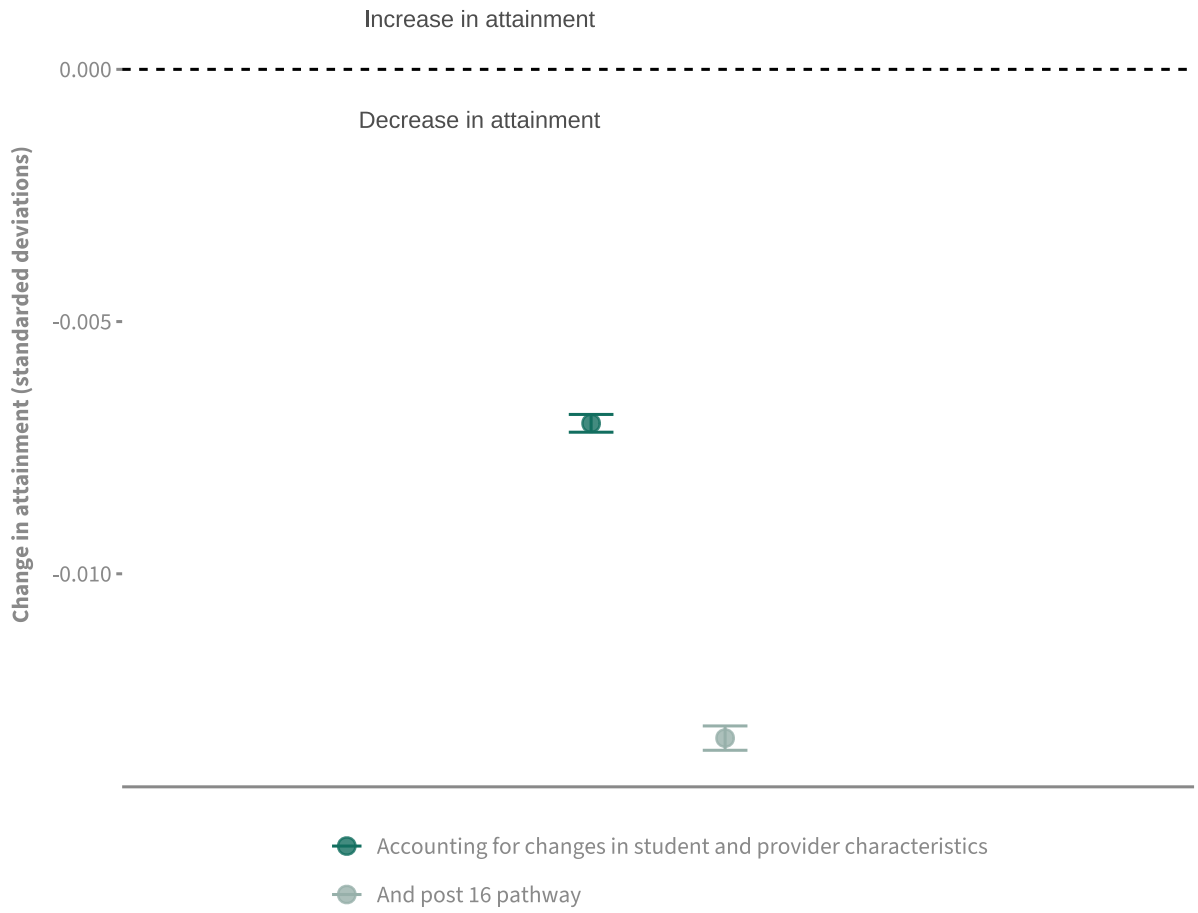
This implies that an overmatched student has *lower* odds of completing their qualifications than an otherwise similar, well-matched student, but only if they were on the same type of study programme. This may reflect the substantial difference in retention rates between pathways. As shown in Research Question 2, level 3 programmes have higher retention rates. Our findings

therefore suggest that students with borderline GCSE results for level 3 study are more likely to complete their 16-19 programme if they overmatch onto a level 3 pathway, even though they would still have lower odds of completing their qualifications than a typical level 3 student

The odds ratios shown on Figure 3.16 are the difference associated with overmatching by one additional percentile. The estimates lie very close to 1 (no difference) because it captures the effect of a small change in student to course matching.

For illustration, a student who overmatched by 10 percentiles would translate to an odds ratio of around 1.15, once student and provider characteristics are controlled for. This means they would have 15 per cent higher odds of completing their courses than an otherwise similar student who was perfectly matched, without taking study programme into account.

Figure 3.17: 16-19 Change in attainment associated with overmatching by one percentile, 2019 GCSE finishers



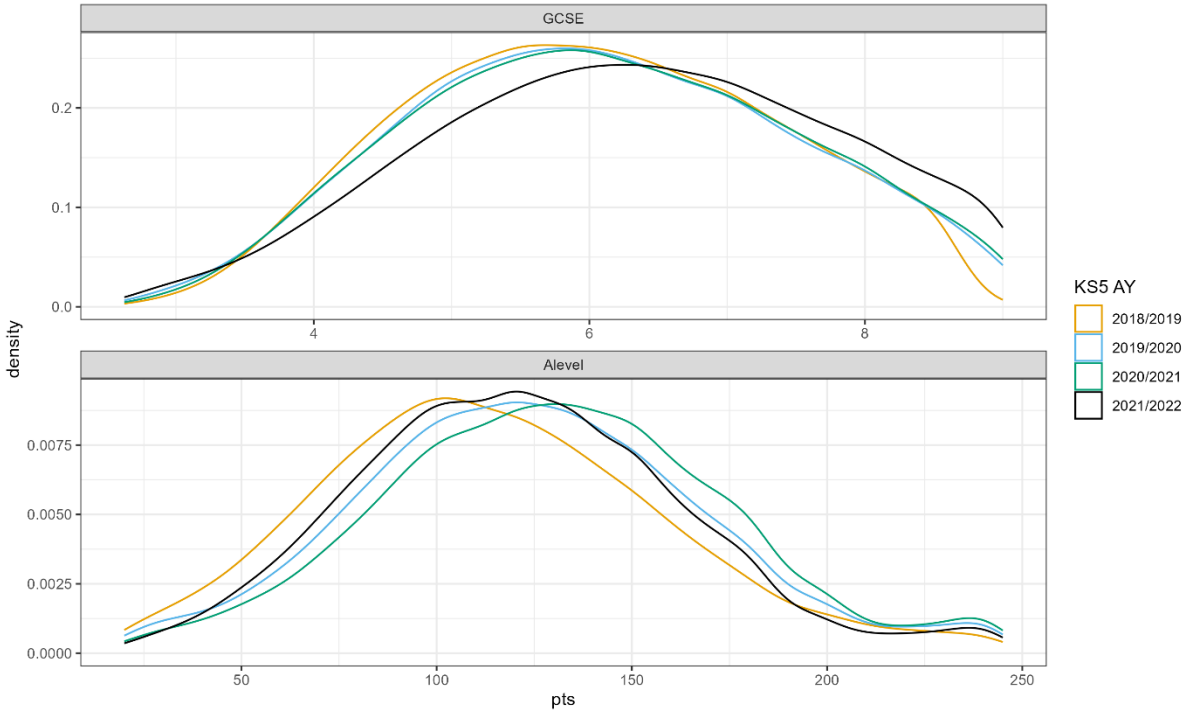
In Figure 3.17, the values below 0 demonstrate that over matching is associated with lower attainment outcomes on our average point score measure, regardless of whether we account for study programme/pathway. This is intuitive and suggest that with all else held constant, the more demanding the post 16 courses students choose, the lower grade they will achieve.

As with the retention chart, the estimate is measuring the response to a single percentile increase in overmatch, so the effect size appears small. As an illustrative example, a student that overmatched by 10 percentiles, would be expected to achieve around 0.1 of a standard deviation lower than a perfectly matched student, roughly equivalent to a tenth of an A level grade per qualification. When we additionally control for 16-19 pathway, the estimate becomes slightly more negative, at around 0.15 of a grade per qualification. Although these effects are modest, they confirm that overmatching is associated with slightly lower attainment

Higher education mismatch

In this section, authored by the Centre for Education Policy and Equalising Opportunity at UCL, we seek to understand whether exam cancellations and the resulting inflated teacher-assessed grades awarded during the pandemic (and on the "glidepath" after) widened existing inequalities in access to higher education courses. These patterns of grade inflation are shown in figure 3.18, and while the KS4 distributions are almost identical across cohorts in pre-pandemic years (top panel), we see grade inflation at KS5 in 2020 and again in 2021. This grade inflation is represented by rightwards shifts in the grade distributions seen in the bottom panel (and for 2022 KS4 in the top panel). Both panels only include students who went on to university, so this is not representative of all students who take GCSEs or A-levels.

Figure 3.18: Distributions of KS4 and KS5 points for each of our cohorts of interest



We document overall mismatch for each cohort we consider:

- 2018/19 – the year immediately before the pandemic;
- 2019/20 – the first year of the pandemic and Centre Assessed Grades (CAGs),
- 2020/21 – the second year of the pandemic and Teacher Assessed Grades (TAGs).
- 2021/22 – the first post-pandemic year, when student sat exams, but grading was on a more lenient "glidepath". This cohort's KS4 exams were cancelled in 2020 and hence we see GRADE inflation in their GCSE results (bottom panel, figure 3.24).

We will henceforth refer to these years as 2019, 2020, 2021 and 2022. As more selective courses were allowed to expand to take in students who met their offers with inflated grades in 2020, this released places at lower ranked universities who would likely have filled their spots with lower achieving pupils. This may have generated an overall increase in overmatch.

We next study mismatch at each decile of the ability distribution of university students to account for the increasing difficulty of overmatching towards the top and increasing difficulty of undermatching towards the bottom. Note also that this is not the full ability distribution as it only includes university attendees.

We then document inequalities in the match between student ability and degree course quality for students with different characteristics (ethnicity, socio-economic status, gender) and across different school types. Inequalities in access to better-ranked courses may exacerbate existing inequalities as there can be significant benefits to attending certain subject and institutions.[xiv] We are also interested in how these "mismatch gaps" evolved during the pandemic.

We first investigate the distribution of mismatch for each characteristic of interest by plotting the average course ranking at each decile of the ability distribution overall, for certain characteristics, such as men and women, and across school types. We then focus in on any inequalities in match across school types or student characteristics in a regression framework, which also allows us to test whether these inequalities remain when we control for other characteristics, prior attainment and 16-19 mismatch.

Overall mismatch

Our first key finding is, surprisingly, that overall mismatch hardly changed between 2019 and 2022. In figure 3.25 we plot the distribution of mismatch for all students by academic year. The distributions across cohorts are very similar, with only a slight decrease in the peak, and a slight increase in spread each year from 2019-2022. This is confirmed in figure 3.26 which shows around 67% of students are "matched" – on a course within 20 percentiles either side of their rank – in 2019, which falls to 66% in 2021. However, this was driven by slight increase in undermatch, while overmatch fell between 2019 and 2021. Interestingly, we do see an increase in overmatch and undermatch in the first post-pandemic "glidepath" year of 2022; however, as these students' GCSEs were also affected by the pandemic it is difficult to draw any conclusions about these changes. A potential explanation for the counterintuitive findings in 2020 and 2021 is that although grade inflation in the pandemic allowed some students onto higher ranked courses, it also allowed access for some students who would not otherwise have attended university. These students were lower ranked, and this therefore pushed everyone else upwards in the rankings to match their new courses, meaning that we do not observe the expected increase in overmatch.

Figure 3.21 shows average mismatch within each decile of the Attainment 8 score, to help understand how mismatch varies across the attainment distribution. Unsurprisingly, given the lack of overall change in mismatch across these cohorts, we see little difference in the overall distribution of mismatch by attainment. To produce these figures, we plot the average course decile (y-axis) for students in each attainment decile (x-axis), ranking students by their Attainment 8 score, and courses ranked by the score of their median student. If all students in a decile were

perfectly matched to their course the point would lie on the 45-degree line; any point above the line represents a decile in which most students are overmatched and any below the line are deciles in which most students are undermatched.

Figure 3.19: Distribution of Higher Education mismatch (2019-2022)

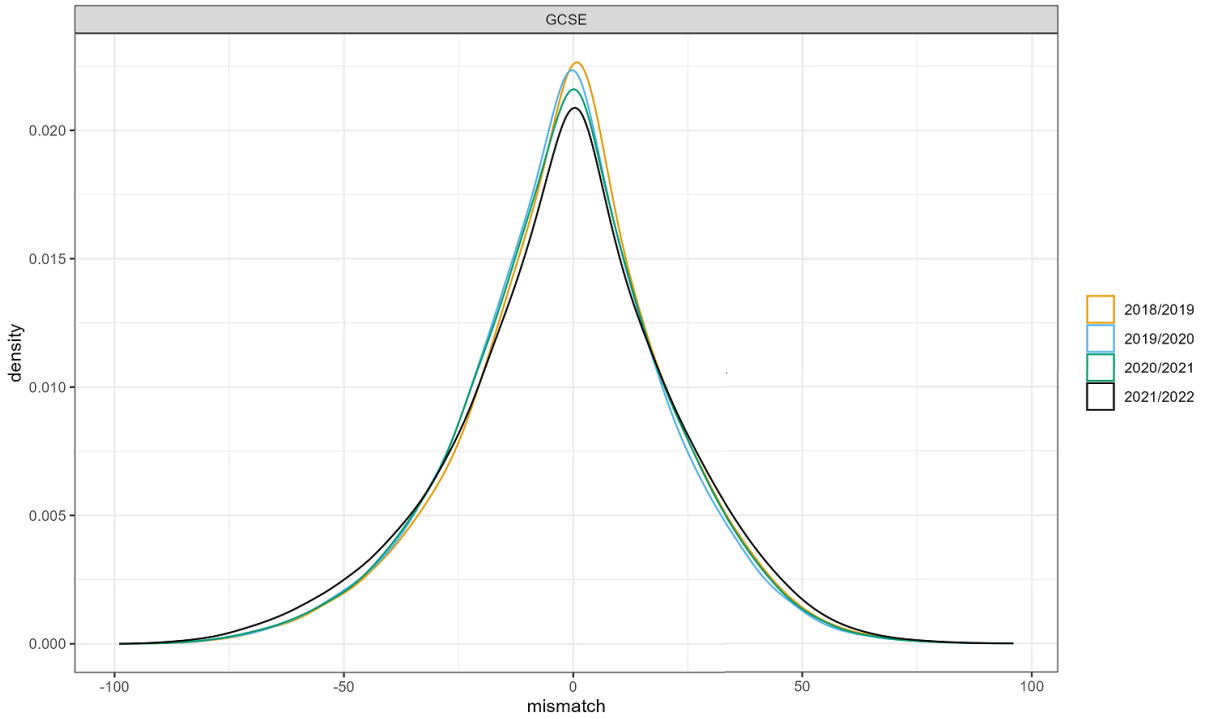


Figure 3.20: Total Higher Education undermatch, match and overmatch (2019-2022)

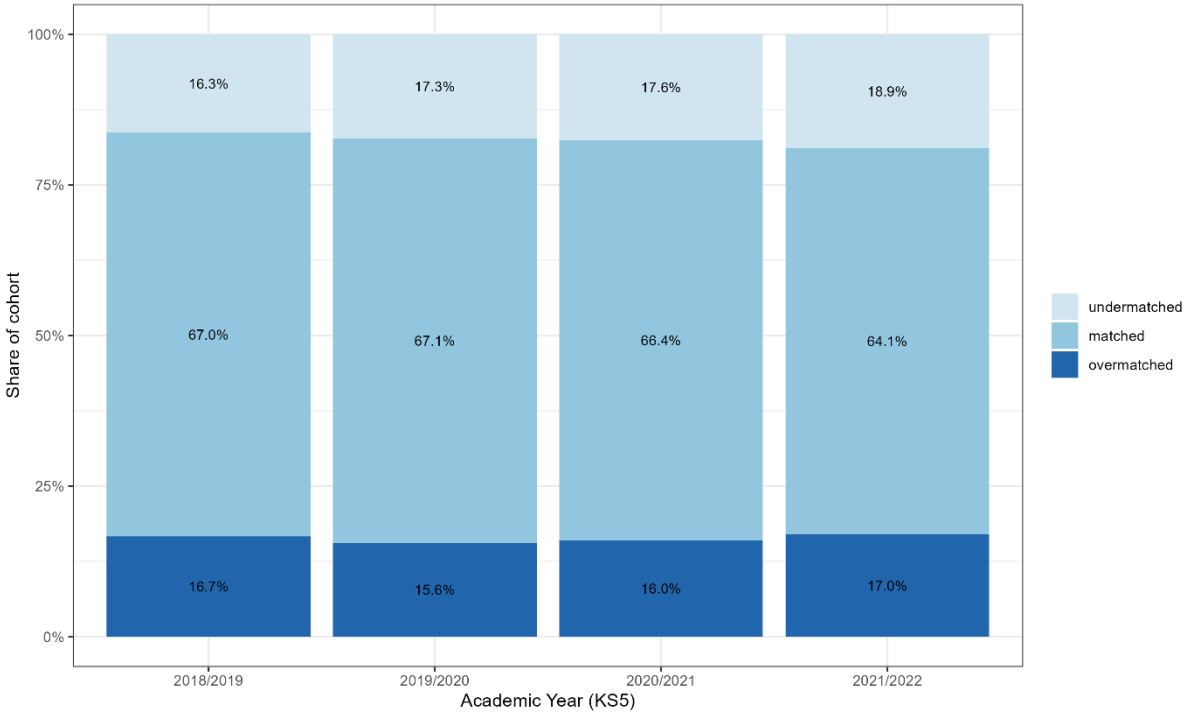
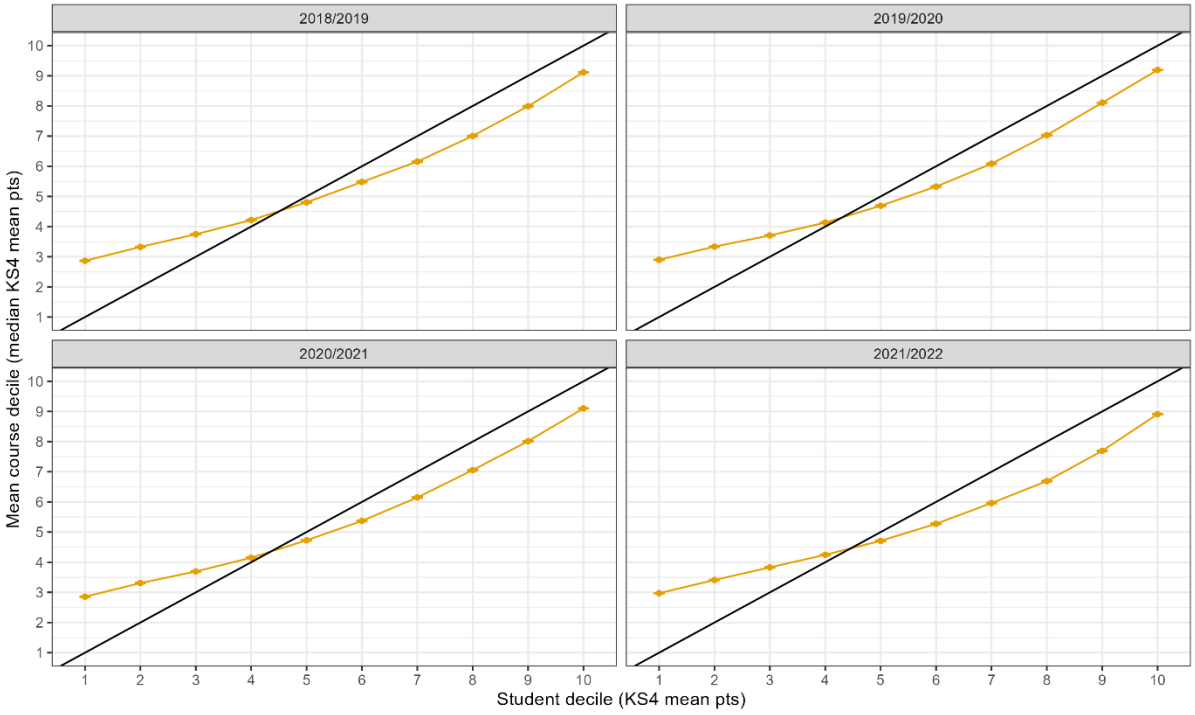


Figure 3.21 Average HE mismatch by KS4 decile (2019-2022)



While there was little overall change in match over the pandemic, we do see increases in match inequalities between pupils from different school types and with certain characteristics between 2019 and 2022. We next discuss each of these in turn.

Mismatch by school type

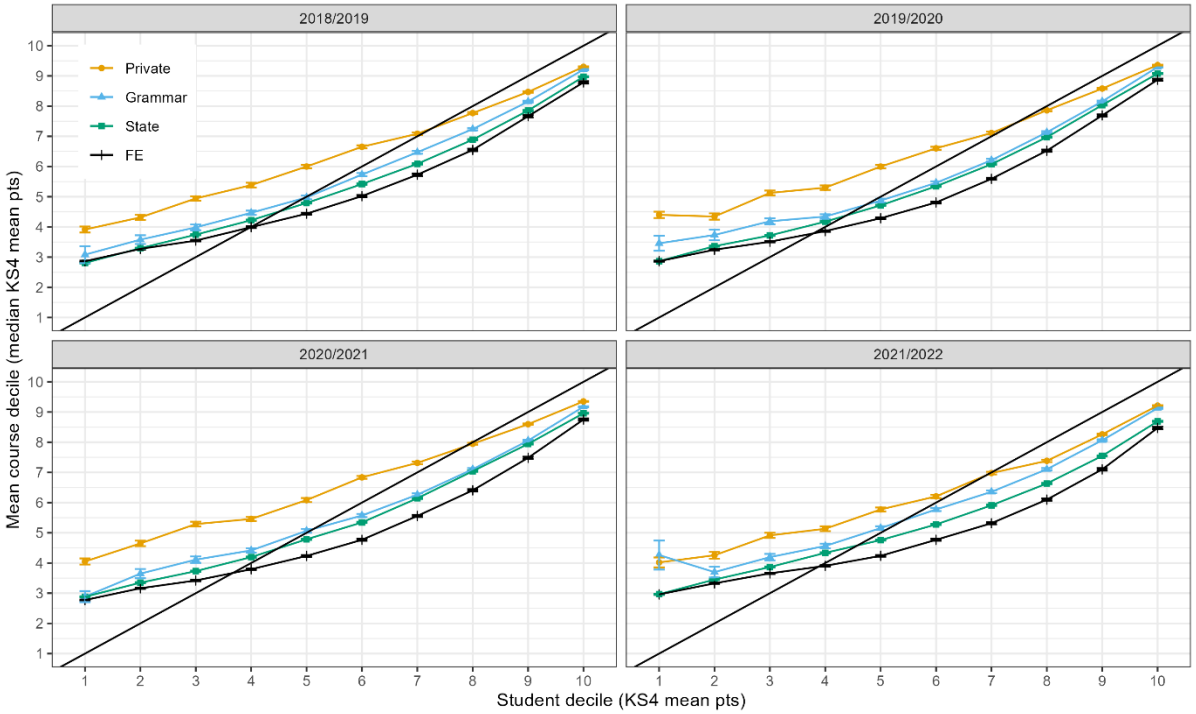
While inequalities in match by SES, gender and ethnicity have been documented before[xv] [xvi] [xvii], to date there has been little emphasis on the role of independent, fee-paying schools on match, with one recent exception.[xviii] These schools are significantly better resourced than those in the state sector and, as well as serving children of better-resourced parents, are likely able to offer better careers advice and assistance with university applications, increasing pupils' chances of gaining a place at a higher-ranked university. They also have greater incentives to ensure their pupils are placed at such universities, since this is an expectation of parents who pay to send their pupils to these schools.

Comparing pupils from different school types reveals large inequalities in the ranking of courses that similarly attaining students from state and private schools can access. In Figure 3.22 we replicate the plot in figure 3.21, splitting the sample into students from private schools, grammar schools, state schools and FE colleges. We classify the school at age 17/18, capturing the institution they attended when applying to university.

Looking first at the pre-COVID cohort (top-left panel, 2019), students from private schools have a marked advantage in accessing higher-ranked courses. They attend higher-ranked degree courses than their similar ability peers from state schools and further-education (FE) colleges at every decile of the attainment distribution, with the gaps being substantially wider than found between low- and high-SES pupils in Campbell et al (2022). Students from private schools are overmatching at most ability deciles apart from the top three (where the ceiling on grades limits overmatch), whereas state-school pupils are undermatching on average at the 3rd or 4th attainment decile.

The gap between those attending private schools and others is particularly substantial in deciles 2-5 of the age 16 attainment distribution, suggesting that lower-performing GCSE students (among those who attend university) benefit most from the advantages of private schooling for university entry. Grammar school pupils are on slightly better-ranked courses than their other state school and FE college peers of similar ability, and this is especially true for those in the middle of the achievement distribution (4th to 6th deciles). Note that since grammar schools select on ability, those at this part of the attainment distribution are in the minority in these schools. Mirroring the findings for private schools, this suggests grammar schools may offer the most benefit to lower attaining pupils. Results for students at FE Colleges indicate they are attending the lowest ranked courses on average among their "ability peers" – even more so than those from state schools.

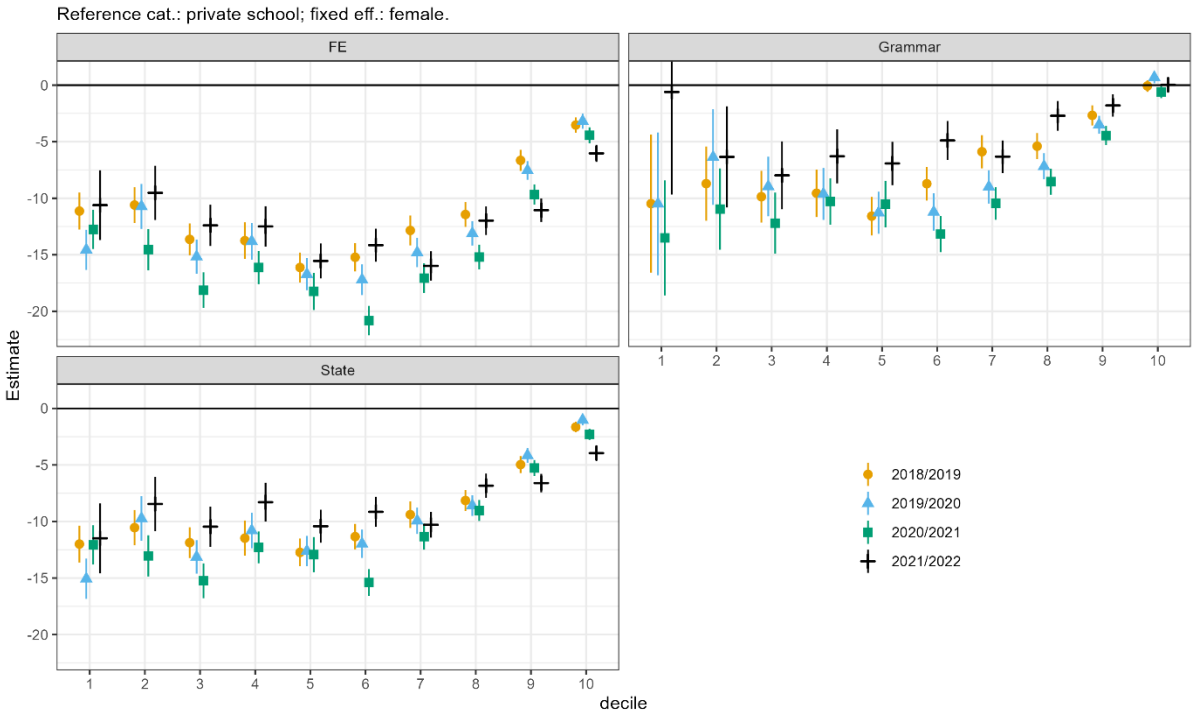
Figure 3.22: Average HE mismatch across school types by KS4 decile (2019-2022)



How did these gaps change in 2020 and 2021, when exams were replaced by teacher assessments? There appears to be little evidence on these plots of any substantial change in these patterns in the COVID-disrupted years. However, when we study these differences more closely in Figure 3.23 below, a widening of the gap to private schools for all three school types across attainment deciles becomes clear. These gaps grew most at the in the 6th, 7th and 8th deciles. These plots display the coefficient on school type from a regression of our mismatch index on school type (with private schools as the reference category), including gender as an additional control.[10] Looking at the state school graph (bottom left panel of figure 3.29) we can see that while the fairly substantial gap between state and private school students remains relatively unchanged in 2020 versus 2019, there is a widening of the mismatch gap in 2021, especially for students in the 6th decile of attainment and above. Similar patterns can be seen for grammar school and FE college students versus private school students. This evidence suggests private school students benefitted disproportionately over students at other school types from the switch to teacher assessment. This finding is supported by the shrinking of the private-state gap in 2022, when external exams returned. However, we cannot separate the return to exams and "glidepath" from the effects of COVID-cancelled GCSEs for this cohort.

[10] In the case of our school type analysis only limited controls are available since private schools generally (i) do not complete the school census which is our source for demographics information on students; and (ii) do not enter their students into SATs at KS2.

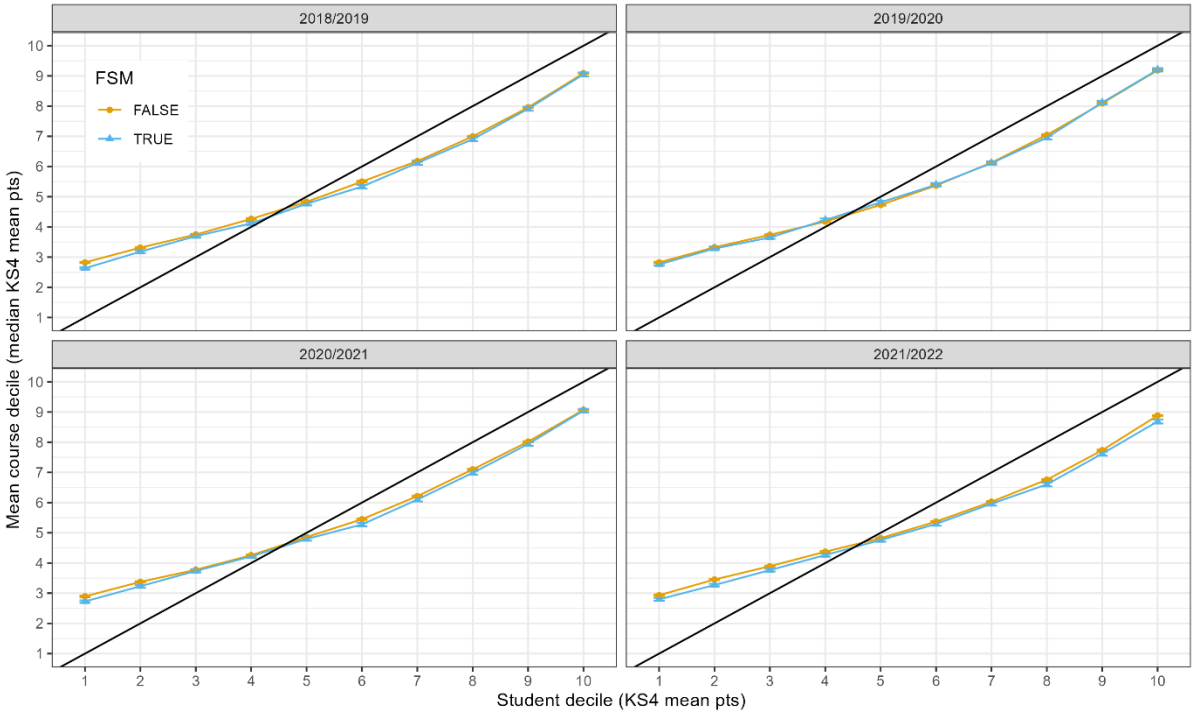
Figure 3.23: HE match gaps across school types by KS4 deciles (2019-2022) (ref. private schools)



Socioeconomic gaps in mismatch

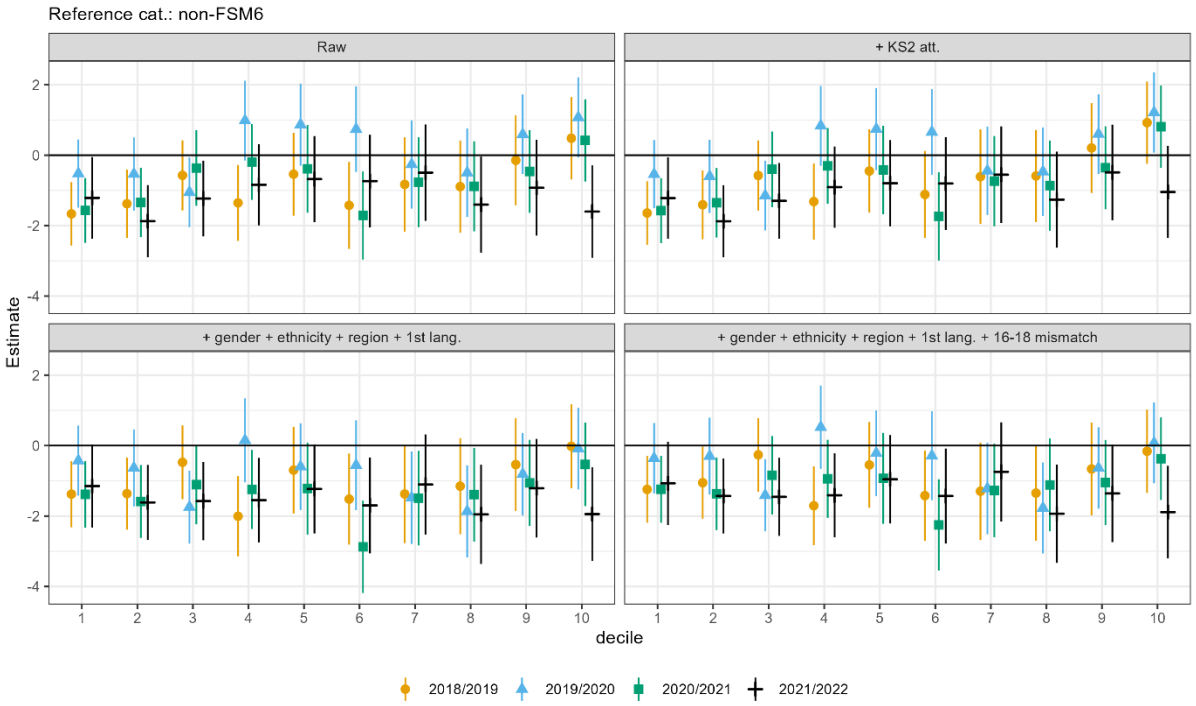
In this and the following subsections we focus exclusively on state-school students, for whom we have detailed demographic measures and prior attainment. We turn first to inequalities in match across students from different socioeconomic backgrounds, measured by their eligibility for free school meals (specifically we use the FSM6 measure, an indicator for having been eligible for FSM at any time in the last 6 years). For our pre-pandemic year (2019) we find very little evidence of inequalities in match throughout the achievement distribution (figure 3.24), and this pattern is unchanged during the pandemic. This is surprising, as previous work has found large mismatch gaps by socioeconomic status. However, our FSM measure here only differentiates the most disadvantaged students and combines the rest into a single category; previous work has used location-based measures of disadvantage to achieve more granularity. We chose to focus on a measure (FSM) that we knew applied at an individual level.

Figure 3.24: Average HE mismatch across SES (FSM status) by KS4 decile (2019-2022)



Still, examining these differences more closely in figure 3.25, we see gaps in match across the entire attainment distribution, with FSM students matching to courses around 2 percentiles lower ranked than similarly qualified non-FSM students, except at the very top of the attainment distribution where these gaps are close to zero. The patterns across time are then quite volatile, with gaps shrinking a bit for the middle deciles in 2020 (blue triangles) and then opening again in 2021. In 2022 there are gaps of 1-2 percentiles across the attainment distribution. The panels in figure 3.25 show the cumulative impact of adding controls to regressions of the mismatch index on FSM status. We first plot raw gaps, then control for prior (KS2) attainment, then gender, ethnicity and English as an additional language (EAL), and finally age 16-19 mismatch (as calculated in the previous section). The model with all controls sees negative or zero match gaps for FSM students for all deciles. Adding mismatch makes little to no difference to the estimates.

Figure 3.25: HE match gaps across SES (FSM status) by KS4 decile (2018-2021) (ref. non-FSM)



Gender gaps in mismatch

We next turn to gender gaps. As Figure 3.26 illustrates, pre-pandemic, males tend to enter higher-ranked courses than similar ability females, except at the bottom of the attainment distribution, with the biggest gaps in the middle of the student attainment distribution. Interestingly, the pro-male gaps narrowed in 2020 and 2021 (and pro-female gaps appeared for the bottom two deciles), suggesting female students disproportionately captured the benefits of exam cancellations. They remained narrowed in 2022.

Focusing more closely on these gaps in Figure 3.27, where we also condition on potential confounders, we see clearly that these gaps narrow considerably in 2020 and again in 2021. The narrowing of these gaps is in line with evidence that teacher assessment tends to favour girls.[xix] [xx] [xxi] [xxii] [xxiii] This hypothesis is supported by the grade distributions shown separately by gender in figure 3.28, which show that while grade inflation appears quite uniform among female students (rightward shift of whole distribution) grade inflation occurred less uniformly among male students (reduced peak accompanied by a rightward shift).

In terms of the effects of adding controls to these models, we find very different results compared to what we saw with SES gaps. Adding prior attainment (top right) and demographic (bottom left) controls has little to no effect on the coefficients. However, adding 16-19 mismatch as a control moves all the gaps in favour of women, shrinking pro-male gaps in the top half of the distribution and opening up pro-female gaps in the bottom half.

Figure 3.26: Average HE mismatch across gender by KS4 decile (2019-2022)

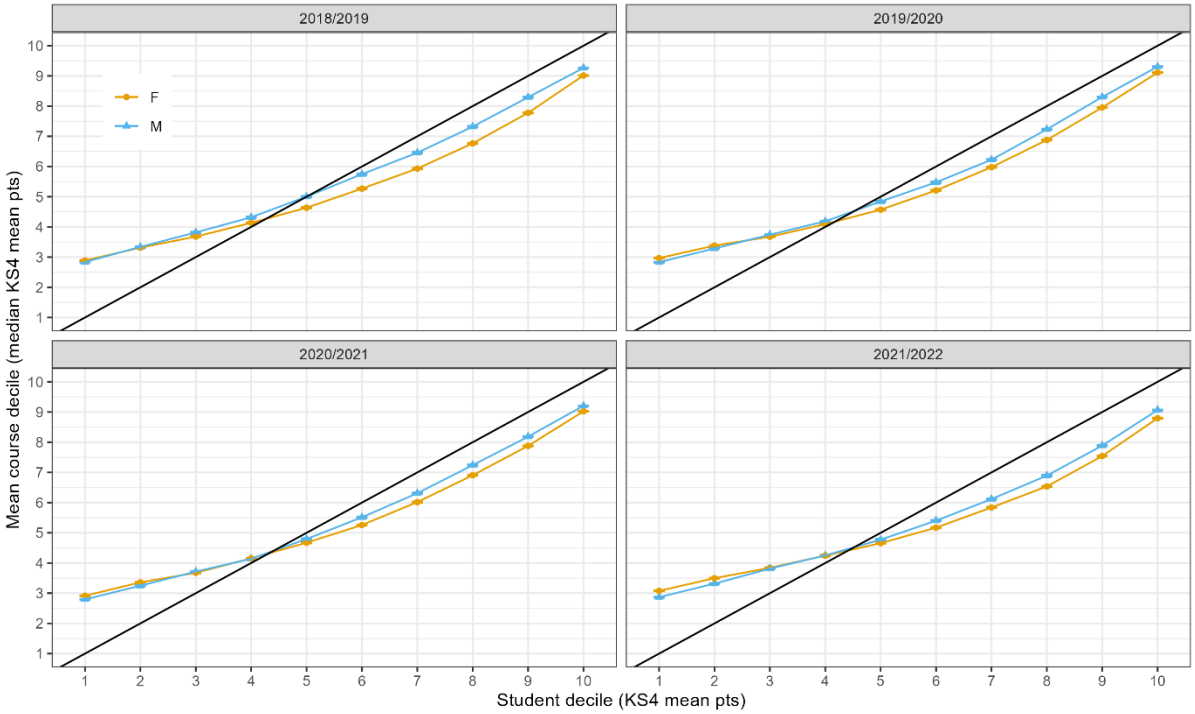


Figure 3.27: HE match gaps across gender by KS4 decile (2018-2022) (ref. female)

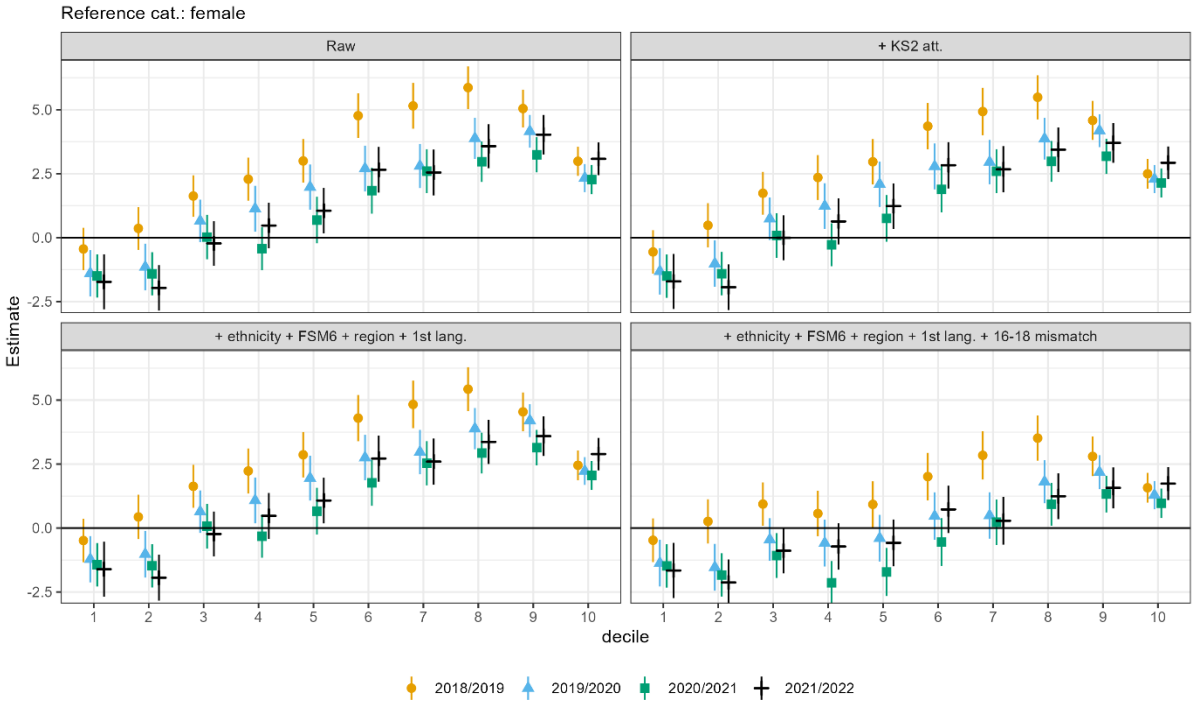
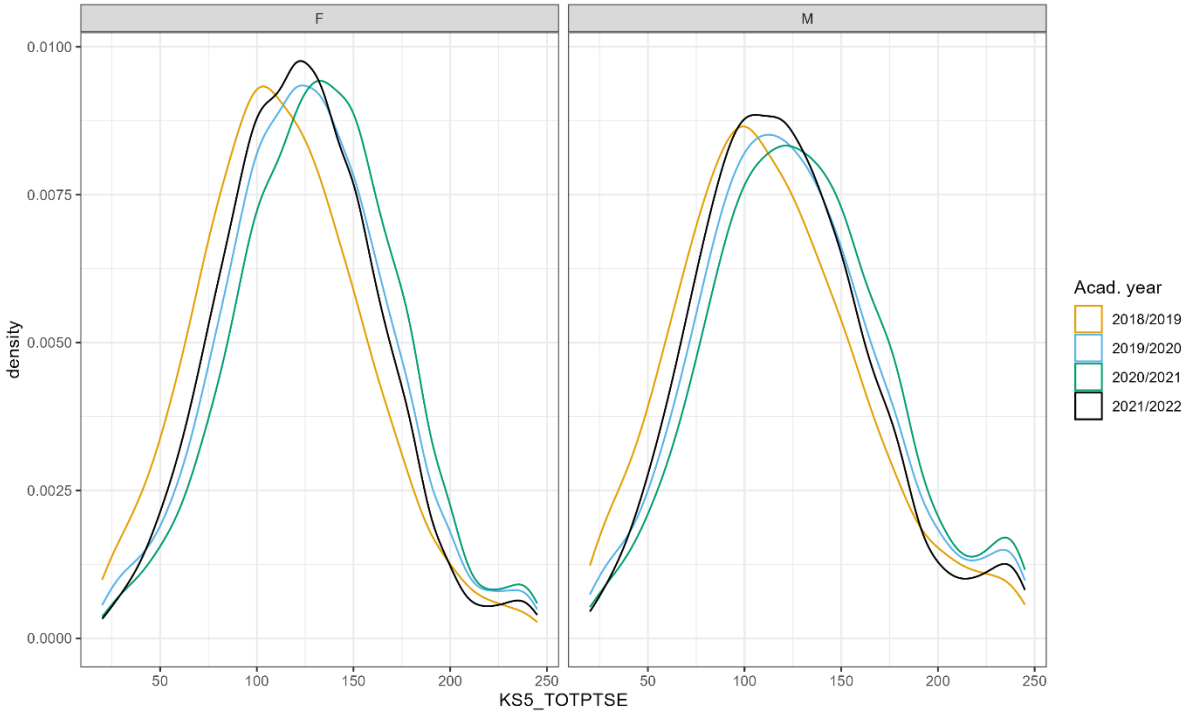


Figure 3.28: Grade distributions for male and female students by cohort (2019-2021)



Ethnicity gaps in mismatch

Finally, we examine inequalities by ethnic group. Mismatch for each ethnic group follows similar patterns to that overall, with lower ability students overmatching and mid- to high-ability students undermatching (figure 3.29). No single ethnic group stands out at this level of analysis. However, when we focus in on the inequalities between ethnic groups at each attainment decile, we see that most ethnicities (with the exception of Asian students) access better courses on average than white students in the same ability decile. There appears to be little change during the pandemic, with gaps perhaps widening.

In figures 3.31 and 3.32 we repeat this analysis after aggregating all ethnic minorities into one group, to help aid identification of any patterns over time or as we add controls. First, in figure 3.31, we can see a clear widening of the white/non-white gap in 2020 and this then narrows again in 2021 and 2022. Focusing in on the gap in figure 3.32, this pattern becomes even clearer with gaps of over 2.5 pp opening in 2020, which then partly close in 2021 and 2022. Adding controls has little impact on these gaps, until we control for 16-19 mismatch which shrinks the gaps towards zero.

Figure 3.29: Average HE mismatch across ethnic groups by KS4 decile (2019-2022)

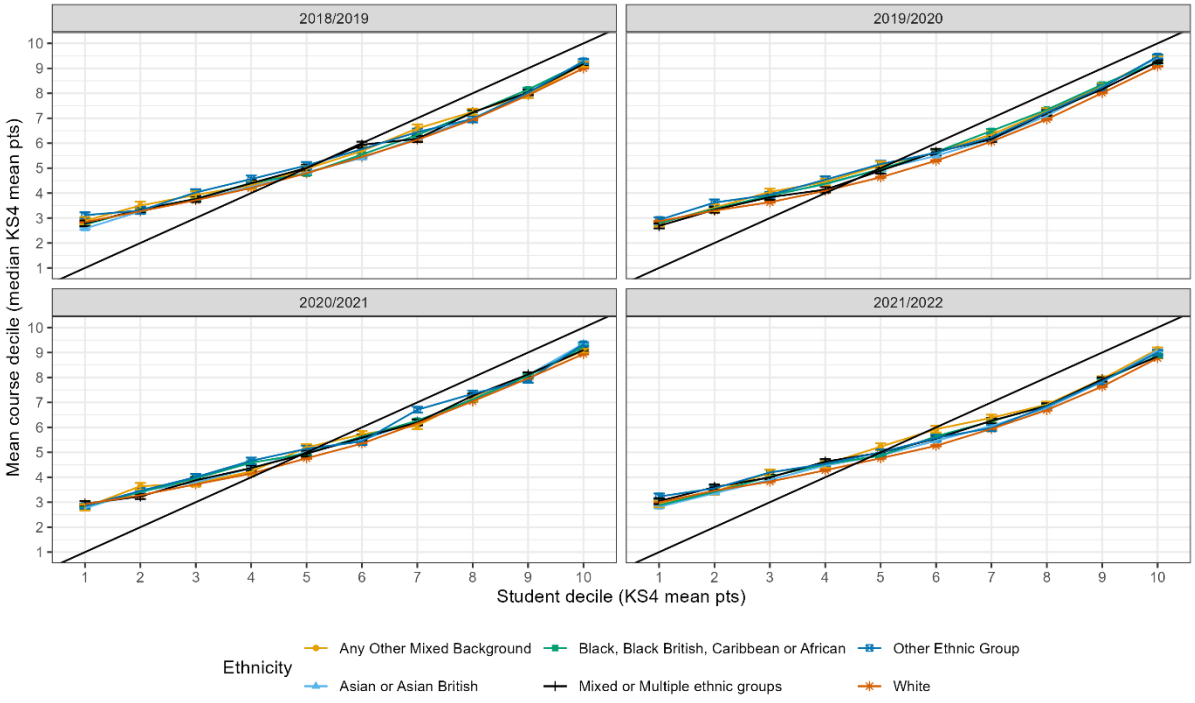


Figure 3.30: HE match gaps across ethnicity by KS4 decile (2019-2022) (ref. non-white)

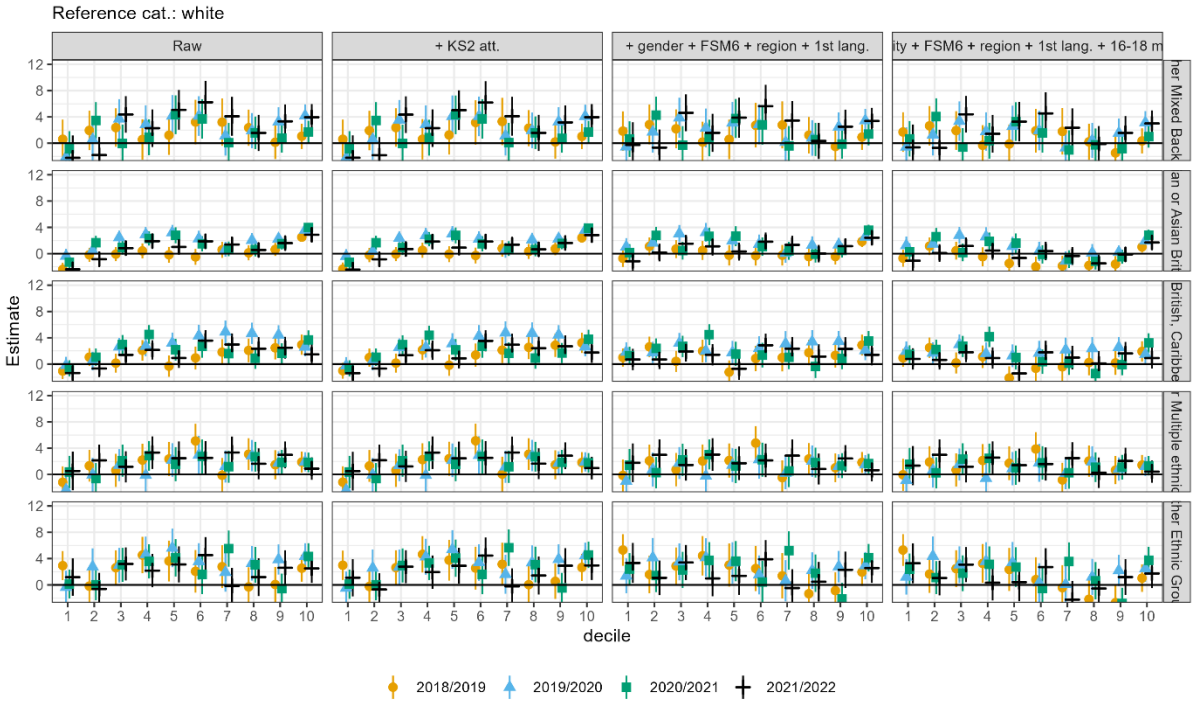


Figure 3.31: Average HE mismatch across white/non-white by KS4 decile (2019-2022)

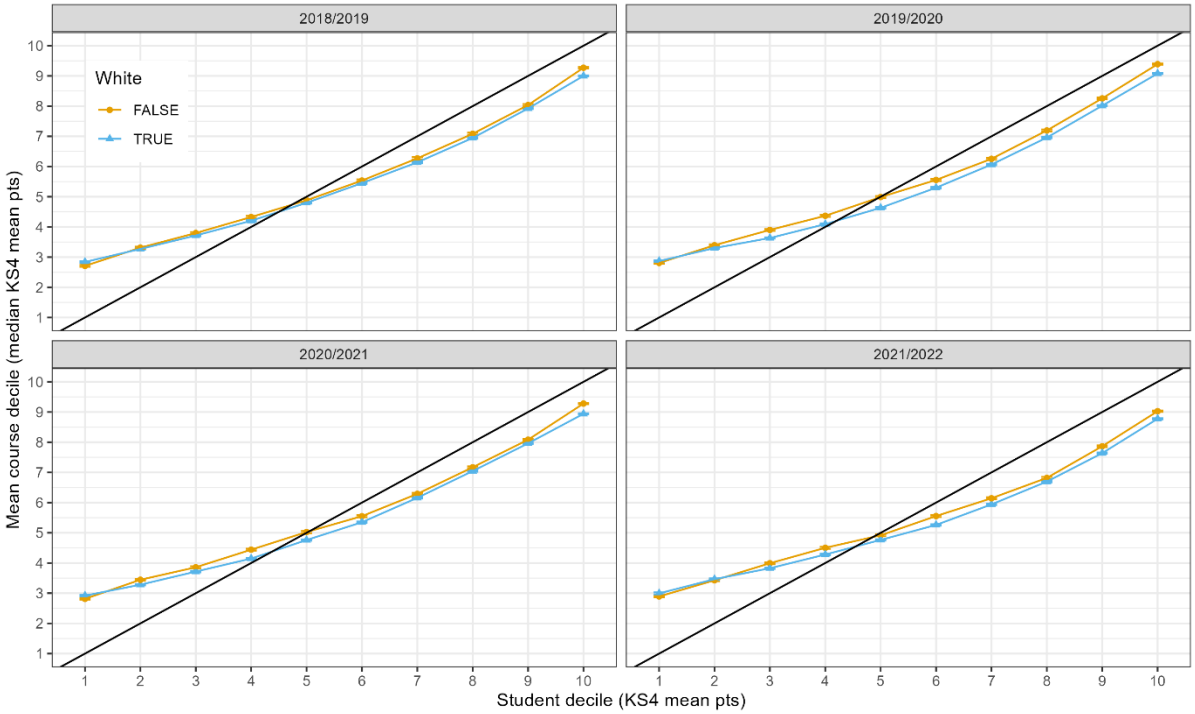
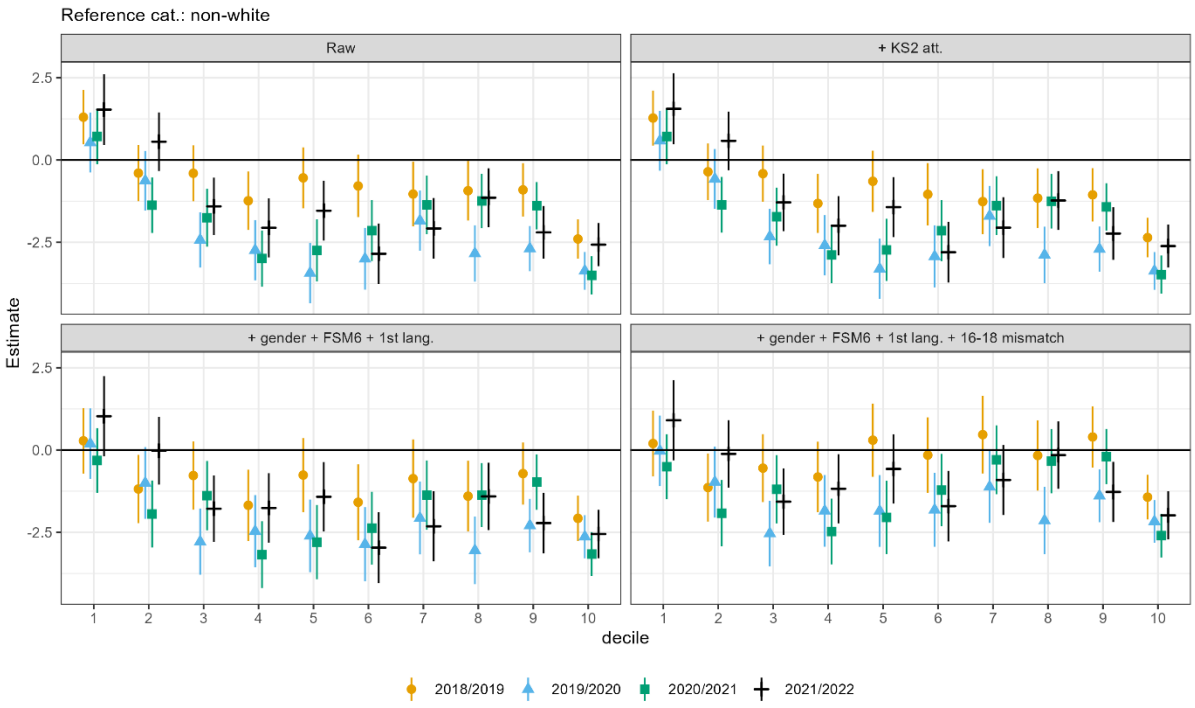


Figure 3.32: HE match gaps across white/non-white by KS4 decile (2019-2022) (ref. non-white)



Conclusion

The study choices students make after finishing their GCSEs at age 16 shape their chances of progressing into skilled employment or higher education. The pandemic temporarily reshaped who accessed which pathways, particularly for students on the margins of meeting level 3 entry requirements. Understanding whether these shifts expanded opportunity or widened inequalities is essential for ongoing and future qualification reform, accountability arrangements, and providing targeted careers guidance and support for vulnerable learners.

The higher GCSE results awarded under Centre and Teacher Assessed Grades (CAGs/TAGs) afforded many students the opportunity to study on courses that they otherwise would not have met the entry requirements for. The increase in A level and other level 3 study for these year groups confirm that more students aspire to study at level 3 than are usually able to.

Economically disadvantaged students, those with special educational needs, students from all ethnic backgrounds and regions of the country saw an increase in enrolment to level 3 study programmes following the awarding of CAG/TAG GCSEs. However, increases were often less pronounced for more vulnerable student groups.

Our analysis showed a decline in the proportion of students completing their level 3 courses for the cohorts awarded CAG/TAG GCSEs. This suggests that those who switched to level 3 qualifications as a result of higher GCSE grades may have struggled, however, it is not possible to disentangle this from the ongoing, disruptive effects of the pandemic which will have continued to hamper students learning.

Retention rates vary by background characteristics, but our modelled analysis suggests that for the most part, these gaps weren't exaggerated by the changing entry patterns following CAG/TAG GCSEs, and in many instances narrowed slightly.

Furthermore, students who newly met entry requirements *were* often able to complete their courses. Even when we look at retention rates amongst level 3 students with the lowest prior attainment (most likely to be those that would not have met entry criteria in a usual year) we still see that more than two thirds completed their study programmes. This compares to 80-90 per cent for the level 3 cohort as a whole.

Course completion rates in this range do not provide strong evidence for simply relaxing entry criteria, they do however demonstrate that there is a group of students who are capable of level 3 study but are often restricted in their opportunity.

Increased entry to level 3 courses was not the only trend observed since the pandemic. We also see a worrying increase in the proportion of students not studying towards any substantial qualifications post 16, which appears to be particularly acute for economically disadvantaged students and those with an Education, Health and Care Plan. Unlike many other trends observed, this decline in participation has not reversed since the end of the pandemic. The introduction of post 16 auto-enrolment is a positive step towards countering this trend, but more information is

needed on how it will work in practice, and further action to support young people to *stay* in post 16 education is required.

In the transition between key stage 4 and 16-19 study, we find systematic mismatch patterns across student and provider characteristics. Male students are more likely than female students to overmatch, especially amongst the highest achievers; White students are more likely to undermatch than students from Asian or Black backgrounds; and students in selective schools and those in London are more likely to overmatch. Our mismatch analysis provides insight into the opportunity structure of the post 16 system: who feels encouraged to stretch themselves, who is steered towards less demanding options[11], and where constraints in provision or guidance may limit choice. While some degree of mismatch is expected and often appropriate, reflecting student preference, career goals, or school/college offer, persistent differences between groups may signal structural inequalities. The introduction of V levels may simplify students' choice of post 16 study, which has the potential to reduce mismatch in the coming years.

The patterns of mismatch into 16-19 education remained remarkably stable following the GCSE grading adjustments in the pandemic, but our analysis suggest that this may reflect *how* students matching behaviour changed. As noted previously, disadvantaged students were slightly less likely than their non disadvantaged peers to switch onto level 3 study programmes following the pandemic. In our mismatch analysis, this greater tendency toward undermatching was partly offset by increased overmatching within qualification types, where disadvantaged students were slightly more likely to choose more demanding subjects.

Irrespective of changes following the pandemic, our analysis confirms that the existing gaps between student groups will result in meaningful differences in outcomes. It is established that higher level qualifications lead to improved employment and earning outcomes in later life,[xxiv] but furthermore, students that overmatch onto more stretching pathways appear more likely to complete their 16-19 study programme in the first place. However, this improvement in retention rates does not extend to overmatching based on subject difficulty within the same pathway (for example A levels), which appears to be associated with slightly poorer retention outcomes.

Strengthening careers education, information, advice and guidance is essential to reducing patterns of undermatch, particularly for disadvantaged and SEND learners. One practical way to improve this will be to make routine use of the course ranking data developed in this research, helping advisers and students understand the relative demands of different qualifications. Embedding these rankings into guidance tools would support more consistent, transparent advice and help ensure students are choosing pathways that are appropriately stretching. EPI will continue work to consider how the 16-19 course rankings developed in this research can be adapted into a set of resources schools can use to support their year 11 students.

[11] Our methodology creates a proxy for course difficulty based on the prior attainment of students entering each qualification. It is not a perfect assessment of exactly which courses are more demanding or stretching than others

Finally, we consider how mismatch in the transition between 16-19 study and higher education varied during the pandemic.

Although the evidence is mixed on whether HE mismatch (being on a course with higher- or lower-attaining peers) per se is harmful, there are widely documented benefits to studying at a better-ranked institution and studying a more selective subject, benefits often referred to as course effects. Our approach allows us to compare the average course attended by different groups of students throughout the attainment distribution. We maintain the assumption throughout that for two students of the same ability, being on a higher ranked course is better.

We document pre-pandemic levels of higher education mismatch in 2019 for all students overall, and across groups with different characteristics (SES, gender, ethnicity) and those from different school types. We then repeat this exercise for the two cohorts whose KS5 exams were cancelled due to the pandemic, and they were awarded (inflated) teacher assessed grades. We are interested in understanding the impact of this grade inflation on mismatch overall, and whether it improved or exacerbated existing inequalities in match.

We find that there are significant inequalities in the rank of course students from different backgrounds and from different school types are able to access on average, when compared with peers of similar ability. The largest inequalities are between private- and state-school students, with private school students accessing courses ranked around 10 percentiles higher than their 'ability peers' from state schools. This is true across the attainment distribution. These inequalities were slightly exacerbated by exam cancellations during the pandemic.

The next largest inequalities pre-pandemic were between male and female students. Male students accessed courses ranked up to 5 percentiles higher than their female same-ability peers, with the largest gaps in the upper half of the ability distribution. Interestingly, female students closed these gaps substantially when awarded teacher assessed grades during the pandemic, suggesting these gaps may stem from gendered differences across assessment methods. Several studies have revealed bias in teacher assessment (versus assessment based on external exams, and our results suggest such methods may work to the advantage of more advantaged students, and girls, especially in the UK.

Finally, we also document pre-pandemic inequalities that favoured advantaged students over disadvantaged (FSM) students, which closed slightly during the pandemic for all but those in the top attainment decile. Perhaps surprisingly, ethnic minority students generally outperformed white students in terms of access to better ranked courses – this was unaffected by the pandemic.

Overall, although the pandemic induced changes to assessment and associated grade inflation did exacerbate some inequalities, these changes had a much smaller impact than might have been expected. This suggests that the pre-pandemic inequalities are consequences of the whole university admissions system and are relatively robust to (unexpected) changes in assessments and grading standards.

Policy recommendations

1) Our research supports the introduction of V levels. The growing demand for 16-19 programmes that combine A levels with vocational or technical options aligns with this direction, and previous evidence showing that T levels are not suitable for all learners reinforces the need for more flexible mixed pathways.

   Where mixed programmes reflect genuine demand and lead into high value progression routes, they should be reflected in the accountability system and other published data sources. Current reporting focuses on A levels and other level 3 qualifications separately. With the introduction of V levels, which are designed to support flexibility, it would be beneficial to regularly report on the attainment, retention and destination outcomes of those studying mixed programmes. Standardised grading is a key feature of V levels, this means more meaningful reporting across subjects should be possible, compared to the current accountability metrics for vocational qualifications.

2) Although our regional findings, such as the higher prevalence of overmatching in London, do not provide direct evidence that a greater concentration of providers automatically leads to more stretching choices, they do highlight a broader structural point: sufficiency of local post 16 provision is a necessary pre-requisite for well-matched choices. This is reinforced by previous EPI research, which shows that students with similar prior attainment are more likely to study at level 3 if they attend a school sixth form.[xxv] The government and education providers need to ensure that students are able to choose appropriately demanding academic, applied or technical pathways within a realistic travel area, and careers advice should be connected to local and sectoral provision.

3) Retention rates are substantially lower for economically disadvantaged students and those with special educational needs, highlighting the need for more systematic and proactive support if the worrying increase in students not in education or training is to be reversed. The current funding system creates a cliff edge at age 16, with disadvantaged students attracting less support despite evidence that attainment gaps continue to widen during the 16-19 phase. To address this, we reiterate our call for a dedicated student premium for the 16-19 phase, mirroring the pupil premium in schools. This would give colleges the resources needed to provide structured academic, pastoral and transition support to the students most at risk of disengagement.

   Although the government provides vulnerability data to providers through the Get Information About Pupils (GIAP) service, this information is often uploaded too late for effective early intervention and is inconsistently accessed by colleges. Ensuring providers receive timely data, alongside expectations for its routine use, would enable earlier identification of at risk learners and more targeted retention strategies.

4) Maintain level 3 entry requirements to ensure course integrity, but encourage providers to use flexible, evidence-based discretion where students narrowly miss criteria. Promote stepped pathways (e.g. using post 16 level 2 qualifications as initial stepping stones) to support students who could succeed at level 3 with targeted preparation. The government's proposals in response to the consultation on post 16 level 3 and below pathways appears consistent with this approach.

5) Our findings regarding mismatch in higher education suggest more needs to be done by policymakers, UCAS and schools to reduce inequalities in the courses that students from different schools and backgrounds can access. This could encompass a wide range of activities such as information, advice and guidance on how to choose well matched courses, as well as encouraging schools and universities to target foundation years courses at disadvantaged students. UCAS have recently added a "match tool" to their website, which allows users to see the actual grades held by previously accepted students (2022–2024), rather than just the official published requirements, and shows what proportion of students with your grades were made an offer.

6) The widening of these inequalities following exam cancellations reinforces the message that external exams are the fairest and most equitable way to assess students.

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