

Subject choice trends in post-16 education in England

*Investigating subject choice
over the past 20 years*

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Notices

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The analysis was carried out in the Secure Research Service, part of the Office for National Statistics and draws on data from the National Pupil Database and Individualised Learner Record.

Please note that, in order to avoid the disclosure of any personal information, counts of fewer than 10 students have been excluded and/or rounded figures have been presented to protect the identity of individuals where necessary.

Foreword from the Advisory Group

The past twenty years have seen a number of important changes to the post-16 landscape: new qualifications created, existing ones reformed or scrapped, and an increasing emphasis on the study of STEM subjects. The higher education sector, in turn, has seen increasing shifts in student demand for different subjects, particularly within the SHAPE disciplines (Social Sciences, Humanities and Arts for the People and the Economy), and at least some of this is likely tied to disciplinary trends earlier in the education pipeline. In light of this context, members of the British Academy's policy team, together with Fellows specialising in education, were keen to investigate trends in post-16 subject choice and take-up over time, particularly in the SHAPE disciplines.

To answer this call, the British Academy commissioned the National Foundation for Educational Research (NFER) to conduct a detailed, quantitative analysis of subject choice trends at Level 3 in England using data from the National Pupil Database.¹ The objective of the study was to better understand how patterns of choice and subject combinations at Level 3 have changed over the past twenty years, and to explore the impact of the narrowing of the post-16 curriculum as a result of the virtual elimination of AS levels in Year 12. As Fellows of the British Academy, we were invited to act as an Advisory Group to oversee and guide this important piece of work.

As the national academy for the Humanities and Social Sciences, we are particularly interested in the shifts, opportunities and challenges for our disciplines at the post-16 level, and the wider implications these might have for pathways into studying SHAPE subjects in higher education, as well as for the knowledge and skills young people take out into the workplace and in wider society. This research expands the British Academy's existing policy work on the education pipeline including through our SHAPE Observatory and SHAPE Indicators, monitoring the health of our disciplines and mobilising them for the benefit of all.

We thank NFER for their hard work in providing us with such a comprehensive and rigorous analysis. This report does show how the number of subjects and different subject groups has reduced post-16, limiting the breadth of student choice. It gives us valuable insight into what is happening and why, but it has also raised new questions about likely future trends that will require further investigation. Our next steps at the British Academy will be to use these questions and the data provided by this report to deliver a second part to this research, which will explore the future trends the current system may deliver; the possible consequences these trends will have on education, skills and employment; and consider policy options to address these impacts as needed.

¹ Level 3 qualifications are the main exit point for most 18-year-olds from school or college into further study or the workplace. They include A-levels, AS-levels and T levels – the full list can be found here: www.gov.uk/what-different-qualification-levels-mean/list-of-qualification-levels

We believe in the importance and value of a broad and balanced school curriculum, where pupils can enjoy the benefit of the skills and knowledge bases that both SHAPE and STEM subjects provide. The full portfolio of this research will tell us more about what drives student subject choice, and shed light on the consequences of recent and likely policy reforms. This independent NFER research provides a significant piece of evidence that we hope will contribute to debates about post-16 education currently taking place in government and within the education sector, and will help inform how future reforms can put a broad and balanced school curriculum front-and-centre.

Professor Anna Vignoles CBE FBA

Professor Cristina Iannelli FBA

Professor Peter Mandler FBA

Executive Summary

Students' post-16 education choices matter and, over the past two decades, those choices have been changing.

Key policy changes appear to have impacted on student subject choice, particularly with respect to Humanities subjects. The most substantive change to the post-16 landscape in recent years have been reforms to AS- and A-level qualifications that were introduced from September 2015.² A particularly notable aspect of this reform for studying subject choice was the decoupling of AS- and A-level qualifications, which meant that AS results would no longer count towards an A-level qualification as they had in previous years. This contributed to a rapid reduction in qualification entries with the average number of Level 3 qualifications per student dropping from 5 in 2015 to 3 in 2019.³

This independent report by the National Foundation for Educational Research, commissioned by the British Academy, extends the research conducted and captured by the Academy's [SHAPE Observatory](#), which monitors the health of SHAPE disciplines (Social Sciences, Humanities and the Arts for People and the Economy). This report examines the data on how students have chosen to combine different subjects over last two decades and how student characteristics relate to subject choice. It also explores how wider contextual changes have affected the subjects that students choose to study in order to build a better understanding of the drivers of post-16 education choices.

The analysis presented in this report draws student-level data from the National Pupil Database (NPD) and Individualised Learner Record (ILR) between 2003/04 and 2021/22 and uses both descriptive and econometric approaches. More information about our methodological approach can be found in the technical appendix, and data tables can be explored in the accompanying data dashboards.

² Ofqual (2018) *Get the facts: AS and A level reform*. Available at: <https://www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform/get-the-facts-as-and-a-level-reform> (Accessed: 6 March 2024).

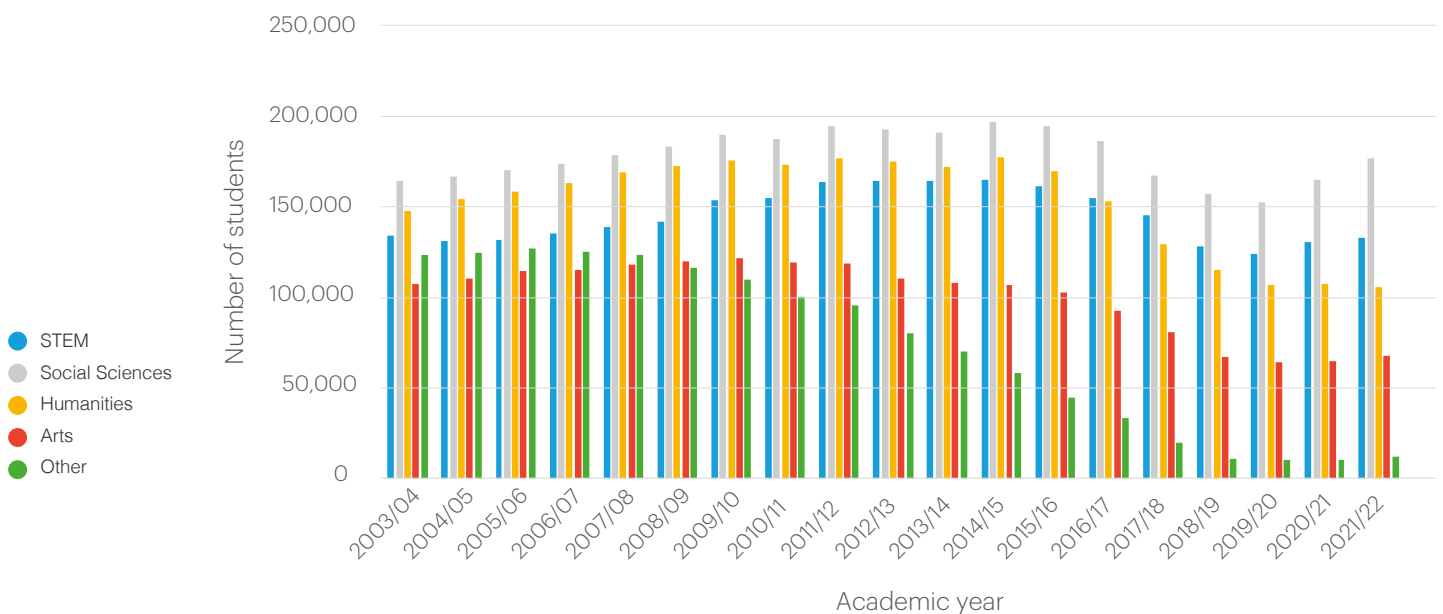
³ Robinson, D. and Bunting, F. (2021) *A narrowing path to success? 16-19 curriculum breadth and employment outcomes*. Available at: https://epi.org.uk/wp-content/uploads/2021/09/EPI-Royal_Society-16-19-report.pdf (Accessed: 7 March 2024).

Key findings

Trends in subject combinations over time

- There has been a fall in take-up across all major subject groups - Arts, Humanities, Social Science and STEM (Science, Technology, Engineering and Maths) - at AS/A-level since 2015/16. Our analysis shows this is probably due to the decoupling of AS- and A-level qualifications from 2015/16 which has meant that students are now taking many fewer qualifications compared to previously.⁴
- Our findings suggest that students are increasingly narrowing the range of subjects they are taking at AS/A-level. Increasing proportions of students are electing to only study subjects that sit within the same major subject group (e.g. all STEM subjects or all Social Science subjects). This is particularly notable given that post-16 students in England study a narrower range of subjects, on average, than their international counterparts.
- Between 2003/04 and 2021/22, the proportion of students exclusively taking AS/A-levels from a single subject group almost doubled from 18% to 35%. Most of this rise has taken place since 2015/16.
- Likewise, there has been a significant decline in the proportion of AS- and A-level students studying a three-way combination of subject groups (e.g. combining a STEM, Social Science and Humanities subject).
- Among the 2021/22 cohort, only 5% of students were combining subjects from a STEM, Social Science and Humanities subject. This represents a drop of almost two-thirds from 2015/16, where around 14% of each cohort opted to study a STEM, Social Science and Humanities subject together.

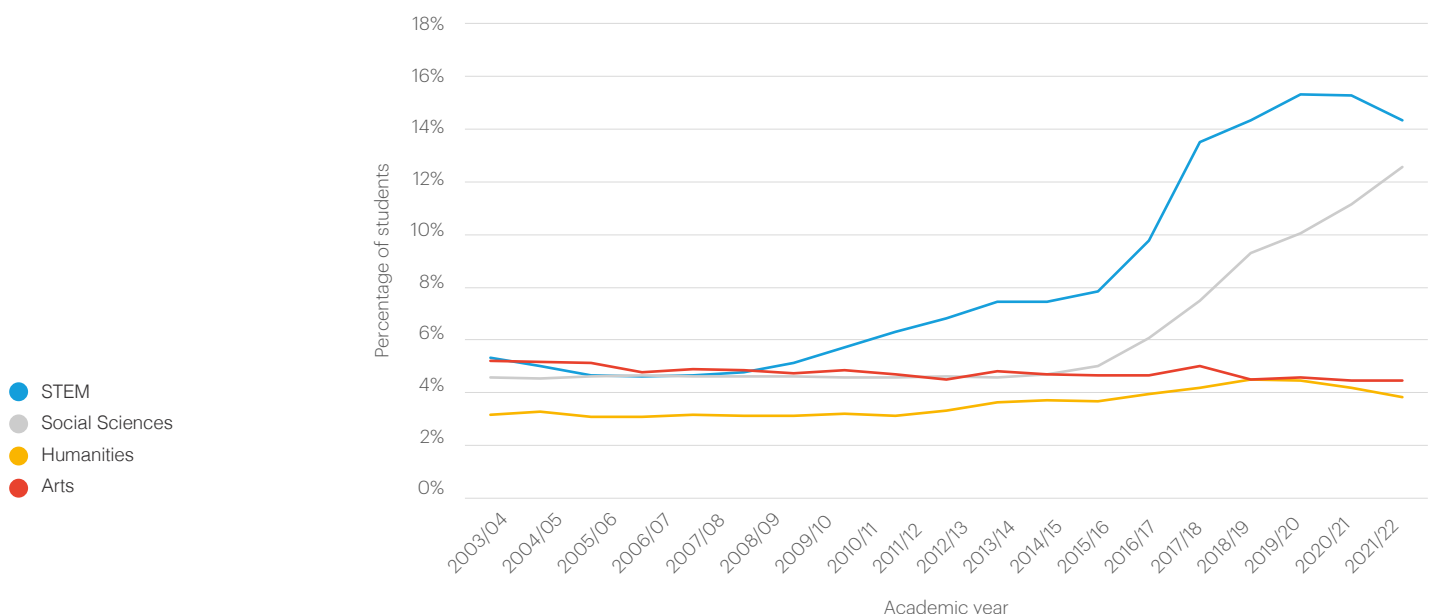
The number of students at AS/A-level studying Humanities, Social Sciences and STEM subjects has fallen since around 2015/2016. The number studying Arts subjects started falling earlier.



⁴ Ofqual, *ibid.*

- Humanities and Arts subjects take-up has declined considerably over the last two decades, compared to STEM and Social Science subjects. Controlling for students' characteristics, the likelihood of a student studying a Humanities and Arts subject is around 21 and 15 percentage points lower in 2021/22 compared to 2003/04 respectively.⁵
- For Humanities, the decline has largely taken place since decoupling. Between 2003/04 and 2015/16, the proportion of AS/A-level students taking Humanities was very stable at a little under 60%. Since 2016, there has been a steady decline in take-up, with only 38% of students taking a Humanities subject in the 2021/22 cohort.
- The decline in Humanities take-up since 2015/16 appears to have been driven by reductions in the proportion of students taking subjects which have traditionally been the most popular Humanities subjects (such as English, History, Religious Studies and Modern Foreign Languages).
- The decline across Arts subjects started in the early 2010s, before decoupling, and has been more gradual, from a high of 42% in 2006/07 to 24% in 2021/22. It is seen across all Arts subjects.
- Take-up of Social Sciences has been relatively stable over the period. In 2003/04, 62% of AS/A-level students took a Social Science subject, compared to 63% in 2021/22.
- Beyond decoupling, there are a wide range of patterns in subject choice but our analysis does not identify other policy reforms which have driven changes to the same extent as decoupling.
- The proportion of Level 3 students (including both AS/A-level students and those studying other Level 3 qualifications) studying each major subject group broadly mirrors the trends observed for AS/A-level students. However, there are some notable patterns across subjects:
- Among Level 3 students studying at least one STEM or at least one Social Science subject, there has been an expansion in the proportion of students exclusively studying these subjects via vocational qualifications.
- Among students studying Arts subjects, there appears to have been a shift towards studying vocational Level 3 qualifications and away from AS- or A-levels. Despite this apparent shift towards vocational Level 3 qualifications, however, the overall take-up of the Arts at Level 3 is declining.

The proportion of AS- and A-level students exclusively studying AS- and A-level subjects in the Social Sciences and STEM major groups has risen over time, particularly since around 2015/16.



⁵ See Section 4.2.2. This compares to 3 percentage points and 10 percentage points for Social Sciences and STEM subjects respectively

Trends in subject choice by student characteristics

- A young person's background and environment play a key role in influencing their subject choices. Subject choices by AS/A-level students vary significantly by student characteristics, even once other factors have been accounted for. This is summarised for major subject groups in Figure 1 for the period between 2003/04 and 2021/22.
- For the characteristics included in our analysis, differences were particularly marked between genders and different ethnic groups:
- Female students are more likely to engage in Arts, Humanities and Social Science subjects than their male counterparts.
- Students from non-White ethnic backgrounds are more likely to study STEM and Social Science subjects compared to students from White ethnic backgrounds.
- In general, the disparities observed between different student characteristics across subjects are longstanding and have persisted over time.
- Some patterns vary markedly across individual subjects. For example, female students are more likely to study Social Science subjects like Psychology and Sociology, whilst male students are more likely to study others like Business Studies, Economics, Geography and Government and Politics.
- The observable differences in subject take-up across regions in England are not large. Our analysis identified that students in London are more likely to take a Humanities, Arts, or Social Sciences subject than students at a setting in most other English regions. This was not the case for STEM subjects.

Figure 1: Summary of how take-up of major subject groups varies by student characteristics

Likelihood of students with a given set of characteristics studying subject	Major subject group			
	Arts	Humanities	Social Sciences	STEM
Students who are female, compared to male students	More likely	More likely	More likely	Less likely
Students who are eligible for free school meals (FSM), compared to students who are not	More likely	Less likely	More likely	Less likely
Students with a special educational need or disability (SEND) ⁶ , compared to students without	More likely	Less likely	Less likely	Less likely
Students from non-White ethnic backgrounds, compared to student from White ethnic backgrounds	Less likely	Less likely	More likely**	More likely
Students who have achieved Level 2 (at least five 9-4 grades at GCSE), compared to students who have not	Less likely	More likely	More likely	More likely
Students with English as an additional language (EAL), compared to students without	Less likely	More likely*	Less likely	More likely

* This is largely driven by Modern Foreign Languages

** Social Sciences are more likely to be studied by students from Black and Asian ethnic backgrounds compared to students from White backgrounds. However, this was not the case for students from a Chinese ethnic background. The National Pupil Database maintains a distinction between Chinese and other Asian students. We elected to maintain this distinction in this study.

Trends in subject choice across providers

- While almost all providers are offering AS/A-levels in each major subject group, at the individual subject level, choices for students have diminished since 2007/08 with providers generally reducing the range of subjects being offered.⁶
- Almost all Arts AS/A-level subjects have seen a dramatic decline in availability across providers. The only exception is Art and Design Studies, which has seen moderate decline.
- Almost all providers offer Humanities subjects. However, most Humanities subjects have experienced a decline in availability between 2007/08 and 2021/22. History and English Literature are still offered by most providers. Subjects such as French, German and Religious Studies are offered by significantly fewer providers than they were in 2007/08.
- Like Humanities subjects, Social Science subjects are offered by almost all providers, although fewer providers offered Business Studies and Law in 2021/22 than they did in 2007/08. By contrast, Economics is a rare example of a subject that has significantly grown in availability over this period.

Conclusions

Our findings highlight that there have been substantial changes to the post-16 choices made by students over the last two decades, which have been influenced by wider system and policy-level changes. This has resulted in students taking fewer subjects at AS/A-level and has led to a narrower range of subject take-up. This reflects a decline observed in the percentage take-up across almost all subjects as well as a shift towards students being more likely to choose subjects from related disciplines.

While it is difficult to disentangle the impacts that individual policies and wider contexts have had on observed trends, the decoupling of AS- and A-level qualifications in 2015/16 has likely played a key role in the reduction in the range of subjects taken up by students. These changes have particularly affected the take-up of Humanities and Arts subjects – and risk having a profound impact on the future shape of these disciplines.

Looking to the future, further evidence on the impact of curriculum narrowing at post-16 on both young people's outcomes and wider society will be crucial in developing a better understanding of the potential impact of these trends. It is critical that further reforms to the post-16 landscape carefully consider possible impacts on subject choice, and how this might shape the future of certain disciplines.

⁶ Note that, for the purposes of our analysis, subjects offered by providers are proxied by whether students were studying a given subject at a given provider in a given year.

1.0 Introduction

The subject choices that students make at age 16 shape the course of their lives. Subject choices affect a young person’s skills development and their understanding of the world around them. They shape young people’s pathways into further and higher education, and employment. These choices also have the potential to widen or close the gaps in life outcomes between disadvantaged groups and their more advantaged peers.

As recently highlighted by the Department for Education, “young people in England study a narrower range of subjects than many international comparators” and post-16 education in England is perceived as narrow.⁷ This report focusses on the breadth of subjects studied in post-16 education and the impact that policy reforms have had on young people’s choices, both directly and indirectly. It is vitally important that students’ post-16 education choices are well understood, and that education policy is developed with an understanding of how reforms might affect the breadth of subject choice.

The most substantive change to the post-16 landscape in recent years has been reforms to AS- and A-level qualifications that were introduced from September 2015.⁸ The most notable aspect of this reform for studying subject choice was the decoupling of AS- and A-level qualifications. This meant that AS results would no longer count towards an A-level qualification as they had in previous years. These reforms were phased in over a four-year period so would have affected different subjects at different points in time, as shown by Figure 2. As a result of decoupling, students are now taking many fewer AS qualifications compared to previously. The average number of Level 3 qualifications per student dropped from 5 in 2015 to 3 in 2019.⁹ Similarly, Ofqual research on the A- and AS-Levels reforms found schools were reducing the number of subjects with which students starts Year 12 had reduced from 4 to 3 in response to these changes.¹⁰

Figure 2: Years in which new AS- and A-level qualifications were introduced by subject

September 2015	September 2016	September 2017	September 2018
Art and Design	Dance	Design and Technology	Other Ancient Languages
Biology	Drama and Theatre	Government and Politics	Other Modern Foreign Languages
Business	Geography	Law	
Chemistry	French	Mathematics	
Computer science	German	Media studies	
Economics	Greek (Classical)	Music technology	
English language	Latin		
English language and literature	Spanish		
English literature	Music		
History	Physical Education		
Physics	Religious Studies		
Psychology			
Sociology			

Source: www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform/get-the-facts-as-and-a-level-reform

⁷ DofE (2023), *A world-class education system: The Advanced British Standard consultation*. Available at: <https://consult.education.gov.uk/advanced-british-standards-directorate/the-advanced-british-standard/supporting-documents/A%20worldclass%20education%20system%20%20The%20Advanced%20British%20Standard%20consultation.pdf>

⁸ Ofqual (2018), *AS and A Level decoupling: Implications for the maintenance of AS standards*. Available at: https://assets.publishing.service.gov.uk/media/5b3de66240f0b678bc5d0174/7_-_AS_Decoupling_Report_-_PROOFED.pdf

⁹ Robinson and Bunting, *ibid*.

¹⁰ Ofqual, *ibid*

Research published on the British Academy's [SHAPE Observatory](#) has already highlighted trends over the past ten years in subject choices, including the contrasting fortunes of many Social Science and Humanities subjects at A-level.¹¹ However, there remain key gaps in our current knowledge of how students combine different subjects, disciplines and qualifications as well as how these combinations are changing over time. Developing a better understanding of these gaps is crucial given the ongoing debate about major reform to post-16 education, such as previously announced preliminary plans in England to introduce a new Advanced British Standard, a new qualification framework where students would typically study a minimum of five subjects at post-16.¹²

This independent report by the National Foundation for Educational Research, commissioned by the British Academy, extends the research conducted and captured by the Academy's SHAPE Observatory to-date by examining the data on how students' choices of subjects and courses have changed over the last two decades, via novel analysis of how students combine subjects at Level 3. It also investigates the relationship between student characteristics and wider contextual factors with subject choice.

The report is structured as follows. Section 2.0 discusses the combinations of subjects which students are completing and how this has changed over time, with a particular focus on Social Science, Humanities and Arts subjects. It also considers how the combinations of Level 3 qualifications which students take have evolved. Section 3.0 then goes on to examine the associations between subject choices and the characteristics of students and education providers. Finally, Section 4.0 considers the extent to which the characteristics of students and contextual factors may help explain changes in the demand for different qualification and subject choices.

1.1 Data and methodology

All data for this report can be found in the accompanying data dashboards.

The analysis presented in this report draws on student-level data in England from the National Pupil Database (NPD) and Individualised Learner Record (ILR) between 2003/04 and 2021/22 and uses both descriptive and econometric approaches. Our analysis focuses on England only, due to the difficulty of accessing data from other nations and the differences in the qualification and policy contexts.

Recognising that some students may study multiple qualifications across different academic years for their post-16 qualifications, our analysis identifies any Level 3 exam enrolment (excluding apprenticeships) in the three years following the completion of each student's GCSEs. This enables us to look holistically at the range of subjects which a student studies throughout their post-16 study.

As such, the data in this report is therefore presented at the cohort-level, which is referenced to the academic year in which students in that cohort would have usually started Year 13.¹³ In other words, data for 2021/22 throughout the report refers to the 2021/22 cohort who would have normally started in Year 13 (or equivalent) in September 2021. It should also be noted that the cohorts covered by different tables may vary due to data availability over the analysis period.

¹¹ The British Academy (2023), *SHAPE Indicators*. Available at: <https://www.thebritishacademy.ac.uk/policy-and-research/british-academy-shape-observatory/shape-indicators/> (Accessed: 6 March 2024); The British Academy (2023) *Studying SHAPE: 2022*. Available at: <https://www.thebritishacademy.ac.uk/publications/studying-shape-2022/> (Accessed: 6 March 2024).

¹² The British Academy (2023), *Studying SHAPE: 2022*. Available at: <https://www.thebritishacademy.ac.uk/publications/studying-shape-2022/> (Accessed: 6 March 2024).

¹³ Students were assigned to a cohort based on the year in which they completed their Key Stage 4 (KS4).

It is important to note that this definition will result in different breakdowns and totals for subject enrolments and student numbers compared to other published statistics or reports which have used different approaches to identify subject choice or cohorts. This should be taken into account when comparing data and tables to other published sources.

A very wide set of subjects have been studied at Level 3 over the last twenty years in England. A subject typology has been developed to summarise subject trends. Throughout the report, we refer to ‘major groups’; these are categories of subjects such as the Humanities and Social Sciences. An overview of the major groups and the subject typology is provided in the box overleaf.

Further detail on all aspects of the methodology can be found in the technical appendix.

Subject classifications

This is an overview of the main subjects included in the major subject groupings presented throughout the report. A full list of subjects can be found in the accompanying technical appendix.

Arts

AS- and A-levels				
Media Studies	Art and Design	Performing Arts	Music	Design and Technology
Vocational Qualifications				
Arts, Media and Publishing				

Humanities

AS- and A-levels				
History	English Literature	English Language	English Literature and Language	Classical Subjects
Religious Studies	Foreign Languages			
Vocational Qualifications				
History, Philosophy and Theology	Languages, Literature and Culture			

Social Sciences

AS- and A-levels				
Sociology	Geography	Economics	Law	Business Studies
Government and Politics	Psychology			
Vocational Qualifications				
Education and Training	Business, Admin. And Law	Psychology		

Science, Technology, Engineering and Maths (STEM)

AS- and A-levels				
Maths	Biology	Chemistry	Physics	IT or computer studies
Vocational Qualifications				
Science and Mathematics	Engineering and Manufacturing Technologies	Information and Communication Technology		

Other

AS- and A-levels include: Physical Education and General Studies.

Vocational Qualifications include: Health, Public Services and Care; Agriculture, Horticulture and Animal Care; Construction, Planning and the Built Environment; Retail and Commercial Enterprise; Sport, leisure and recreation; and Foundations for learning and life.

2.0 Trends in subject combinations over time

This section provides insights into how subject choices at AS- and A-level have evolved over time, including the prevalence of different combinations. It also contextualises this in the wider Level 3 landscape (including both AS/A-levels and other Level 3 qualifications) by exploring how the balance of take-up of different Level 3 qualifications has changed over the last two decades.

2.1 How has subject take-up evolved over the last two decades?

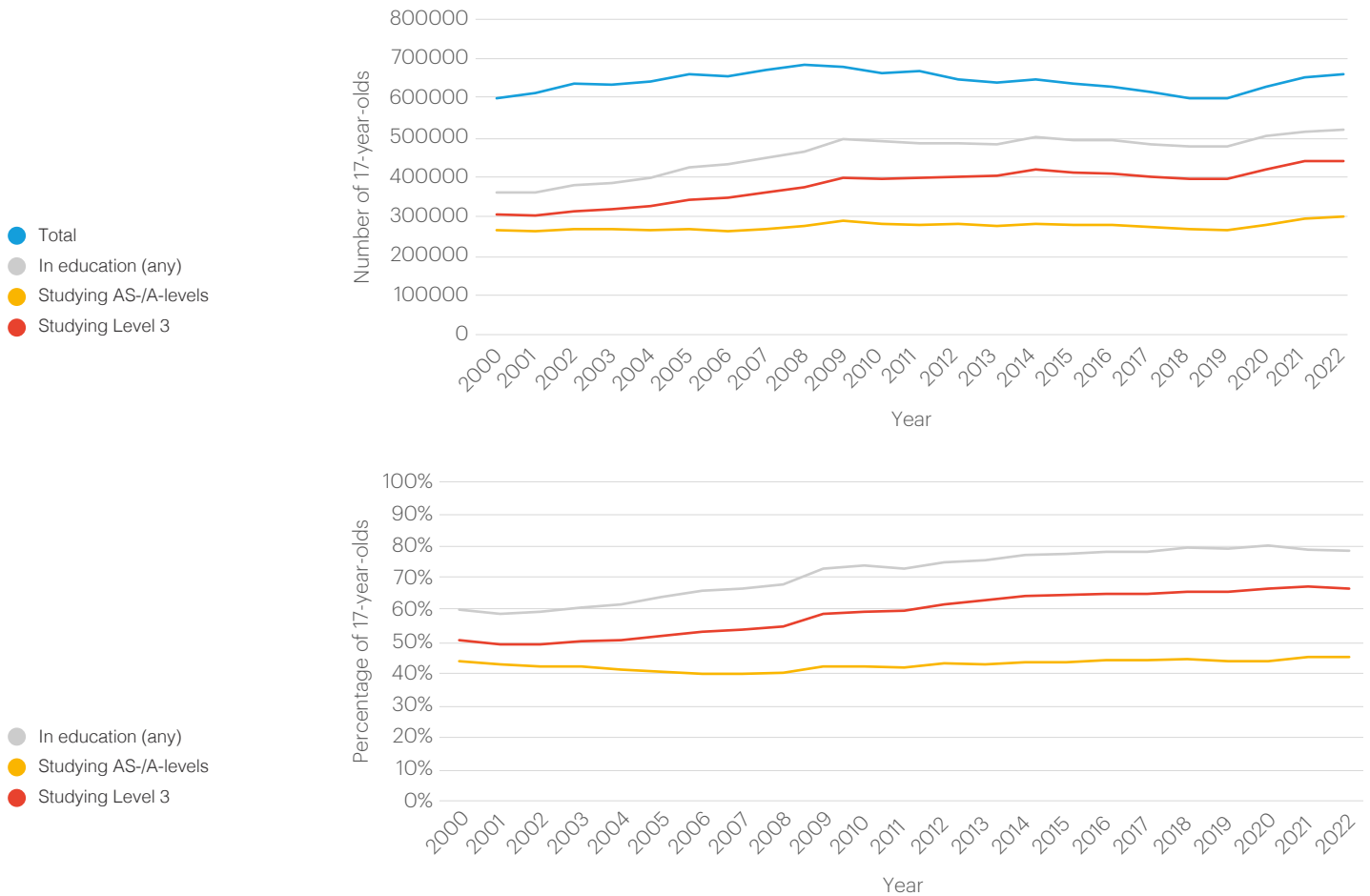
In this sub-section, we explore the take-up of subjects at AS- and A-level (both at major group level and individual subject level) and establish how this has changed over time.

Summary of key findings:

- The decoupling of AS- and A-level qualifications appears to have led to a reduction in the range of subjects taken up by students. While there has been a fall in student numbers across all major subject groups since 2015/16, Humanities and Arts subjects have been particularly affected by a decline in take-up.
- The decline in Humanities take-up since 2015/16 appears to have been driven by reductions in the proportions of students taking subjects that had traditionally been the largest Humanities subjects (English, History, Religious Studies and Modern Foreign Languages)
- The decline in Arts subjects is reflected across all individual subjects and has taken place over a more prolonged period of time, starting in the early 2010s.

AS- and A-level participation has remained stable over the last two decades

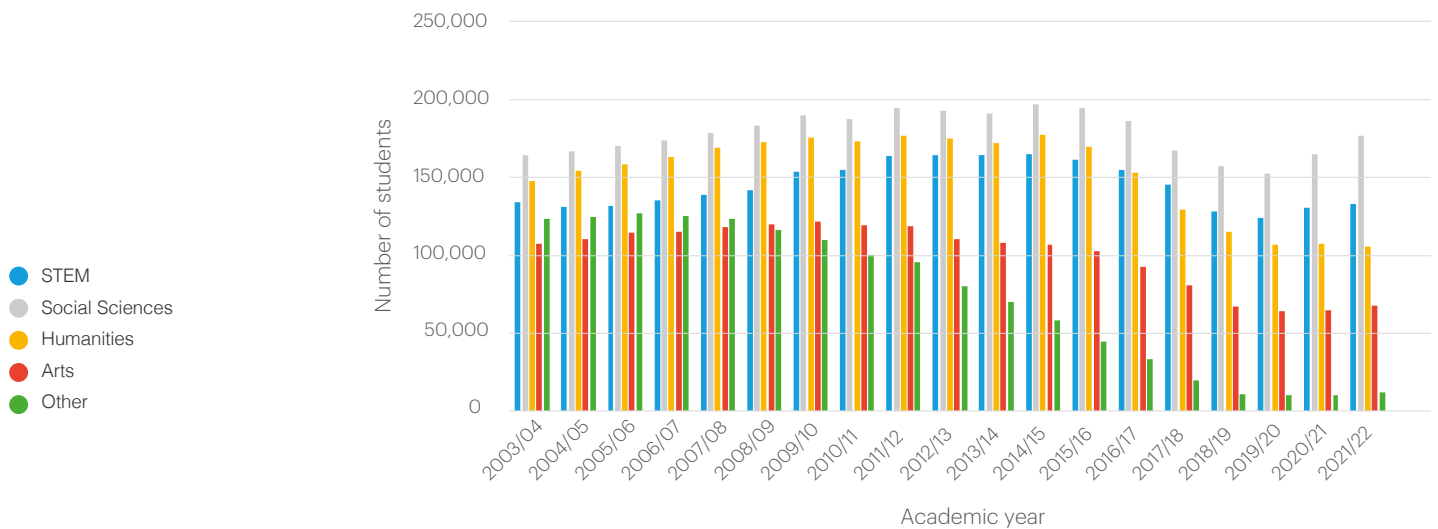
Figure 3 presents the trends in education participation for 17-year-olds between 2000 and 2022 providing wider context to the subject trends presented throughout this section. It shows that participation in education at age 17 has increased over the last two decades, rising from 359,000 in 2000 to 518,000 in 2022. This is reflected in the share of students studying any Level 3 qualification increasing from 51% in 2000 to 67% in 2022. However, the share of students studying AS- and A-levels has remained fairly stable over the period at around 40-45%.

Figure 3: Participation of 17-year-olds in education, England, 2000-2022

Source: Department for Education participation in education, training and employment age 16 to 18 statistics

While the take-up of all major subject groups has declined somewhat in recent years, the Humanities and Arts have been particularly affected.

Despite the fact that the relative size of the AS/A-level cohort has remained fairly stable over the last two decades, the number of students studying all the major subject groups have broadly declined since 2015/16 as shown in Figure 4, suggesting that the numbers of AS/A-level students studying each group have fallen in conjunction with the decoupling of AS- and A-levels. This is linked to the fact that the decoupling of these qualifications led to a reduction in the number of qualifications, and therefore subjects, each student was taking overall. Indeed, the average number of Level 3 qualifications per student dropped from 5 in 2015 to 3 in 2019. However, there are notable differences in trends over the last two decades across different subject groups.

Figure 4: Number of students at AS/A-level studying each major subject group

On the one hand, the proportion of students studying STEM and Social Science subjects at AS/A-level over the last two decades has remained relatively stable, despite the decline in the number of subjects studied by students since decoupling. This is shown below in Figure 5.

For Social Science subjects, the proportion increased from 62% to 64% of students between 2003/04 and 2015/16. This fell to 60% in 2016/17 following decoupling, but the proportion has since recovered to 63%. For STEM subjects, the proportion has remained relatively stable at around half of all students in each cohort since 2003/04 (ranging from 48% to 54%). Between 2003/04 and 2008/09, this proportion decreased slightly from 51% to 48%, before increasing steadily to 54% in 2013/14. Since 2013/14, this proportion has declined to 48%.

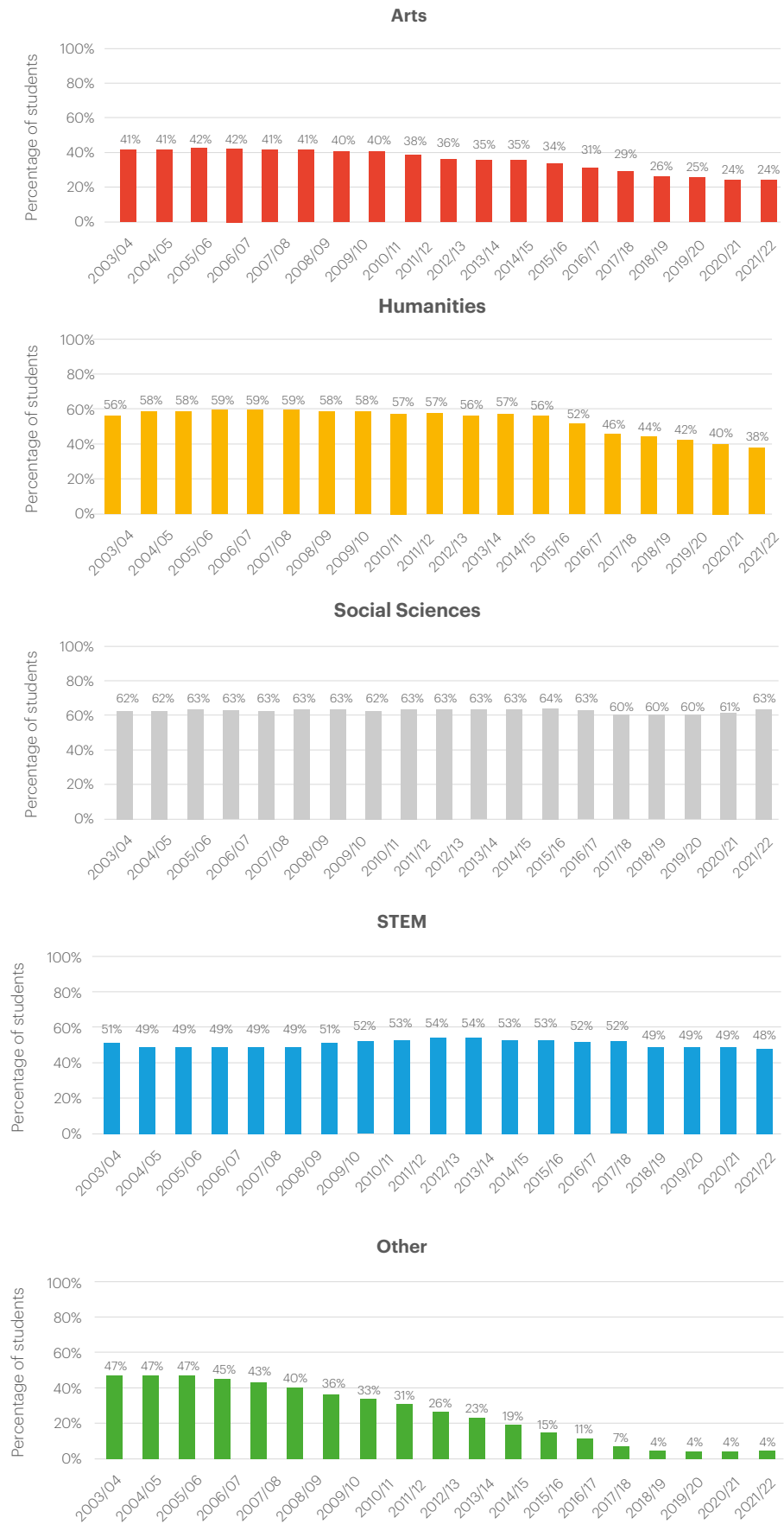
Conversely, the take-up of Humanities and Arts subjects has declined consistently in recent years. For example, until 2015/16, the proportion of students taking Humanities was consistently a little under three-fifths of students, ranging only between 56% and 59%. Since 2016, there has been a steady decline in take-up, with only 38% of students taking a Humanities subject in the 2021/22 cohort.

The drop in Arts subject take-up at AS-/A-level, however, started earlier. The proportion taking Arts subjects remained stable at around two-fifths of students across the 2003/04 to 2010/11 cohorts (ranging from 42% and 40%), before falling gradually (particularly around the time of decoupling) and eventually stabilising at around a quarter (24-26%) of students in the 2017/18 cohort onwards. In Section 2.3.1, we will see that some study of Arts subjects at Level 3 has moved over time from AS-/A-levels to other types of Level 3 qualifications.

Similarly, over the last two decades the take-up of 'Other' subjects outside of these four core subject groups has all drastically reduced. As shown in Figure 5, almost half (47%) of students in the 2003/04 to 2005/06 cohorts studied at least one Other subject at AS- or A-level. This proportion steadily dropped year-on-year from 2006/07 onwards, reaching just 4% of the 2018/19 cohort at which point the proportion appears to have stabilised. This pattern largely reflects the decline and eventual removal of the General Studies qualification, leaving Physical Education/Sport Studies as the only AS-/A-level subject in this group. (See Section 2.1.1 for further discussion).

In the following sub-section, we investigate these trends further by exploring how patterns have evolved between individual subjects within each major subject group.

Figure 5: Proportion of students at AS/A-level studying at least one subject in each major subject group



2.1.1 Take-up of individual subjects

Social Science subjects

The take-up of individual Social Science subjects has remained broadly stable over the last twenty years, with typically only small year-on-year variations as shown by Figure 6. The relative stability in take-up across the Social Science subjects as a whole suggests that AS/A-level students continue to prioritise taking Social Science subjects, despite the reduction in the number of qualifications, and therefore subjects, students are taking overall since the decoupling of AS- and A-level qualifications.

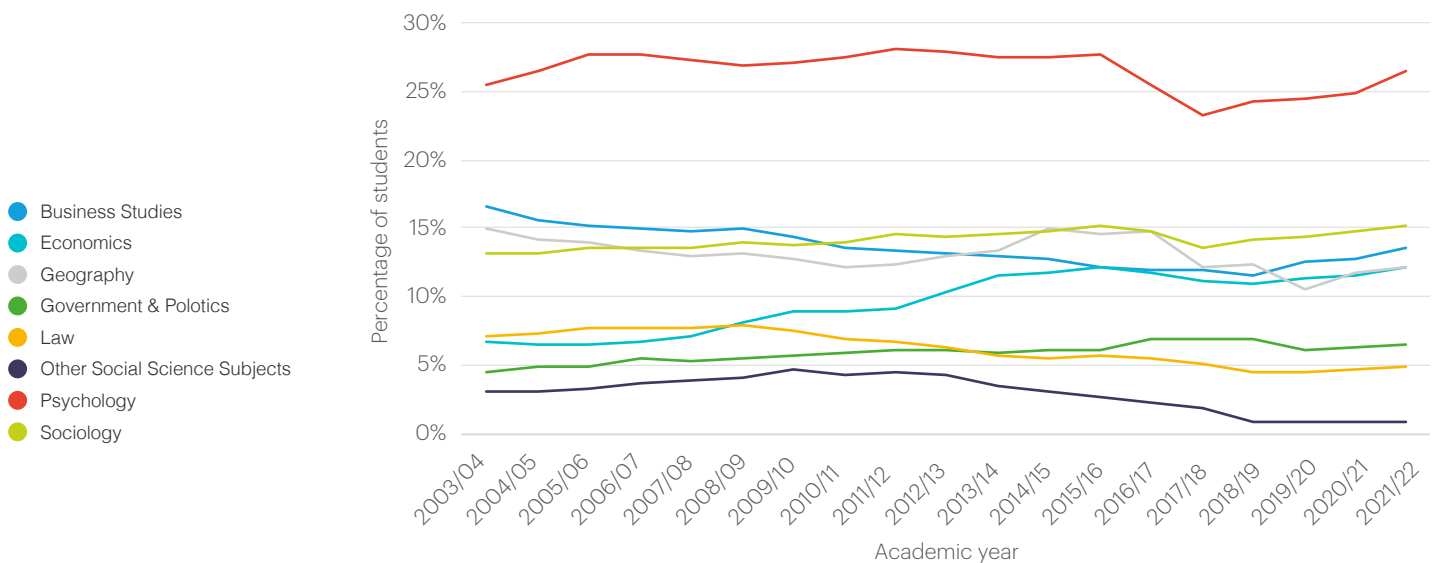
Psychology has consistently been the most popular Social Science subject across all cohorts since 2003/04. Where falls in participation at AS/A-level have occurred, they have largely recovered since. For example, as shown in Figure 6, there was a decrease in Psychology take-up after 2015/16, dropping from 28% to 23% of the 2017/18 cohort, but this has since risen back to 26% of the 2021/22 cohort. The timing of the decline coincides with the period during which the changes to the AS/A-level qualifications were introduced.

Like Psychology, Geography also experienced a small decline from its long-term levels at the same time as decoupling. Business Studies, on the other hand, saw a longer-term gradual decline in take-up from 17% in 2003/04 to 12% in 2018/19. Since then, it has experienced a slight increase in popularity to 13% in 2021/22.

Other Social Science subjects such as Sociology have mostly had stable participation over the last two decades. In the case of Sociology, participation has remained at consistently 13-15% of each cohort.

Economics is the only Social Science subject that appears to have experienced significant growth over this period. As shown in Figure 6, the proportion of each cohort taking Economics has nearly doubled from 6% in 2005/06 to 12% in 2013/14 and has since remained relatively stable.

Figure 6: The proportion of students at AS/A-level studying individual Social Science subjects



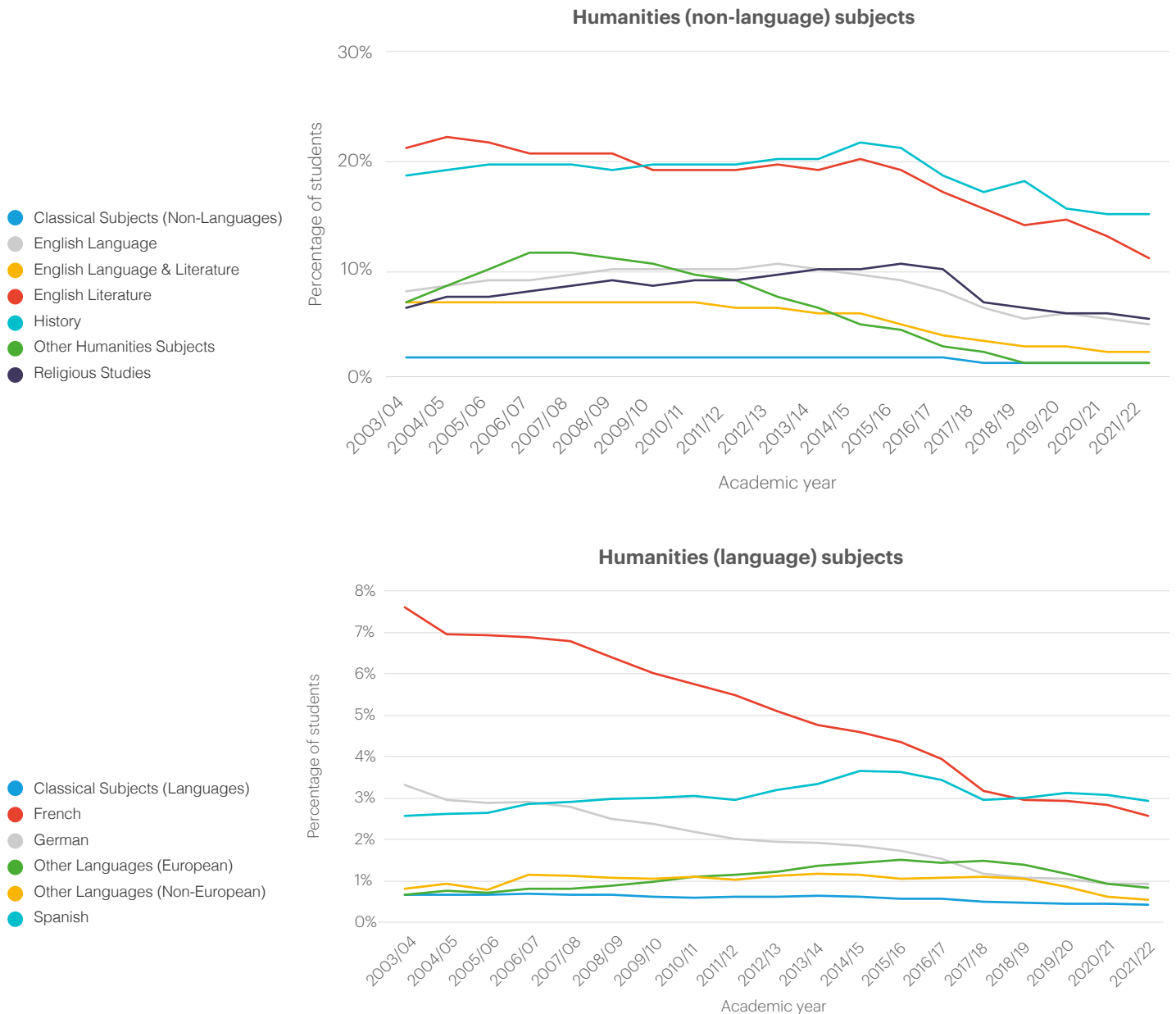
Humanities subjects

The decline in the take-up of Humanities among AS- and A-level students that has occurred since 2015 appears to have largely been driven by drops in participation across what are traditionally the more popular Humanities subjects, particularly English Literature, Language, History and Religious Studies. All four of these subjects have experienced notable drops in take-up since 2016/17.

For example, as shown in Figure 7, until 2016/17, around a fifth of AS/A-level students chose to study English Literature (19% of the 2015/16 cohort). This has since declined to 11% of the 2021/22 cohort. Similarly, the take-up of English Language has reduced from 9% in 2015/16 to just 5% of the 2021/22 cohort. Take-up of English Language and Literature also fell over this period. While this decline may also be linked to reforms to the English Literature and Language GCSEs from 2015 (as discussed in Section 4.2.1), the fact that other popular Humanities subjects saw comparable drops over this period suggests that decoupling was a driver. Indeed, for History, the proportion of students studying the subject over the same period dropped from 21% to 15%. Further, the take-up rate of Religious Studies has halved from 11% in 2015/16 to 5% of the 2021/22 cohort.

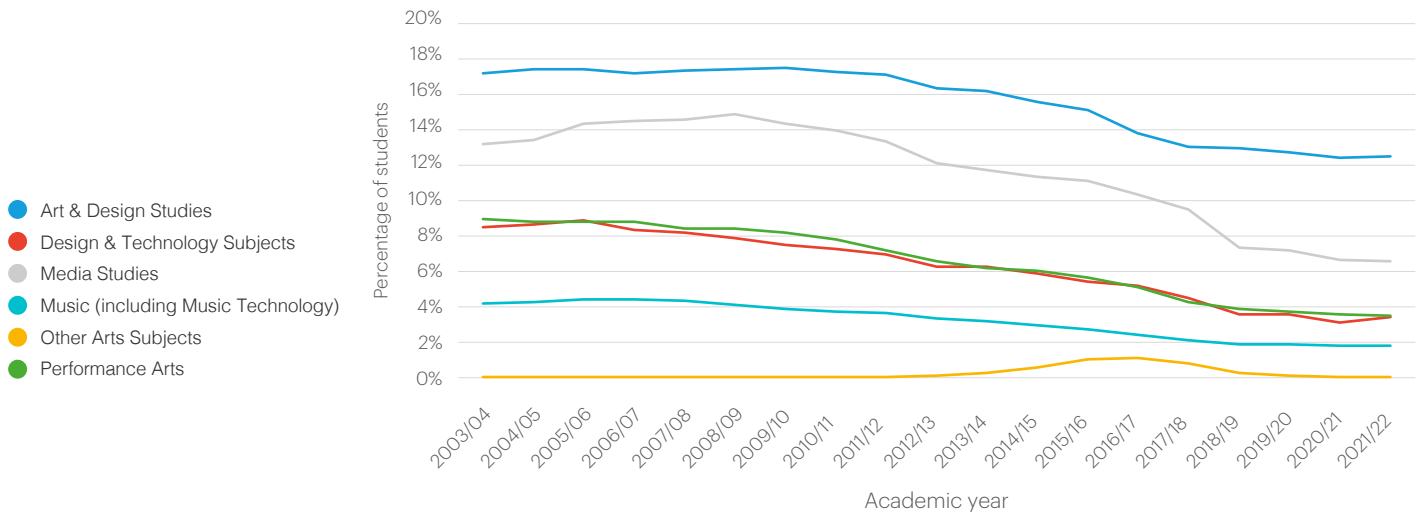
Across the Modern Foreign Languages, there is a mixed picture. Participation in French and German has fallen over the last two decades, dropping by over half from 8% and 3% in 2003/04 respectively to 3% and 1% in 2021/22. On the other hand, participation in Spanish has remained relatively stable, with consistently 3% to 4% of students in each cohort taking the language over the last 20 years. It is important to note that language study at post-16 is likely to be heavily influenced by GCSE and KS3 provision across schools. A-level languages often require GCSE as a pre-condition for study, which is not the case for all A-level subjects.

While Classical Languages take-up has remained broadly stable over the period, take-up for Classical subjects which are not languages appears to have declined around 2016/17.

Figure 7: The proportion of students at AS/A-level studying individual Humanities subjects**Arts subjects**

The decline of the Arts subject group overall is reflected by declines across all the individual Arts subjects, as shown in Figure 8. For example, Art and Design take-up has slowly dropped from a high of 18% in 2009/10 to 12% of the 2021/22 cohort, while Media Studies participation has halved from 15% in 2008/09 to just 7% from 2018/19 onwards.

Unlike the declines observed for Humanities subjects, which appear broadly linked to the changes to the AS/A-level structure, the decline across Arts subjects appears to have started much earlier and been more gradual. As covered in Section 2.3.2 there appears to also have been some shift in students who study Arts from AS/A-levels to other type of Level 3 qualifications too.

Figure 8: The proportion of students at AS/A-level studying individual Arts subjects

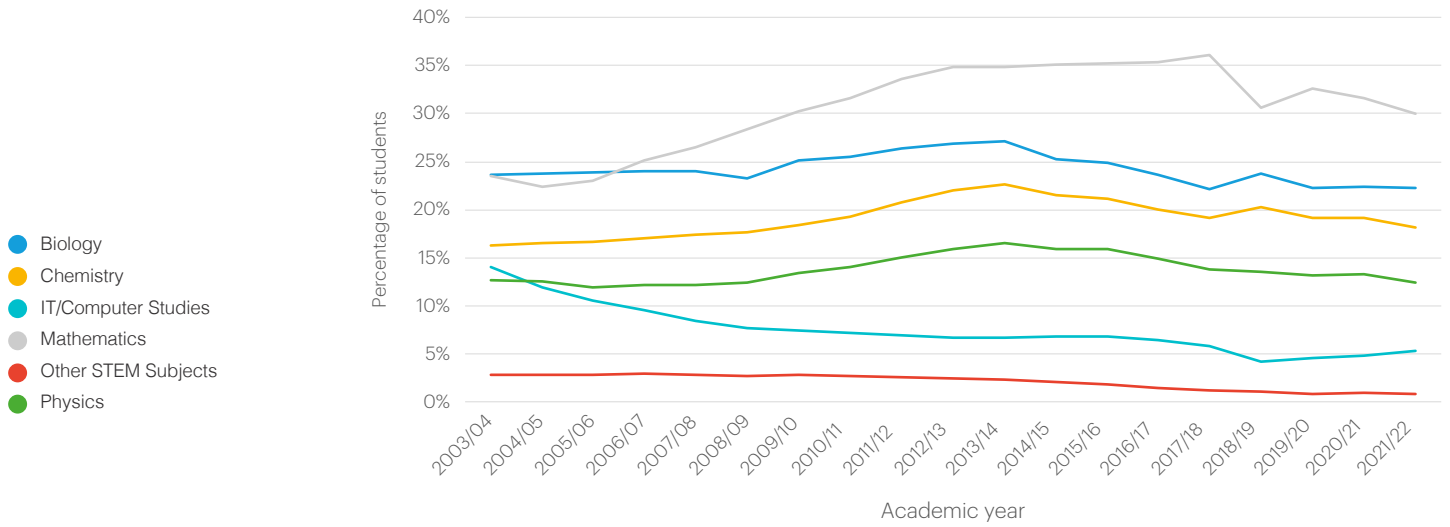
STEM subjects

Individual STEM subjects have consistently seen relatively high levels of take-up over the last two decades, as shown in Figure 9. These trends indicate that the popularity of STEM subjects among AS/A-level students has largely persisted. This is true even during the period of decoupling of the AS- and A-level structure and reduction in the average number of AS- and A-levels taken since 2016/17.¹⁴ Mathematics grew very strongly between around 2005/06 and 2012/23. It became the most popular subject since 2006/07. Participation in Mathematics peaked at 36% of the 2017/18 cohort. However, since the decoupling of Maths AS in 2017, this has seen a drop to 30% by 2021/22.

Biology, Chemistry and Physics all saw an expansion in participation between 2009/10 and 2015/16, though this has since ebbed. Between 2009/10 and 2015/16, a number of policy changes and reforms were enacted that may have contributed to the uplift in student numbers across the sciences. These include the introduction of the English Baccalaureate at GCSE in 2010/11 and the publication of guidance by the Russell Group recommending traditional subject take-up at A-level in 2011. However, all of these science subjects have seen a small reduction in participation since 2016/17, in line with the timing of decoupling.

IT/Computer Science is the only large STEM subject to have experienced a persistent decline in participation over the last two decades, dropping from 14% of the 2003/04 cohort to just 5% of the 2021/22 cohort.

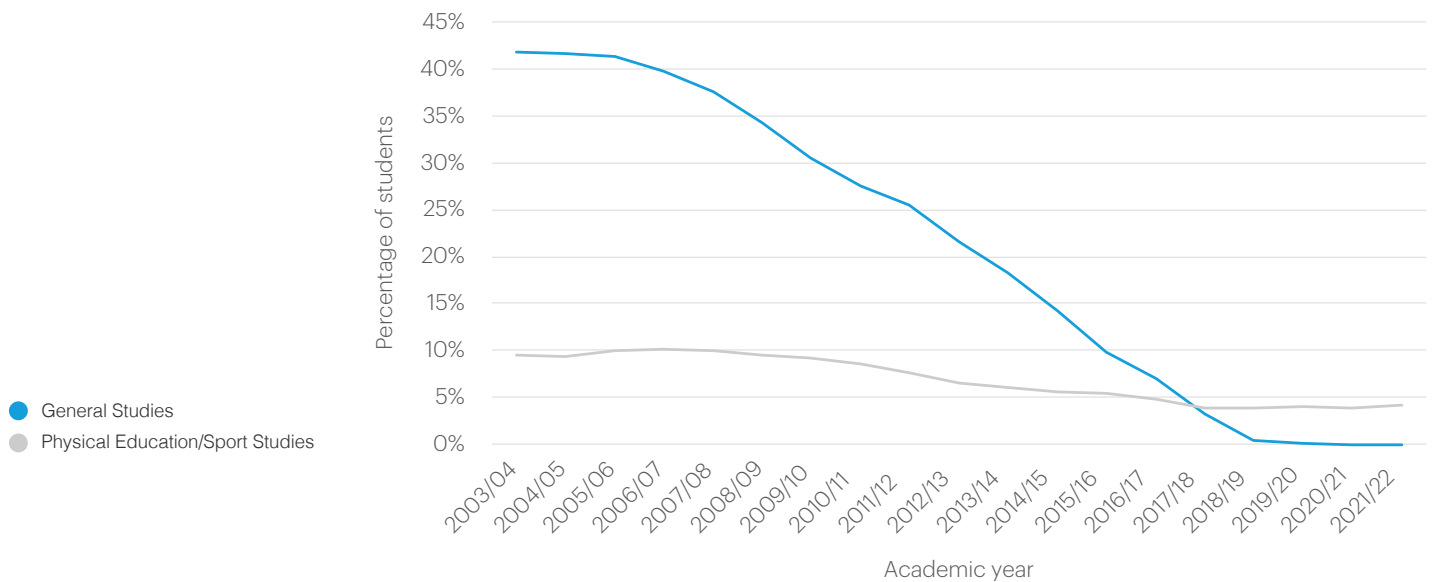
Figure 9: The proportion of students at AS/A-level studying individual STEM subjects



Other subjects

The drastic decline in the number of students taking Other subjects has been primarily driven by the phasing out of General Studies, as shown in Figure 9. In 2007/08, 37% of students took General Studies, which was phased out from teaching in 2017.¹⁵ The take-up of PE/Sport studies has also halved from 10% of the 2007/08 cohort to just 4% of the 2021/22 cohort.

Figure 10: The proportion of students at AS/A-level studying individual Other subjects



¹⁵ Ofqual (2015), *Further Decisions for Completing GCSE, AS and A Level Reform in 2017*. Available at: <https://assets.publishing.service.gov.uk/media/5a74ebb4e5274a3cb2868410/2015-05-14-reform-of-gcses-as-and-a-levels-in-2017-may-2015.pdf>. Accessed 21 June 2024.

2.2 What subject combinations are AS- and A-level students taking?

In this sub-section, we discuss the subjects that students are choosing to combine and how this has evolved over time, at both the subject group and individual subject level. We focus on the most prominent two- and three-way combinations of subjects at the major group and individual subject level.

Summary of key findings:

- AS/A-Level students are increasingly choosing to only study subjects that sit within the same major subject groups (e.g. all STEM subjects or all Social Science subjects). There has been a sharp rise in the number choosing to do this since 2015/16 from 21% of students to 35% in 2021/22.
- Likewise, the proportion of AS- and A-level students studying a three-way combination of major subject groups has fallen significantly. Only a small minority of students are choosing to study a three-way combination of subject groups in the most recent data. For example, the number of students combining Biology, English Literature and Psychology – a popular 3-way subject combination – dropped by three-quarters between 2015/16 and 2021/22.
- Humanities and Arts subjects are less frequently being combined with other major subject groups, reflecting the decline in uptake across these subjects and shift towards students taking subjects from the same major subject group. For instance, the percentage of total AS/A-level students within each cohort combining Social Sciences and Humanities fell by 12 percentage points from 36% of students in 2015/16 to 24% in 2021/22.

More students are choosing to exclusively study subjects within the same subject group

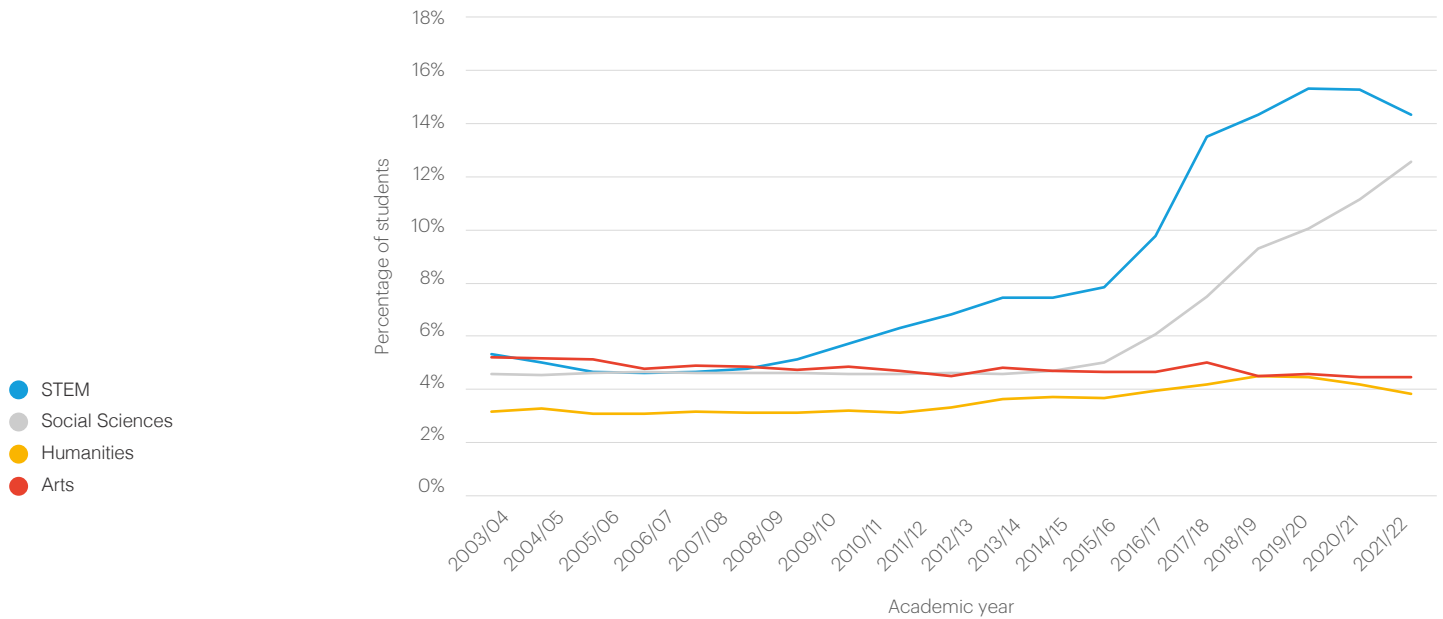
Figure 11 shows that, across all four major subject groups, there has been an overall increase in the proportions of students exclusively studying subjects from a single subject group since 2003/04 (at 18%). The proportion of students choosing to do this has risen from 21% in 2015/16 of students to 35% in 2021/22. This rise coincided with the decoupling of AS- and A-level qualifications.¹⁶ For example, students are increasingly choosing to only combine STEM subjects like Biology, Chemistry and Maths, or only combine Social Science subjects, like Geography, Psychology, and Economics.

These trends indicate that students are increasingly narrowing their focus to one group of subjects, particularly for students studying Social Sciences and STEM subjects, rather than combine them with other subject areas. A likely explanation is that the changes to the structure of AS- and A-levels have led to students no longer taking an additional AS-level subject that historically would have given them the opportunity to widen the range of subjects they study at Level 3.

However, the extent of this change varies greatly across subject groups. For STEM subjects, the increase in students exclusively studying these subjects has been particularly dramatic in recent years. The initial increase between the 2003/04 and 2015/16 was comparatively gradual, increasing from 5% to 8% over the 12-year period. This then dramatically accelerated from the 2016/17 cohort onwards, reaching 15% by 2019/20, and has remained fairly stable in subsequent cohorts.

¹⁶ The figure does not consider General Studies. For example, students would be classified as exclusively studying Humanities subjects if they only studies Humanities subjects and General Studies. This ensures that the phasing out of General Studies does not explain the trends highlighted here.

Figure 11: The proportion of AS- and A-level students exclusively studying A- and AS-level subjects from the same major subject group



In comparison, there was no significant increase in the proportion of students exclusively studying Social Sciences year-on-year until the 2015/16 cohort. As shown in Figure 11, since around 2015/16 there has been a notable increase, resulting in the proportion of students choosing to exclusively study Social Sciences more than doubling from 5% of all AS- and A-level students in 2015/16 to 13% in 2021/22.

For Arts and Humanities subjects, any shift towards exclusivity has been far more muted. As shown in Figure 11, the proportion of students choosing to study only Humanities subjects rose gradually from 3% in 2003/04 to 4% in 2021/22. For Arts, there has been no such increase, reflecting the wider decline in Arts take-up. Around 5% of the 2003/04 cohort studied such subjects exclusively, compared to 4% in 2021/22.

One possible explanation for the differences in trends observed across major subject groups is undergraduate degree requirements. For example, it is not unusual for entry to STEM degrees to require or recommend multiple STEM subjects to a greater extent than other subject groups.¹⁷ As the number of qualifications being studied declined with decoupling, students were thus less likely to take subjects from other subject groups which were less likely to be a requirement or recommendation.

¹⁷

2.2.1 Two-way major subject group combinations

Humanities and Arts subjects are less frequently being combined with other major subject groups

The decline in take-up of Humanities, Arts and Other subjects and the shift towards exclusively studying subjects within the same major subject group, particularly for Social Science and STEM subjects, is reflected in the prevalence of different subject group combinations. There have also been some key changes in prominence of these combinations over time.

This is shown in Figure 12 which presents the percentage of total AS/A-level students within each cohort combining different two-way subject combinations. For example, the figure in the top left corner indicates that 24% of students were combining Humanities and Arts AS- and A-level subjects in 2005/06. The figure shows that this had fallen to 18% by 2015/16 and to only 9% by 2021/22.

In 2021/22, the most prevalent two-way combinations of subject groups were to combine at least one Social Science subject with a STEM subject (24%) and to combine a Social Science subject with a Humanities subject (24%). Historically, these two-way combinations have consistently been among the most popular subject combinations. However, the prevalence of both of these combinations has reduced notably since 2015/16 and the decoupling of AS- and A-level qualifications. In 2015/16, 36% of students combined Social Science and Humanities and 31% combined Social Sciences and STEM subjects, which means there has been a 12 and 7 percentage point drop respectively in the number of students electing to take these subjects in combination.

Furthermore, though a less common combination among each cohort, there has also been a marked reduction in the proportion of AS/A-level students choosing to take Humanities and STEM subjects since 2015/16, halving from 24% to 11% in 2021/22.

There has also been a decline in the prevalence of all two-way combinations involving the Arts, however, this has taken place over a more prolonged period. This is consistent with the trends in overall take-up of the Arts discussed in Section 2.1. For example, 24% of AS/A-level students combined Arts and Humanities in 2005/06. This fell to 18% in 2015/16 and then reduced even further to 9% by 2021/22. Similarly, the proportions combining Arts and Social Sciences or Arts and STEM subjects has dropped by 10% and 8% respectively between 2005/06 and 2021/22.

Figure 12: Proportion of AS- and A-level students taking each possible two-way combination of subject groups

2005/06	Arts					
	Humanities	24%				
	Social Sciences	22%	37%			
	STEM	14%	24%	29%		
	Other	18%	27%	30%	24%	
		Arts	Humanities	Social Sciences	STEM	Other

2015/16	Arts					
	Humanities	18%				
	Social Sciences	18%	36%			
	STEM	11%	24%	31%		
	Other	4%	8%	10%	9%	
		Arts	Humanities	Social Sciences	STEM	Other

2021/22	Arts					
	Humanities	9%				
	Social Sciences	12%	24%			
	STEM	6%	11%	24%		
	Other	0%	1%	3%	2%	
		Arts	Humanities	Social Sciences	STEM	Other

Note: Totals will not sum to 100% because students who do subjects from three or more subject groups will be counted more than once.

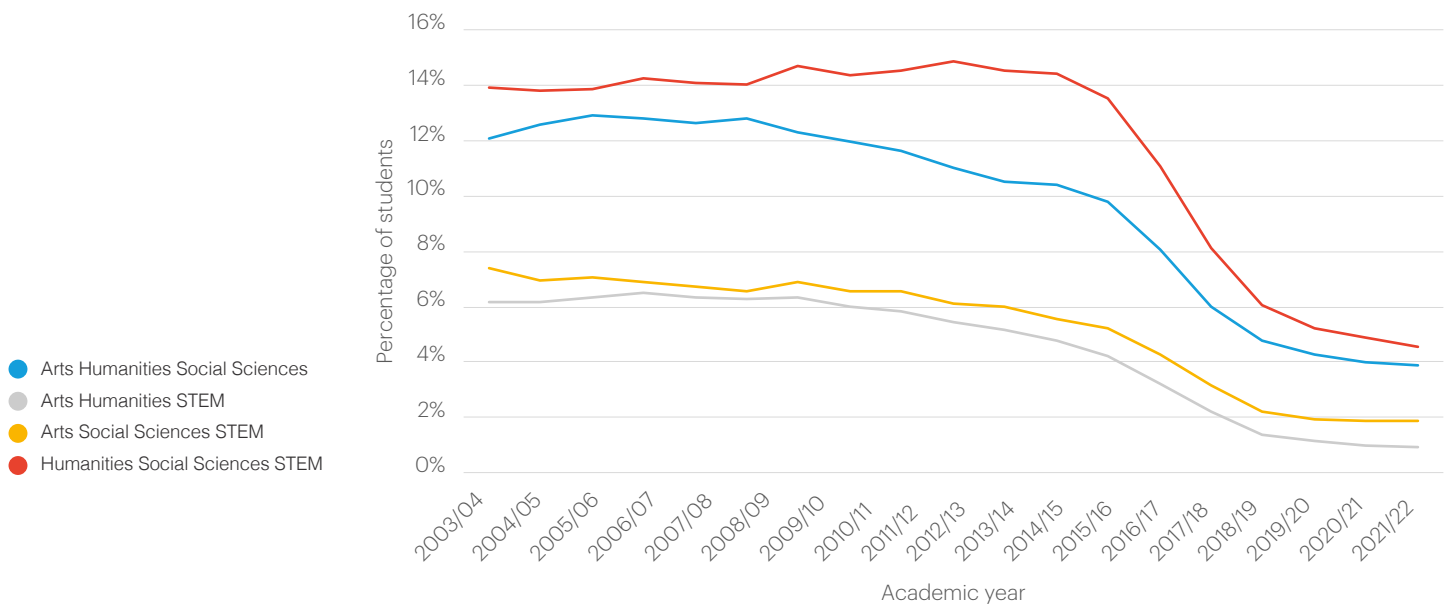
2.2.2 Three-way major subject group combinations

Only a small proportion of students study subjects from three major subject groups and these are dominated by two combinations of subjects

Figure 13 shows the proportion of students who are choosing to combine subject combinations across three of the major subject groups. The two most popular combinations combine both Social Science and Humanities subjects, studied alongside either a STEM subject or an Arts subject.

However, irrespective of the combination under consideration, the proportion of students studying a combination of subjects from any three different major subject groups has dropped significantly since 2015/16, likely due to decoupling. Until 2015/16, around 14% of each cohort opted to study a combination of STEM, Social Science and Humanities subjects. Among the 2021/22 cohort, this has dropped to only 5% of students. For example, the number of students combining Biology, English Literature and Psychology – a popular 3-way subject combination – dropped by three-quarters between 2015/16 and 2021/22. Similarly, the number of students combining Mathematics, History and Geography dropped by around 85% between 2015/16 and 2021/22.

Figure 13: The proportion of students studying different three-way combinations of subjects by major subject group



2.2.3 Individual subject combinations

This sub-section focuses on outlining the predominant trends in subject combinations in the 2021/22 cohort. Given that the number of possible subject combinations is vast, these can be further explored across different cohorts in the accompanying data dashboards.

Social Sciences

Students studying at least one Social Science in the 2021/22 tended to take a broad range of other subjects. However, there are some pairs of subjects that feature more prominently. Most notably, 46% of students studying Economics combine this with Maths and 21% combine it with Business Studies. Maths is often required for Economics courses at university.¹⁸ Similarly, 37% of Government and Politics students combine this with History. Among Psychology students, 27% combine with Biology and 19% combine with Sociology.

For other Social Science subjects, the subjects they are taken with range more widely. For example, 22% of students studying Geography combine this with Biology, 20% combine with Maths and 19% combine with Psychology. Business Studies and Economics are also often combined with Geography.

The most common three-way combination including at least one Social Science was to take Psychology with Biology and Chemistry. 10% of students studying Psychology choose this combination. One possible explanation is that some Psychology degree or apprenticeship courses may require or recommend a STEM subject at Level 3.¹⁹

Other common three-way combinations in the 2021/22 cohort include: 9% of Economics students also studying Maths and Physics, 7% of Geography students taking Biology and Chemistry, 7% of Government and Politics students taking English Literature and History and 7% of Law students taking Psychology and Sociology. As with Psychology, a key driver of subject combinations may be actual or perceived pre-requisites for further study in these subjects.

Humanities

Humanities students, like Social Science students, tend to take a broad range of other subjects. However, the subjects they are inclined to combine tend to vary depending on the type of Humanities subject they are taking.

Across all three types of English A- and AS-level (English Literature, English Language and Literature and English Language), the most common subjects that students combine their English qualification with are Psychology, Sociology and History. For example, 29% of English Language students, 26% of English Language and Literature students and 25% of English Literature students also study Psychology.

In contrast, students studying a language often combine this with a STEM subject, English Literature or Psychology. For students studying French, Spanish, and German in 2021/22, the most popular subject to study alongside their language is Mathematics, at 24%, 20% and 32% respectively. Further, the most common three-way subject combinations across French, German and Spanish are with STEM subjects. Around 9% of German students, 8% of students taking French and 8% of students taking Spanish combine their language with Biology and Chemistry.

¹⁸ UCAS (2019), *UCAS Subject guides: Economics*, UCAS. Available at: <https://www.ucas.com/explore/subjects/economics#getting-in-entry-requirements>. (Accessed: 21 June 2024).

¹⁹ *Ibid*

Other large Humanities subjects like History and Religious Studies see students take combinations across a wide range of subjects, but these combinations typically are across the Humanities and Social Sciences, rather than STEM or Arts subjects. Again, combinations with English Literature and Psychology are quite common. For History, 22% combine with English Literature, 20% with Psychology and 16% with Government and Politics. For Religious studies, 25% combine with Psychology, 21% with History, 20% with English Literature and 20% with Sociology.

Arts

As was the case for Humanities, the subjects that Arts AS/A-level students are studying in combination with their Arts subject varies somewhat across individual subjects. For example, Music and Design & Technology students often combine this with STEM subjects, namely Maths and Physics. In 2021/22, around 32% of Design & Technology students and 27% of Music students also choose to study Maths, while 23% of Design & Technology students also choose to study Physics. Further, around 18% of Design & Technology students combine this with both Maths and Physics.

AS- and A-level students studying Art and Design, Media Studies and Performance Arts are more likely to also be studying other Arts subjects, Humanities or Social Sciences, though STEM subjects do still feature. In the 2021/22 cohort, 19% of Art and Design students also study Psychology, 12% study Media studies and 12% study Mathematics. Around 23% of Performance Arts students combine this with English Literature, 21% with Psychology and 15% with History. The breadth of combinations studied by these students is reflected in the three-way combinations of subjects as there are no single three-way combinations that appear particularly commonly.

STEM

Students studying STEM subjects overwhelmingly choose to study at least one additional STEM subject. In 2021/22, 87% of Physics students, 69% of IT/Computer Studies and 57% of Chemistry students choose to also study Maths. 68% of Chemistry students choose to also study Biology and 56% of Biology students choose to study Chemistry. Furthermore, as previously discussed, comparatively large proportions of all AS- and A-level students exclusively study STEM subjects. The most common combinations include: Biology, Chemistry and Maths; IT/Computer Studies, Mathematics and Physics; and Chemistry, Maths and Physics.

Psychology and Economics are the only non-STEM subjects that are commonly combined with STEM subjects. In 2021/22, 32% of students taking Biology and 18% of those taking Chemistry also studied Psychology, while 19% of Maths students also studied Economics.

2.3 How do AS- and A-level subject trends compare to trends at Level 3 as a whole?

This sub-section contextualises the overarching AS- and A-level subject trends discussed above in the context of the wider Level 3 post-16 choice landscape, including both academic qualifications (e.g. AS/A-levels) and vocational qualifications such as Applied Generals. It covers how overall subject trends change when all Level 3 qualifications are considered, and how the qualification split between academic and vocational varies across students studying different major subject groups.

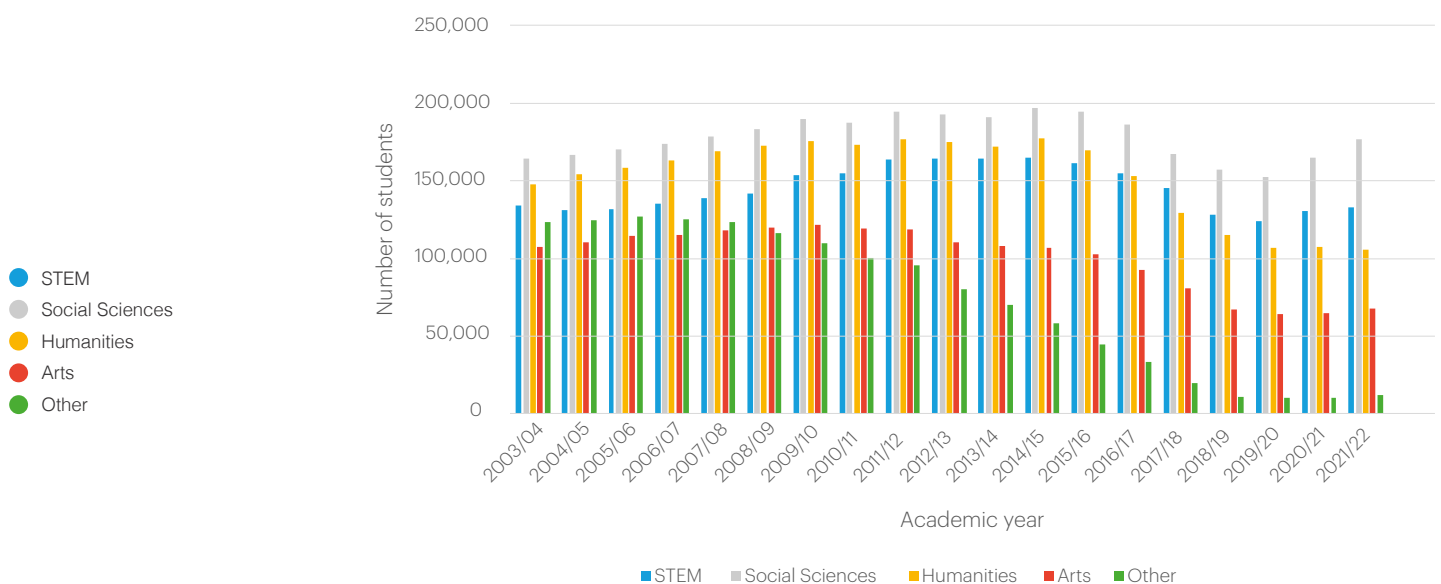
Summary of key findings:

- The proportion of Level 3 students overall studying each major subject group (including academic and vocational qualifications) broadly mirrors the trends observed for AS/A-level students.

2.3.1 How do overall subject trends compare when Level 3 qualifications are included?

Figure 14 and Figure 15 present the number and proportion of all Level 3 students (including both academic and vocational qualifications) studying Arts, Humanities, Social Sciences, STEM and Other subjects respectively. They also show how this has changed since 2007/08. Both figures highlight that the major subject group over time trends for all Level 3 students broadly mirrors the trend presented for AS- and A-level students in Section 2.1. This is unsurprising given that AS- and A-levels represent an important part of the Level 3 post-16 qualification landscape. For example, the share of Level 3 students overall (which includes AS/A-level students) studying Humanities fell by 18 percentage points from 42% in 2007/08 to just 24% in 2021/22. This is similar to the fall in Humanities take-up amongst AS/A-level students.

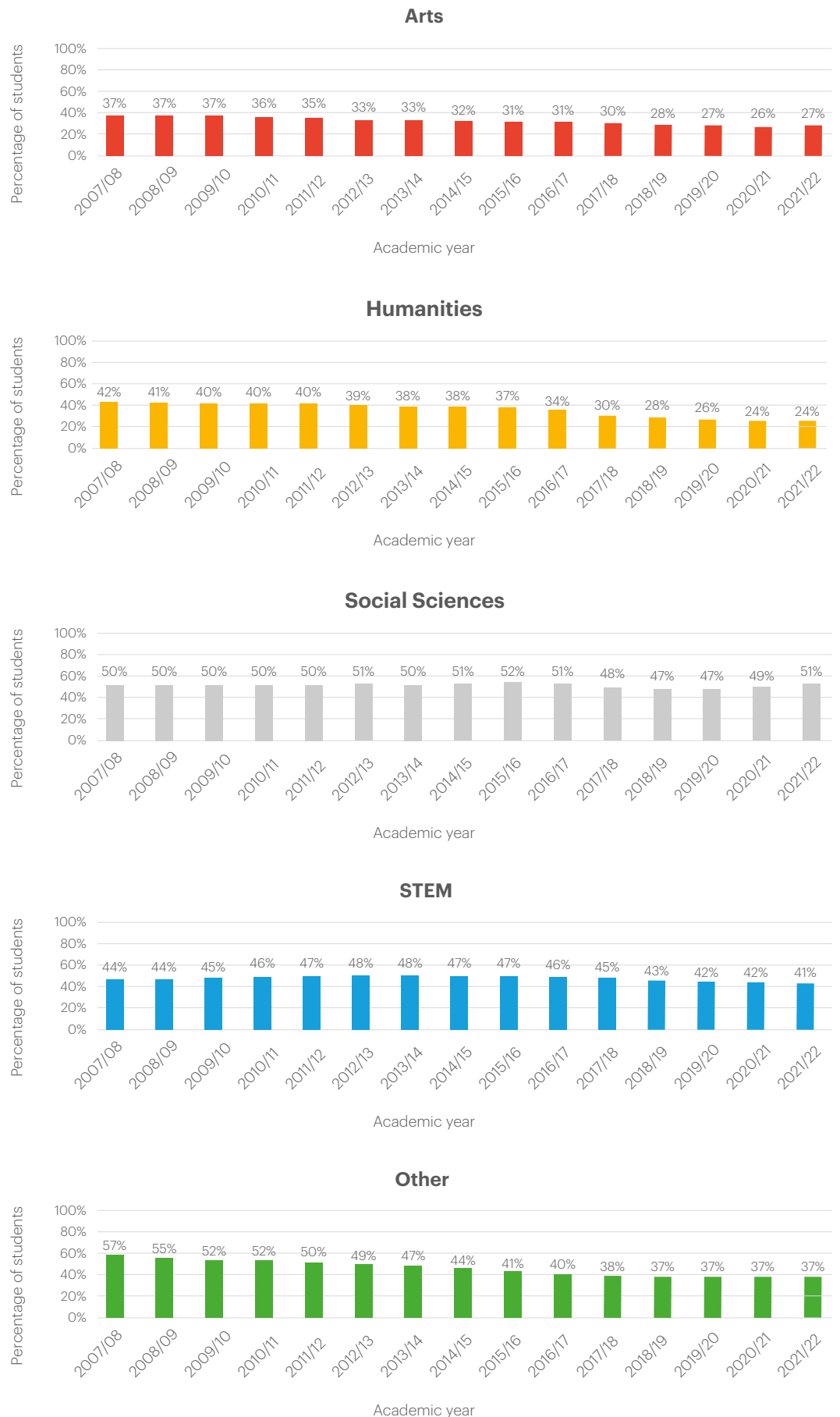
Figure 14: Number of students at Level 3 studying each major subject group



There are, however, some notable differences. Most notably, a far greater number of Level 3 students study Other subjects than AS/A-level students. This is likely due to the much wider range of subjects available in this category in other Level 3 qualifications. Comparing Figure 4 and Figure 14 shows us that Humanities subjects are more popular amongst AS-/A-level students than Arts subjects, but the opposite is true in recent years once other Level 3 qualifications are considered.

These figures also suggest that the decline in the study of Arts at Level 3 has not been as severe as the AS-/A-level data suggested. While there is still a decline in the proportion of Level 3 students studying Arts subjects, it is not as sharp as it was amongst just AS-/A-level students. In 2007/08, 41% of AS- and A-level students were studying Arts subjects. That fell to 24% by 2021/22. In comparison, 37% of Level 3 students (which includes AS- and A-level students) were studying Arts subjects in 2007/08, falling to 27% in 2021/22.

Similarly, the decline in Level 3 students studying Other subjects is not as pronounced as it is for A- and AS-level students alone. This is because it is not possible to meaningfully compare the Other category for AS- and A-level students, which is dominated by the General Studies qualification, to the vocational Level 3 Other category which has far more options. For example, these include qualifications such as BTECs in Health and Social Care, Hospitality, and Agriculture.

Figure 15: Proportion of Level 3 students studying at least one subject in each major subject group

2.3.2 How does qualification mix compare between different subject groups?

In this sub-section, we consider how qualification splits vary between students studying different subject groups to develop a better understanding of the role of qualification type in subject take-up.

Figure 16 presents the qualification breakdown across the 2007/08, 2015/16 and 2021/22 cohorts among students studying at least one qualification in a subject group. For example, the figures for STEM in 2021/22 show that, among students studying at least one Level 3 STEM qualification (either academic or vocational), 42% are studying AS- or A-levels only, 38% are studying a mix of both AS- and A-levels and vocational qualifications and 20% are studying only vocational qualifications.

The figure shows that among students studying at least one Arts subject there appears to have been a shift towards studying vocational Level 3 qualifications, as opposed to AS- or A-levels. In 2021/22, 28% of Level 3 Arts students were studying only AS/A-level qualifications. This represents a notable decrease since 2007/08 when 42% of students taking an Arts subject were exclusively taking AS/A-levels. Conversely, the proportion of students studying at least one Arts subject electing to only study Level 3 vocational qualifications has increased over the same period from 17% in 2007/08 to 31% in 2021/22. Despite this apparent shift towards vocational Level 3 qualifications, however, the overall trend discussed in Section 2.3.1 indicates that the overall take-up of the Arts at Level 3 is declining.

A similar shift towards Level 3 vocational qualifications is observed among students studying at least one subject in the 'Other' group. In 2021/22, just 4% of Level 3 students studying an Other subject was studying AS/A-levels only, while 53% were studying other vocational Level 3 qualifications only. By comparison, in 2007/08, 30% studied AS/A-levels only and 31% studied exclusively other Level 3 qualifications. This reflects the removal of the General Studies A-level (as discussed in Section 2.1.1) as well as changes in the number and popularity of vocational qualifications and subjects that sit within the Other subject category.

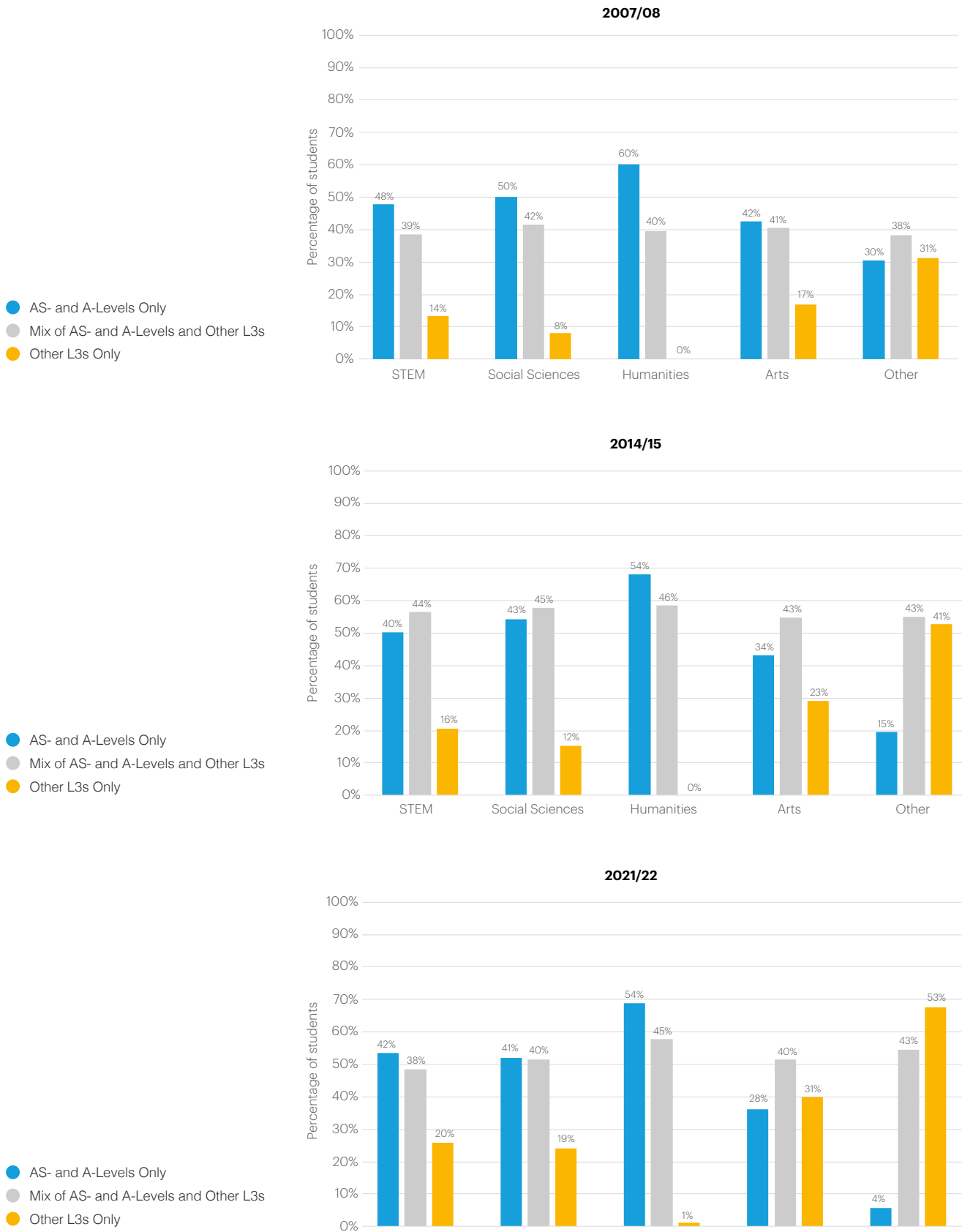
In contrast, nearly all students studying at least one Humanities subject are choosing to study at least one AS/A-level. More than half study AS/A-levels exclusively. Almost all Humanities students consistently take at least one AS/A-level, with the majority choosing to study exclusively AS/A-level qualifications. This has remained relatively stable over the past two decades. This reflects the fact that almost all Humanities subjects are only offered as AS/A-level qualifications.

Among Level 3 students studying at least one STEM or at least one Social Science subject, there has been an expansion in the proportion of students exclusively studying these subjects via vocational qualifications. Today, around a fifth of students studying a STEM or Social Science subject (20% and 19%) respectively are studying only vocational Level 3 qualifications (as opposed to AS/A-levels). In comparison, in 2007/08, 14% of students taking a STEM subject and 8% of students taking a Social Science subject studied vocational Level 3 qualifications. This may reflect the increased popularity of vocational qualifications like Applied Generals and the breadth and number of STEM and Social Science vocational qualifications.

It is important to note that the above trends are likely to be impacted by planned changes to the Level 3 vocational landscape. T-levels, new Level 3 vocational qualifications which are broadly equivalent in size to 3 A-levels, were first launched in September 2020 in a handful of subjects. While the number of students currently taking these new qualifications remains small, this could have a more meaningful impact on the qualification landscape in the coming years as the Government are (as of Spring 2024) planning to defund a number of popular BTEC qualifications from 2025 onwards, where they overlap with T levels.²⁰ This could greatly affect subject choice across the Level 3 vocational landscape in future.

²⁰ DfE (2023), Wave 3 T Levels: overlapping qualifications. Available at: <https://www.gov.uk/government/publications/wave-3-t-levels-overlapping-qualifications>. (Accessed: 11 March 2024).

Figure 16: Proportion of students studying different qualification combinations by major subject group



3.0 Trends in subject choice by key characteristics

This section provides an overview of how subject choice at AS- and A-level varies by student characteristics and across providers.²¹ This is also contextualised within the wider qualification landscape by exploring how patterns at AS/A-level differ to those for Level 3 overall (including both AS/A-levels and vocational qualifications such as Applied Generals). While it is focused on 2021/22, data from other years can be found in the accompanying data dashboards.

3.1 Subject choice by student characteristics

In this sub-section, we investigate how the take-up of subjects at AS- and A-level (both at major group and individual subject level) varies by key student characteristics, including prior attainment, gender, ethnicity, eligibility for free school meals at age 16 (FSM), whether students have a special educational need or disability (SEND) and whether English is an additional language (EAL).²²

This study is primarily focused on how subject take-up varies across AS-/A-level students with different characteristics. Students with some characteristics (e.g. disadvantaged students) are less likely to do AS-/A-levels in the first place.²³ While this does not necessarily mean there will be differences across the proportions of AS-/A-level students choosing different subjects, previous literature has highlighted notable differences such as disadvantaged students being less likely to study science and Maths A-levels.²⁴

In Section 4.0, we extend the analysis further by considering how student characteristics relate to subject choice, holding all other factors constant. This is important as there are some characteristics which strongly relate between students: for example, more disadvantaged students are also more likely to have lower prior attainment.

²¹ For the most part, student characteristics are identified at the end of KS4 (at age 16) to ensure consistency between pupils. Only region and provider information are identified at post-16. Students in independent schools are excluded when looking at characteristics as consistent characteristic information is not recorded in the data.

²² We use the following ethnicity groups: Asian, Black, Chinese, Mixed, Other Ethnic Group, and White. In the data, there is also a small group of students of unknown ethnicity.

²³ DfE (2023), 'Level 2 and 3 attainment age 16 to 25'. Available at: <https://explore-education-statistics.service.gov.uk/find-statistics/level-2-and-3-attainment-by-young-people-aged-19/2021-22> (Accessed: 7 March 2024).

²⁴ Allen, R., Parameshwaran, M. and Thomson, D. (2016) *Social and ethnic inequalities in choice available and choices made at age 16*. Available at: https://assets.publishing.service.gov.uk/media/5a80a3a240f0b62302694aa7/SMC_social_and_ethnic_inequalities_in_post_16_report.pdf.

Summary of key findings:

Characteristics with larger differences in subject uptake

- Male students were over-represented in STEM but under-represented across Humanities and Arts.
- Students from an Asian ethnic background were over-represented in STEM but under-represented in the Humanities, Arts and Other subjects.
- Students from a White ethnic background were over-represented across Arts and Other subjects.
- Students with EAL were more likely to study Social Sciences, STEM and Modern Foreign Languages, rather than Arts or Other subjects.

Characteristics with smaller differences in subject uptake

- Similar proportions of disadvantaged pupils appear to be taking up all the major subject groups.
- Only very small proportion of students studying any AS/A-level major subject group did not achieve 9-4 in five of their GCSEs.

Comparing to the wider Level 3 landscape

- For most characteristics, the patterns of students studying each major subject group are broadly similar between AS/A-level students and all Level 3 students.

3.1.1 Gender

Male students are over-represented across STEM subjects but under-represented across Humanities and Arts

As shown in Figure 17, only 46% of students studying STEM subjects in the 2021/22 cohort were female, compared to 56% of students studying all subjects. In contrast, 66% of Humanities students, 63% of Arts students and 59% of Social Science students were female. This highlights that there are large differences in subject take-up across all major subject groups.

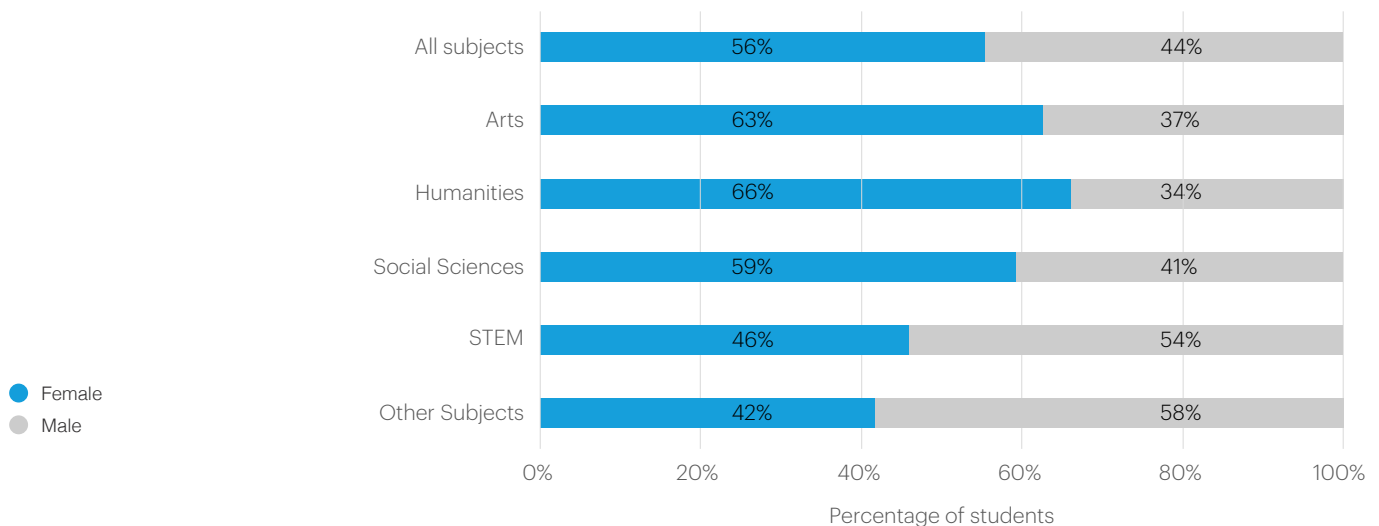
Further, participation by gender varies significantly at the individual subject level and there are large differences in take-up by gender within each major subject group. Within the Arts, Art and Design and Performance Arts were both heavily female-dominated, with 74% and 76% of students identified as female compared to 63% of Arts students. The inverse is true for Design and Technology, where only 29% of students were female. For Media and Music, the gender balance was more even at 56% and 46% respectively.

While all large Humanities subjects are female-dominated, the extent of this varies by subject. For example, 73-78% of students studying each of the English subjects and French were female, compared to 66% of Humanities students overall. In contrast, History take-up had a more balanced composition by gender (54% of History students being female).

Participation by gender also varies across the Social Science subjects. Among the largest subjects, Business Studies, Economics and Geography are male-dominated. For these subjects, 40%, 30% and 47% of students respectively are female, compared to 59% of Social Science students. In contrast, Psychology and Sociology are heavily female-dominated, with 74% and 76% of students respectively being female.

This variation is also observed across the individual STEM subjects. Biology and Chemistry participation in 2021/22 were skewed towards female students, with 64% and 55% of students studying these subjects respectively being female, compared to 46% of STEM students overall. In contrast, 37% of Maths, 22% of Physics and only 15% of IT/Computer Science students were female.

Figure 17: Proportion of AS-/A-level students studying different major subject groups by gender (2021/22)²⁵



In general, the gender disparities observed across subjects are longstanding and have persisted over time. For example, the gender imbalance in STEM has not shifted significantly since 2010. If anything, the Humanities and Arts have become more female-dominated over time. There are some exceptions: Chemistry has become more female-dominated over time, and the share of female students studying IT/Computer Studies has dropped drastically.

3.1.2 Free school meals eligibility

Similar proportions of disadvantaged students were taking up all the major subject groups

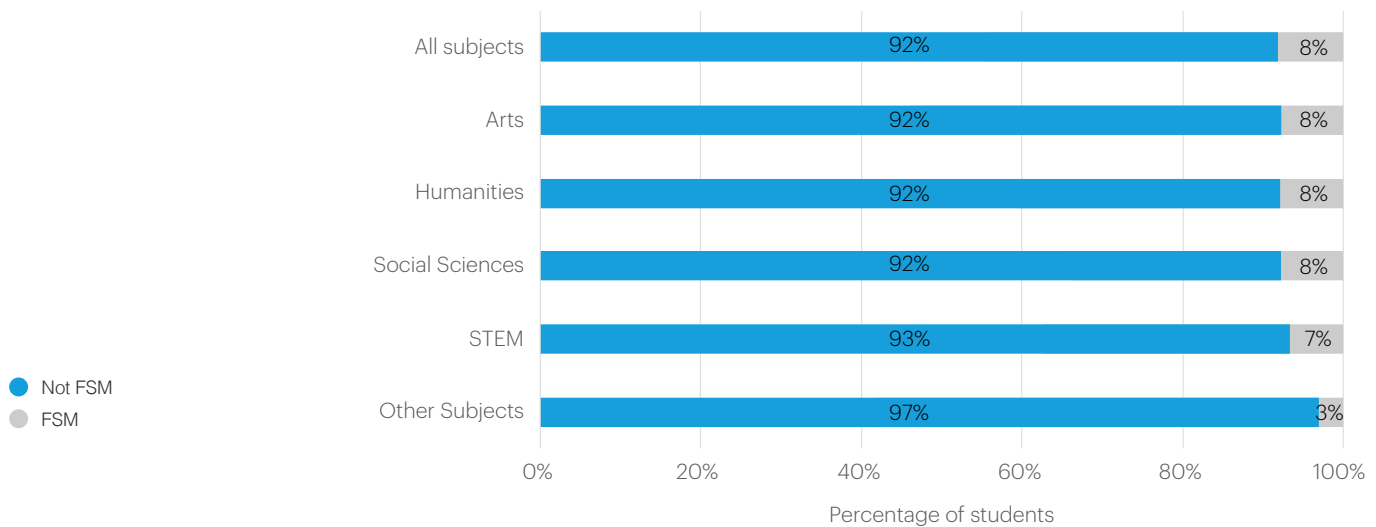
As shown in Figure 18, around 8% of students studying Humanities, Social Sciences and Arts subjects and 7% of students studying STEM subjects were eligible for FSM in 2021/22. This is consistent with 8% of all students studying an AS/A-level in 2021/22 being eligible for FSM.

This is mirrored at the individual subject level. For the most part, there are not large differences in the FSM eligible proportions of students studying each subject. For example, across the Arts, the proportion of students eligible for FSM studying each subject varies from 5% of Music students to 9% of Media students. Similarly, across the STEM subjects, the proportion of students eligible for FSM studying each subject varies from 6% of Physics students to 8% of Chemistry students.

²⁵

We use the term 'Gender' as opposed to 'Sex'. This mirrors the NPD data used here.

Figure 18: Proportion of AS-/A-level students studying different major subject groups by FSM eligibility (2021/22)



There are slightly more marked differences across the large Social Science subjects. Psychology, Law and Sociology see around 9%, 10% and 11% of students eligible for FSM respectively. This compares to around 7% of Economics and Business Studies and 5% of Geography students.

Among the large Humanities subjects, the proportion of students eligible for FSM varies from 7% of students studying History, to between 8% and 9% of English Language and Literature students to 10% of Religious Studies students. There are, however, greater differences between the take-up of different languages. Only 3% of students studying German are eligible for FSM, compared to 6% of students studying French or Spanish. While a small group, almost a quarter (24%) of students studying non-European languages were eligible for FSM.

Comparing trends over the last decade, the most marked pattern is that take-up among FSM pupils in the Humanities and Arts has increased more over time compared to other subject groups. In 2007/08, take-up of Humanities among FSM pupils (at 6%) was similar to that among STEM subjects, whilst in 2021/22, it was slightly higher at 8 percent (compared to 7% for STEM subjects). This appears to reflect small increases in the FSM share of take-up across the large Humanities subjects (including English, History and Religious Studies). However, Social Sciences has tended to have the highest rate of FSM eligible students amongst the subject groups.

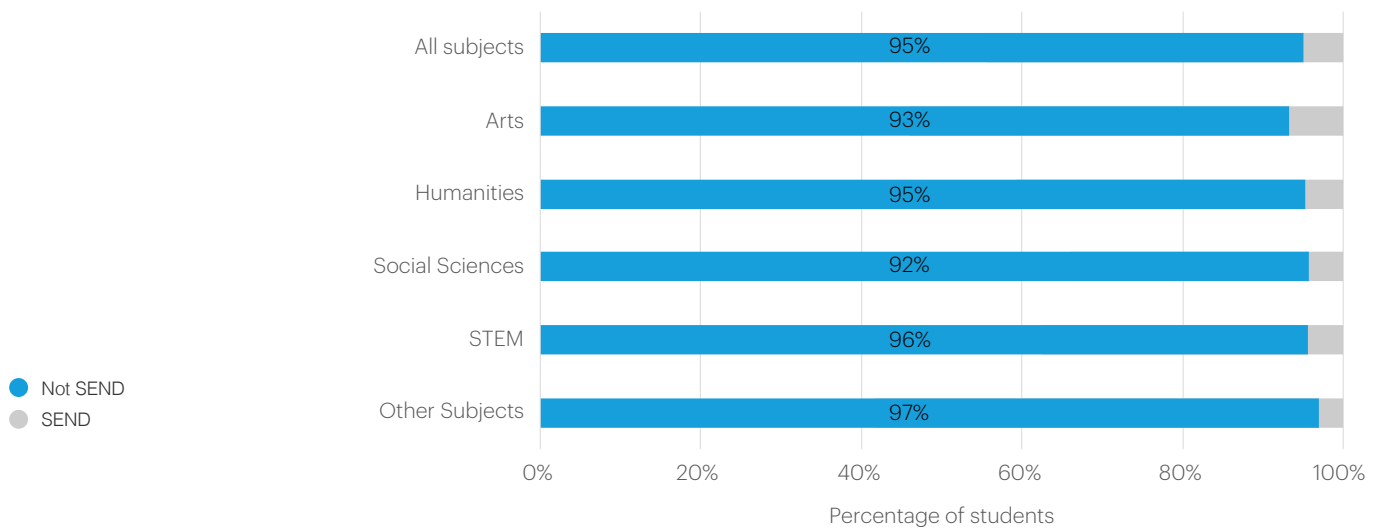
3.1.3 Students with special educational needs and disabilities

Students with SEND are more likely to study Arts subjects

As shown in Figure 19, around 5% of Humanities students and 4% of Social Science and STEM students had SEND, which is similar to the 5% of students across all AS/A-level subjects with SEND. In contrast, students with SEND are slightly over-represented across the Arts subjects at around 7%. Further, the pattern in take-up of SEND students across major subject groups has remained fairly stable over time.

In general, the proportion of students with SEND is broadly similar across the individual subjects within each subject major group. For example, the proportion of students with SEND ranges from 6 to 7% across Arts subjects, 4 to 5% for large Social Science subjects and 3 to 5% for large Humanities subjects. Similarly, most STEM subjects had between 4 to 5% of students with SEND. Only IT/Computer Science exceeds this with 7% of students with SEND.

Figure 19: Proportion of AS-/A-level students studying different major subject groups by SEND status (2021/22)



3.1.4 Ethnicity

There are large differences in the take-up of different subjects across ethnic groups

As shown in Figure 20, students from White ethnic backgrounds are under-represented in STEM subjects and over-represented across the Humanities, the Arts and Other subjects. Around 65% of STEM students in the 2021/22 cohort are from a White background, compared to 70% of AS/A-level students across all subject groups. This compares to 80% of Arts students, 75% of Humanities students and 70% of Social Science students who are from a White background.

Conversely, Figure 20 shows that around 20% of students taking STEM subjects are from an Asian ethnic background, compared to 15% of students across all subject groups. In contrast, only 7% of Arts students and 11% of Humanities students are from an Asian background.

The representation of students from other ethnic backgrounds is broadly similar across each major subject group and only varies to a small extent. For example, students from a Black ethnic background make up 7% of Social Science students, 6% of STEM and Humanities students, 5% of Arts students.

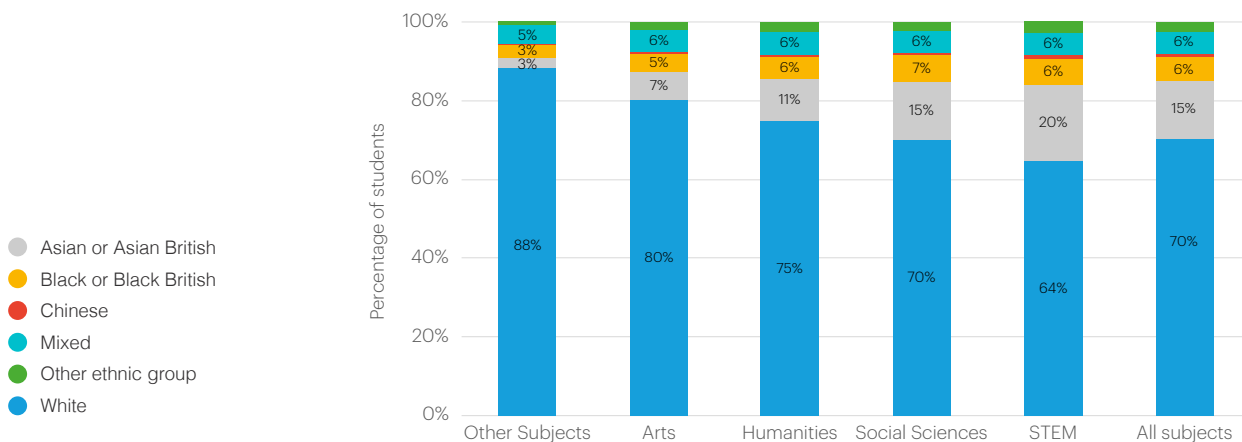
Comparing across the large Humanities subjects in 2021/22, Religious Studies (at 67%), English Literature (at 72%), Spanish (73%) and French (74%) are relatively less likely to be studied by students from White ethnic background, as compared to English Language and Literature (at 79%), History (at 80%) and English Language (83%). Only 8% of students studying non-European languages are from a White background.

Among the large Social Science subjects, take-up across ethnic groups was generally similar. The key exceptions are Economics and Geography. Economics is studied by a lower share of pupils from a White ethnic background (at 58%, compared to 70% across all Social Sciences) and a relatively high share of pupils from Asian ethnic backgrounds (at 23%, compared to 15% across all Social Sciences). Conversely, Geography is studied by a high share of pupils from a White ethnic background (at 83%) and low share of pupils from Asian (at 8%) or Black ethnic backgrounds (at 3%, compared to 7% across all Social Sciences).

Detailed trends for other individual subjects can be found in the accompanying data dashboards.

While the broad patterns of subject choice across different ethnic groups have not changed over the last decade, it should be noted that the proportion of AS/A-level students from minority ethnic backgrounds has grown, from 17% in 2007/08 to 30% in 2021/22.

Figure 20: Proportion of AS-/A-level students studying different major subject groups by ethnicity (2021/22)²⁶



3.1.5 English as an additional language

EAL students are more often choosing to study Social Science and STEM subjects than Arts subjects

As shown in Figure 21, around 24% of STEM students and 19% of Social Science students have EAL, compared to 20% of AS/A-level students across all major subject groups. The proportion of students taking Humanities with EAL is similar to that across all subject groups overall at around 18%. In contrast, students with EAL are under-represented across Arts subjects as around 13% and 5% respectively. It should be noted that these trends may partly reflect differences in take-up of subjects across ethnic groups which are outlined above.

We do nonetheless observe large differences in the proportion of EAL students taking different individual subjects within each subject groups. Across the Arts, only 6% of Performance Arts students and 8% of Music students had EAL compared to 13-15% of Media, Art and Design and Design and Technology students.

Within the Humanities, EAL students were less likely to be represented in English Language and English Language and Literature at around 11-12% of students. Comparatively, higher proportions of students taking English Literature (17%) and Modern Foreign Languages had EAL. Around 16%, 22% and 29% of students studying German, French and Spanish respectively had EAL.

Among the Social Science subjects, Geography had a notably low proportion of EAL students at just 10% whereas more than a quarter (27%) of Economics students have EAL. For the other large Social Science subjects (Business Studies, Psychology and Sociology), the proportion of students taking these subjects with EAL is at around a fifth, ranging from 19-21%, consistent with the proportion studying Social Sciences overall with EAL.

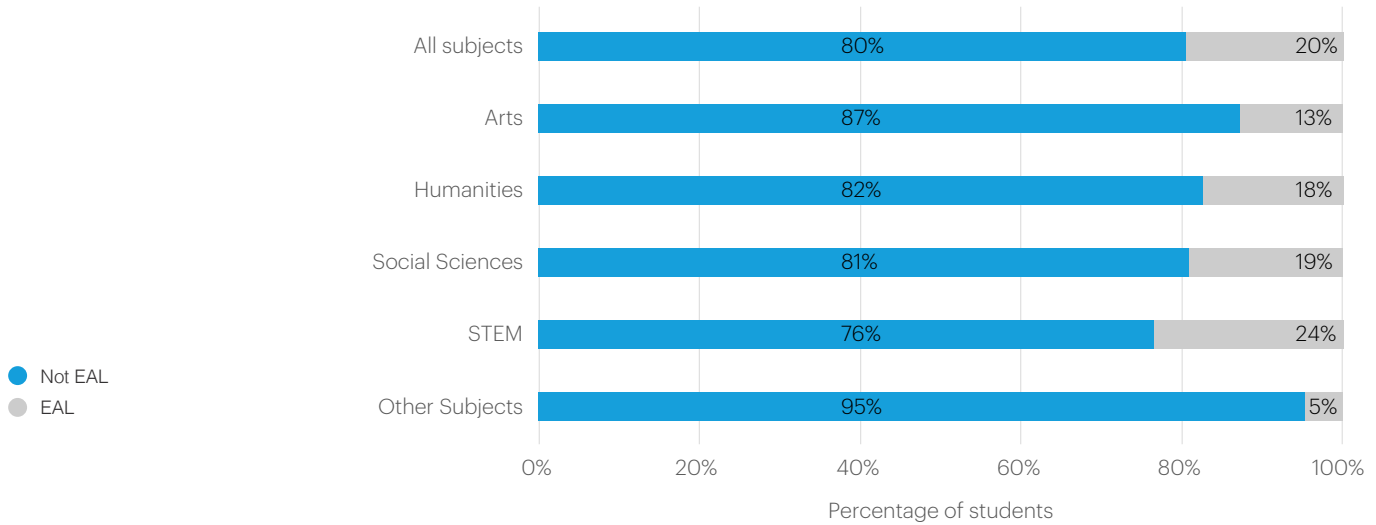
Among the STEM subjects, 22% of students taking Physics have EAL, compared to 24-25% of students taking Biology, IT/Computer Science and Maths. This increases further to 31% of students taking Chemistry.

Similarly to the trends observed for ethnicity, the proportion of AS/A-level students with EAL has grown, from 12% in 2007/08 to 20% in 2021/22.

²⁶

The National Pupil Database maintains a distinction between Chinese and other Asian students. We elected to maintain this distinction in this study.

Figure 21: Proportion of AS-/A-level students studying different major subject groups by EAL status (2021/22)



3.1.6 Geography of subject choice

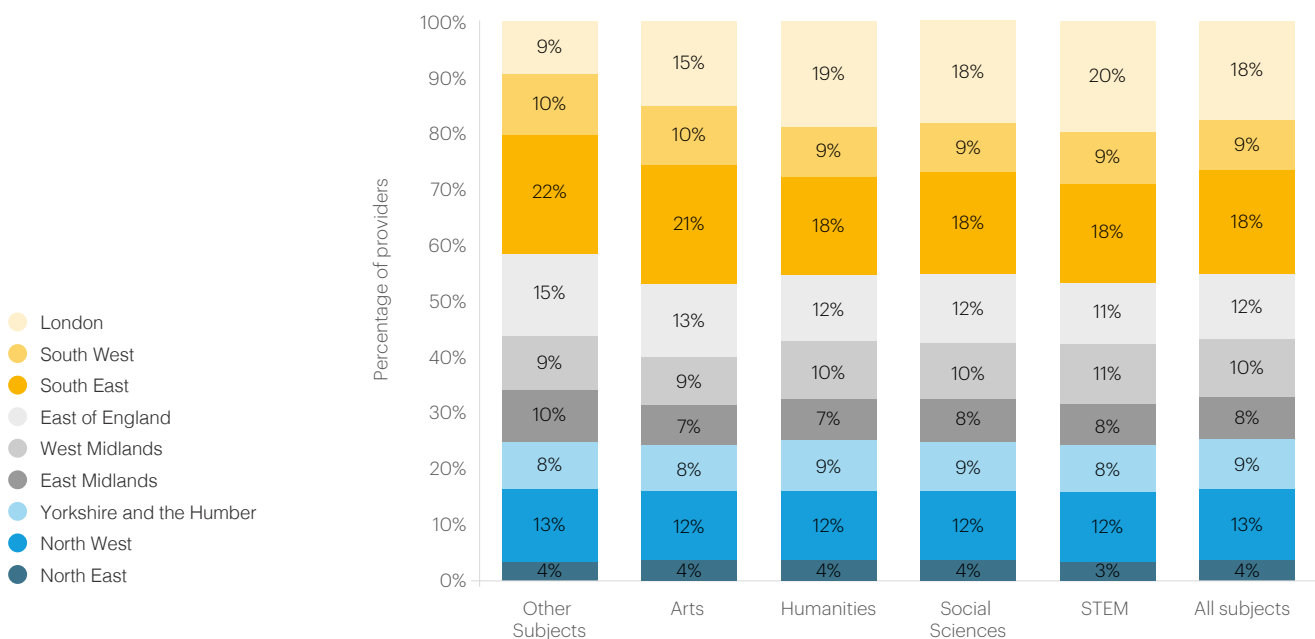
Observable differences in subject take-up across regions were not large.

Figure 22 shows that subject participation by region only varied to a small extent across STEM, Social Sciences, Humanities and Arts subject groups.

Similarly, the proportion of students in rural and urban locations (as shown in the data dashboards) taking each subject was largely comparable. This suggests there are not large geographic differences in subject take-up.

It is, however, important to note that, once other differences in student characteristics are accounted for, we do identify some significant differences across regions and locations which are discussed in Section 4.0. In addition, trends for individual subjects can be found in the accompanying data dashboards.

Figure 22: Proportion of AS-/A-level students studying different major subject groups by region (2021/22)



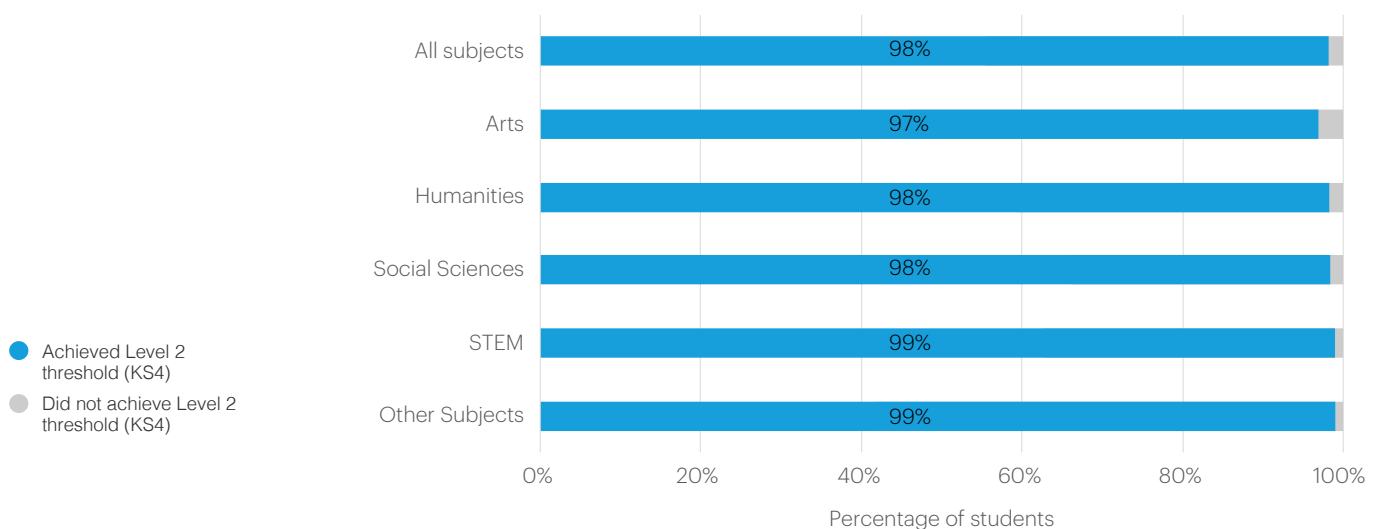
3.1.7 Prior attainment

Only a small proportion of students studying any AS-/A-level major subject group had lower levels of attainment at KS4

As shown in Figure 23, around 2% of AS/A-level students across all subjects had not achieved Level 2 (at least five GCSEs at grades 9-4).²⁷ Around 1% of STEM students, 2% of Social Science students, 2% of Humanities students and around 3% of Arts students did not achieve this attainment threshold at KS4.

The fact that so few students without at least five GCSEs at grades 9-4 study AS/A-levels likely reflects the fact that these students will not typically meet the entry requirements for academic courses (though schools might allow exceptions e.g., cases of ill health). Instead, these students will likely pursue other qualifications or training.

Figure 23: Proportion of AS-/A-level students studying different major subject groups by prior attainment (2021/22)



3.1.8 How do AS- and A-level subject choices compare to trends across Level 3 subjects as whole by student characteristic?

For most characteristics, the proportions studying each major subject groups are broadly similar between AS/A-level students and all Level 3 students.

For the most part, only relatively small differences in the patterns of students with each characteristic taking each major subject group were observed between Level 3 overall and AS/A-level only. For example, around 57% of Level 3 Social Science students were female compared to 59% of AS/A-level Social Science students. The exception to this was for the Other major subject group where patterns differed considerably. This is likely to reflect the large number of vocational qualifications available within the Other major subject group at Level 3.

Higher proportions of Level 3 students had not achieved at least five GCSEs at grades 9-4 than was observed for students taking AS/A-levels.

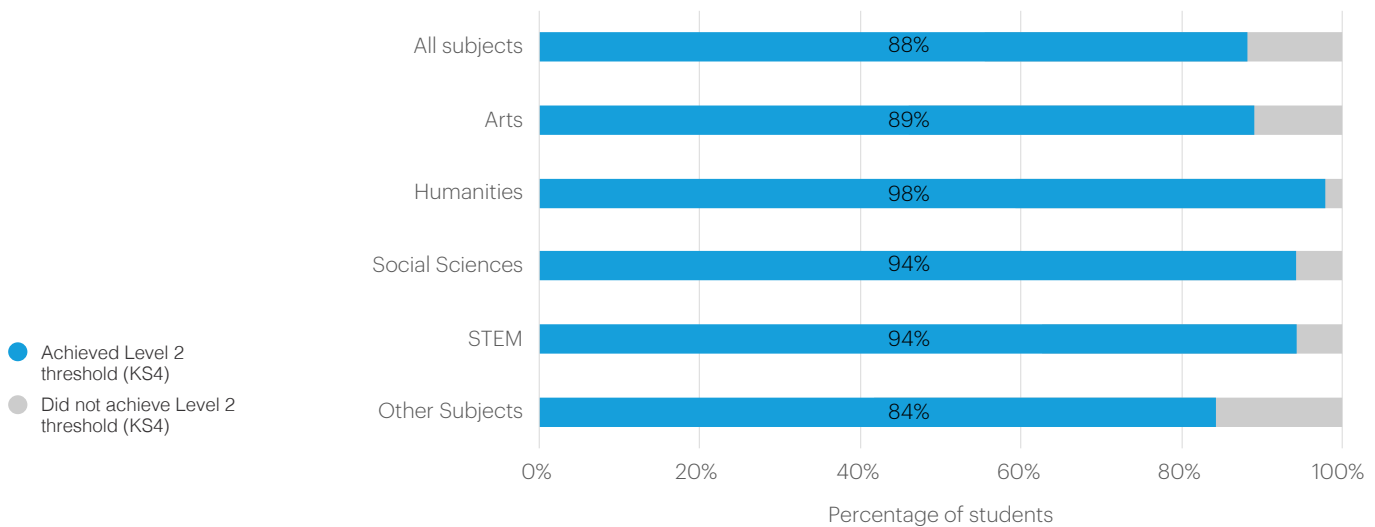
The other notable difference was the participation of lower prior attainers in each major subject group, as shown in Figure 24. This is unsurprising given that entry requirements for vocational Level 3 qualifications, such as Applied Generals, are typically lower than AS/A-levels.

²⁷

Formerly at A*-C. Note that there are a number of series breaks (due to grading reform and definitional changes) in our series, which make comparisons over time difficult. For this reason, our discussion focuses on the latest available year of data.

In sub-section 3.1.7, we showed that for AS/A-levels only around 2% of students in 2021/22 did not achieve the equivalent of five 9-4 grades at GCSE. As shown by Figure 24, the proportion of Level 3 students who did not achieve this was around 10 percentage points higher at 12% in 2021/22. This is reflected across each of the major subject groups, except Humanities (which is unsurprising given that there are very few Humanities qualifications available at Level 3 that are not AS/A-levels). For example, 11% of Level 3 Arts students did not achieve this threshold, compared to 3% of AS/A-level Arts students. For STEM and Social Sciences, the differences were smaller at around 4 to 5 percentage points higher for Level 3 than among AS/A-level students.

Figure 24: Proportion of Level 3 students studying different major subject groups by prior attainment (2021/22)



3.2 Subject choice across providers

In this sub-section, we discuss how the availability of subjects at AS- and A-level (both at major group and individual subject level) varies across all providers offering Level 3 qualifications (including both AS/A-levels and other vocational qualifications).²⁸ It should be noted that, for the purposes of our analysis, subjects offered by providers are proxied by whether students were studying a given subject at a given provider in a given year. Furthermore, changes in the share of providers offering a particular subject may be both a driver and a consequence of subject trends. For example, a provider may no longer be offering a particular subject in response to changes in the wider policy context, or may decide it is no longer financially viable due to a lack of existing take-up among students.

Summary of key findings:

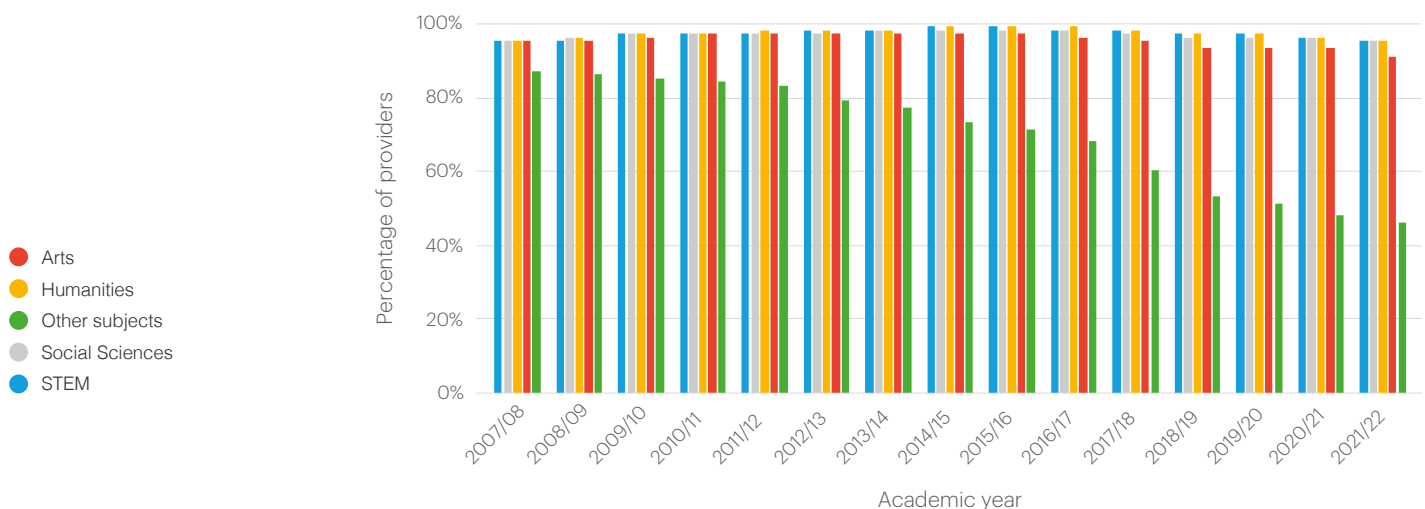
- Almost all providers are offering AS/A-levels in each of the major subject groups and this has remained broadly stable since 2007/08.
- There is significantly more variation at the individual subject level, and more subjects have seen declining levels of coverage across providers since 2007/08 than subjects seeing increases.
- Arts subjects, except for Arts and Design, in particular have seen a large decline in offering across providers. Availability of Humanities subjects have also been affected, albeit to a lesser extent than the Arts.

²⁸ Providers with fewer than 20 students in a cohort are not included in the analysis presented in this section. This reduces variability in the time-series driven by very small providers. All percentages are based on the share of all providers that offer Level 3 qualifications to at least 20 students in that cohort. More than 95% of such providers offered AS-/A-levels in each year in the data.

Most providers are offering AS/A-levels in each of the major subject groups, with the exception of Other subjects, and this has remained broadly stable since 2007/08

As shown in Figure 25, over 95% of Level 3 providers have consistently offered Humanities, Social Sciences and STEM AS/A-level subjects since 2007/08. For Arts subjects, the share of providers offering these subjects has dropped slightly since 2007/08, falling from 97% to 91%, but remains high. However, the availability of Other subjects (which is presented on a separate scale) has declined drastically since 2007/08, dropping from 87% of providers offering these AS/A-level subjects in 2007/08 to just 46% of providers in 2021/22.

Figure 25: Proportion of providers offering each AS/A-level major subject group over time²⁹



However, the share of providers offering different individual subjects has declined, particularly among Arts and Humanities subjects (as compared to Social Science and STEM subjects). This suggests that availability of qualifications across providers may be partly contributing to the decline in Arts and Humanities take-up, as outlined in Section 2.1. However, as outlined above, we cannot say this for certain. The trends highlighted here are discussed in further detail below.

3.2.1 Provision of individual subjects

Social Sciences

Across the large Social Science subjects, the share of providers offering each subject varied between 2007/08 and 2015/16, as shown in Figure 26. Since 2015, all large Social Science subjects have seen some decline in offering across providers.

Psychology, Geography and Business Studies have experienced relatively small declines in availability in recent years, having previously been reasonably stable. For example, the share of providers offering Psychology remained broadly stable at around 90% from 2011/12 to 2015/16, with only a decline since 2015/16 from 91% to 86% in 2021/22. Similarly, the availability of Geography across providers was stable at 87-88% until 2016/17 and has since declined by around 6 percentage points, from 87% to 81% in 2021/22. The decline in the proportion of providers offering Business studies appears to have started slightly earlier, dropping from 74% in 2011/12 to 62% in 2021/22.

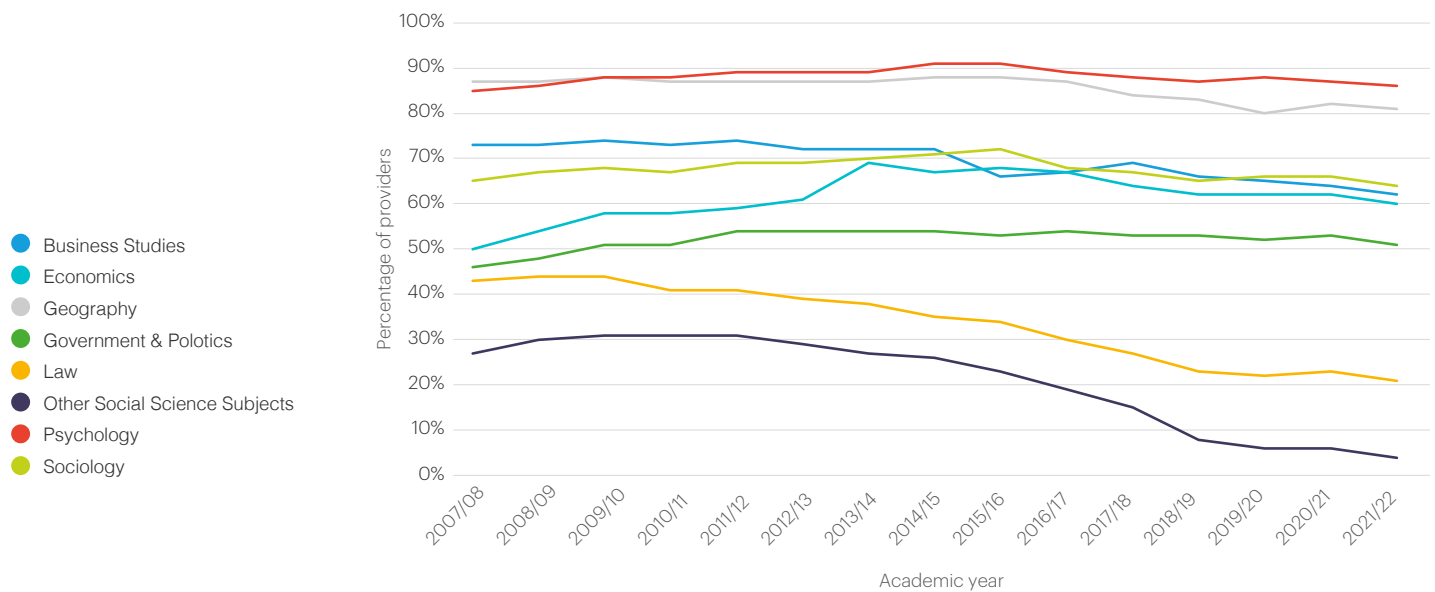
The decline in the availability of Law AS/A-level stands out from this overall trend as it has been far larger in scale and has taken place over a much longer period. The share of providers offering this AS/A-level has halved since 2009/10, dropping from 44% to 21% of providers in 2021/22.

²⁹

Figures are rounded to the nearest percentage point to protect against statistical disclosure.

In contrast, the availability of some Social Science subjects across providers expanded prior to 2015/16, before experiencing a decline from 2015/16 onwards. For example, the share of providers offering Economics rose notably from 50% in 2007/08 to 68% in 2015/16 before declining to 60% of providers in 2021/22. Similarly, the proportion offering Sociology had increased from 65% in 2007/08 to 72% in 2015/16 before then declining to 64% of providers in 2021/22.

Figure 26: The share of providers offering individual Social Science subjects



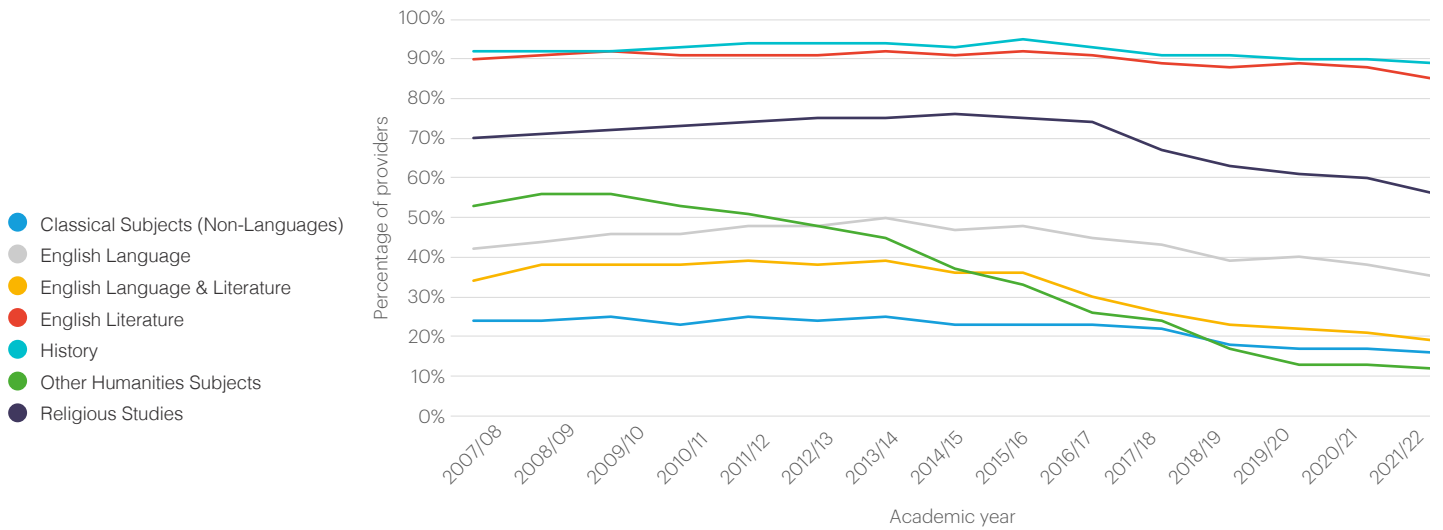
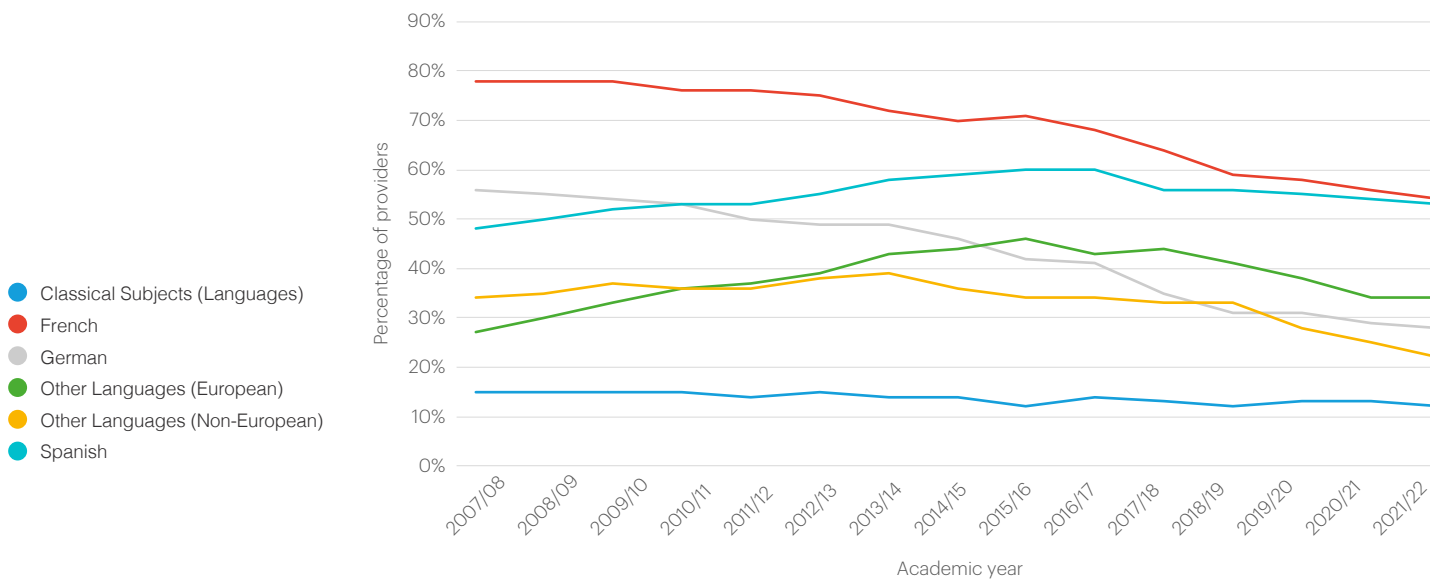
Humanities

Almost all Humanities have experienced a reduction in the share of the providers offering these subjects between 2007/08 and 2021/22.³⁰ None of the Humanities subjects considered have grown since 2015/16. However, the scale, duration and pattern of the decline varies greatly, as shown in Figure 27. For example, the provision of the largest Humanities (History and English Literature) has remained reasonably stable, only declining slightly since around 2015/16. The share of providers offering History dropped from 95% in 2015/16 to 89% in 2021/22 and the share providing English Literature dropped slightly from 92% to 85% over the same period.

In contrast, the availability of English Language and English Language and Literature AS/A-levels expanded until 2013/14 (to 50% and 39% respectively) but has declined ever since. In 2021/22, English Language was available across 35% of providers while English Language and Literature was available across just 19% of providers. Similarly, Religious Studies availability increased slightly until 2014/15 to 76% before declining to 56% of providers in 2021/22.

The reduction in the share of providers offering various Modern Foreign Languages has been particularly marked. Further, this has generally taken place over an extended period of time. For example, the availability of French dropped from 78% in 2009/10 to 54% in 2021/22, while the availability of German declined steadily from 56% in 2007/08 to just 28% in 2021/22. The trend for Spanish, however, differs. The provision increased from 48% of providers in 2007/08 to 60% in 2016/17 before experiencing a decline to 53% by 2021/22. It is important to note that the reduction in Modern Foreign Languages provision may partly reflect challenges recruiting and retaining teachers, in addition to the changes in the subject choices which students are making.

³⁰ Spanish and Other Languages (European) are the exceptions amongst subjects featured in this study. It should be noted Other Languages (European) covers a range of languages which may have different trends.

Figure 27: The share of providers offering individual Humanities subjects³¹**Humanities (non-language) subjects****Humanities language subjects****Arts**

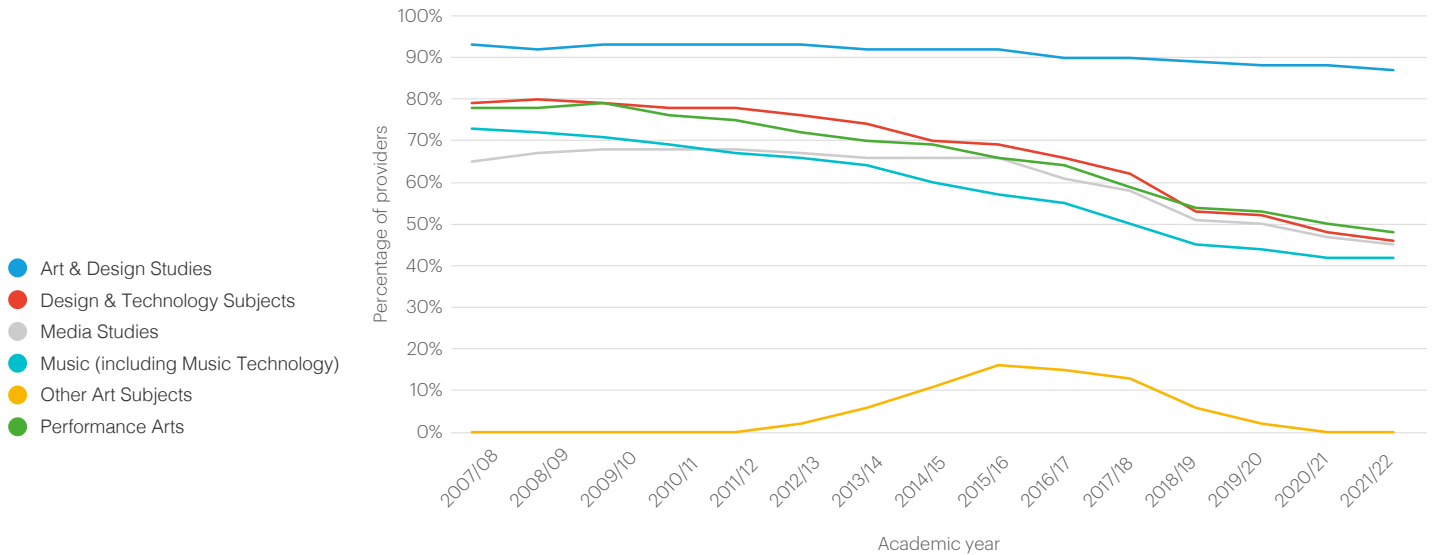
As shown in Figure 28, all individual Arts AS/A-levels subjects except Art and Design have experienced a dramatic decline in the share of providers offering these subjects. This drop has taken place over an extended period. For example, the proportion of providers offering Design and Technology dropped from 78% in 2011/12 to 46% in 2021/22. Similarly, Performance Arts availability dropped from 79% of providers in 2009/10 to just 48% in 2021/22, while Music steadily declined from being available at 73% of providers in 2007/08 to just 42% of providers in 2021/22. The reduction in Media Studies availability occurred more recently, having been relatively stable until 2015/16 before dropping from around 66% to 45% of providers in 2021/22.

³¹

The 'larger' and 'smaller' Humanities groups are the same as in Figure 7, for consistency. The groups were determined by comparing the proportion of students studying each subject between 2003/04 and 2021/22.

In contrast, the provision of Art and Design AS/A-level has stayed stable and continues to be offered by most providers. There has only been a relatively small decline from 92% of providers in 2015/16 to 87% in 2021/22.

Figure 28: The share of providers offering individual Arts subjects

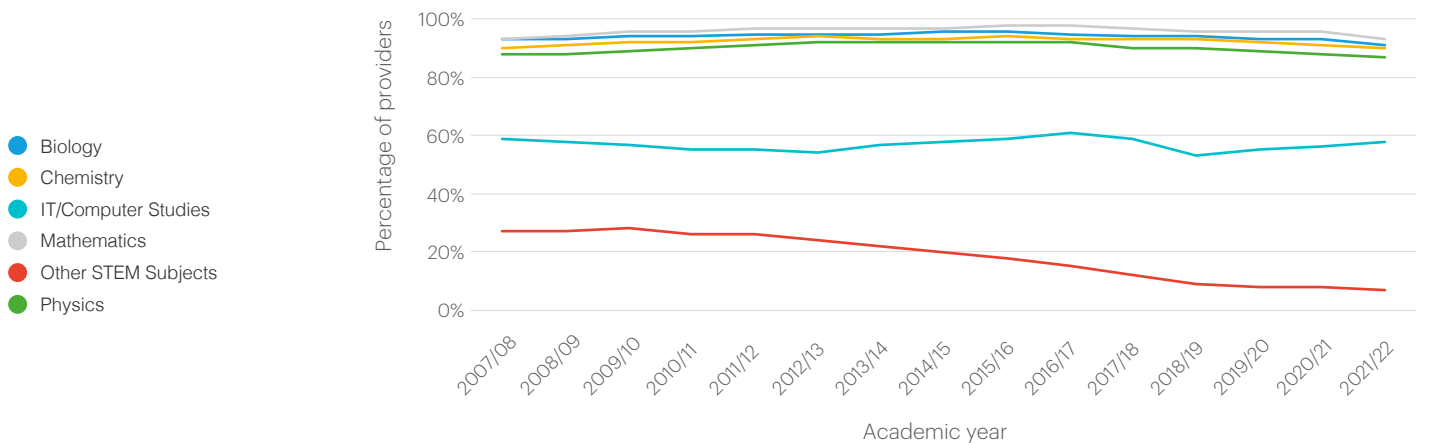


STEM

Overall, the provision of individual STEM AS/A-level subjects has remained stable, with most providers offering these subjects with the exception of IT/Computer Studies. This is shown below in Figure 29. For example, the sciences (Biology, Chemistry and Physics) have all only experienced small declines in the region of 4 to 5 percentage points since 2015/16 and remain available at around 90% of providers. The share of providers offering Mathematics has remained stable at about 96-97% of providers since 2009/10, only experiencing a slight reduction in 2021/22 to 93% of providers.

The exception to these trends is IT/Computer Studies, where the share of providers offering this AS/A-level has fluctuated between 53% and 61% since 2007/08, with multiple periods of growth and decline.

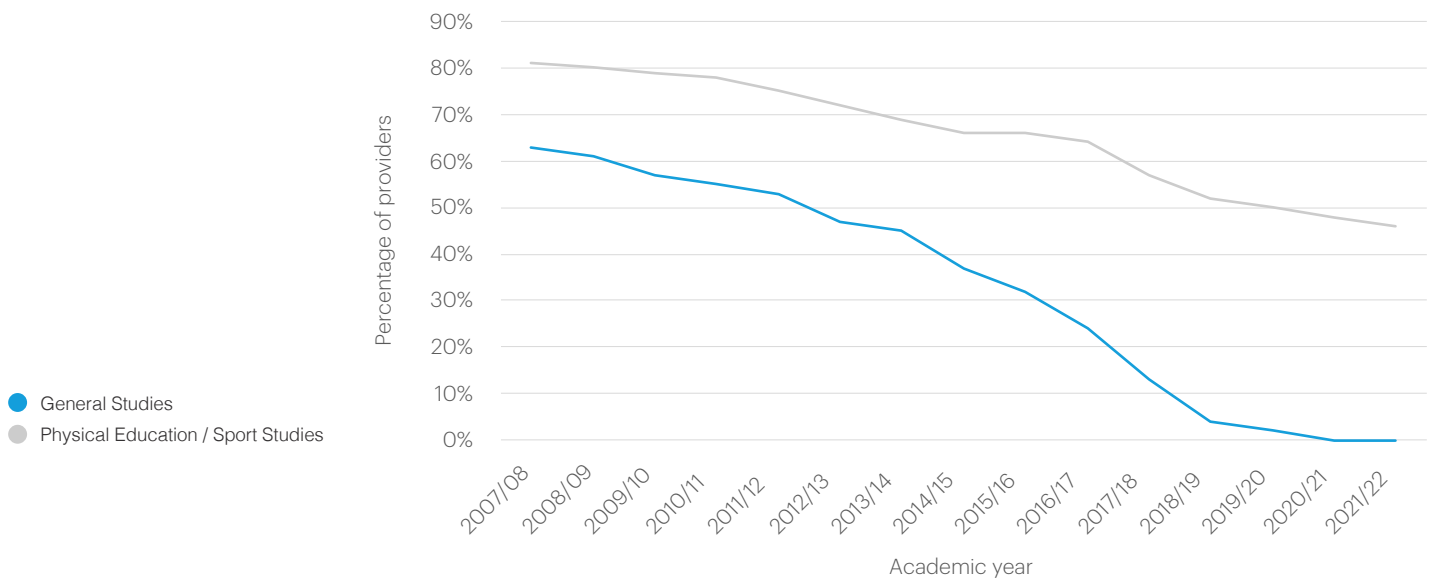
Figure 29: The share of providers offering individual STEM subjects



Other subjects

Figure 30 shows that the decline in the availability of Other AS/A-level subjects, as outlined in sub-section 3.2, is not solely driven by the removal of the General Studies AS/A-level. It shows that the availability of PE/Sport Studies AS/A-level has also been in steady decline since 2007/08, dropping from 81% to 46% of providers.

Figure 30: The share of providers offering individual Other subjects



3.2.2 How does the provision of AS- and A-level subjects compare to trends across Level 3 subjects?

As shown in Figure 31, over 95% of all Level 3 providers offered some form of Level 3 qualification for each major subject group in 2021/22.³² AS/A-levels were typically offered by a greater share of providers than other types of Level 3 qualifications.

That said, for STEM subjects, both AS/A-levels and other Level 3 qualifications were widely available and offered by over four-fifths of providers. There is only a small difference in the proportion offering AS/A-levels and other Level 3 qualifications in this subject area, which suggests that the majority of providers offered both AS/A-levels and other Level 3 qualifications in STEM.

This also appears to be the case for Arts subjects. However, this is partly due to how the data has been constructed. Music exams, which can count as Level 3 qualifications, are likely to be artificially inflating the proportion of providers that offer other Level 3 qualifications in Arts.

For Social Sciences, the difference in the availability of other Level 3 qualifications compared to AS/A-levels is larger than for STEM, but the majority of providers (around two-thirds) did offer Social Science Level 3 qualifications.

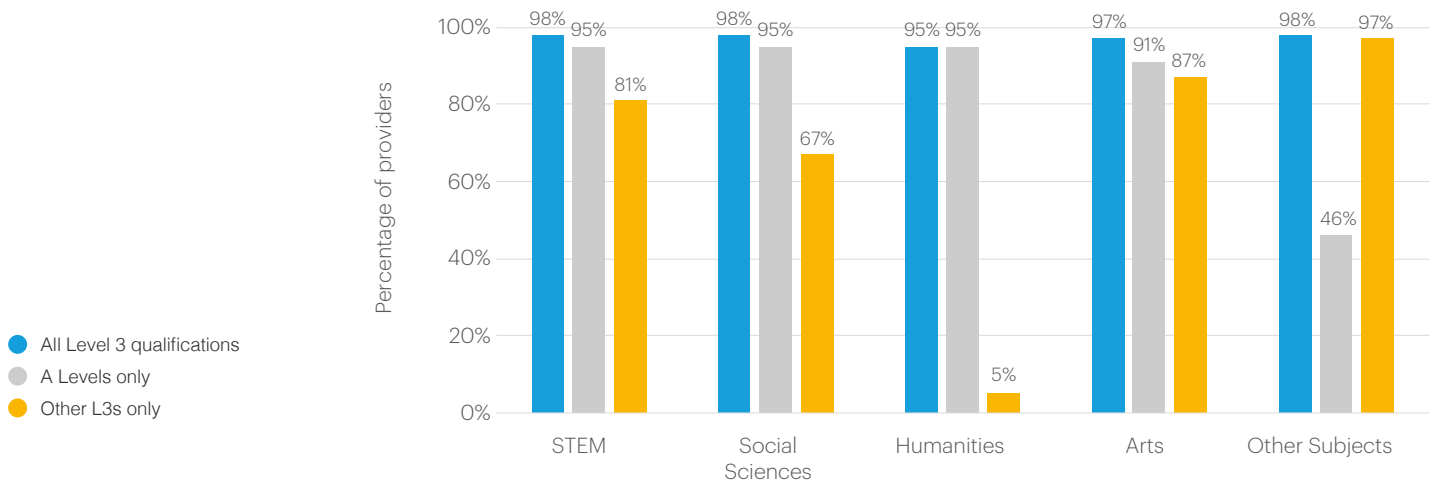
³²

As above, providers with fewer than 20 students in a cohort are not included in the statistics in this section.

This is not the case for Humanities subjects. Only 5% of providers offered other Level 3 Humanities qualifications compared to 95% of providers offering AS/A-levels in Humanities subjects. However, this likely reflects the fact that there are very few qualifications in Humanities subjects that are not AS/A-levels.

In contrast, a greater share of providers offered Level 3 qualifications in Other subjects than offer AS/A-levels in Other subjects. This is likely to reflect the fact that there are greater numbers of other Level 3 qualifications in Other subjects compared to AS-/A-levels. As shown in Figure 31, 97% of providers offered other Level 3 qualifications in Other subjects compared to just 46% of providers offering AS/A-levels in Other subjects.

Figure 31: The proportion of providers offering different qualification types in each major subject group in 2021/22



4.0 Investigating the relationship between subject choice, student characteristics and wider contextual changes

This section builds on the evidence presented earlier in the report by using regression analysis to estimate the effect of different policy changes, wider contextual changes, student and provider characteristics on subject take-up.

Regression analysis is a statistical method that allows us to estimate the correlation between different factors on an outcome of interest, while keeping other factors unchanged. This enables us to isolate and understand the relationship between an individual factors and subject choice, all else being equal. In this case, we model the relationship between the likelihood of a student studying a given subject and the policies and student characteristics discussed in previous sections.

All models were tested on the four major subject groups (Arts, Humanities, Social Sciences and STEM), both for take-up at AS/A-level and all Level 3 qualifications. We also tested selection of individual AS/A-level subjects with a focus on larger Humanities and Social Sciences, subjects with significant change in take-up since 2003/04, or subjects likely to be particularly affected by the policy changes tested.³³

It is vital to note that the analysis presented in this section provides us insights into associational relationships, rather than causal ones. This is because there may be factors which we were unable to account for with the available data. Such factors could be related to both subject choices and the policy and student characteristics which we consider.

More information about our regression approach, including more detail about how models have been specified and robustness checks, can be found in the technical appendix. Data tables with the results from all regression models are included in the accompanying dashboards.

³³ This included: Business Studies, Classic Studies (Languages), Classical Studies (Non-Languages), Economics, English Language, English Language and Literature, English Literature, French, Geography, German, Government and Politics, History, Mathematics, Media Studies, Music, Other Languages (Non-European), Performance Arts, Psychology, Religious Studies, Sociology and Spanish.

4.1 Effect of student and provider characteristics on subject take-up

In this section, we build on findings from Section 3.0 and further investigate the characteristics associated with subject take-up with a focus on the four previously mentioned major subject groups, both at AS/A-level and Level 3 more generally.

It is important to note that findings may differ from those identified in Section 3.0, as they consider how student characteristics relate to subject choice, holding all other factors constant. This is important as there are some characteristics which will strongly relate between students: for example, more disadvantaged students are also more likely to have not achieved 9-4 in five subjects at GCSE.

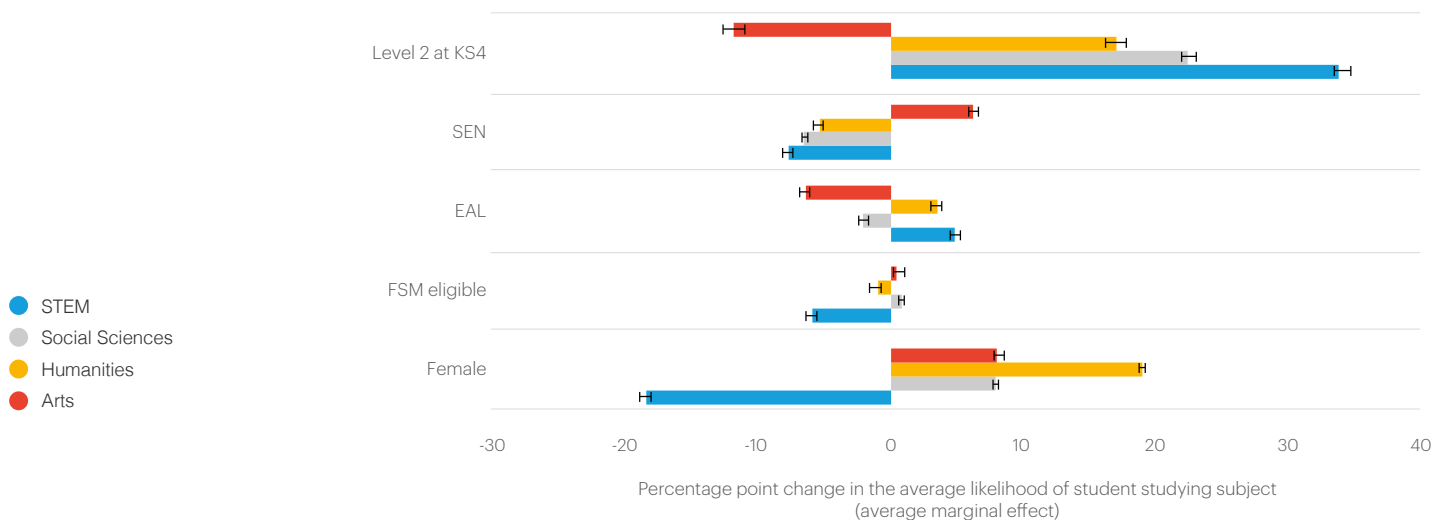
Summary of key findings:

- Overall, the regression analysis broadly confirms the trends identified in Section 3.0. For example, when holding other factors constant, female students are significantly more likely to study an Arts, Humanities and Social Sciences AS-/A-Level and less likely to study STEM.
- However, we do identify significant differences between subject groups and pupil characteristics which were not apparent in descriptives.
- For example, students in London were more likely to take Arts, Humanities, and Social Science AS-/A-Level subjects than most other regions in England. This was not the case for STEM uptake.

Throughout this sub-section, we refer to the effects of characteristics, such as FSM or SEN, on the likelihood of selecting a particular subject. These are all estimated relative to students without those characteristics and whilst holding all other factors in our model constant.

Figure 32 presents the estimated average marginal effect of binary student characteristics on the take-up of Arts, Humanities, Social Sciences and STEM subjects at AS- and A-level. A marginal estimated effect of 1% here means that, controlling for all other factors, this characteristic increases the average likelihood of a student studying that subject by one percentage point. The 95% confidence interval is also displayed, which gives an indication of the level of certainty we have in each estimate, even though this regression is estimated on the population of students. Where the confidence interval overlaps with 0, we do not have evidence of a significant difference between groups.

Figure 32: The estimated average marginal effect of student characteristics on AS/A-level subject choice³⁴



4.1.1 Arts

As shown by Figure 32, Arts AS/A-level subjects are significantly more likely to be chosen by female students, students with SEN, and AS/A-level students without five GCSEs at grades 9-4.³⁵ The regression results also show Arts AS/A-level subjects are significantly more likely to be chosen from students from a White ethnic background. Arts AS/A-level subjects are significantly less likely to be studied by students with EAL. FSM eligibility appears to only have a very small association with take-up of Arts subjects.³⁶

Our analysis found that students at settings in the North and Midlands are significantly less likely to study Arts subjects than students at settings in London. Interestingly, this analysis also found that students in settings in urban areas are significantly less likely to study Arts subjects than their peers in rural settings. By contrast, the modelling also found that students studying at FE college are significantly more likely to study Arts subjects than their peers at school with post-16 provision. Students at some larger settings are less likely to study Arts.

There are some differences at individual subject level, though these typically align with the trends in Section 3.0. Most notably, the patterns for Music vary considerably to other Arts subjects. When controlling for other factors, female students, FSM students, and students without five GCSEs at grades 9-4 are all less likely to study Music.

³⁴ Given the results presented in Section 3.1.7 which did not show large differences in prior attainment across subjects, the estimated effect sizes for 'Level 2 at KS4' (i.e. not being a student with lower prior attainment) may be surprising. The results here suggest that the differences in subject take-up between those with Level 2 at KS4 and those without Level 2 at KS4 are large. This can be explained by the fact that only a small subset of AS-/A-level students have lower prior attainment at Level 2, such that these differences are not immediately apparent from descriptive analysis.

³⁵ Unless otherwise specified, where we refer to statistically significant differences throughout this section, this refers to differences which are significant at the 1% level. This means there is less than a 1% change that the results have been found by chance alone.

³⁶ This effect was significant at the 5% significance level but not at the 1% level.

4.1.2 Humanities

Humanities are significantly more likely to be studied by female students. However, they are less likely to be studied by students eligible for FSM and students with SEN – as shown by Figure 32. The regression results show Humanities are significantly less likely to be studied by AS-/A-level students who are not from a White ethnic background. This was broadly similar across individual Humanities subjects, though as discussed in Section 4.0, there is some variation.

The analysis identified some interesting results for students with EAL. At major subject level, students with EAL are significantly more likely to study Humanities than their peers. However, this appears to be being driven entirely by Modern Foreign Language participation. Students with EAL are significantly more likely to study French, German, Spanish and Non-European languages at AS/A-level than their peers. As outlined in Section 3.1.5, this may partly reflect EAL students undertaking qualifications in their first language. In contrast, students with EAL are significantly less likely to study AS/A-level English, History, Religious Studies and Classics.

For Humanities overall, this analysis found that students in all other regions of England are less likely to take a Humanities subject than students at a setting in London. Students at Urban settings and some larger settings were also significantly more likely to study a Humanities subject. This may be related to the fact that economies of scale and larger catchment areas may make a more diverse offering of subjects financially viable for providers. Finally, students at Sixth Form colleges, FE colleges or other types of post-16 provision were significantly less likely to study Humanities subjects than students at schools with post-16 provision. Across individual subjects considered, estimated effects tend to mirror these conclusions, with some exceptions.³⁷

4.1.3 Social Sciences

Social Sciences are significantly more likely to be studied by female students, as illustrated by Figure 32. They are also significantly more likely to be studied by AS-/A-level students from Black and Asian ethnic backgrounds (compared to those from a White background). On the other hand, they are less likely to be studied by students with EAL, with SEN, students who have achieved 9-4 in five GCSEs at KS4 and from a Chinese ethnic background.

We also found that students eligible for FSM were significantly more likely to study Social Sciences than their peers, after we controlled for all other factors. The models at individual subject level suggest that this is being driven by students eligible for FSM being significantly more likely to study Sociology, Psychology and Government and Politics AS/A-levels. Students eligible for FSM were significantly less likely to study other Social Science subjects like Geography, Economics and Business Studies.

The analysis found that students in northern regions of England were less likely to choose to study a Social Science subject than their peers studying in London. This was also true for the South East and South West. Once again, students in settings with more than 100 students were significantly more likely to study Social Science subjects than their peers studying in settings with fewer than 100 students. Studying in a sixth form college or further education college, as opposed to a school with post-16 provision, does not make a statistically significant difference to the likelihood of studying a Social Science subject, unlike Humanities and STEM. This appears to be driven by students in sixth form and further education colleges broadly being significantly more likely to study subjects like Business Studies, Sociology and Psychology but significantly less likely to study Economics or Geography than their peers in schools with post-16 provision.

³⁷ For example, pupils were less likely to study French and English Literature and Literature in urban settings, albeit differences were not significant. Further, regional take-up patterns for Religious Studies students were very different to other Humanities subjects with pupils with the North West and West Midlands more likely to study Religious Studies, compared to their counterparts in London.

This analysis also generally confirms the trends identified in Section 3.0 which highlighted take-up across individual Social Science subjects varies considerably depending on student characteristics. For example, female students are significantly more likely to study Psychology and Sociology than male students, whereas male students are significantly more likely to study subjects like Business Studies, Economics, Geography and Government and Politics.

4.1.4 STEM

Figure 32 shows that regression results broadly confirm the trends for STEM subjects identified in Section 4.0. Our analysis shows that STEM subjects are significantly more likely to be taken by students with EAL, students from Asian, Black, Chinese, mixed and other ethnic backgrounds, and students who achieved five GCSEs at grades 9-4. These subjects are significantly less likely to be taken by female students, students eligible for FSM and students with SEN. The effect size of FSM eligibility is much larger for STEM than it was for Arts, Humanities or Social Sciences.

The regression models found that students studying in FE colleges are significantly less likely to study STEM subjects compared to students in schools. Students at settings with more than 100 students are more likely to study STEM. Unlike with the other major subject groups, students in London were no more likely to study STEM than students elsewhere

4.1.5 Effects of student and provider characteristics on Level 3 qualification participation

Our regression models were also estimated on Level 3 participation overall (including AS/A-level students and other vocational qualifications), in order to identify where patterns vary with those identified for AS/A-level students. These results can be found in the accompanying dashboards and cover all cohorts between 2007/08 and 2021/22.

Gender remains an important predictor of subject take-up at Level 3. Controlling for all other factors, female students are more likely to engage in Arts, Humanities and Social Science subjects than their male counterparts. They are also much less likely to do STEM subjects. The pattern here is largely unchanged from the AS/A-level results. Further, the relationship between most other student characteristics, such as SEN, EAL and ethnicity are largely unchanged when comparing the AS/A-level results to the Level 3 results. The same is largely true for the regional predictors.

However, the influence of lower prior attainment and FSM changes when looking at all Level 3 students. In the AS/A-level student population, the effect of achieving five GCSEs at grades 9-4 on participation in Arts subjects was negative, and FSM was a positive predictor of Social Science take-up. For the wider Level 3 student population, these results are reversed. Having achieved 9-4 in five GCSEs had a positive effect on students taking up each of the four major subject groups, including Arts subjects. The effects of being eligible for FSM follow the opposite pattern. As outlined in Section 3.0, this is consistent with the fact that students without five GCSEs at grades 9-4 and/or FSM eligibility are more likely to study vocational subjects at Level 3 (which are more likely to have been classified as Other subjects).

Further, including students who do not study AS/A-levels in these regressions changes our estimates of the influence of different provider types on subject take-up. For example, whilst an AS-/A-level student in an FE College was more likely to study Arts than an AS-/A-level student in a school with post-16 provision, a Level 3 student in an FE college was less likely to study Arts than their Level 3 counterpart in a school with post-16 provision. This suggests that, within FE Colleges, Arts subjects are favoured amongst AS/A-levels, but this is not the case in the wider Level 3 space. The same thing was true for the urban indicator in the model; students in urban areas were less likely study Arts AS-/A-Level student, but the result was reversed when we looked at who studies Arts amongst all Level 3 students. These differences could suggest there are interaction effects between the take-up and available of Arts A-/AS-levels and vocational qualifications in local areas, and would a good topic for future research.

Level 3 students in sixth form colleges and FE colleges are less likely to study Social Sciences compared to students in schools with post-16 provision. We found no such effect for AS/A-level students. One explanation is that there is more extensive provision of non-A-Level Social Science qualifications in sixth form and FE colleges, compared to schools, although this also merits further research.

4.2 Effect of wider contextual changes on subject take-up

Summary of key findings:

- The decoupling of AS- and A-level qualifications appears to have had a near universal negative effect on participation across subjects.
- Aside from decoupling, we observe a wide range of patterns in subject choice over the last two decades. However, due to the large number of policy and wider contextual changes which may have impacted subject uptake, our analysis is not able to isolate the drivers of these changes.

4.2.1 Policy context

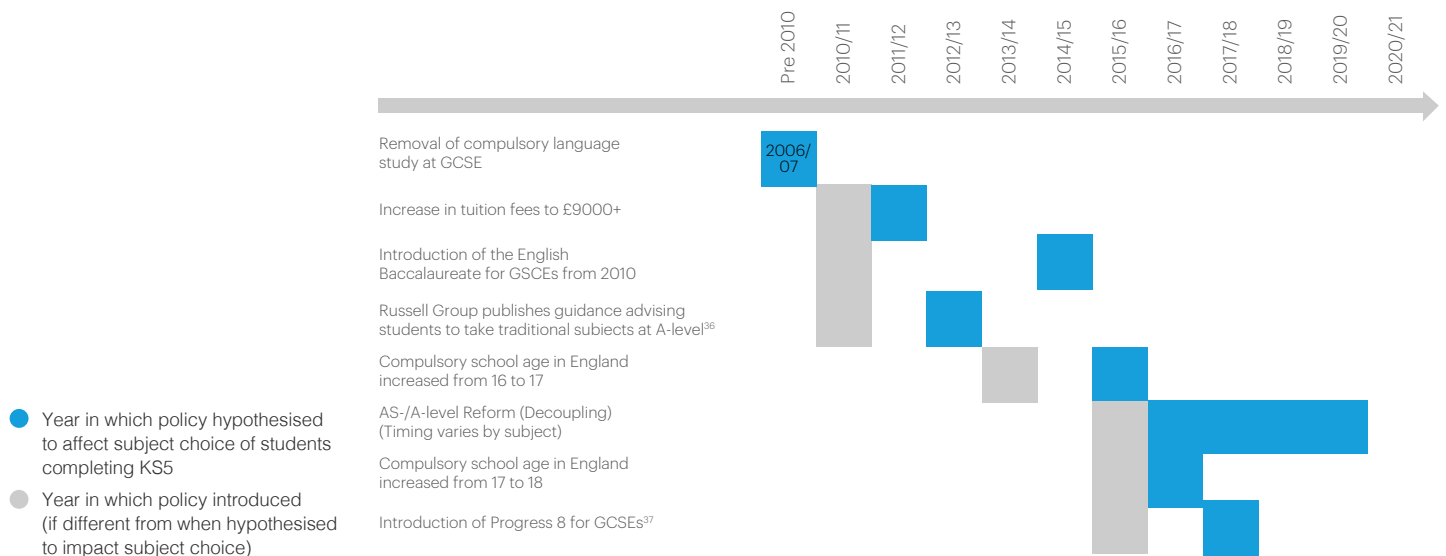
Over the last two decades, there have been key policy and wider contextual changes that may have impacted on subject choice, particularly with respect to Social Science and Humanities subjects. A selection of particularly important changes which could have effects on take-up of subjects AS- and A-level is summarised in Figure 33.

We also identify the first Level 3 cohort whose subject choices are likely to be affected by each policy. As far as possible, this is based on the first cohort where that policy or change was in place at the time during which the young person made their subject choices. However, in many cases, these policy changes will not have had an immediate impact on subject choice but instead have played out over many years/cohorts (e.g. GCSE reforms will take several years to impact on post-16 choices). Furthermore, many policy and wider contextual changes occurred at a similar time, making it difficult to disentangle the impact which individual policies or contextual changes may have had on subject choice.

This includes changes which have directly impacted the post-16 landscape, such as the incremental increase from 16 to 18 of the compulsory school age in England between 2013 and 2015. This policy change sought to ensure all young people stayed in some form of education, employment or training to 18, thereby increasing the proportion of young people engaging in post-16 study. Furthermore, the most substantive change to the post-16 landscape in recent years have been reforms to AS- and A-level qualifications that were introduced from September 2015.³⁸ This included reviewing and updating the content of qualifications, reforming assessment such that it largely takes place at the end of the course, and the decoupling of AS- and A-levels (see Section 1.0).

In addition, there have been a number of system changes to the pre-16 school system which, by influencing students' GCSE choices, may have also impacted subject choice at post-16. Most notably, the introduction of the English Baccalaureate (EBacc) subjects as a performance measure for GCSEs from 2010 sought to increase the number of students taking English Language and Literature, Maths, the Sciences, Geography or History and a Language to GCSE.³⁹ This was done by introducing new school-level measures which examine both the number of students that take GCSEs across this set of subjects and on how well students do in these subjects. Following the EBacc, the Attainment 8 and Progress 8 accountability measures were introduced. These measures incentivised schools to focus on certain subjects and encourage students to take them, over others, when making their subject choices.

Figure 33: Timeline of key policy and wider contextual changes hypothesised to impact subject choice



³⁸ Ofqual (2018) *Get the facts: AS and A level reform*. Available at: <https://www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform/get-the-facts-as-and-a-level-reform> (Accessed: 6 March 2024)

³⁹ House of Commons Education Committee (2011) *The English Baccalaureate*. Available at: <https://education-uk.org/documents/pdfs/2011-cesc-ebac.pdf> (Accessed: 6 March 2024).

It is important to note that subject choice at post-16 is also likely to be affected by changes made within higher and further education. For example, there is evidence to suggest the sizeable increase in tuition fees in 2012 up to £9,000 did lead to an immediate reduction in the number of people applying to go to university once the change was implemented.⁴⁰ On the other hand, applications did recover in the following years and research has suggested disadvantaged students were not deterred by increased fees.⁴¹ That research suggested that students' subject choices are influenced by the value of different subjects in the labour market (both at Level 3 and beyond), and therefore it is also conceivable that changes in the economy, such as the recession following the 2008 financial crisis and the Covid-19 pandemic, might also impact on subject choice.⁴²

Similarly, student choices may have been affected by an apparent focus on more "traditional" subjects in university admissions in the early 2010s. In 2011, the Russell Group published guidance advising students to take traditional subjects at A-level.⁴³ They recommended that students with ambitions to study at Russell Group universities should have A-levels in at least two facilitating subjects to improve their chances of getting a place. The facilitating subjects are Biology, Chemistry, English Literature, Geography, History, Maths, Further Maths, Modern and Classical Languages, and Physics. In response to concerns that this list negatively impacted on choices for certain subjects, the Russell Group scrapped the list in 2019. The list has since been replaced with an online tool which provides information about the subjects needed for entering different fields of study at Russell Group universities.⁴⁴

Alongside the policy changes set out above, it is important to note that there have been a number of changes to individual qualifications for certain subjects which may have also impacted subject choice. For example, the introduction of a new GCSE for English Language and English Literature from 2015 – which was perceived by some commentators as more difficult and more narrowly focused than the old qualifications – may have adversely impacted post-16 choices for English qualifications.⁴⁵ Further, the introduction of triple science GCSE in 2008 was intended to support take-up in STEM subjects.⁴⁶

Additionally, there have been numerous, significant reforms to the wider Level 3 vocational qualification landscape, such as reforms recommended in the Wolf Review, although these are not explored in detail in this report.⁴⁷

⁴⁰ Sa, F. (2019), 'The Effect of University Fees on Applications, Attendance and Course Choice: Evidence from a Natural Experiment in the UK', *ECONOMICA*, 86(343), pp. 607–634. Available at: <https://doi.org/10.1111/ecca.12278>.

⁴¹ Davies, P., Davies, N.M. and Qiu, T. (2017), 'Information and choice of A-level subjects: A cluster randomised controlled trial with linked administrative data', *British Educational Research Journal*, 43(4), pp. 647–670. Available at: <https://doi.org/10.1002/berj.3289>; UCAS (2023), *What is the journey to a million?*, UCAS. Available at: <https://www.ucas.com/about-us/journey-million/what-journey-million> (Accessed: 2 May 2024); BBC (2011) 'Top universities warn against "soft subjects"', 4 February. Available at: <https://www.bbc.co.uk/news/education-12365050> (Accessed: 6 March 2024); Russell Group (2019) 'Informed Choices relaunch', *Russell Group*, 23 May. Available at: <https://russellgroup.ac.uk/news/informed-choices-relaunch/> (Accessed: 6 March 2024); Clark, Sheryl, Mountford-Zimdars, Anna, and Francis, Becky, 'Risk, Choice and Social Disadvantage: Young People's Decision-Making in a Marketised Higher Education System.' *Sociological Research Online*, 20(3):9, August 2015. Available at: <https://www.socresonline.org.uk/20/3/9.html>.

⁴² Davies et al, *ibid*.

⁴³ BBC, *ibid*.

⁴³ Russell Group, *ibid*.

⁴⁵ The British Academy (2023), *English Studies Provision in UK Higher Education*. Available at: <https://www.thebritishacademy.ac.uk/publications/english-studies-provision-uk-higher-education/>; Noble, J. (2022), 'Changes to GCSE blamed for "crisis" drop in A-level English exam entries', 8 July. Available at: <https://feweek.co.uk/changes-to-gcse-blamed-for-crisis-drop-in-a-level-english-exam-entries/> (Accessed: 7 March 2024)

⁴⁶ Francis, B., Henderson, M., Godec, S., Watson, E., Archer, L. and Moote, J. (2023), 'An exploration of the impact of science stratification in the English school curriculum: the relationship between "Double" and "Triple" Science pathways and pupils' further study of science', *Research Papers in Education*, pp. 1–23. Available at: <https://doi.org/10.1080/02671522.2023.2283417>.

⁴⁷ Wolf, A. (2011), *Review of vocational education. The Wolf report*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/180504/DFE-00031-2011.pdf (Accessed: 11 March 2024).

4.2.2 Changes in AS- and A-level subject take-up over time

In this sub-section, we explore the estimated effects of policy changes and wider contextual changes between 2003/04 and 2021/22 by considering how AS- and A-level subject take-up has evolved over time, whilst holding other factors such as cohort characteristics fixed. This enables us to estimate time trends which take account of other simultaneous changes in student characteristics that were going on during this period. For example, underlying demographic changes relating to ethnicity, and changes in FSM rates.

For example, our findings suggest that decoupling of AS- and A-level qualifications is likely to have contributed to the observed reduction in participation across almost all subjects. This is due to the fact that students are studying fewer qualifications as a result. Our findings are less suggestive that other policy changes have had such large effects on subject choice. However, this should not be taken as strong evidence of no effect because of the uncertainties involved when looking at two decades of data like this.

Figure 34 presents the estimated change in the likelihood for studying each of the main subject groups over time, as compared to 2003/04. The wider results from our regression models, including our findings on Level 3 participation overall (including AS/A-level students and other vocational qualifications) are not presented here, and can be found in the accompanying data dashboards.

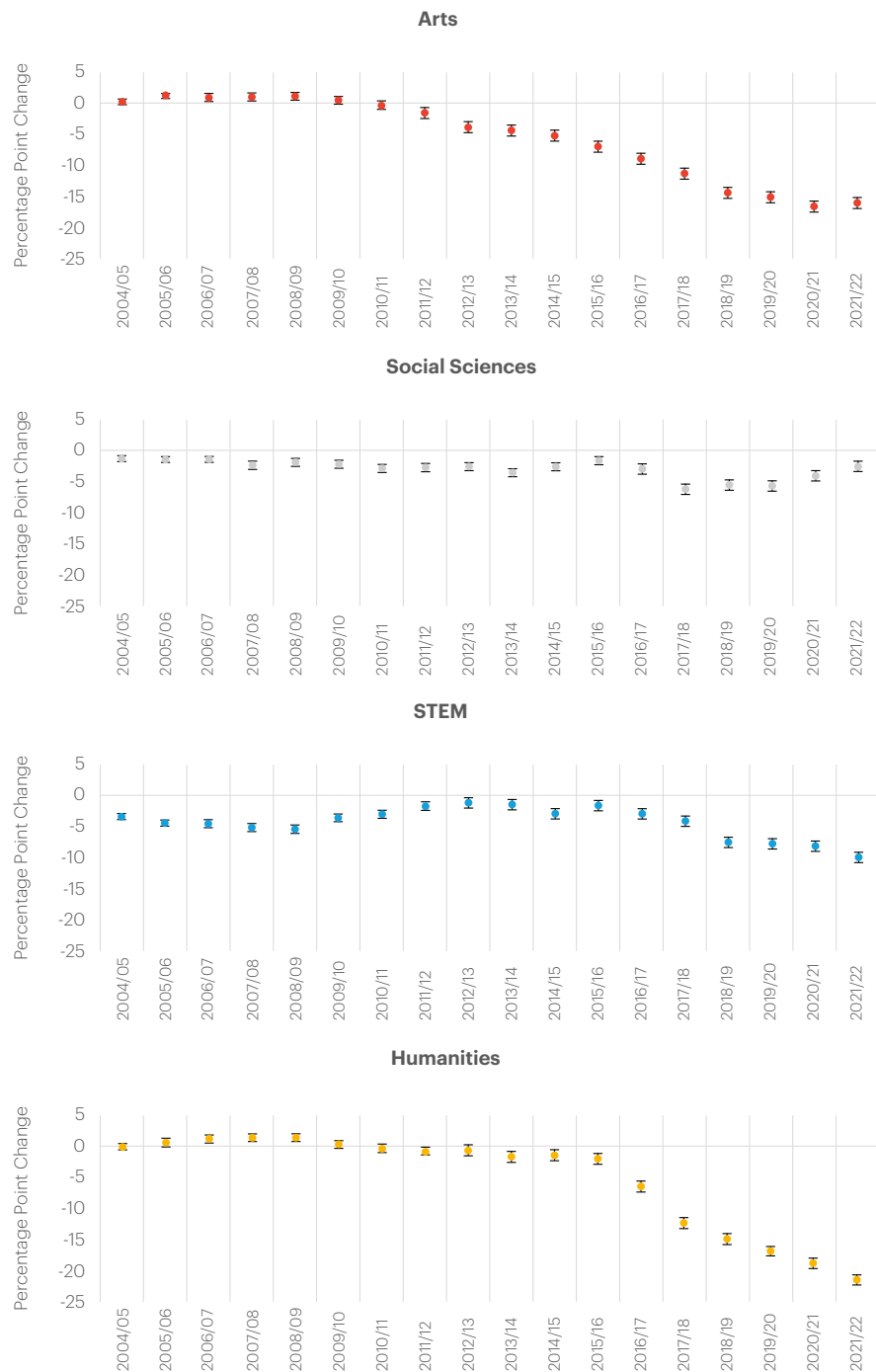
Humanities

Figure 34 shows that there was a slight increase in take-up in Humanities subjects between 2003/04 and 2008/09, followed by a gradual decline up to 2016/17. In line with the introduction of decoupling, there was then a steep decline in Humanities subject take-up in 2016/17, which has continued steadily since then.

Looking across selected subjects in the Humanities, the decline in Humanities take-up around 2016/17 is reflected in many of the large humanities subjects such as Religious Studies, Geography and History. A rapid decline in 2016/17 also occurred for English Literature and Language subjects. English Literature experienced a particularly sharp decline from 2015/16 onwards. It is important to note that this decline may not only be related to decoupling, but also to the aforementioned reforms to the GCSE English Curriculum in 2015 (see sub-section 4.2.1). However, due to the overlap in timing between decoupling and GCSE curriculum change, it is not possible for us to disentangle observed impacts.

As outlined in Section 2.0, trends vary substantially between languages. While French take-up has steadily declined since 2003/04 (including a notable decline around the time of decoupling), Spanish has fluctuated over our analysis period, seeing a marked decline around the time of decoupling. Interestingly, we do not see an obvious impact from the removal of compulsory languages at GCSE in 2004 on language take-up. This may partly be explained by the fact that take-up was already declining prior to this for both French and German, alongside the aforementioned challenges with isolating the impact of individual policies on subject take-up.

Figure 34: Estimated average marginal effects of the likelihood of students studying different subject groupings at AS/A-level compared to 2003/04



STEM

Figure 34 shows that take-up of STEM subjects declined throughout the 2000s, before recovering steadily between 2008/09 and 2012/13. Policies such as the introduction of triple science GCSE in 2018, and the large increase in tuition fees in 2012 (as outlined in sub-section 4.2.1) may have incentivised students to prioritise certain STEM qualifications associated with higher earnings, contributing to the increase between 2008/09 and 2012/13. However, given that a large number of policies were introduced in a short space of time, it is impossible to disentangle the potential impact of different policies. Take-up remained broadly steady between 2012/13 and 2015/16 with a one-off drop in 2014/15, before falling markedly in 2018/19, around the timing of decoupling. Between 2018/19 and 2020/21, levels stabilised, followed by a slight drop in 2021/22.

Social Sciences

The pattern for Social Science is markedly different from the Humanities. There was a slight drop in subject take-up in 2004/05, followed by a fluctuating but mainly declining trend up to 2010. Between 2010/11 and 2016/17, take-up remained stable. This suggests that subject take-up was not significantly impacted – at least in aggregate – by the large number of policy changes which occurred in this period (as outlined in 4.2.1). This was followed by a sharp decline following decoupling, although subject take-up has since rebounded, returning almost to 2015/16 levels.

Looking across selected subjects in the Social Sciences, trends vary between individual subjects, although changes over time are generally more muted than among Humanities subjects. For example, take-up of Business Studies fell steadily between 2003/04 and 2018/19, before experiencing a slight recovery in recent years. In comparison, Psychology take-up fluctuated between 2003/04 and 2015/16, before experiencing a decline in 2016/17 and 2017/18 followed by a recovery up to 2020/21.

Arts

Finally, Figure 34 shows that Arts take-up increased slightly in the first half of the 2000s, before remaining steady until 2009/10. Since 2009/10, take-up has since decreased steadily with significant year-on-year declines, together with a particularly large drop around the time of decoupling. Since 2019/20, levels have stabilised. Nevertheless, there has been a sharp decline in AS- and A-level Art take-up over our analysis period with a student in the 2021/22 cohort being around 15 percentage points less likely to study an Arts subject compared to 2003/04.

The gradual decline in Arts subject participation suggests that a number of factors have contributed to this decrease, alongside decoupling. We can speculate that guidance from the Russell Group on subject choice in 2011 at AS/A-level (which did not encourage any participation in Arts subjects and has since been scrapped) may have contributed to this. Further, the increase in tuition fees for cohorts from September 2012 – which may have incentivised students to choose higher earning routes – may have also been a contributory factor. However, as outlined above, given that many policies were introduced around a similar time which may have impacted Arts take-up and the gradual nature of the decline, it is not possible to determine how individual policies may have contributed to this trend.

5.0 Conclusions

Our findings highlight that there have been substantial changes to the choices made by students at post-16 over the last two decades. Students have increasingly been taking fewer subjects at AS/A-level and hence have ended up with a narrower range of subjects. This reflects a decline observed in the percentage take-up across almost all subjects overall as well as a shift towards students only taking subjects from the same major subject group.

While it is difficult to disentangle the impacts that individual policies have had on observed trends, this report suggests key policy changes, in particular the decoupling of AS- and A-level qualifications in 2015/16, appear to have played a key role in the reduction in the range of subjects taken by students. These changes have particularly impacted the take-up of Humanities, whilst Arts subjects have continued to decline since the early 2010s. These developments risk having profound impacts on the future shape of these disciplines.

This report also raises important questions, and areas for further research. More research is needed to understand the contexts in which students make choices about subjects, what motivates their choice to combine certain subjects, and how providers of post-16 education make decisions about what subjects to offer. Additionally, the relationship between post-16 subject choice and pathways into higher education, particularly the interaction between trends in university course requirements and narrowing in Level 3 subject choices, has emerged as a theme worthy of further study. We also need further evidence on the impact of curriculum narrowing at post-16 both on young people's outcomes, and on the knowledge and skills that young people take out into the workplace and wider society.

Nonetheless, this report provides valuable insights into trends in students' subject choices and subject combinations. Looking to the future, this research makes clear that policymakers and stakeholders should carefully consider possible impacts on subject choice and the future of certain disciplines in any reforms of post-16 education. In showing how key policy changes over the past two decades may have contributed to further narrowing of England's already narrow system of post-16 study, it suggests breadth and balance in post-16 provision should be at the heart of policy debates and future reforms in this area.

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