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Assessment**

Popularity of A Level subjects among university students

Research Report

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1. Introduction

Researchers investigating progression to higher education (HE) have suggested that student and school characteristics (e.g., gender, prior academic attainment, social background, type of school) are important factors affecting HE participation and the type of HE institution attended (Chowdry et al., 2013; Boliver, 2013; Vidal Rodeiro, Sutch, & Zanini, 2015). This is in part because certain types of qualifications and/or subjects that are good preparation for HE tend to be taken by young people with higher academic attainment, which is related to social background and to the choices available in their schools (Vidal Rodeiro, 2007; Dilnot, 2016; Gill, 2017).

However, over the past few years, policy makers and the general public in England have become increasingly concerned about the extent to which different qualifications and subjects prepare young people for careers or further study. Despite policy efforts and claims of “equivalence”, multiple studies have identified ways in which the progression of young people differs depending on the qualifications and/or subjects studied, even after controlling for their background characteristics (Smith, Joslin, & Jameson, 2015; Vidal Rodeiro, Sutch, & Zanini, 2015; Hupkau et al., 2017; Dilnot, 2018; Vidal Rodeiro & Williamson, 2018).

In England, the principal measure of academic attainment for 18 year-old pre-university students is the A Level. In recent years, over 80 different subjects have been offered at A Level. Students can decide which and how many of those subjects they wish to study depending on, for example, their career aspirations, their academic ability, the provision at their school/college or the advice given to them. Students aiming for university typically study three or four subjects at A Level. For example, in 2015, 73 per cent of the 18 year-olds applying to UK HE institutions did so with just A Levels (UCAS, 2016).

Choosing A Levels, however, is not straightforward as some subjects might be seen as providing better grounding for university courses than others. Furthermore, many HE courses require particular subjects and there is also a disparity in the attitudes of HE admissions staff towards certain A Levels. The latter is shown by the gulf in uptake of some subjects among students at prestigious HE institutions, compared to the national uptake or to the uptake in other types of institutions. For example, Vidal Rodeiro and Sutch (2013) showed that Mathematics was taken by over half of the accepted applicants to Russell Group¹ universities but by just over 15 per cent of the accepted applicants to universities in the MillionPlus group². On the contrary, uptake of more applied subjects (e.g., Design & Technology, Art & Design, Business Studies or Media Studies) was much higher amongst students in MillionPlus group universities than amongst students in universities of the Russell Group.

Individual institutions have their own lists of “preferred” subjects, some of which are more open than others. For example, the Russell Group has, since 2011, published an annual guide to A Level choice known as *Informed Choices* (Russell Group, 2017). In this guide, they advised students to study at least two from a list of “facilitating subjects”, which would leave their options open for a variety of courses. However, they acknowledged that this advice would not apply to all students, and those who were definitely intending to study certain specialist courses such as Music would be best served otherwise. Outside the Russell Group, there is less information available to prospective applicants to guide subject choices, and data on HE entry requirements by institution is not usually available.

¹ The Russell Group represents 24 leading UK universities (<https://www.russellgroup.ac.uk/>).

² MillionPlus is the Association for Modern Universities in the UK (<http://www.millionplus.ac.uk/>).

As progression to HE continues to be a matter of interest, not just from a research point of view but also for students, HE institutions, awarding bodies and policy makers, a better understanding of how A Level subjects are used to access HE (and different types of HE institutions) is important. The main aim of this research was, therefore, to investigate:

- the proportions of students who hold different A Level subjects (or combinations of A Level subjects) when applying for a place at a HE institution³;
- the performance in different A Levels amongst the students applying for a place at a HE institution; and
- how students' backgrounds interact with the choice of A Level subjects to influence the type of HE institution attended.

³ Note that the data available for this work (see Section 2.1 for details) includes all students at the end of Key Stage 5, who could have potentially applied to study a course in a HE institution. However, the data does not identify the students who made an application and only information about those who enrolled in HE is available.

2. Data and methodology

2.1 Data

This study followed a full cohort of Year 13 (2015/16) students in schools/colleges in England through the first year of their HE studies (2016/17). In order to do so, data from two different sources was used:

- *National Pupil Database (NPD)*

The NPD extracts had information, for the academic year 2015/16, on:

- A Level qualifications and attainment;
- prior attainment (e.g., GCSE (General Certificate of Secondary Education) and other qualifications taken at Key Stage 4); and
- students' characteristics such as gender, type of school attended and deprivation.

- *Higher Education Statistics Agency (HESA)*

The data from the HESA covered all full-time, first-year undergraduates. Data was linked to the NPD extract described above using a unique student identifier. In particular, the HESA data included:

- level of study (e.g., first degree, foundation degree, HND/HNC⁴, other);
- information about whether a student's parents have HE qualifications;
- subject of HE course; and
- HE institution.

The students in this research were 17 or 18 years-old at the beginning of the academic year 2015/16 and achieved at least one A Level, graded A*-E. All A Levels achieved by these students, independent of the year in which they certificated, were included in the analyses. Note that AS Levels were not considered in this study. The size of this A Level cohort was 276,705⁵.

Just below 160,000 students in the above A Level cohort (159,790) appeared in the HESA student records for the academic year 2016/17. The 116,910 A Level students who were not in the HESA data (that is, 42 per cent of the A Level cohort) might not have applied to study in a HE institution, they might not have been offered a place at a HE institution, or they might have taken a gap year⁶. It is also worth noting at this point that the linking between NPD and HESA data is done by name, date of birth and postcode, and so some A Level students might have been lost in the matching process.

2.2 Method

In a first step, the research used descriptive statistics to investigate the following:

- a) the uptake of A Level subjects, and combinations of A Level subjects, among students who started a HE course in the academic year 2016/17;
- b) the comparison of the uptake of A Level subjects, and combinations of A Level subjects, between students starting a HE course and the national A Level cohort;

⁴ Higher National Diploma/Higher National Certificate.

⁵ Numbers have been rounded to nearest multiple of 5, following HESA's Standard Disclosure Control policy.

⁶ Note that, for example, in 2017, the HE acceptance rate for A Level students was 88.9% and for students taking a combination of A Levels and BTECs it was 87% (UCAS, 2017a). Furthermore, 21,820 students aged 17 or 18 deferred (i.e., applied for a course and then take a year out before going to university) their university entry (UCAS, 2017b). This corresponds to 7.9% of the acceptances in that age group.

- c) the performance in the most popular A Level subjects, and in combinations of A Level subjects, among students who started a HE course in the academic year 2016/17; and
- d) the comparison of performance in the most popular A Level subjects, and in combinations of A Level subjects, between students starting a HE course and the national A Level cohort.

Breakdowns by students' characteristics (gender, prior attainment, type of school, level of deprivation), HE institution and degree subject area were included in these descriptive analyses.

As mentioned in Section 2.1 above, data on students' characteristics and performance at Key Stage 4 (prior attainment) and at A Level was obtained from the NPD. In particular:

- *Prior attainment* was measured by the average GCSE and equivalent point score per entry⁷. For some of the analyses in this report, this measure was used to divide students into three approximately equally sized groups: low, medium or high prior attainment.
- *A Level performance* was measured by the percentages of students achieving specific grades in each A Level subject, by the percentage of students achieving AAB grades, by the number of A*/A grades achieved in facilitating⁸ subjects, by the percentage of students who achieved AAB including two facilitating subjects, and by the A Level points⁹ in the best (up to) three A Levels.
- *Schools* were classified in two groups: independent schools and state-maintained centres (the latter includes academies, comprehensive schools, grammar schools, secondary modern schools, sixth form colleges and further education centres).
- The *income related level of deprivation* that a student experiences was inferred using a government index based on the home postcode. The Income Deprivation Affecting Children Index (IDACI) measures the proportion of children in the immediate neighbourhood living in low income families¹⁰. It varies between 0 and 1 and indicates how income deprived the area is that they live in (although it cannot tell us how income deprived the student actually is). This measure was used to divide students into three approximately equally sized groups: living in areas of low (more affluent), medium or high deprivation.

Different combinations of A Level subjects were used in the analyses carried out in this report. Firstly, the most popular combinations of A Level subjects were considered. Secondly, A Levels were classified as "facilitating", "useful", "more limited suitability", "less effective preparation" and "non-counting", as described in Dilnot (2018) and as "facilitating" and "non-facilitating" as suggested in Russell Group (2017). Finally, A Levels were classified using content-based groups (e.g., applied; expressive; Humanities; Languages; STEM¹¹) as shown in Bramley (2014).

⁷ GCSE grades were converted into points as follows: A*=58; A=52; B=46; C=40; D=34; E=28; F=22; G=16.

⁸ Facilitating subjects are the subjects most commonly required or preferred by universities to get on to a range of degree courses, see, for example, Russell Group (2017).

⁹ A Level grades were converted into points as follows: A*=60; A=50; B=40; C=30; D=20; E=10.

¹⁰ The definition of low income includes people who are out of work, but also those in work with low earnings. For further information on IDACI calculation, including definitions of children, families, and income deprivation, see <https://www.gov.uk/government/publications/english-indices-of-deprivation-2015-technical-report>.

¹¹ Science, Technology, Engineering and Mathematics.

Using the A Level taxonomy based on subject content (Bramley, 2014), A Level students were assigned to an A Level specialism. In order to do so, the number of A Levels that each student had in each category was calculated. For students with three or more A Levels, the following rules were used:

- If more than half of a student's A Levels were in one category, they were assigned to that category (they must have at least two A Levels in the category, as these are students with at least three A Levels).
- If they did not have two A Levels in any single category, they are not specialists so they were assigned to the "None" category.
- If the student had two subjects in exactly one category but this did not form the majority (for example they took four A Levels, spread across categories in the configuration 2+1+1), they were assigned to that category.
- If the student had two subjects in at least two categories, they were assigned to the "Multiple" category.

Students with fewer than three A Levels were assigned to the "None" category.

Previous studies carried out in the Research Division of Cambridge Assessment that included analyses looking at the HE institution attended (Vidal Rodeiro & Sutch, 2013; Gill & Vidal Rodeiro, 2014; Vidal Rodeiro, Sutch, & Zanini, 2015; Sutch, Zanini, & Vidal Rodeiro, 2016; Gill, Vidal Rodeiro, & Zanini, 2018) have considered HE institutions in mission groups. Institutions in the same mission group have similar origins and ethos and share interests and procedures (e.g., Russell Group, University Alliance, MillionPlus Group, Guild HE). However, in this work, different classifications of the HE institutions were explored and used. In particular:

- HE institutions were considered in two groups: Russell Group and "Other" universities. The Russell Group¹² consists of research-intensive and highly selective institutions. The other group is constituted by newer universities and colleges, which are usually recruiting institutions or universities with former "polytechnic" status.
- HE institutions were also classified as being (or not) in the Sutton Trust Top-30 most selective universities. The universities in the Sutton Trust Top-30 group are research-intensive and regarded as some of the UK's prestigious, elite and most selective institutions¹³.
- The Complete University Guide¹⁴ produces the most comprehensive independent rankings of the UK's HE institutions. The main league table measures institutions by ten indicators (e.g., student satisfaction; student-staff ratio; research quality; degree completion; graduation prospects), reports an overall ranking and ranks by each of the indicators. In this research, the overall ranking and the rankings by student satisfaction, research quality and graduate prospects were considered to group the HE institutions. Each of the measures were used to divide institutions into three approximately equally sized groups¹⁵: low, medium or high ranking.

¹² A full list of universities can be obtained from the HESA website (<https://www.hesa.ac.uk/>) and the members of the Russell Group can be identified in the group's website (<https://www.russellgroup.ac.uk/>).

¹³ <https://www.suttontrust.com/wp-content/uploads/2011/07/sutton-trust-he-destination-report-final.pdf>.

¹⁴ <https://www.thecompleteuniversityguide.co.uk/league-tables/rankings>.

¹⁵ Note that, although the groupings are of roughly equal size, higher ranked universities tend to have a greater number of students enrolled. Therefore, almost half of students are defined to be at institutions that have a high ranking overall.

The subject of study at university was provided in a list of 19 broad degree areas, which related to the principal subject of the student's qualification aim. These were: Agriculture and related subjects; Architecture, Building and Planning; Biological Sciences; Business and Administrative Studies; Creative Arts and Design; Education; Engineering and Technology; Languages; Historical and Philosophical Studies; Law; Mass Communications and Documentation; Mathematical Sciences; Medicine and Dentistry; Computer Science; Combined; Physical Sciences; Social Studies; Subjects allied to Medicine; Veterinary Sciences.

The relationship between enrolment in HE and A Level subject uptake has also been investigated using regression analyses. In particular, multilevel logistic regression analyses were carried out in order to look at the relationship between enrolment in HE and A Level specialism, controlling for background variables including performance at A Level and students' characteristics derived from the data (e.g., gender; prior attainment; previous institution type; socio-economic background¹⁶).

Logistic regression is a type of regression analysis that is used when the dependent variable or outcome is a dichotomous variable (i.e., it takes only two values, which usually represent the occurrence or non-occurrence of some event) and the independent variables are continuous, categorical, or both. It is used to model the probability that the event of interest will occur as a function of the independent variables (see, for example, Hosmer & Lemeshow, 2000).

A multilevel model was proposed due to the hierarchical (or multilevel) structure of the data. If we failed to recognise this hierarchical structure, then the standard errors of the regression coefficients would be underestimated, leading to an overstatement of the statistical significance.

For the purpose of the analyses presented in this report, the dependent variable for the regression models was the students' enrolment in HE.

Generally, the models considered in this report took the following form:

$$\log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \beta_1 IV1_{ij} + \beta_2 IV2_{ij} + \dots + \beta_l IVl_{ij} + u_j$$

where p_{ij} is the probability of student i in institution j of enrolling in HE, $IV1$ to IVl are the independent variables, β_0 to β_l are the regression coefficients and u_j is random variable at school level.

A detailed breakdown of the dependent and independent variables included in the multilevel logistic models is presented in Table 1.

¹⁶ Depending on the regression model (see Table 1), the socio-economic background was measured by the income related deprivation or by the parental education.

Table 1: Description of the variables included in the multilevel logistic regression models

	Name	Description	Range of values	Main model	Different HEIs models
<i>Dependent Variables</i>	Students' enrolment in HE	Indicator of enrolment in HE	Discrete variable: 0 did not enrol in HE; 1 enrolled in HE	✓	
	Students' enrolment at different types of HE institutions	Indicator of enrolment at different types of HE institutions	Discrete variable: 0 did not enrol at particular HE type; 1 enrolled in at particular HE type		✓
<i>Independent Variables</i>	Gender	Gender of the student	Discrete variable: male; female	✓	✓
	Level of deprivation	Student's level of deprivation based on the IDACI	Discrete variable: low; medium; high	✓	✓
	Type of school	Type of institution the student attended prior to HE	Discrete variable: state; independent	✓	✓
	Parental education	Indicator of whether a student's parents have HE qualifications	Discrete variable: 1 if the student's parents have HE qualifications; 0 otherwise		✓
	Prior attainment	Average GCSE and equivalent point score per entry	Continuous variable: ranges from 0 to 67.5.	✓	✓
	Performance at A Level	Points in best (up to) three A Levels divided by 3	Continuous variable: ranges from 0 to 60.	✓	✓
	A Level specialism	A Level subject specialism	Discrete variable: none; applied; expressive; Humanities; Languages; STEM; multiple	✓	✓
	Number of A Level subjects	Indicator variables of whether students: gained one, two, three, four, and five or more A Levels.	Discrete variables (5 variables): 1 if the student gained the number of A Levels; 0 otherwise	✓	✓
	Number of A Levels in facilitating subjects	Indicator variables of whether students: gained zero, one, two, three, and four or more A Levels in facilitating subjects.	Discrete variables (5 variables): 1 if the student gained the number of A Levels in facilitating subjects; 0 otherwise	✓	✓

3. Results¹⁷

3.1 Uptake of A Level subjects

This section of the report investigated the uptake of individual A Level subjects, and combinations of A Level subjects, amongst students who started a HE course in the academic year 2016/17. A comparison of the uptake of A Level subjects, and combinations of A Level subjects, between students starting HE and the national A Level cohort was also carried out.

Breakdowns by type of HE institution and degree subject area are reported here too. Breakdowns by students' characteristics (e.g., gender, prior attainment, type of school, level of deprivation) are reported in Appendix A.

Individual A Level subjects

Table 2 shows the uptake of individual A Level subjects for students starting HE courses in the 2016/17 academic year and it compares that to the uptake of these subjects by the national A Level cohort in 2015/16. Only the subjects taken by at least 1% of the A Level cohort are included in the table. For example, Mathematics, the most popular A Level subject overall (27.4% of the A Level cohort), was taken by 30.8% of the university students and by 22.7% of non-university students.

The most popular subjects amongst university students, following Mathematics, were Psychology, Biology, History, Chemistry and English Literature. It should be noted that the order of the subjects by their popularity was fairly similar in all three groups of students.

The percentages of students holding STEM subjects at A Level was higher amongst university students than amongst all A Level students (and non-university students¹⁸). This pattern was also similar in most Humanities subjects but reversed in subjects such as Business Studies, Media/Film/TV Studies, Drama & Theatre Studies, Physical Education, Art & Design, Music, and Design & Technology.

Table 2 also shows that over 71% of the students with an A Level in Further Mathematics enrolled in HE and that around 65% of those with A Levels in Science subjects (Chemistry, Physics, Biology) and in Mathematics started a HE course following completion of Key Stage 5. On the other hand, fewer than 50% of students with A Levels in Art & Design or in Film Studies enrolled in HE.

The uptake of individual A Level subjects is presented and broken down by university type in Table 3. This table shows, for example, that Mathematics was taken by 48.2% of the students in Russell Group universities, 67.4% of the students in the universities of Cambridge or Oxford, and 47.5% of the students in universities included the Sutton Trust Top-30 group. Table 3 also shows that students in Cambridge and Oxford universities held in higher proportions A Levels in other STEM subjects (e.g., Biology, Chemistry, Physics, Further Mathematics) and in Foreign Languages (e.g., French, German, Spanish) than students in other universities. There was also variation in the uptake between university groups of more applied subjects (e.g., Design & Technology, Art & Design, Business Studies, ICT, Media Studies) or Humanities (e.g., Psychology, Sociology). Overall, higher proportions of students not in Russell Group, Oxbridge and the Sutton Trust Top-30 group universities held A Levels in those subjects than students in such institutions.

¹⁷ Throughout this report, all numbers have been rounded to nearest multiple of 5, following HESA's Standard Disclosure Control policy.

¹⁸ Note that the term "non-university students" refers to the 116,910 A Level students who were not in the HESA data. These students might not have applied to study in a HE institution, they might not have been offered a place at a HE institution, or they might have taken a gap year.

Table 4 presents, in an alternative way, the uptake of individual A Levels subjects by each university type. Specifically, for each A Level subject, the percentage of students (out of those who enrolled in a HE course) who went to each type of university was calculated. For example, around 10 per cent of the students who obtained an A Level in French enrolled in Oxford or Cambridge. Similarly, one in seven (almost 14 per cent) of those with an A Level in Further Mathematics enrolled in Oxford or Cambridge.

The uptake of individual A Level subjects is presented, broken down by university rankings in Table 5-1 and Table 5-2. There was variation on the popularity of the A Level subjects by the different university rankings. For example, Table 5-1 and Table 5-2 show that STEM subjects (e.g., Biology, Chemistry, Physics and Mathematics) were more popular amongst students in institutions of high research quality and high graduation prospects than in institutions with lower rankings in these areas. However, Biology and Chemistry were more popular amongst students in institutions of low student satisfaction than in institutions rated high by their students. The opposite patterns were found in subjects such as Physical Education or Law.

In the same way as Table 4 does, Table 6 and Table 7 present the percentage of students (out of those who enrolled in HE) who were in high rank universities and in low rank universities, respectively. These tables show that there were differences between the uptake patterns in institutions ranked higher overall and ranked higher by student satisfaction or graduation prospects. For example, Table 7 shows that just over 36% of students with an A Level in Art & Design enrolled in an institution with a low rank for graduation prospects. However, this figure is 23% for an institution with a low rank overall. Similarly, Table 6 shows that between 70% and 75% of the students with Modern Foreign Languages went to institutions with a high rank overall, but the percentages attending institutions ranked high for graduation prospects were around 5% lower.

Table 2: Uptake of individual A Level subjects (ordered by decreasing percentage of students with the subject enrolled in HE)

A Level subject	All students (N=276,705)	University students (N=159,790)	Non-University students¹⁸ (N=116,910)	Difference	Students with the subject who enrolled in HE
Mathematics (Further)	4.94	6.09	3.38	2.71	71.10
Chemistry	15.81	18.44	12.21	6.23	67.36
General Studies	4.38	5.04	3.48	1.56	66.46
Physics	10.97	12.47	8.91	3.56	65.67
Mathematics	27.39	30.80	22.72	8.09	64.95
Biology	19.01	21.35	15.81	5.53	64.85
History	17.45	19.18	15.09	4.09	63.47
Government & Politics	4.89	5.38	4.23	1.14	63.46
Law	3.68	4.04	3.19	0.86	63.43
English Literature	16.08	17.64	13.94	3.70	63.37
Religious Studies	8.20	8.94	7.18	1.76	62.99
Psychology	20.20	21.90	17.88	4.03	62.61
Sociology	11.23	12.12	10.00	2.12	62.37
Economics	9.71	10.46	8.67	1.79	62.25
Geography	11.61	12.32	10.64	1.68	61.28
Computer Studies/Computing	2.02	2.14	1.85	0.29	61.25
French	3.08	3.25	2.84	0.42	61.04
Spanish	2.72	2.86	2.53	0.34	60.76
Information & Communications Technology	2.27	2.33	2.20	0.13	59.12
Classical Civilisation	1.34	1.36	1.32	0.04	58.45
English Language	7.81	7.90	7.68	0.22	58.44
English Language & Literature	4.21	4.26	4.15	0.11	58.41
German	1.30	1.28	1.31	-0.03	57.23
Music	1.54	1.46	1.64	-0.17	55.00
Business Studies	9.07	8.56	9.77	-1.22	54.48
Physical Education/Sports Studies	3.77	3.52	4.11	-0.59	53.93
Media/Film/TV Studies	7.07	6.43	7.93	-1.50	52.57
Art & Design	2.51	2.23	2.91	-0.68	51.16
Drama & Theatre Studies	4.18	3.70	4.85	-1.15	51.06
D&T Product Design	3.23	2.82	3.79	-0.97	50.40
Film Studies	2.39	2.03	2.89	-0.86	48.98
Art & Design (Fine Art)	5.09	4.27	6.22	-1.96	48.37
Art & Design (Graphics)	1.73	1.44	2.12	-0.68	48.16
Art & Design (Textiles)	1.31	1.03	1.70	-0.67	45.33
Art & Design (Photography)	4.50	3.37	6.05	-2.68	43.20

Table 3: Uptake of individual A Level subjects, by type of HE institution (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Russell Group		Oxbridge		Sutton Trust Top-30	
	No (N=107,925)	Yes (N=51,870)	No (N=155,875)	Yes (N=3,920)	No (N=99,290)	Yes (N=60,500)
Mathematics	22.42	48.24	29.89	67.37	20.62	47.52
Psychology	24.75	15.97	22.36	3.85	25.07	16.70
Biology	17.96	28.40	21.27	24.43	17.68	27.37
History	16.82	24.08	18.95	28.34	16.55	23.48
English Literature	16.57	19.86	17.44	25.53	16.63	19.29
Chemistry	12.80	30.18	17.93	38.63	12.09	28.85
Geography	11.22	14.62	12.43	7.86	10.74	14.92
Sociology	14.75	6.66	12.40	0.94	15.28	6.95
Physics	8.48	20.76	11.93	33.83	7.49	20.65
Economics	8.98	13.56	10.45	11.18	8.46	13.75
Business Studies: Single	10.59	4.33	8.77	0.18	10.81	4.86
Religious Studies	8.92	8.98	8.98	7.28	8.98	8.88
English Language	9.21	5.16	8.06	1.63	9.49	5.29
Media/Film/TV Studies	8.70	1.73	6.59	0.15	9.09	2.08
Art & Design (Fine Art)	5.13	2.47	4.32	1.91	5.31	2.55
Mathematics (Further)	2.46	13.64	5.40	33.60	1.63	13.41
Government & Politics	4.35	7.51	5.35	6.46	4.28	7.17
Art & Design (Photography)	4.63	0.73	3.45	0.03	4.91	0.84
General Studies	4.33	6.52	5.02	5.95	4.18	6.45
English Language & Literature	5.21	2.29	4.35	0.74	5.34	2.50
Drama & Theatre Studies	4.30	2.46	3.76	1.20	4.41	2.53
Physical Education/Sports Studies	4.38	1.74	3.61	0.13	4.53	1.88
Law	4.75	2.58	4.13	0.66	4.84	2.74
D&T Product Design	3.60	1.19	2.88	0.36	3.75	1.29
French	1.94	5.98	3.00	13.40	1.80	5.64
Spanish	2.03	4.61	2.79	5.85	1.87	4.49
Art & Design	2.73	1.18	2.27	0.59	2.85	1.20
Film Studies	2.68	0.67	2.08	0.15	2.81	0.75
Information & Communications Technology	3.05	0.83	2.38	0.03	3.18	0.92
Computer Studies/Computing	2.18	2.05	2.15	1.84	2.13	2.15
Art & Design (Graphics)	1.94	0.41	1.47	0.08	2.03	0.46
Music	1.32	1.76	1.42	3.17	1.26	1.79
Classical Civilisation	1.08	1.93	1.33	2.37	0.98	1.97
Art & Design (Textiles)	1.40	0.27	1.05	0.05	1.48	0.29
German	0.80	2.28	1.19	4.85	0.74	2.18

Table 4: Uptake of individual A Level subjects, percentage at each type of HE institution (ordered by decreasing percentage at Oxbridge)

A Level subject	% at HE institutions (out of students enrolled in HE)		
	Russell Group	Oxbridge	Sutton Trust Top-30
Mathematics (Further)	72.74	13.53	83.41
French	59.73	10.10	65.69
German	57.78	9.26	64.16
Physics	54.05	6.65	62.69
Mathematics	50.84	5.36	58.41
Music	39.03	5.30	46.39
Chemistry	53.12	5.13	59.24
Spanish	52.22	5.00	59.34
Classical Civilisation	46.15	4.28	55.00
History	40.76	3.62	46.36
English Literature	36.54	3.55	41.41
Government & Politics	45.37	2.95	50.52
General Studies	41.99	2.89	48.50
Biology	43.18	2.81	48.54
Economics	42.06	2.62	49.76
Computer Studies/Computing	31.08	2.11	38.05
Religious Studies	32.61	1.99	37.59
Geography	38.51	1.56	45.84
Art & Design (Fine Art)	18.79	1.10	22.62
Drama & Theatre Studies	21.55	0.80	25.85
Art & Design	17.14	0.65	20.37
English Language	21.21	0.51	25.38
Psychology	23.66	0.43	28.86
English Language & Literature	17.46	0.43	22.20
Law	20.72	0.40	25.69
D&T Product Design	13.73	0.31	17.31
Sociology	17.84	0.19	21.70
Film Studies	10.70	0.19	14.06
Art & Design (Graphics)	9.17	0.13	12.22
Art & Design (Textiles)	8.44	0.12	10.51
Physical Education/Sports Studies	16.03	0.09	20.17
Media/Film/TV Studies	8.71	0.06	12.24
Business Studies: Single	16.43	0.05	21.52
Information & Communications Technology	11.57	0.03	15.01
Art & Design (Photography)	7.08	0.02	9.46

Table 5-1: Uptake of individual A Level subjects, by ranking of the HE institution (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Overall Ranking			Student Satisfaction		
	Low (N=29,670)	Medium (N=49,830)	High (N=77,565)	Low (N=41,095)	Medium (N=60,340)	High (N=55,630)
Mathematics	14.06	19.85	44.78	28.80	30.21	33.67
Psychology	26.65	25.25	18.00	21.69	22.32	21.69
Biology	15.03	17.50	26.23	22.73	20.61	21.12
History	15.22	16.03	22.92	16.43	20.83	19.71
English Literature	16.60	15.71	19.26	17.05	18.29	17.35
Chemistry	8.97	11.62	26.57	20.48	17.36	18.26
Geography	9.58	11.07	14.32	9.83	13.10	13.51
Sociology	17.77	14.83	8.28	13.39	12.33	11.04
Physics	4.88	7.26	18.99	10.89	12.43	14.05
Economics	5.04	8.07	14.35	9.30	10.47	11.70
Business Studies: Single	9.99	12.14	5.81	8.10	8.89	8.67
Religious Studies	9.38	8.71	8.93	8.79	9.39	8.57
English Language	11.78	9.90	5.18	8.27	8.04	7.54
Media/Film/TV Studies	10.91	9.29	2.83	7.65	6.19	5.72
Art & Design (Fine Art)	5.04	6.03	2.70	4.76	3.89	4.11
Mathematics (Further)	0.70	1.17	11.49	5.66	5.61	7.17
Government & Politics	3.28	3.72	7.34	4.86	5.73	5.51
Art & Design (Photography)	5.49	5.37	1.14	3.94	2.96	3.22
General Studies	3.68	4.81	5.78	4.12	5.18	5.68
English Language & Literature	6.20	5.23	2.87	4.22	4.40	4.10
Drama & Theatre Studies	4.82	4.24	2.75	3.51	3.73	3.56
Physical Education/Sports Studies	5.47	4.34	2.26	3.66	3.31	3.66
Law	5.62	4.91	2.92	3.71	4.48	3.87
D&T Product Design	3.22	4.29	1.69	2.60	2.60	3.17
French	1.43	1.59	5.05	3.03	3.21	3.50
Spanish	1.54	1.83	4.07	2.74	2.84	3.05
Art & Design	2.80	3.30	1.26	2.63	2.09	2.00
Film Studies	3.55	2.72	0.95	2.51	1.91	1.72
Information & Communications Technology	3.46	3.26	1.30	2.42	2.33	2.26
Computer Studies/Computing	1.89	2.24	2.20	1.87	2.08	2.45
Art & Design (Graphics)	2.17	2.34	0.55	1.67	1.35	1.32
Music	1.29	0.95	1.55	1.14	1.39	1.35
Classical Civilisation	0.93	0.93	1.82	1.17	1.55	1.31
Art & Design (Textiles)	1.47	1.79	0.34	1.14	1.03	0.90
German	0.68	0.68	1.92	1.21	1.35	1.29

Table 5-2: Uptake of individual A Level subjects, by ranking of the HE institution (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Research Quality			Graduation Prospects		
	Low (N=29,680)	Medium (N=57,670)	High (N=69,320)	Low (N=34,720)	Medium (N=49,985)	High (N=72,360)
Mathematics	12.49	23.33	45.56	13.31	22.50	45.50
Psychology	27.00	24.78	17.39	26.05	25.48	17.51
Biology	13.52	18.26	27.31	13.75	18.53	26.93
History	16.85	16.11	22.99	15.66	18.51	21.55
English Literature	17.44	15.44	19.52	17.47	16.88	18.23
Chemistry	7.00	12.98	28.07	7.99	12.32	27.81
Geography	10.00	11.27	14.37	9.06	13.34	13.33
Sociology	17.06	15.24	7.46	17.10	14.40	8.22
Physics	4.16	9.15	19.13	4.46	8.04	19.66
Economics	4.42	9.92	13.85	5.06	10.03	13.65
Business Studies: Single	9.83	11.87	5.38	10.31	11.83	5.57
Religious Studies	9.39	8.82	8.85	9.45	8.94	8.70
English Language	12.72	8.65	5.26	12.04	9.23	5.05
Media/Film/TV Studies	11.18	8.60	2.50	11.05	8.25	2.90
Art & Design (Fine Art)	5.22	4.96	3.08	6.56	4.37	2.95
Mathematics (Further)	0.67	1.88	12.14	0.66	1.73	11.90
Government & Politics	3.00	4.55	7.21	3.36	4.91	6.77
Art & Design (Photography)	6.13	4.24	1.26	6.38	3.90	1.43
General Studies	4.48	4.22	6.05	4.14	5.15	5.48
English Language & Literature	6.67	4.88	2.68	6.13	5.10	2.75
Drama & Theatre Studies	6.06	3.32	2.80	5.41	3.94	2.53
Physical Education/Sports Studies	6.13	4.26	1.80	5.12	4.17	2.32
Law	5.65	4.82	2.76	5.55	4.98	2.71
D&T Product Design	3.11	4.32	1.41	3.24	3.93	1.82
French	1.30	1.84	5.31	1.52	1.96	5.01
Spanish	1.53	1.92	4.27	1.69	2.14	3.97
Art & Design	2.78	2.71	1.50	3.73	2.30	1.39
Film Studies	3.97	2.27	0.92	3.76	2.35	0.91
Information & Communications Technology	3.19	3.35	1.11	3.48	2.93	1.36
Computer Studies/Computing	1.83	2.32	2.16	1.77	2.31	2.24
Art & Design (Graphics)	2.22	1.98	0.62	2.68	1.65	0.67
Music	1.50	0.83	1.64	1.23	1.09	1.51
Classical Civilisation	1.13	0.93	1.84	1.17	1.16	1.60
Art & Design (Textiles)	1.39	1.47	0.46	1.93	1.20	0.45
German	0.66	0.72	2.04	0.65	0.83	1.92

Table 6: Uptake of individual A Level subjects, percentage at high ranked HE institution (ordered by decreasing overall uptake of the A Level subject)

A Level subject	% at high ranked HE institutions (out of students enrolled in HE)			
	Overall	Student Satisfaction	Research Quality	Graduation Prospects
Mathematics	70.56	38.05	64.17	66.88
Psychology	39.89	34.48	34.44	36.20
Biology	59.65	34.44	55.49	57.13
History	58.03	35.77	52.01	50.89
Chemistry	69.93	34.48	66.04	68.29
English Literature	53.00	34.24	48.02	46.79
Physics	73.92	39.22	66.56	71.40
Geography	56.39	38.16	50.60	48.98
Sociology	33.15	31.70	26.71	30.70
Economics	66.57	38.92	57.42	59.07
Religious Studies	48.46	33.35	42.96	44.07
Business Studies: Single	32.96	35.28	27.27	29.45
English Language	31.85	33.25	28.91	28.94
Media/Film/TV Studies	21.35	30.95	16.86	20.44
Mathematics (Further)	91.60	41.02	86.51	88.49
Government & Politics	66.28	35.71	58.21	57.06
General Studies	55.71	39.22	52.10	49.24
Art & Design (Fine Art)	30.71	33.57	31.35	31.28
English Language & Literature	32.70	33.48	27.26	29.23
Law	35.04	33.32	29.64	30.40
Drama & Theatre Studies	36.10	33.53	32.85	30.96
Physical Education/Sports Studies	31.11	36.16	22.23	29.78
Art & Design (Photography)	16.51	33.31	16.19	19.20
French	75.31	37.48	70.87	69.75
Spanish	69.00	37.01	64.74	62.81
D&T Product Design	29.13	39.24	21.67	29.29
Information & Communications Technology	27.14	33.84	20.71	26.44
Art & Design	27.51	31.33	29.22	28.32
Computer Studies/Computing	49.99	39.83	43.87	47.41
Film Studies	22.60	29.54	19.70	20.32
Music	51.52	32.15	48.65	46.69
Art & Design (Graphics)	18.61	32.04	18.57	21.09
Classical Civilisation	64.90	33.67	58.64	53.34
German	72.45	34.86	68.94	67.82

Table 7: Uptake of individual A Level subjects, percentage at low ranked HE institution (ordered by decreasing overall uptake of the A Level subject)

A Level subject	% at low ranked HE institutions (out of students enrolled in HE)			
	Overall	Student Satisfaction	Research Quality	Graduation Prospects
Mathematics	8.48	24.04	7.53	9.39
Psychology	22.59	25.47	22.90	25.85
Biology	13.07	27.38	11.76	13.99
History	14.73	22.03	16.32	17.74
Chemistry	9.03	28.57	7.06	9.42
English Literature	17.48	24.86	18.36	21.52
Physics	7.27	22.47	6.20	7.77
Geography	14.43	20.52	15.07	15.98
Sociology	27.21	28.40	26.14	30.65
Economics	8.94	22.85	7.85	10.50
Religious Studies	19.48	25.28	19.51	22.97
Business Studies: Single	21.67	24.35	21.33	26.18
English Language	27.70	26.92	29.92	33.13
Media/Film/TV Studies	31.50	30.56	32.28	37.31
Mathematics (Further)	2.14	23.92	2.05	2.36
Government & Politics	11.34	23.27	10.35	13.58
General Studies	13.57	21.03	16.51	17.83
Art & Design (Fine Art)	21.92	28.70	22.74	33.42
English Language & Literature	27.00	25.44	29.06	31.26
Law	25.82	23.60	25.94	29.84
Drama & Theatre Studies	24.19	24.38	30.43	31.75
Physical Education/Sports Studies	28.84	26.74	32.32	31.56
Art & Design (Photography)	30.30	30.07	33.83	41.15
French	8.16	23.94	7.43	10.12
Spanish	10.01	24.56	9.90	12.80
D&T Product Design	21.22	23.78	20.49	24.98
Information & Communications Technology	27.60	26.79	25.47	32.49
Art & Design	23.35	30.35	23.18	36.39
Computer Studies/Computing	16.45	22.51	15.92	18.00
Film Studies	32.47	31.85	36.36	40.30
Music	16.37	20.09	18.98	18.21
Art & Design (Graphics)	28.04	29.87	28.61	40.43
Classical Civilisation	12.67	22.16	15.48	18.75
German	9.90	24.28	9.51	10.92

Table 8-1 to Table 8-4, presenting the uptake of individual A Level subjects by degree subject area, show, for example, that Mathematics was taken by 99.5% of the candidates accepted to pursue a degree in “Mathematical Sciences”, 28.9% of the candidates accepted to “Subjects allied to Medicine” degrees and by only 10.4% of the candidates accepted to study “Languages”. On the other hand, Business Studies was taken by only 38.5% of the students accepted to study a degree in “Business and Administrative Studies” and French or Spanish were taken only by 14.1% and 11.1%, respectively, of the students enrolled in a “Language” degree¹⁹.

¹⁹ Note the “Languages” degree area includes courses, among others, in Linguistics, Literature, English, American Studies, Celtic Languages, Literature & Culture, Latin, Ancient Greek, Classics or Languages Studies. Therefore, it is possible that a student enrolled in a Language degree without an A Level in French or Spanish.

Table 8-1: Uptake of individual A Level subjects, by degree subject area (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Agriculture & related subjects (N=780)	Architecture, Building & Planning (N=2,580)	Biological Sciences (N=18,715)	Business & Administrative Studies (N=11,930)	Combined (N=26,815)
Mathematics	20.46	37.12	21.77	21.56	27.78
Psychology	24.94	9.81	56.50	17.66	18.47
Biology	59.72	8.88	49.76	8.02	13.82
History	11.25	12.06	11.72	13.55	24.45
English Literature	8.06	9.00	12.61	9.92	21.41
Chemistry	32.10	6.09	27.12	4.78	12.14
Geography	27.11	22.65	11.80	12.98	11.51
Sociology	5.88	5.08	15.34	11.88	13.38
Physics	4.22	15.21	3.61	3.21	8.42
Economics	5.50	10.59	2.70	23.70	15.19
Business Studies: Single	11.25	11.95	4.51	38.52	10.71
Religious Studies	5.37	4.89	8.01	7.32	11.53
English Language	4.86	5.16	6.51	8.42	9.16
Media/Film/TV Studies	2.17	3.96	2.91	9.90	6.88
Art & Design (Fine Art)	2.56	23.86	2.08	2.17	3.14
Mathematics (Further)	0.51	1.40	0.51	1.33	5.71
Government & Politics	1.79	2.37	1.25	4.64	9.47
Art & Design (Photography)	5.24	5.59	1.67	3.01	2.43
General Studies	6.91	5.74	4.78	4.79	5.35
English Language & Literature	1.28	2.17	3.46	4.02	5.26
Drama & Theatre Studies	1.53	0.93	1.78	2.36	4.34
Physical Education/Sports Studies	5.24	3.72	12.39	4.94	2.82
Law	0.51	1.90	2.57	4.06	3.49
D&T Product Design	5.75	21.45	0.80	2.67	1.61
French	1.53	1.82	1.67	1.98	6.28
Spanish	1.15	1.90	1.73	2.83	5.48
Art & Design	2.05	11.87	0.96	1.33	1.57
Film Studies	0.26	1.24	0.67	1.36	2.39
Information & Communications Technology	2.69	3.88	1.22	4.93	2.27
Computer Studies/Computing	0.38	0.89	0.25	0.91	1.34
Art & Design (Graphics)	0.38	6.63	0.25	1.23	1.00
Music	0.77	0.50	0.49	0.36	1.39
Classical Civilisation	0.51	0.58	0.57	0.55	1.67
Art & Design (Textiles)	0.77	0.93	0.34	0.96	0.68
German	0.64	0.78	0.66	0.65	2.31

Table 8-2: Uptake of individual A Level subjects, by degree subject area (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Computer Science (N=5,380)	Creative Arts & Design (N=13,000)	Education (N=3,810)	Engineering & Technology (N=9,420)	Historical & Philosophical Studies (N=7,170)
Mathematics	50.89	8.93	8.20	86.86	10.99
Psychology	8.14	12.67	32.52	3.46	16.31
Biology	7.57	4.54	8.14	14.56	8.62
History	6.81	11.52	15.50	3.77	81.05
English Literature	4.50	21.63	22.56	1.57	37.97
Chemistry	9.93	1.75	2.63	39.22	3.50
Geography	5.82	6.11	11.61	6.79	11.44
Sociology	4.43	6.58	26.61	0.97	10.60
Physics	25.85	2.91	0.79	70.52	2.02
Economics	7.83	1.85	1.81	6.07	9.32
Business Studies: Single	10.47	4.70	5.07	3.10	3.54
Religious Studies	3.27	5.94	15.21	1.59	25.29
English Language	3.22	8.94	21.46	0.84	7.52
Media/Film/TV Studies	7.70	15.28	7.28	1.19	3.15
Art & Design (Fine Art)	2.21	22.61	3.34	1.07	3.32
Mathematics (Further)	12.50	0.39	0.18	22.72	0.49
Government & Politics	1.30	1.55	1.60	0.70	14.01
Art & Design (Photography)	2.25	17.64	3.99	0.54	1.41
General Studies	4.03	3.92	3.94	4.51	6.81
English Language & Literature	1.64	6.25	8.09	0.39	4.59
Drama & Theatre Studies	1.06	15.32	5.81	0.33	3.14
Physical Education/Sports Studies	0.73	1.12	2.68	1.06	1.44
Law	1.45	1.01	2.78	0.30	3.52
D&T Product Design	4.26	10.33	1.29	8.84	0.73
French	0.87	2.01	1.34	1.09	3.03
Spanish	0.71	1.67	1.29	1.03	2.02
Art & Design	1.02	11.62	2.21	0.84	1.74
Film Studies	1.65	7.22	1.58	0.45	1.06
Information & Communications Technology	14.78	1.64	2.78	2.19	0.93
Computer Studies/Computing	34.19	0.85	0.29	4.10	0.33
Art & Design (Graphics)	2.58	9.00	0.58	0.58	0.47
Music	0.56	8.64	1.63	0.93	0.91
Classical Civilisation	0.50	1.28	0.76	0.21	5.02
Art & Design (Textiles)	0.07	7.26	1.16	0.03	0.29
German	0.48	0.93	0.39	1.02	1.20

Table 8-3: Uptake of individual A Level subjects, by degree subject area (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Languages (N=755)	Law (N=7,960)	Mass Communications & Documentation (N=3,830)	Mathematical Sciences (N=4,685)	Medicine & Dentistry (N=2,960)
Mathematics	10.42	10.66	3.21	99.53	72.34
Psychology	18.86	27.23	14.18	5.89	6.09
Biology	8.16	8.96	2.30	11.91	97.46
History	36.83	36.62	16.22	5.38	4.19
English Literature	61.03	30.12	27.25	2.31	3.25
Chemistry	3.30	3.76	0.63	28.94	98.61
Geography	8.13	8.49	5.67	4.46	4.73
Sociology	10.69	21.63	14.11	1.52	0.44
Physics	1.31	1.41	0.86	47.32	12.85
Economics	3.94	9.45	1.85	12.42	3.08
Business Studies: Single	2.67	8.93	6.27	3.76	0.41
Religious Studies	13.05	15.34	7.34	1.17	2.27
English Language	18.16	11.78	21.71	1.20	0.41
Media/Film/TV Studies	5.25	3.78	52.04	0.70	0.00
Art & Design (Fine Art)	3.87	1.22	4.44	0.83	0.57
Mathematics (Further)	0.64	0.46	0.05	64.29	4.16
Government & Politics	5.94	13.03	3.16	0.81	0.14
Art & Design (Photography)	1.64	1.29	10.89	0.47	0.07
General Studies	6.19	4.96	3.55	4.44	8.12
English Language & Literature	8.81	7.07	11.62	0.45	0.34
Drama & Theatre Studies	5.92	2.16	9.46	0.55	0.17
Physical Education/Sports Studies	0.86	1.18	2.04	1.00	0.71
Law	2.39	33.65	2.30	0.70	0.20
D&T Product Design	0.53	0.39	1.44	0.70	0.17
French	14.08	3.25	1.44	2.24	2.03
Spanish	11.13	2.93	1.12	1.56	1.79
Art & Design	2.07	0.65	2.27	0.47	0.37
Film Studies	1.98	0.87	17.06	0.23	0.03
Information & Communications Technology	0.89	1.76	2.53	1.37	0.10
Computer Studies/Computing	0.25	0.34	0.94	3.39	0.14
Art & Design (Graphics)	0.60	0.23	1.88	0.19	0.00
Music	1.53	0.34	0.84	1.26	0.57
Classical Civilisation	6.82	1.37	1.02	0.32	0.27
Art & Design (Textiles)	0.48	0.29	0.94	0.09	0.07
German	5.13	1.13	0.55	1.37	1.12

Table 8-4: Uptake of individual A Level subjects, by degree subject area (ordered by decreasing overall uptake of the A Level subject)

A Level subject	Physical Sciences (N=8,975)	Social Studies (N=13,935)	Subjects allied to Medicine (N=9,865)	Veterinary Science (N=340)
Mathematics	59.98	27.44	28.87	58.48
Psychology	9.97	22.41	35.12	6.14
Biology	32.90	9.60	67.37	99.42
History	7.03	22.57	7.76	4.68
English Literature	4.97	16.25	8.42	2.63
Chemistry	52.55	5.29	47.73	99.42
Geography	32.78	24.02	8.47	13.16
Sociology	2.99	26.54	12.59	0.00
Physics	41.40	4.17	4.21	11.99
Economics	5.05	32.54	2.46	0.58
Business Studies: Single	2.60	8.48	2.94	0.00
Religious Studies	2.74	11.58	6.95	0.58
English Language	2.31	7.75	5.13	0.29
Media/Film/TV Studies	0.92	4.47	1.44	0.00
Art & Design (Fine Art)	1.14	1.65	1.57	0.88
Mathematics (Further)	13.89	3.47	0.35	2.34
Government & Politics	1.02	14.17	0.69	0.29
Art & Design (Photography)	1.00	1.76	1.36	0.00
General Studies	5.55	5.15	4.74	8.19
English Language & Literature	1.07	4.23	2.43	0.58
Drama & Theatre Studies	0.72	2.64	1.22	0.58
Physical Education/Sports Studies	2.08	2.05	5.65	1.17
Law	0.85	5.16	1.34	0.00
D&T Product Design	1.17	1.08	0.65	0.00
French	1.93	2.51	1.55	2.05
Spanish	1.39	2.43	1.28	2.05
Art & Design	0.57	0.94	0.83	0.58
Film Studies	0.27	0.95	0.36	0.00
Information & Communications Technology	0.89	1.61	1.10	0.00
Computer Studies/Computing	1.63	0.67	0.21	0.00
Art & Design (Graphics)	0.25	0.34	0.28	0.00
Music	0.84	0.47	0.52	0.58
Classical Civilisation	0.55	1.08	0.41	0.00
Art & Design (Textiles)	0.17	0.41	0.52	0.29
German	0.91	0.81	0.68	0.88

Combinations of A Level subjects

The tables presented in this section of the report show which combinations of A Level subjects were most commonly held by undergraduates in UK HE institutions in the academic year 2016/17.

Table 9 shows the number of A Level subjects held by students. Just over 72 per cent of the A Level cohort had three or more A Levels, but this proportion was higher among students who were accepted onto a university course (79 per cent). Note that some students may have held other qualifications in addition to A Levels, such as BTEC, Cambridge National, or Extended Project qualifications. This was likely to be the case for students who held only one A Level, for example.

Table 9: Number of A Level subjects

Number of subjects	A Level cohort (N=276,705)	University students (N=159,790)	Non-University students (N=116,910)
1	12.32	7.74	18.58
2	15.98	13.07	19.96
3	62.47	68.38	54.40
4	8.51	9.99	6.49
5+	0.72	0.82	0.57
<i>Average</i>	<i>2.70</i>	<i>2.83</i>	<i>2.50</i>

Table 10 to Table 11-2 break down the number of A Level subjects held by students accepted onto a university course, by type of HE institution. There is considerable variation across the groups, with students attending Oxford or Cambridge holding the highest number of A Level subjects (3.52 on average) and those attending low ranking (overall) institutions the lowest (2.53).

Table 10: Number of A Level subjects, by type of HE institution

Number of subjects	Russell Group (N=51,870)	Oxbridge (N=3,920)	Sutton Trust Top-30 (N=60,500)
1	1.61	1.1	1.86
2	3.94	2.58	4.29
3	74.46	47.84	74.67
4	18.03	41.31	17.38
5+	1.95	7.17	1.8
<i>Average</i>	<i>3.15</i>	<i>3.52</i>	<i>3.13</i>

Table 11-1: Number of A Level subjects, by ranking of the HE institution

Number of subjects	Overall Ranking			Student Satisfaction		
	Low (N=29,670)	Medium (N=49,830)	High (N=77,565)	Low (N=41,095)	Medium (N=60,340)	High (N=55,630)
1	14.55	11.24	2.60	9.44	7.24	6.62
2	22.59	18.71	5.45	14.92	12.40	11.94
3	58.75	64.27	75.09	65.61	69.96	69.25
4	3.98	5.61	15.33	9.19	9.64	11.29
5+	0.11	0.17	1.53	0.83	0.76	0.89
<i>Average</i>	<i>2.53</i>	<i>2.64</i>	<i>3.08</i>	<i>2.77</i>	<i>2.84</i>	<i>2.88</i>

Table 11-2: Number of A Level subjects, by ranking of the HE institution

Number of subjects	Research Quality			Graduation Prospects		
	Low (N=29,680)	Medium (N=57,670)	High (N=69,320)	Low (N=34,720)	Medium (N=49,985)	High (N=72,360)
1	14.24	10.57	2.24	13.78	9.50	3.32
2	22.60	17.35	4.95	21.73	16.45	6.20
3	58.68	66.10	74.97	59.96	67.22	73.64
4	4.37	5.78	16.19	4.40	6.58	15.28
5+	0.11	0.20	1.66	0.13	0.25	1.56
<i>Average</i>	<i>2.54</i>	<i>2.68</i>	<i>3.10</i>	<i>2.55</i>	<i>2.71</i>	<i>3.06</i>

Table 12 shows the number of facilitating subjects, as defined in Russell Group (2017), held by students. The Russell Group recommends that students take at least two facilitating subjects at A Level in order to keep most options for degree subject choice open (although they caution that some degrees, such as Music or Art, will require non-facilitating subjects to be chosen at A Level). On average, students (including those accepted at university) held A Levels in fewer than two facilitating subjects.

Table 12: Number of A Level facilitating subjects (as defined by the Russell Group)

Number of subjects	A Level cohort (N=276,705)	University students (N=159,790)	Non-University students (N=11,6910)
0	29.08	24.30	35.62
1	29.53	28.61	30.77
2	22.60	24.87	19.49
3	16.12	19.07	12.09
4	2.50	2.99	1.83
5+	0.17	0.16	0.19
<i>Average</i>	<i>1.34</i>	<i>1.48</i>	<i>1.14</i>

Table 13 to Table 14-2 show the breakdown of the number of A Level facilitating subjects held by students accepted onto a university course, by type of HE institution. There is considerable variation across the groups, with students attending Oxford or Cambridge holding the highest number of facilitating subjects (2.95 on average) and those attending low ranking (overall) institutions, institutions with a low research quality ranking, or institutions with low graduation prospects the lowest (0.90, 0.87, 0.88, respectively).

Table 13: Number of A Level facilitating subjects, by type of HE institution

Number of subjects	Russell Group (N=51,870)	Oxbridge (N=3,920)	Sutton Trust Top-30 (N=60,500)
0	7.16	0.79	7.98
1	19.93	6.66	21.03
2	30.69	21.47	30.62
3	34.33	40.92	32.99
4	7.46	27.80	7.00
5+	0.44	2.35	0.38
<i>Average</i>	<i>2.16</i>	<i>2.95</i>	<i>2.11</i>

Table 14-1: Number of A Level facilitating subjects, by ranking of the HE institution

Number of subjects	Overall Ranking			Student Satisfaction		
	Low (N=29,670)	Medium (N=49,830)	High (N=77,565)	Low (N=41,095)	Medium (N=60,340)	High (N=55,630)
0	41.30	35.28	10.26	27.94	23.50	21.80
1	34.16	33.80	23.08	27.79	29.17	28.51
2	17.42	20.71	30.56	22.09	25.61	26.35
3	6.86	9.79	30.03	18.73	19.06	19.78
4	0.25	0.41	5.77	3.25	2.54	3.39
5+	0.00	0.01	0.31	0.19	0.12	0.16
<i>Average</i>	<i>0.90</i>	<i>1.06</i>	<i>1.99</i>	<i>1.42</i>	<i>1.48</i>	<i>1.55</i>

Table 14-2: Number of A Level facilitating subjects, by ranking of the HE institution

Number of subjects	Research Quality			Graduation Prospects		
	Low (N=29,680)	Medium (N=57,670)	High (N=69,320)	Low (N=34,720)	Medium (N=49,985)	High (N=72,360)
0	41.79	32.24	9.54	42.01	30.14	11.25
1	35.45	32.96	21.98	34.46	33.89	22.08
2	17.03	22.58	30.37	17.18	23.53	29.66
3	5.55	11.62	31.48	6.15	11.88	30.58
4	0.18	0.58	6.30	0.20	0.55	6.09
5+	0.00	0.01	0.34	0.00	0.01	0.33
<i>Average</i>	<i>0.87</i>	<i>1.15</i>	<i>2.04</i>	<i>0.88</i>	<i>1.19</i>	<i>1.99</i>

Dilnot (2018) devised a taxonomy of A Level subjects that provides a useful starting point for the analysis of the role of subject choice in university application. The categories in her taxonomy are as follows: facilitating (these are the same A Level subjects identified in the *Informed Choices* report (Russell Group, 2017)); useful; more limited suitability (MLS); less effective preparation (LEP); and non-counting. The A Level subjects included in each category are listed in Appendix B, and the number of A Levels in each category held by the A Level students considered in this research is shown in Table 15. Table 16 and Table 17 show the breakdowns by type of HE institution and overall ranking, respectively.

Table 15 shows that the percentage of students with two or more facilitating or useful subjects was higher amongst university students than amongst non-university students. As expected, the percentages of students with two or more less suitable or non-counting A Level subjects was highest amongst students not enrolled in HE.

There was considerable variation across the different types of HE institutions. For example, Table 16 shows that the percentage of students having four or more facilitating subjects was highest at Oxford and Cambridge (e.g., 30.2 per cent, compared with 7.9 per cent of the students in Russell Group universities).

Table 17 shows that the number of A Levels in facilitating subjects increased with the increasing overall ranking of the HE institution, the number of less suitable A Levels decreased and the number of useful A Levels remained similar.

Table 15: Number of A Level subjects, by the A Level taxonomy proposed by Dilnot (2018)

	Type of A Level subjects	Number of A Level subjects					Average
		0	1	2	3	4+	
A Level cohort (N=276,705)	Facilitating	29.08	29.53	22.60	16.12	2.67	1.34
	Useful	44.39	39.22	14.52	1.87	0.01	0.74
	MLS	59.16	30.22	9.14	1.48	0.01	0.53
	LEP	96.56	3.38	0.06	0.00	0.00	0.03
	Non-counting	95.57	4.42	0.01	0.00	0.00	0.04
University students (N=159,790)	Facilitating	24.30	28.61	24.87	19.07	3.15	1.48
	Useful	41.85	39.96	16.00	2.18	0.01	0.79
	MLS	62.74	28.15	7.87	1.22	0.01	0.48
	LEP	96.97	2.98	0.05	0.00	0.00	0.03
	Non-counting	94.90	5.08	0.02	0.00	0.00	0.05
Non-University students (N=116,910)	Facilitating	35.62	30.77	19.49	12.09	2.02	1.14
	Useful	47.86	38.21	12.49	1.44	0.00	0.67
	MLS	54.26	33.05	10.87	1.82	0.01	0.60
	LEP	96.00	3.93	0.07	0.00	0.00	0.04
	Non-counting	96.48	3.51	0.00	0.00	0.00	0.03

Table 16: Number of A Level subjects, by the A Level taxonomy proposed by Dilnot (2018) and type of HE institution

	Type of A Level subjects	Number of A Level subjects					
		0	1	2	3	4+	Average
Russell Group (N=51,870)	Facilitating	7.16	19.93	30.69	34.33	7.90	2.16
	Useful	48.07	36.77	13.44	1.71	0.01	0.69
	MLS	80.88	16.68	2.31	0.13	0.00	0.22
	LEP	98.76	1.23	0.01	0.00	0.00	0.01
	Non-counting	93.36	6.60	0.04	0.00	0.00	0.07
Oxbridge (N=3,920)	Facilitating	0.79	6.66	21.47	40.92	30.15	2.95
	Useful	64.08	29.49	5.90	0.51	0.03	0.43
	MLS	94.05	5.69	0.20	0.05	0.00	0.06
	LEP	99.67	0.33	0.00	0.00	0.00	0.00
	Non-counting	93.85	6.00	0.15	0.00	0.00	0.06
Sutton Trust Top-30 (N=60,500)	Facilitating	7.98	21.03	30.62	32.99	7.38	2.11
	Useful	47.17	37.25	13.81	1.75	0.01	0.70
	MLS	79.37	17.86	2.59	0.17	0.00	0.24
	LEP	98.60	1.39	0.01	0.00	0.00	0.01
	Non-counting	93.44	6.53	0.04	0.00	0.00	0.07

Table 17: Number of A Level subjects, by the A Level taxonomy proposed by Dilnot (2018) and overall ranking of HE institution

	Type of A Level subjects	Number of A Level subjects					
		0	1	2	3	4+	Average
Low (N=29,670)	Facilitating	41.30	34.16	17.42	6.86	0.26	0.94
	Useful	37.02	42.29	17.92	2.76	0.00	0.84
	MLS	49.84	36.08	11.98	2.09	0.01	0.67
	LEP	95.40	4.49	0.11	0.00	0.00	0.05
	Non-counting	96.29	3.70	0.00	0.00	0.00	0.04
Medium (N=49,830)	Facilitating	35.28	33.80	20.71	9.79	0.42	1.41
	Useful	39.30	41.36	17.09	2.25	0.01	0.83
	MLS	49.92	35.84	12.16	2.07	0.01	0.50
	LEP	95.92	4.02	0.07	0.00	0.00	0.03
	Non-counting	95.16	4.83	0.01	0.00	0.00	0.05
High (N=77,565)	Facilitating	10.26	23.08	30.56	30.03	6.08	2.14
	Useful	45.20	38.19	14.66	1.94	0.01	0.68
	MLS	76.28	20.03	3.39	0.30	0.00	0.24
	LEP	98.34	1.65	0.01	0.00	0.00	0.01
	Non-counting	94.12	5.85	0.03	0.00	0.00	0.06

In this research, A Levels were also classified based on content, as shown in Bramley (2014). The categories in this taxonomy are as follows: STEM; Humanities; Languages; applied; and expressive. Details about the subjects included in each category and on how the different categorisations were devised are given in Appendix B. The number of A Levels in each category held by the A Level students considered in this research is shown in Table 18.

Table 18 shows, for example, that 56.7 per cent of the A Level cohort did not achieve an A Level in a STEM subject. This percentage was higher amongst non-university students. The percentages of students with at least one subject in the Languages area were around 10 per cent and this was similar for university and non-university students. Humanities, applied and expressive subjects were slightly more popular amongst non-university students than amongst university students.

Table 19 and Table 20 show the breakdowns by type of HE institution and overall ranking, respectively.

Table 18: Number of A Level subjects, by the A Level taxonomy based on subject content

	Type of A Level subjects	Number of A Level subjects (% of students)					Average
		0	1	2	3	4+	
A Level cohort (N=276,705)	STEM	56.69	17.60	13.11	10.89	1.70	0.83
	Humanities	25.95	31.53	26.06	15.42	1.03	1.34
	Languages	90.53	8.32	1.07	0.08	0.00	0.11
	Applied	82.87	15.57	1.52	0.04	0.00	0.19
	Expressive	81.57	15.22	2.97	0.23	0.00	0.22
University students (N=159,790)	STEM	52.44	17.95	14.46	12.94	2.21	0.95
	Humanities	24.48	29.62	26.94	17.66	1.31	1.42
	Languages	91.33	7.42	1.15	0.09	0.00	0.10
	Applied	83.45	15.14	1.37	0.04	0.00	0.18
	Expressive	84.39	13.09	2.34	0.18	0.00	0.18
Non-University students (N=116,910)	STEM	62.50	17.13	11.26	8.08	1.02	0.68
	Humanities	27.97	34.15	24.86	12.35	0.66	1.24
	Languages	89.44	9.53	0.96	0.06	0.00	0.12
	Applied	82.07	16.16	1.72	0.05	0.00	0.20
	Expressive	77.72	18.12	3.85	0.31	0.00	0.27

Table 19: Number of A Level subjects, by the A Level taxonomy based on subject content and type of HE institution

	Type of A Level subjects	Number of A Level subjects (% of students)					
		0	1	2	3	4+	Average
Russell Group (N=51,870)	STEM	36.30	16.98	17.97	23.01	5.74	1.45
	Humanities	31.48	25.11	22.70	18.80	1.91	1.35
	Languages	86.44	10.84	2.49	0.22	0.01	0.17
	Applied	90.86	8.51	0.61	0.02	0.00	0.10
	Expressive	91.76	7.77	0.44	0.03	0.00	0.08
Oxbridge (N=3,920)	STEM	26.60	16.39	10.08	24.76	22.16	2.01
	Humanities	43.63	22.75	18.56	13.10	1.97	1.07
	Languages	74.06	17.39	7.38	1.10	0.08	0.36
	Applied	98.47	1.48	0.05	0.00	0.00	0.02
	Expressive	93.82	6.03	0.15	0.00	0.00	0.06
Sutton Trust Top-30 (N=60,500)	STEM	36.92	17.46	17.87	22.35	5.39	1.42
	Humanities	30.87	25.43	23.15	18.63	1.92	1.35
	Languages	87.13	10.30	2.35	0.21	0.01	0.16
	Applied	89.98	9.35	0.65	0.02	0.00	0.11
	Expressive	91.32	8.18	0.48	0.02	5.74	0.09

Table 20: Number of A Level subjects, by the A Level taxonomy based on subject content and overall ranking of HE institution

	Type of A Level subjects	Number of A Level subjects (% of students)					
		0	1	2	3	4+	Average
Low (N=29,670)	STEM	68.89	17.02	9.46	4.55	0.08	0.53
	Humanities	18.29	32.97	30.99	16.99	0.76	1.46
	Languages	94.79	4.89	0.31	0.01	0.00	0.06
	Applied	78.61	19.38	1.94	0.06	0.00	0.23
	Expressive	80.01	16.34	3.37	0.28	0.00	0.26
Medium (N=49,830)	STEM	62.40	18.48	12.19	6.73	0.20	0.89
	Humanities	20.78	32.81	29.16	16.29	0.96	1.46
	Languages	94.29	5.35	0.36	0.00	0.00	0.09
	Applied	78.42	19.57	1.96	0.05	0.00	0.20
	Expressive	78.17	17.43	4.08	0.32	0.00	0.18
High (N=77,565)	STEM	39.34	18.00	17.93	20.36	4.38	1.44
	Humanities	29.19	26.05	23.91	19.08	1.77	1.33
	Languages	88.03	9.78	2.01	0.18	0.01	0.16
	Applied	88.47	10.71	0.80	0.02	0.00	0.11
	Expressive	90.71	8.56	0.68	0.05	0.00	0.10

Using the A Level taxonomy based on subject content (Bramley, 2014), A Level students were assigned to an A Level specialism. The numbers and percentages of university and non-university students with each specialism are shown in Table 21. Table 22 and Table 23 show the breakdowns by type of HE institution and overall ranking, respectively.

Table 21 shows that there were higher percentages of students specialising in Humanities, Languages or STEM subjects at A Level in the group of students that enrolled in HE than in the group of students that did not. The similar pattern can be seen for students with multiple specialisms but, for the remaining specialisms (applied, expressive, none), the pattern was the opposite.

Over half of the students in Oxbridge were specialist in STEM (Table 22). This contrasts with only 13.7% or 18.5% in low or medium ranked HE institutions, respectively (Table 23). The percentage of students with multiple specialism was also higher at Oxbridge than at other institutions and just over 30% of the students in low ranked universities did not have an A Level specialism.

Table 23 also shows that the percentage of specialists in Humanities decreased with the increasing ranking of the HE institutions. On the contrary, the percentages of specialists in STEM and Language subjects increased with the increasing ranking of the HE institutions (e.g., for STEM, the percentage increased from 13.7% in low ranked institutions to 41.1% in high ranked ones).

It is worth noting that the above patterns might be influenced by the type of degrees (and entry requirements) offered at the different types of HE institutions.

Table 21: A Level specialism

A Level specialism	A Level cohort (N=276,705)		University students (N=159,790)		Non-University students (N=116,910)	
	N	%	N	%	N	%
Applied	4,130	1.49	2,140	1.34	1,990	1.70
Expressive	8,600	3.11	3,845	2.41	4,755	4.07
Humanities	114,670	41.44	71,275	44.61	43,390	37.11
Languages	2,615	0.95	1,635	1.02	980	0.84
Multi	3,255	1.18	2,150	1.34	1,110	0.95
None	74,615	26.97	33,070	20.70	41,550	35.54
STEM	68,815	24.87	45,675	28.58	23,140	19.79

Table 22: A Level specialism, by type of HE institution

A Level specialism	Russell Group (N=51,870)		Oxbridge (N=3,920)		Sutton Trust Top-30 (N=60,500)	
	N	%	N	%	N	%
Applied	310	0.59	0	0.05	380	0.63
Expressive	210	0.40	5	0.15	260	0.43
Humanities	21,335	41.13	1,145	29.23	25,110	41.51
Languages	1,150	2.22	265	6.79	1,275	2.11
Multi	1,145	2.20	170	4.37	1,295	2.14
None	4,460	8.60	230	5.90	5,680	9.39
STEM	23,260	44.85	2,095	53.51	26,500	43.80

Table 23: A Level specialism, by overall ranking of HE institution

A Level specialism	Low (N=29,670)		Medium (N=49,830)		High (N=77,565)	
	N	%	N	%	N	%
Applied	580	1.96	950	1.91	590	0.76
Expressive	1,045	3.52	2,120	4.25	505	0.65
Humanities	14,315	48.25	22,715	45.59	33,215	42.82
Languages	85	0.28	150	0.30	1,385	1.79
Multi	185	0.62	465	0.94	1,480	1.91
None	9,385	31.63	14,190	28.48	8,525	10.99
STEM	4,075	13.73	9,235	18.53	31,855	41.07

Schools and colleges offer a wide range of A Levels; (Gill [2017], for example, gives a comprehensive report on the provision of A Level subjects in schools and colleges in England in 2016) and, in theory, many subject combinations are possible. In this research, there were 17,923 different combinations of at least three A Level subjects. The most common combinations were those involving Science subjects. These are almost certainly influenced by the entry requirements to Science-based degrees at university.

Table 24 shows the most popular 20 combinations of A Level subjects held by university students and by non-university students. The data has been restricted to students who have taken at least three A Levels. Notably, the combinations in the list were almost the same for the three groups of students, although the ordering varied.

As mentioned above, the list is dominated by combinations of Science subjects, with Biology, Chemistry and Mathematics being by far the most popular combination. The most common combination consisting of Humanities subjects only was English Literature, History and Psychology (in 7th position). Although as Table 2 showed, Chemistry and History were taken by similar numbers of university students, Chemistry featured in seven of the top 20 combinations, whereas History was only in five. The reason is likely to be because of the variety of Humanities subjects commonly taken at A Level, compared to the relatively small number of Science subjects. Mathematics featured in 11 of the most popular 20 combinations.

Table 25 to Table 30 show the most popular A Level subject combinations among students attending different types of institutions (restricted to students who have taken at least three A Levels). The ranking and percentage across all university students (again restricted to students with at least three A Levels) is also shown for comparison.

While the top two A Level subject combinations overall were strongly represented in each of the university groups, there were some more unusual combinations, particularly in the low ranking universities (Law + Psychology + Sociology) and in the group including Oxford and Cambridge (Economics + Mathematics + Mathematics [Further] + Physics).

Combinations taken by students in each degree subject area are reported in Appendix C.

Table 24: Top-20 combinations of A Level subjects

Combinations of A Level subjects	A Level cohort		University students		Non-University students	
	Rank	%	Rank	%	Rank	%
Biology + Chemistry + Mathematics	1	5.24	1	5.62	1	4.56
Chemistry + Mathematics + Physics	2	2.44	2	2.63	2	2.11
Mathematics + Mathematics (Further) + Physics	3	1.80	3	2.12	4	1.23
Biology + Chemistry + Psychology	4	1.51	4	1.65	3	1.26
Chemistry + Mathematics + Mathematics (Further) + Physics	5	1.08	5	1.32	6	0.65
Biology + Chemistry + Geography	6	0.78	6	0.84	5	0.67
English Literature + History + Psychology	7	0.74	7	0.81	7	0.61
Biology + Mathematics + Physics	8	0.64	9	0.66	8	0.61
Economics + Mathematics + Physics	9	0.63	10	0.63	9	0.61
English Literature + History + Religious Studies	10	0.61	8	0.66	11	0.53
English Literature + Government & Politics + History	11	0.57	11	0.62	12	0.50
Biology + Chemistry + Physics	12	0.54	15	0.53	10	0.56
Biology + Mathematics + Psychology	13	0.53	13	0.55	13	0.49
Biology + Chemistry + History	14	0.51	14	0.54	15	0.46
Computer Studies/Computing + Mathematics + Physics	15	0.49	16	0.50	14	0.48
English Literature + Psychology + Sociology	16	0.49	12	0.57	23	0.36
Economics + Geography + Mathematics	17	0.47	17	0.49	17	0.43
Geography + Mathematics + Physics	18	0.45	21	0.45	16	0.45
Biology + Geography + Psychology	19	0.43	19	0.46	19	0.39
Economics + History + Mathematics	20	0.43	20	0.45	20	0.39

Table 25: Top-10 combinations of A Level subjects, students in Russell Group institutions

Combination of A Level subjects	%	Overall Rank	Overall %
Biology + Chemistry + Mathematics	8.27	1	5.62
Chemistry + Mathematics + Physics	3.68	2	2.63
Mathematics + Mathematics (Further) + Physics	3.66	3	2.13
Chemistry + Mathematics + Mathematics (Further) + Physics	2.92	5	1.32
Biology + Chemistry + Psychology	1.39	4	1.65
Biology + Chemistry + Geography	1.13	6	0.85
English Literature + Government & Politics + History	0.98	11	0.62
English Literature + History + Religious Studies	0.94	8	0.66
Biology + Chemistry + Mathematics + Physics	0.90	23	0.44
Biology + Mathematics + Physics	0.78	9	0.66

Table 26: Top-10 combinations of A Level subjects, students in Oxford and Cambridge

Combination of A Level subjects	%	Overall Rank	Overall %
Chemistry + Mathematics + Mathematics (Further) + Physics	11.85	5	1.32
Biology + Chemistry + Mathematics	7.71	1	5.62
Mathematics + Mathematics (Further) + Physics	3.82	3	2.13
Biology + Chemistry + Mathematics + Physics	3.00	23	0.44
Biology + Chemistry + Mathematics + Mathematics (Further)	2.17	48	0.25
Economics + Mathematics + Mathematics (Further) + Physics	1.91	56	0.23
English Literature + History + Religious Studies	1.35	8	0.66
Chemistry + Mathematics + Physics	1.30	2	2.63
English Literature + Government & Politics + History	1.11	11	0.62
English Literature + French + History	1.09	59	0.22

Table 27: Top-10 combinations of A Level subjects, students in the Sutton Trust Top-30 institutions

Combination of A Level subjects	%	Overall Rank	Overall %
Biology + Chemistry + Mathematics	7.73	1	5.62
Mathematics + Mathematics (Further) + Physics	3.76	3	2.13
Chemistry + Mathematics + Physics	3.69	2	2.63
Chemistry + Mathematics + Mathematics (Further) + Physics	2.82	5	1.32
Biology + Chemistry + Psychology	1.40	4	1.65
Biology + Chemistry + Geography	1.09	6	0.85
English Literature + History + Religious Studies	0.89	8	0.66
English Literature + Government & Politics + History	0.88	11	0.62
Biology + Chemistry + Mathematics + Physics	0.83	23	0.44
Chemistry + Mathematics + Mathematics (Further)	0.79	18	0.46

Table 28: Top-10 combinations of A Level subjects, students in institutions with a low overall ranking

Combination of A Level subjects	%	Overall Rank	Overall %
Biology + Chemistry + Mathematics	2.80	1	5.62
Biology + Chemistry + Psychology	1.80	4	1.65
Chemistry + Mathematics + Physics	1.13	2	2.63
English Literature + Psychology + Sociology	1.00	12	0.57
English Literature + History + Psychology	0.80	7	0.82
English Language + Psychology + Sociology	0.75	29	0.38
Law + Psychology + Sociology	0.75	38	0.33
Psychology + Religious Studies + Sociology	0.75	24	0.43
Biology + Psychology + Sociology	0.61	31	0.35
Biology + Physical Education/Sports Studies + Psychology	0.60	30	0.35

Table 29: Top-10 combinations of A Level subjects, students in institutions with a medium overall ranking

Combination of A Level subjects	%	Overall Rank	Overall %
Biology + Chemistry + Mathematics	3.75	1	5.62
Biology + Chemistry + Psychology	1.82	4	1.65
Chemistry + Mathematics + Physics	1.65	2	2.63
English Literature + History + Psychology	0.80	7	0.82
English Literature + Psychology + Sociology	0.74	12	0.57
Biology + Chemistry + Geography	0.68	6	0.85
Mathematics + Mathematics (Further) + Physics	0.59	16	0.49
Biology + Mathematics + Physics	0.58	9	0.66
Biology + Mathematics + Psychology	0.56	13	0.53
Psychology + Religious Studies + Sociology	0.54	25	0.39

Table 30: Top-10 combinations of A Level subjects, students in institutions with a high overall ranking

Combination of A Level subjects	%	Overall Rank	Overall %
Biology + Chemistry + Mathematics	7.25	1	5.62
Chemistry + Mathematics + Physics	3.55	2	2.63
Mathematics + Mathematics (Further) + Physics	3.38	3	2.13
Chemistry + Mathematics + Mathematics (Further) + Physics	2.32	5	1.32
Biology + Chemistry + Psychology	1.49	4	1.65
Biology + Chemistry + Geography	1.00	6	0.85
English Literature + Government & Politics + History	0.87	11	0.62
English Literature + History + Religious Studies	0.85	8	0.66
Economics + Mathematics + Physics	0.84	10	0.63
English Literature + History + Psychology	0.84	7	0.82

3.2 Performance in A Level subjects

This section of the report investigated the performance in the most popular A Level subjects, and in combinations of A Level subjects, of students who started a HE course in the academic year 2016/17. A comparison of the performance in the most popular A Level subjects, and in combinations of A Level subjects, between students enrolled in HE and the national A Level cohort is also reported here.

Alongside the percentages of students achieving specific grades in each subject (grade A*; at least grade A; at least grade C), other A Level performance indicators were used: the percentage of students achieving AAB grades; the percentage of students who achieved AAB including two facilitating subjects; the number of A*/A grades achieved in facilitating subjects; and the A Level points in best (up to) three A Levels.

Breakdowns by type of HE institution and degree subject area are also reported here. Breakdowns by students' characteristics (e.g., gender, prior attainment, type of school, level of deprivation) are reported in Appendix D.

Table 31 shows the percentages of students achieving particular grades (grade A*; at least grade A; at least grade C) in each A Level subject, as a percentage of those taking the A Level subject. Only A Level subjects with an overall uptake level of more than 1 per cent were included in the analyses. Subjects were ordered by overall uptake (highest first).

Table 31 shows, for example, that top grades were more frequent among university students than among non-university students. For example, among the university students with an A Level in Mathematics, 21.8% had an A* and 48.8% had at least grade A. This compared with 13.3% and 33.4%, respectively, amongst non-university students.

Table 32 (32-1 and 32-2) and Table 33 (33-1 and 33-2) show the percentages achieving grade A*, at least grade A and at least grade C in each A Level subject, by type of HE institution and overall ranking of the HE institution, respectively. As above, only A Level subjects with an overall uptake level of more than 1% were included in these tables.

As an example, Table 32-1 shows that there were more students with grade A* and at least grade A in A Level mathematics in universities of the Russell Group (35.5% and 73.9%, respectively) than at university overall (13.3% and 33.4%). Table 32-2 shows similar results for students in universities in the Sutton Trust Top-30. Percentages of students with A* (and at least grade A) in Mathematics were highest in Oxford and Cambridge universities (Table 32-1).

Table 31: Percentages of students achieving grade A*, at least grade A and at least grade C in each A Level subject

A Level subject	University students				Non-University students			
	A*	At least A	At least C	Number of students with the A Level	A*	At least A	At least C	Number of students with the A Level
Mathematics	21.81	48.79	85.25	49,225	13.34	33.42	72.45	26,560
Psychology	6.74	22.18	78.26	35,000	3.23	12.21	60.96	20,900
Biology	11.94	32.02	77.24	34,115	7.29	22.44	64.18	18,490
History	6.60	27.45	87.30	30,645	4.05	17.34	74.81	17,640
English Literature	9.95	28.77	86.79	28,190	6.68	19.66	76.34	16,295
Chemistry	10.49	37.10	81.73	29,465	6.01	25.77	68.41	14,280
Geography	7.70	31.97	86.92	19,690	3.95	18.75	72.98	12,440
Sociology	7.38	23.24	81.33	19,370	3.09	12.23	63.62	11,690
Physics	12.04	36.85	78.41	19,925	5.29	19.91	58.46	10,415
Economics	9.22	35.35	86.31	16,720	5.67	25.34	76.15	10,140
Business Studies: Single	4.04	17.68	79.05	13,675	2.18	10.01	64.20	11,425
Religious Studies	5.85	26.49	84.12	14,290	4.98	19.65	71.58	8,395
English Language	1.59	12.91	85.06	12,620	0.90	6.95	69.84	8,975
Media/Film/TV Studies	1.24	12.39	85.33	10,280	0.70	6.31	68.89	9,275
Art & Design (Fine Art)	17.88	38.56	89.76	6,815	13.49	29.01	81.99	7,275
Mathematics (Further)	31.98	62.73	92.48	9,730	23.19	46.21	79.92	3,955
Government & Politics	7.78	31.88	84.24	8,590	5.64	22.32	72.32	4,945
Art & Design (Photography)	12.94	25.93	86.67	5,380	7.73	17.22	76.08	7,075
General Studies	5.08	15.47	63.72	8,050	2.66	8.39	48.29	4,065
English Language & Literature	3.73	15.23	81.27	6,810	1.81	8.74	68.52	4,850
Drama & Theatre Studies	4.91	17.75	81.64	5,910	3.37	13.68	71.94	5,665
Physical Education/Sports Studies	4.69	21.39	72.83	5,630	2.23	10.59	54.61	4,810
Law	5.70	21.47	75.47	6,460	2.36	9.96	57.50	3,725
D&T Product Design	6.22	21.13	75.18	4,500	2.60	10.34	55.98	4,430
French	11.14	43.14	87.72	5,200	6.30	32.62	80.77	3,320
Spanish	10.55	39.17	89.56	4,580	6.66	29.97	81.73	2,955
Art & Design	15.40	34.11	88.00	3,560	10.15	24.40	78.55	3,400
Film Studies	2.62	16.77	92.17	3,245	1.04	8.47	80.46	3,380
Information & Communications Technology	1.75	11.83	64.39	3,720	0.47	4.28	43.64	2,570
Computer Studies/Computing	4.24	22.33	70.15	3,420	0.56	7.17	46.48	2,160
Art & Design (Graphics)	12.74	30.48	88.65	2,300	7.71	19.10	77.79	2,475
Music	6.37	27.66	82.09	2,340	3.61	18.08	72.41	1,915
Classical Civilisation	5.99	29.53	87.43	2,170	3.18	17.50	74.08	1,545
Art & Design (Textiles)	14.40	34.33	90.52	1,645	8.92	22.72	80.10	1,985
German	8.24	40.03	88.20	2,050	10.83	40.70	83.82	1,535

Table 32-1: Percentages of students achieving grade A*, at least grade A and at least grade C in each A Level subject, by type of HE institution

A Level subject	Russell Group				Oxbridge			
	A*	At least A	At least C	Number of students with the A Level	A*	At least A	At least C	Number of students with the A Level
Mathematics	35.47	73.94	98.67	25,025	76.43	98.03	99.85	2,640
Psychology	19.02	55.43	98.56	8,280	60.26	94.70	100.00	150
Biology	23.57	58.89	97.57	14,730	79.73	98.54	99.90	960
History	14.68	55.26	99.55	12,490	49.73	96.85	99.91	1,110
English Literature	22.56	60.19	99.54	10,300	64.20	98.40	100.00	1,000
Chemistry	17.73	58.36	98.01	15,650	67.75	97.75	99.74	1,515
Geography	16.08	61.00	99.33	7,585	53.25	98.05	100.00	30
Sociology	24.57	63.54	98.96	3,455	72.97	94.59	100.00	40
Physics	20.19	57.44	97.39	10,770	70.87	98.04	99.92	1,325
Economics	18.68	64.06	98.95	7,035	56.85	98.40	100.00	440
Business Studies: Single	13.49	51.47	98.71	2,245	*20	*	*	*
Religious Studies	14.62	58.06	99.25	4,660	47.72	95.44	100.00	285
English Language	5.60	39.00	99.33	2,680	43.75	96.88	100.00	65
Media/Film/TV Studies	5.59	46.82	98.99	895	*	*	*	*
Art & Design (Fine Art)	33.72	69.63	98.99	1,280	73.33	96.00	100.00	75
Mathematics (Further)	39.25	73.41	98.26	7,075	83.97	98.18	100.00	1,315
Government & Politics	15.52	58.71	98.82	3,900	51.38	98.02	99.60	255
Art & Design (Photography)	34.12	57.22	99.74	380	*	*	*	*
General Studies	9.26	27.36	81.75	3,380	30.90	66.52	95.28	235
English Language & Literature	14.21	46.85	98.74	1,190	*	*	*	*
Drama & Theatre Studies	15.07	48.27	98.43	1,275	48.94	82.98	97.87	50
Physical Education/Sports Studies	13.97	55.88	97.45	900	*	*	*	*
Law	17.63	60.87	98.88	1,340	*	*	*	*
D&T Product Design	20.71	56.31	97.57	620	*	*	*	*
French	17.04	60.66	98.32	3,105	50.48	95.62	100.00	525
Spanish	17.28	59.33	98.87	2,390	60.70	96.94	100.00	230
Art & Design	33.11	65.57	99.51	610	*	*	*	*
Film Studies	11.53	53.89	98.85	350	*	*	*	*
Information & Communications Technology	8.60	45.12	97.44	430	*	*	*	*
Computer Studies/Computing	12.43	54.24	96.99	1,065	52.78	94.44	100.00	70
Art & Design (Graphics)	28.91	61.14	99.53	210	*	*	*	*
Music	12.49	48.74	98.03	915	47.58	93.55	100.00	125
Classical Civilisation	11.78	53.59	99.10	1,000	46.24	95.70	100.00	95
Art & Design (Textiles)	28.06	70.50	99.28	140	*	*	*	*
German	12.66	56.96	98.90	1,185	40.00	97.37	100.00	190

²⁰ The “*” indicates that figures have been suppressed because there were fewer than 30 candidates at Oxbridge who had obtained an A level in the subject.

Table 32-2: Percentages of students achieving grade A*, at least grade A and at least grade C in each A Level subject, by type of HE institution

A Level subject	Sutton Trust Top-30			
	A*	At least A	At least C	Number of students with the A Level
Mathematics	34.86	72.71	98.20	28,750
Psychology	17.45	52.09	97.97	10,100
Biology	22.39	56.83	96.81	16,560
History	13.37	51.44	99.33	14,205
English Literature	20.74	56.22	99.29	11,670
Chemistry	16.85	56.70	97.67	17,460
Geography	14.87	57.30	99.01	9,025
Sociology	22.86	59.98	98.64	4,205
Physics	18.84	56.02	96.87	12,490
Economics	17.28	60.05	98.55	8,320
Business Studies: Single	12.33	48.15	97.93	2,945
Religious Studies	13.37	54.14	98.90	5,370
English Language	5.34	38.12	99.22	3,205
Media/Film/TV Studies	5.09	42.37	99.05	1,260
Art & Design (Fine Art)	33.53	66.80	98.90	1,540
Mathematics (Further)	37.74	72.49	98.16	8,115
Government & Politics	14.36	55.34	98.46	4,340
Art & Design (Photography)	31.63	54.42	99.21	510
General Studies	8.71	26.07	80.77	3,905
English Language & Literature	12.10	41.47	98.54	1,510
Drama & Theatre Studies	13.68	44.18	98.30	1,530
Physical Education/Sports Studies	14.01	54.27	96.74	1,135
Law	16.08	55.78	98.01	1,660
D&T Product Design	18.87	53.27	96.79	780
French	16.17	58.61	98.07	3,415
Spanish	15.91	55.89	98.34	2,715
Art & Design	33.10	63.31	99.17	725
Film Studies	9.65	49.56	99.12	455
Information & Communications Technology	7.53	41.58	95.52	560
Computer Studies/Computing	10.92	50.77	96.54	1,300
Art & Design (Graphics)	27.05	59.07	99.64	280
Music	10.78	45.62	97.79	1,085
Classical Civilisation	10.22	48.07	98.24	1,195
Art & Design (Textiles)	26.59	64.74	98.84	175
German	12.08	54.86	98.63	1,315

Table 33-1: Percentages of students achieving grade A, at least grade A and at least grade C in each A Level subject, by ranking of the HE institution*

A Level subject	High				Medium			
	A*	At least A	At least C	Number of students with the A Level	A*	At least A	At least C	Number of students with the A Level
Mathematics	30.10	65.32	95.77	3,4730	2.06	9.95	64.96	9,890
Psychology	14.33	44.06	94.53	13,960	1.99	8.93	72.57	12,585
Biology	19.07	49.61	93.11	20,340	1.56	7.04	60.37	8,720
History	11.13	44.48	97.98	17,780	0.33	4.41	77.66	7,985
English Literature	17.43	48.50	97.81	14,940	1.55	7.22	78.18	7,830
Chemistry	14.68	50.67	94.36	20,605	0.85	6.17	59.12	5,790
Geography	12.81	51.11	97.49	11,105	1.31	8.00	77.09	5,515
Sociology	17.75	49.42	95.28	6,420	2.53	11.58	78.66	7,390
Physics	16.16	49.15	92.73	14,730	0.33	1.94	42.17	3,615
Economics	13.65	50.46	95.71	11,130	0.40	6.00	72.89	4,020
Business Studies: Single	9.92	39.68	93.90	4,505	1.40	8.18	76.12	6,050
Religious Studies	11.17	46.80	96.65	6,925	0.90	8.16	76.75	4,340
English Language	4.55	32.91	97.79	4,020	0.22	3.89	83.13	4,935
Media/Film/TV Studies	3.37	31.71	95.22	2,195	0.95	8.75	85.33	4,630
Art & Design (Fine Art)	29.53	60.06	97.42	2,095	14.78	33.38	88.85	3,005
Mathematics (Further)	34.77	67.91	96.70	8,910	1.54	5.65	49.14	585
Government & Politics	11.47	46.27	95.71	5,695	0.54	3.93	65.41	1,855
Art & Design (Photography)	25.00	45.95	95.16	890	11.51	24.78	87.11	2,675
General Studies	7.98	24.30	78.42	4,485	1.46	4.71	47.62	2,400
English Language & Literature	9.52	34.04	94.84	2,230	1.08	6.91	78.73	2,605
Drama & Theatre Studies	10.82	36.36	95.64	2,135	1.42	7.25	77.17	2,110
Physical Education/Sports Studies	11.82	48.72	93.72	1,750	1.80	10.58	69.50	2,165
Law	13.56	47.35	94.08	2,265	1.67	8.70	71.53	2,450
D&T Product Design	15.64	44.93	92.22	1,310	2.76	13.18	73.18	2,140
French	14.31	53.93	96.17	3,915	1.14	10.86	64.77	790
Spanish	14.19	51.33	96.96	3,160	2.19	11.49	77.46	915
Art & Design	27.68	55.26	97.14	980	12.52	30.33	87.96	1,645
Film Studies	7.37	40.25	98.36	735	1.33	12.24	93.07	1,355
Information & Communications Technology	5.25	29.83	86.82	1,010	0.62	6.41	60.75	1,625
Computer Studies/Computing	8.37	41.33	91.45	1,710	0.18	3.58	53.67	1,120
Art & Design (Graphics)	22.43	50.93	96.03	430	12.68	30.76	90.49	1,170
Music	9.71	42.16	95.93	1,205	0.00	3.16	61.18	475
Classical Civilisation	9.08	43.15	96.88	1,410	0.00	4.33	74.03	460
Art & Design (Textiles)	24.34	59.93	97.75	270	13.90	32.62	90.81	890
German	10.90	50.67	97.11	1,485	2.06	15.34	70.50	340

Table 33-2: Percentages of students achieving grade A*, at least grade A and at least grade C in each A Level subject, by ranking of the HE institution

A Level subject	Low			Number of students with the A Level
	A*	At least A	At least C	
Mathematics	1.15	6.06	48.39	4,170
Psychology	1.25	5.58	59.83	7,910
Biology	0.63	2.94	40.76	4,460
History	0.27	2.33	63.50	4,515
English Literature	1.08	4.32	68.27	4,925
Chemistry	0.26	2.52	37.47	2,660
Geography	0.63	5.14	66.08	2,840
Sociology	1.82	8.48	69.17	5,270
Physics	0.35	1.59	27.00	1,450
Economics	0.47	3.34	54.11	1,495
Business Studies: Single	0.71	4.29	63.92	2,965
Religious Studies	0.72	5.89	66.26	2,785
English Language	0.17	2.83	73.68	3,495
Media/Film/TV Studies	0.19	4.79	79.22	3,240
Art & Design (Fine Art)	8.17	19.48	81.19	1,495
Mathematics (Further)	0.96	6.25	37.02	210
Government & Politics	0.21	2.16	54.41	975
Art & Design (Photography)	8.22	16.75	81.47	1,630
General Studies	1.19	3.02	39.52	1,095
English Language & Literature	0.76	4.95	69.82	1,840
Drama & Theatre Studies	1.19	5.80	68.11	1,430
Physical Education/Sports Studies	1.05	6.90	55.82	1,625
Law	1.20	5.94	57.25	1,670
D&T Product Design	1.47	7.12	57.80	955
French	1.65	6.37	54.95	425
Spanish	2.40	12.66	63.97	460
Art & Design	7.58	17.93	78.10	830
Film Studies	1.14	7.22	88.03	1,055
Information & Communications Technology	0.10	3.22	49.51	1,025
Computer Studies/Computing	0.00	2.85	39.32	560
Art & Design (Graphics)	5.74	16.59	80.31	645
Music	0.78	6.27	60.57	385
Classical Civilisation	0.73	4.36	63.64	275
Art & Design (Textiles)	10.11	24.14	85.06	435
German	0.00	3.94	53.20	205

Table 34 shows the cumulative distribution of A Level grades held by university students, non-university students and the national A Level cohort. This analysis is restricted to students holding (that is, achieving at least an E in) more than three A Levels. For clarity and brevity, A* grades are represented as “**” in this table. The grades have been compared on an individual basis, so higher grades in one A Level do not compensate for lower grades in another; for example, **C is not classed as ABB or above (i.e., **C would appear as BBC or better). Only the best three grades held by each student have been used.

The highest grade combinations (for example *AA and above) were more frequent among university students than among non-university students, and also more frequent among university students than among the national A Level cohort.

Table 34: Cumulative distribution of A Level grades

Grade combination (at least)	A Level students (N=198,385)	University students (N=126,540)	Non-University students (71,845)
***	2.68	3.22	1.68
**A	6.43	7.55	4.39
*AA	11.77	13.66	8.29
AAA	15.75	18.19	11.29
AAB	26.14	29.69	19.65
ABB	35.34	39.71	27.35
BBB	40.28	45.04	31.57
BBC	56.10	61.39	46.41
BCC	65.04	70.17	55.67
CCC	68.35	73.29	59.29
CCD	83.27	86.90	76.63
CDD	88.47	91.28	83.33
DDD	89.51	92.07	84.81
DDE	98.09	98.73	96.92
DEE	99.78	99.87	99.62
EEE	100.00	100.00	100.00

The tables and figures below show the percentage of candidates with A Level grades equal to or exceeding the AAB threshold, overall and broken down by type of HE institution and by degree subject area. Approximately a quarter of university students (23 per cent) achieved AAB or above (Table 35). However, there is wide variation in these measures across university groups, with over half of the Russell Group students holding AAB or above, but only 3 per cent of students in universities with an overall ranking of medium doing so (Table 36).

Table 35: Students achieving AAB or above (A Levels only), overall and by type of HE institution

Students ...	N	%
A Level	50,235	18.16
University	36,895	23.09
Non-University	13,340	11.41
Russell Group	29,285	56.46
Sutton Trust Top-30	32,200	53.22
Oxbridge	3,755	95.89

Table 36: Students achieving AAB or above (A Levels only), by ranking of HE institution

HE Institution ranking		N	%
Overall	High	34,465	44.44
	Medium	1,685	3.38
	Low	520	1.76
Student Satisfaction	High	14,810	26.62
	Medium	12,685	21.02
	Low	9,180	22.33
Research Quality	High	33,580	48.44
	Medium	2,490	4.32
	Low	580	1.95
Graduation Prospects	High	39,170	54.14
	Medium	2,610	5.23
	Low	875	2.52

Figure 1 shows that over 90% of the students enrolled in a Medicine and Dentistry degree and almost 80% of those in Veterinary Science achieved AAB or above. Just under 50% of the students in Mathematical Sciences degrees also achieved AAB or above. The degree subject areas with lower percentages of students above the AAB threshold (under 10%) were Business and Administrative Studies, Agriculture, Mass Communications and Documentation, and Education.

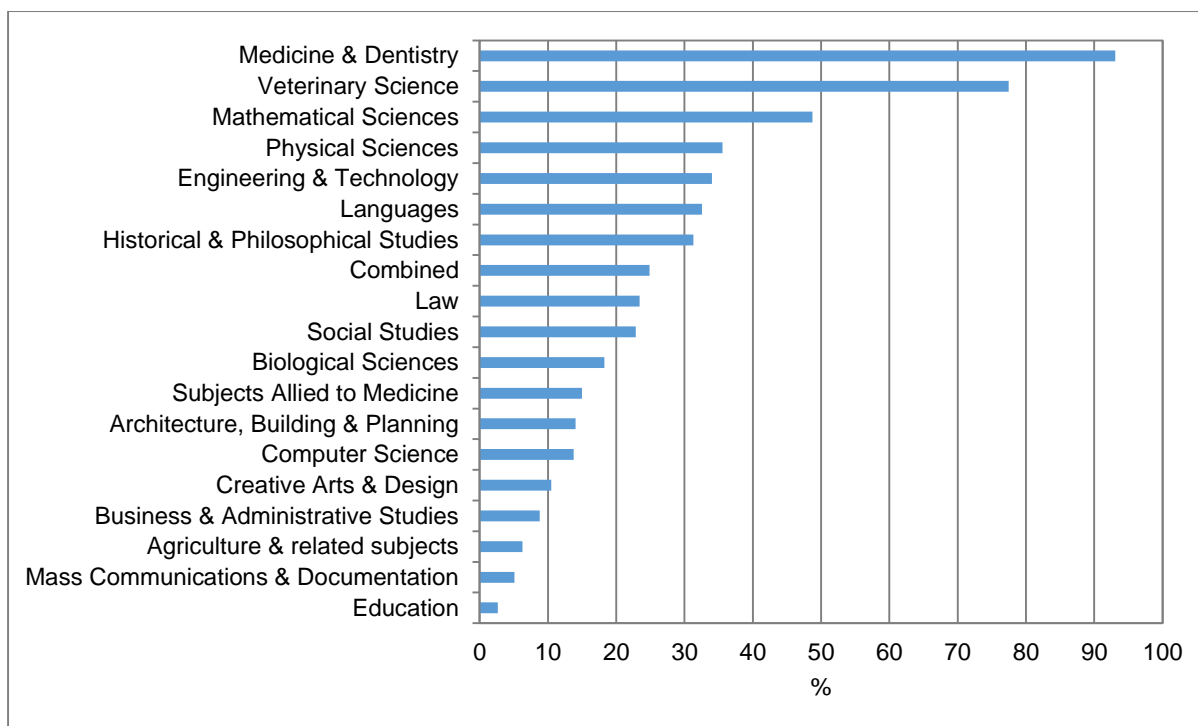


Figure 1: Students achieving AAB or above (A Levels only), by degree subject area

Table 37, Table 38 and Figure 2 show the percentage of candidates with A Level grades equal to or exceeding the AAB threshold, including two facilitating subjects.

Table 37: Students achieving AAB or above including two facilitating subjects (A Levels only), overall and by type of HE institution

Students ...	N	%
A Level	37,795	13.66
University	28,015	17.53
Non-University	9,785	9.37
Russell Group	23,405	45.13
Sutton Trust Top-30	25,655	42.41
Oxbridge	3,515	89.76

Table 38: Students achieving AAB or above including two facilitating subjects (A Levels only), by ranking of HE institution

Ranking if the HE Institution		N	%
Overall	High	27,035	34.85
	Medium	675	1.36
	Low	170	0.57
Student Satisfaction	High	11,035	19.84
	Medium	9,595	15.90
	Low	7,250	17.64
Research Quality	High	26,500	38.23
	Medium	1,210	2.10
	Low	155	0.53
Graduation Prospects	High	26,195	36.20
	Medium	1,465	2.93
	Low	220	0.63

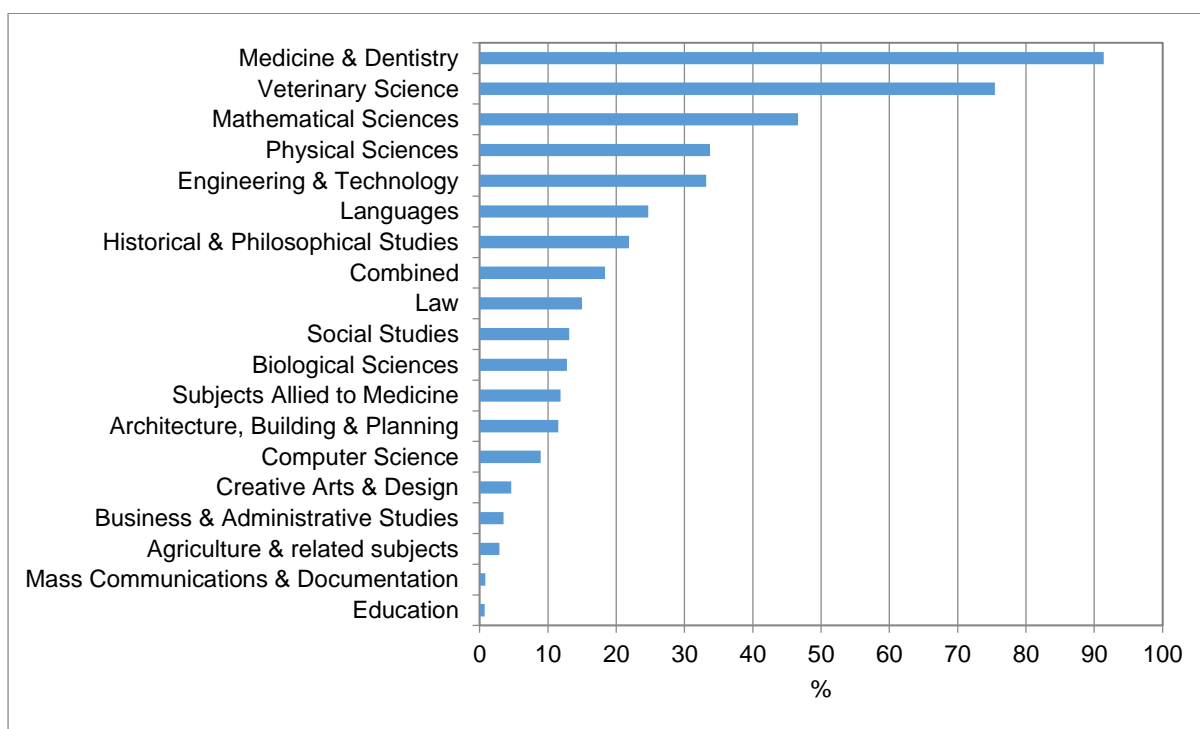


Figure 2: Students achieving AAB or above including two facilitating subjects (A Levels only), by degree subject area

Table 39, Table 40 and Figure 3 show the A Level points per entry²¹ (points in best - up to - three A Levels), overall and broken down by type of HE institution and by degree subject area.

Students enrolled in HE scored, on average, 32 points per A Level entry (slightly higher than the A Level cohort). This measure was higher in Russell Group and Sutton Trust Top-30 universities and highest in Oxbridge (55 points per entry). Table 40 shows that the average points per entry was quite low in HE institutions with a low overall ranking (21 points per entry).

Table 39: A Level points per entry (points in best – up to – three A Levels), overall and by type of HE institution

Students ...	Mean	Standard Deviation	Number of students
A Level	28.34	18.04	276,705
University	31.99	17.43	159,790
Non-University	23.34	17.65	116,910
Russell Group	44.89	12.93	51,865
Sutton Trust Top-30	44.16	13.20	60,500
Oxbridge	54.62	12.00	3,915

Table 40: A Level points per entry (points in best – up to – three A Levels), by ranking of HE institution

HE Institution ranking		Mean	Standard Deviation	Number of students
Overall	High	41.63	14.34	77,565
	Medium	24.22	15.15	49,830
	Low	20.80	14.39	29,665
Student Satisfaction	High	33.58	17.34	55,625
	Medium	32.62	16.76	60,340
	Low	29.62	18.04	41,095
Research Quality	High	42.74	13.97	69,320
	Medium	25.16	15.20	57,675
	Low	21.27	14.61	29,680
Graduation Prospects	High	41.16	15.30	72,355
	Medium	26.57	15.21	49,985
	Low	21.53	14.81	34,715

²¹ A Level grades were converted into points as follows: A*=60; A=50; B=40; C=30; D=20; E=10.

Figure 3 shows that students enrolled in either a Medicine and Dentistry degree or in a Veterinary Science degree had the highest average A Level points per entry (around 50 points per entry). They were closely followed by students doing degrees in Mathematical or Physical Sciences and degrees in Languages. Students with the lowest A Level points were enrolled in degrees in the areas of Mass Communications and Documentation, Computer Science, Creative Arts and Design, and Education.

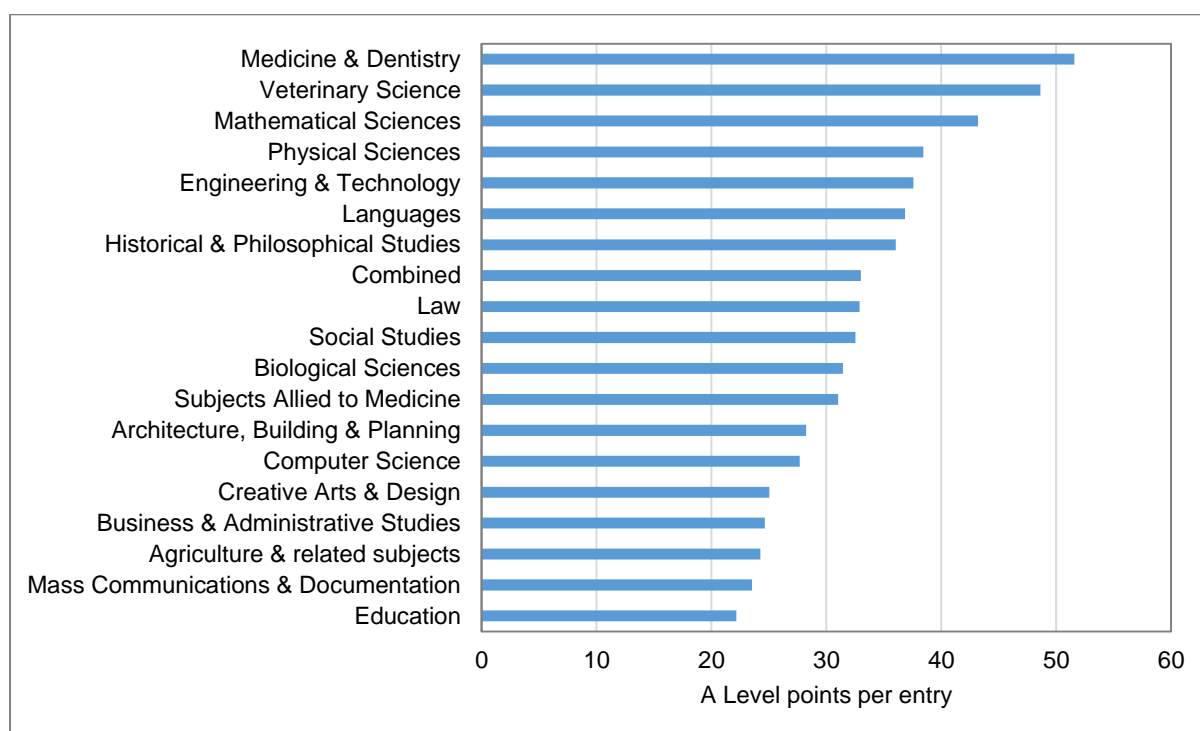


Figure 3: A Level points per entry (points in best – up to – three A Levels), by degree subject area

3.3. Factors affecting enrolment in HE

As discussed in Section 2.2, the relationship between enrolment in HE and A Level subject uptake was investigated using regression analyses. In particular, multilevel logistic regression analyses were carried out in order to look at the relationship between enrolment in HE and A Level specialism, controlling for background variables including performance at A Level and students' characteristics derived from the data (e.g., gender, prior attainment, previous institution type, socio-economic background).

Two different sets of regression models were considered: whilst the first set of models looked at enrolment in HE amongst the national A Level cohort (the outcome variable being an indicator of enrolment at any HE institution), the second set of models focused on students who already enrolled in HE and investigated the likelihood of enrolling at a specific type of HE institution (the outcome variables being enrolment at an institution of the Russell Group, enrolment at a Sutton Trust Top-30 institution, enrolment at Oxford/Cambridge, and enrolment at a high ranked institution).

For each set of models, we pursued the following approach. In a first step, a model including only the main effects of the specialism at A Level was considered. The outcomes of this model (Model A) show the effects of each of the different A Level specialisms (STEM, Humanities, Languages, etc.) on the probability of enrolling in HE, controlling for student and school characteristics. To investigate whether some of the background characteristics (in particular, gender and school type) interact with A Level subject specialism to influence the

type of HE attended, a model including interaction terms between specialism and gender and between specialism and school type was also considered (Model B).

Enrolment at any HE institution

Table 41 shows the effects of the A Level specialism on the probability of enrolling at any HE institution, after taking into account students' background characteristics such as their gender, prior attainment, prior institution, their A Level uptake (number of subjects) and their A Level performance²².

Model A in Table 41 shows that the A Level specialism was a significant predictor of attending HE, even after controlling for students' characteristics and taking into account school effects. In particular, students who specialised in expressive subjects were significantly less likely to enrol in HE than students with no specialism. On the contrary, students specialising in Humanities, Languages, STEM and those with a multiple specialism were significantly more likely to enrol at a HE institution than students with no specialism. Figure 4 shows that specialists in Humanities at A Level had the highest probabilities of attending HE, followed by STEM specialists. Students specialising in expressive A Levels were the least likely to enrol in HE.

²² The measure of A Level performance considered in these analyses was the A Level points per entry. An alternative measure (AAB indicator) was included in the regression models instead of the A Level points, but the results (in particular, the effect of A Level specialism) were almost identical and therefore not reported here.

Table 41: Enrolment in HE ~ regression analyses

Variable			Model A		Model B	
			Estimate (Standard Error)	p-value	Estimate (Standard Error)	p-value
Intercept			-1.416 (0.054)	<.0001	-1.423 (0.054)	<.0001
Gender	Male		-0.087 (0.009)	<.0001	-0.113 (0.016)	<.0001
	[Female]					
Type of school	Independent		-0.736 (0.031)	<.0001	-0.644 (0.041)	<.0001
	[State]					
Prior attainment			0.020 (0.001)	<.0001	0.020 (0.001)	<.0001
Number of	2		0.198 (0.018)	<.0001	0.193 (0.018)	<.0001
A Levels	3		0.255 (0.021)	<.0001	0.248 (0.021)	<.0001
	4		0.474 (0.030)	<.0001	0.468 (0.031)	<.0001
	5+		0.364 (0.070)	<.0001	0.363 (0.070)	<.0001
	[1]					
Number of	1		0.065 (0.012)	<.0001	0.064 (0.012)	<.0001
A Levels in	2		0.090 (0.016)	<.0001	0.089 (0.016)	<.0001
facilitating	3		0.140 (0.021)	<.0001	0.147 (0.021)	<.0001
subjects	4+		0.070 (0.043)	0.1023	0.089 (0.043)	0.0384
	[0]					
A Level performance			0.024 (0.000)	<.0001	0.024 (0.000)	<.0001
A Level	Applied		-0.060 (0.036)	0.0891	0.005 (0.061)	0.9339
specialism	Expressive		-0.298 (0.026)	<.0001	-0.424 (0.032)	<.0001
	Humanities		0.165 (0.013)	<.0001	0.190 (0.017)	<.0001
	Languages		0.121 (0.048)	0.0120	0.113 (0.069)	0.1042
	Multi		0.066 (0.045)	0.1480	0.150 (0.066)	0.0230
	STEM		0.146 (0.018)	<.0001	0.070 (0.023)	0.0027
	[None]					
Type of school	Independent	Applied			-0.230 (0.110)	0.0369
*		Expressive			0.379 (0.085)	<.0001
A Level		Humanities			-0.065 (0.037)	0.0812
specialism		Languages			-0.135 (0.097)	0.1655
		Multi			-0.623 (0.117)	<.0001
		STEM			-0.207 (0.039)	<.0001
		[None]				
Gender	Male	Applied			-0.046 (0.072)	0.5234
*		Expressive			0.344 (0.055)	<.0001
A Level		Humanities			-0.057 (0.021)	0.0070
specialism		Languages			0.069 (0.097)	0.4776
		Multi			0.006 (0.084)	0.9449
		STEM			0.171 (0.024)	<.0001
		[None]				

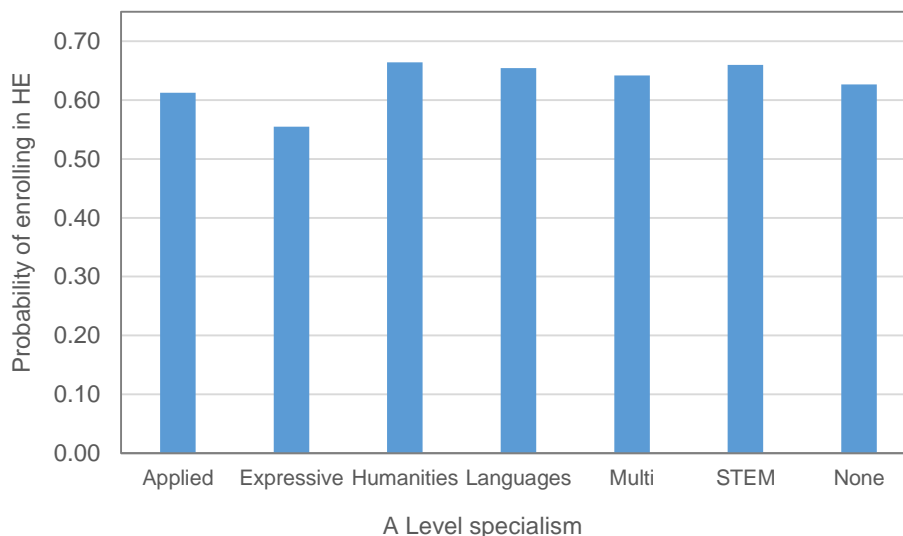


Figure 4: Probability of enrolling in HE by A Level specialism²³

Although not the main focus of this research, a brief summary of the effects of the background variables included in Model A on enrolment in HE, is provided below.

Gender: There was a significant gender effect on the probability of enrolling in HE. In particular, male students were significantly less likely to enrol in HE than female students with the same profile of attainment at both GCSE and A Level.

Type of school: Students with similar prior attainment and A Level uptake/performance from independent schools were less likely to enrol in HE in the year following completion of Key Stage 5²⁴ than students from state schools.

Prior attainment: Prior attainment at school (measured by the average GCSE and equivalent point score per entry) was a significant predictor of enrolment at a HE institution. In particular, the probability of enrolment in HE increased with increasing prior attainment.

Number of A Levels: The probability of attending a HE institution increased significantly with the number of A Levels achieved. In particular, students having two A Levels were slightly more likely to be in HE than those with just one, after controlling for all other variables shown in Table 41. This likelihood increased further for students having three and four or more A Levels.

Number of A Levels in facilitating subjects: As above, the number of A Levels in facilitating subjects was a significant predictor of enrolment in HE. The likelihood of enrolling in HE increased for students having one, two or three A Levels in these subjects (compared to

²³ The calculated probabilities shown are for female students, attending a state school, taking three A Levels (one in a facilitating subject), and having average prior attainment and average A Level performance.

²⁴ Previous research (Crawford & Cribb, 2012) showed that gap-year takers were more likely to come from families of higher socio-economic status, including having university-educated parents and higher household incomes. Also, they were more likely to come from schools with relatively few pupils on free school meals and higher average academic performance, or from independent schools. For example, using data from the wave 6 of the LSYPE (Longitudinal Survey of Young People in England), Crawford and Cribb (2012) show that nearly 20 per cent of gap-year takers come from independent schools.

students with none). The effect of having four or more was not significantly different to the effect of having just three.

A Level performance: Overall achievement at A Level was a significant predictor of enrolment in a HE institution. In particular, the higher the average A Level score, the higher the probability of enrolment, suggesting that A Levels are good preparation for university.

Note that the *level of deprivation* was missing for around 40,000 students (approximately 15 per cent of the A Level cohort). Furthermore, there was high collinearity between missing level of deprivation and type of school (75 per cent of the students with missing data were in independent schools). An alternative model with the level of deprivation categories included was fitted. However, the effect of the different school types and, more importantly in this research, the effect of the A Level specialism, were very similar to those in Model A. As a result, the level of deprivation was not considered in the remaining of this report. Results of the alternative model are given Table E1 in the Appendix E.

Model B, also shown in Table 41, investigated whether gender and type of school interact with A Level specialism to influence enrolment in HE.

Regarding gender, Model B shows that the interaction between gender and A Level specialism was significantly associated with enrolment in HE. Table 42 below shows how the probabilities of enrolling in HE by students with each of the A Level specialisms varied by gender. For example, male students specialising in STEM and expressive subjects were more likely than female students specialising in the same areas to enrol in HE. On the contrary, female students were more likely to enrol in HE than male students if they were specialists in applied, Humanities or Language A Level subjects. Female students were also more likely to enrol in HE if they had multiple specialisms or did not specialise at all.

Regarding type of school, Model B also shows that the interaction between type of school and A Level specialism was significantly associated with enrolment in HE. In particular, Table 43 shows how the probabilities of enrolling in HE by students with each of the A Level specialisms varied by type of school. Although students in independent schools had lower probability of enrolling in HE overall, the differences between these probabilities varied by A Level specialism: the smallest difference was between students specialising in expressive A Level subjects (followed by those with no specialism) and the highest difference was between students with multiple specialisms or specialist in STEM.

The effects of all other student characteristics on enrolment in HE were very similar to the effects reported for Model A.

Table 42: Enrolment in HE ~ probability for students with each A Level specialism, by gender²⁵

Gender	A Level specialism						
	Applied	Expressive	Humanities	Languages	Multi	STEM	None
Female	0.63	0.52	0.67	0.65	0.66	0.64	0.63
Male	0.59	0.58	0.63	0.64	0.64	0.66	0.60

²⁵ These probabilities are for students in state schools, who achieved three A Levels (one in a facilitating subject) and with average attainment at Key Stage 4 and at A Level. Note that, although the probabilities are slightly different, the patterns (in terms of differences between male and female students) were the same for students in independent schools.

Table 43: Enrolment in HE ~ probability for students with each A Level specialism, by type of school²⁶

Type of school	A Level specialism						
	Applied	Expressive	Humanities	Languages	Multi	STEM	None
Independent	0.41	0.46	0.50	0.46	0.35	0.43	0.47
State	0.63	0.52	0.67	0.65	0.66	0.64	0.63

Models A and B in Table 41 were also fitted restricting the full A Level cohort to the group of students who achieved three or more A Levels (see Table E2 in Appendix E)²⁷. The effect of A Level specialism, and the way in which students' characteristics (e.g., gender and type of school) interact with the specialism to influence enrolment in HE did not change much.

Enrolment at different types of HE institutions

Regression models similar to the ones reported in Table 41 were fitted with the following outcome variables: enrolment at an institution of the Russell Group, enrolment at a Sutton Trust Top-30 institution, enrolment at Oxford/Cambridge, and enrolment at a high ranked institution²⁸. The results are briefly described below and full details of the regression models are given in Appendix E.

A Level specialism was a significant predictor of attending a university of the Russell Group, even after controlling for students' characteristics and school effects such as the type of secondary school. Similarly to the results for enrolling in HE institutions in general (described in the previous section of the report), students specialised in expressive subjects were significantly less likely to enrol at a Russell Group institution than students with no specialism. On the contrary, students specialising in applied subjects, Humanities, Languages, STEM and those with a multiple specialism were more likely to enrol at a Russell Group institution than students with no specialism. The same patterns were found for the Sutton Trust Top-30 institutions and for high ranked institutions (see Tables E3, E4 and E6 in Appendix E).

Figure 5 shows that, after accounting for other student and school characteristics, specialists in Languages at A Level had the highest probabilities of attending institutions in the Russell and Sutton Trust Top-30 groups or institutions with a high overall ranking, followed by Humanities specialists. Students specialising in expressive A Levels were the least likely to enrol at HE in Russell and Sutton Trust Top-30 institutions and at high ranked institutions.

²⁶ These probabilities are for female students, who achieved three A Levels (one in a facilitating subject) and with average attainment at Key Stage 4 and at A Level. Note that, although the probabilities are slightly different, the patterns (in terms of the differences between students in independent and state schools) were the same for male students.

²⁷ Note that, although A Levels continue to be the most popular qualification held by students who apply to HE, a whole range of other equivalent qualifications are also accepted by HE institutions.

²⁸ A high ranked institution in the regression analyses was an institution in the top-half of the universities listed in the Complete University Guide.

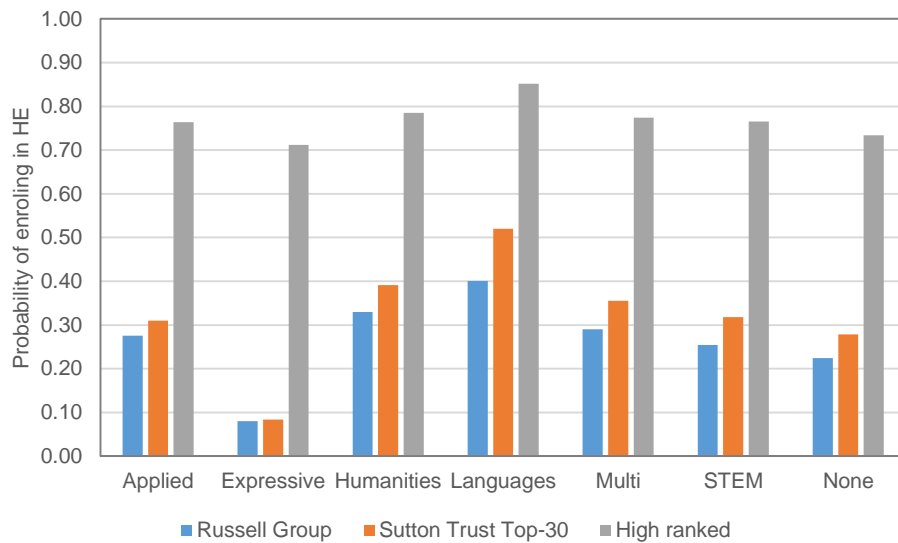


Figure 5: Probability of enrolling in HE by type of institution and A Level specialism²⁹

The A Level specialism effect was slightly different for students enrolling at Oxbridge. In particular students with no specialism were more likely to enrol in Oxbridge than students specialising in STEM or expressive subjects and more likely than students with multiple specialisms. Students specialising in Languages and Humanities were significantly more likely to enrol at Oxbridge than students with no specialism. Figure 6 shows that specialists in Languages at A Level had the highest probabilities of attending Oxbridge, followed by Humanities specialists and students with no specialism. Students specialising in expressive A Levels were the least likely to enrol at Oxbridge, followed by those with a specialism in STEM or applied subjects (see Table E5 in Appendix E for full details of the regression models relating to enrolment at Oxbridge).

²⁹ The calculated probabilities shown are for female students, attending a state school, taking three A Levels (two in facilitating subjects), and having average prior attainment and average A Level performance.

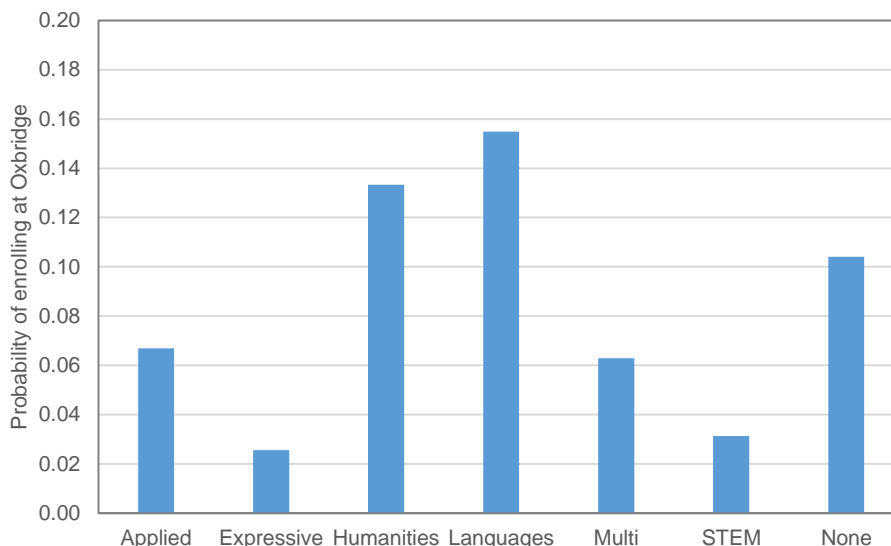


Figure 6: Probability of enrolling at Oxbridge by A Level specialism³⁰

As in the previous section, and although not the main focus of this research, a brief summary of the effects of the background variables included in Model A (Tables E3 to E6 in Appendix E) on enrolment in HE, is provided below.

Gender: There was a significant gender effect on the probability of enrolling in specific types of HE institutions. Contrary to the effect on enrolment in HE, male students were significantly more likely than female students with the same prior attainment and same background characteristics to enrol at institutions in the Russell Group, at institutions in the Sutton Trust Top-30 group, at Oxford/Cambridge and at institutions with a high overall ranking.

Type of school: Students with similar prior attainment and A Level uptake/performance from independent schools were more likely to enrol at institutions in the Russell Group, at institutions at the Sutton Trust Top-30, and at institutions with a high overall ranking than students from state schools. There was not an effect of school type on the probability of attending Oxford or Cambridge. Note that the effect of school type on enrolling in specific institutions (generally prestigious and high ranked) was the opposite to the effect of school type on attending HE in general (students in independent schools were less likely to enrol in HE than students in state schools).

Prior attainment: Prior attainment at school (measured by the average GCSE and equivalent point score per entry) was a significant predictor of enrolment at any type of HE institution. In particular, the probability of enrolment at more prestigious institutions (e.g., Russell Group, Oxbridge, etc.) increased with increasing prior attainment.

Number of A Levels: The probability of attending a more prestigious group of universities (e.g., Russell Group, Oxbridge, etc.) increased significantly with the number of A Levels achieved. In particular, students having four A Levels were slightly more likely to be in the type of HE institutions looked at than those with just three (the baseline in these analyses)³¹, after controlling for all other student characteristics. This likelihood increased for students having five or more A Levels. There was one exception: having four A Levels did not have a

³⁰ The calculated probabilities shown are for female students, attending a state school, taking three A Levels (two in facilitating subjects), and having prior attainment at the 90 per cent percentile and A Level performance at the 90 per cent percentile.

³¹ Note that the analyses reported in this section were restricted to students with three or more A Levels.

significant effect on the probability of attending a Russell Group institution, relative to having three.

Number of A Levels in facilitating subjects: As above, the number of A Levels in facilitating subjects was a significant predictor of enrolment in the type of HE institutions looked at in this section of the report. The likelihood of enrolling in HE increased with the increasing number of A Levels in these subjects. However, there was one exception: having just one A Level in a facilitating subject did not have a significant effect on the probability of attending Oxbridge relative to not having any.

A Level performance: Overall achievement at A Level was a significant predictor of enrolment in any type of HE institution. In particular, the higher the average A Level score, the higher the probability of enrolment at more prestigious institutions.

Parental Education: Students whose parents attended HE were more likely to enrol at institutions in the Russell Group, at institutions at the Sutton Trust Top-30, and at institutions with a high overall ranking than students whose parents did not. However, all else being equal, the effect of parental education on the probability of attending Oxford or Cambridge was negative (and still statistically significant).

In this section, we also investigated whether gender and type of school interact with A Level specialism to influence the type of HE institution attended. A summary of the results (in the form of probabilities of enrolment) is given in Table 44 and Table 45. Full results of these investigations are reported in Tables E3 to E6 in Appendix E (Model B in each of the tables).

It was found that the interaction between gender and A Level specialism was significantly associated with the type of HE institution attended. Table 44 below shows how the probabilities of enrolling in different types of HE institutions by students with each of the A Level specialisms varied by gender. For example, the probability of attending an institution in the Russell Group and the probability of attending Oxbridge for a specialist in STEM were very similar for males and females. However, all else being equal, male students specialising in STEM were more likely than female students specialising in the same area to enrol in one of the Sutton Trust Top-30 institutions and were also more likely to enrol in a high ranked institution. Furthermore, female students were more likely to enrol in Russell Group institutions than male students were if they specialised in Language subjects at A Level or if they had multiple specialisms. On the contrary, female students as above were less likely than male students to enrol in Oxbridge.

Regarding type of school, its interaction with A Level specialism was also significantly associated with the type of HE institution attended. In particular, Table 45 shows how the probabilities of enrolling in HE by students with each of the A Level specialisms varied by type of school. For example, all else being equal, STEM specialists were more likely to attend Russell Group or Sutton Trust Top-30 institutions if they took their A Levels in an independent school than if they did so in a state school. However, for these students, the probability of attending Oxbridge did not vary by the type of school attended.

For Russell Group institutions, the smallest difference in the probabilities of enrolment between students from independent and state schools was between specialists in expressive A Level subjects (followed by those with an specialism in applied subjects) and the highest difference was between students with no specialism or specialists in Humanities. Differences in the probabilities of enrolment in Oxbridge between both groups of students were not very big for any specialism.

Table 44: Enrolment at different types of HE institutions ~ probability for students with each A Level specialism, by gender³²

Type of university	Gender	A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	STEM	None
Russell Group	Female	0.30	0.08	0.32	0.45	0.30	0.26	0.23
	Male	0.31	0.10	0.35	0.39	0.29	0.28	0.23
Sutton Trust Top-30	Female	0.34	0.09	0.39	0.54	0.36	0.32	0.29
	Male	0.35	0.09	0.42	0.53	0.36	0.36	0.29
Oxbridge	Female	0.05	0.03	0.14	0.15	0.06	0.03	0.14
	Male	0.08	0.04	0.17	0.25	0.07	0.04	0.10
High ranked university	Female	0.78	0.72	0.78	0.86	0.79	0.76	0.74
	Male	0.82	0.79	0.84	0.86	0.81	0.83	0.81

Table 45: Enrolment at different types of HE institutions ~ probability for students with each A Level specialism, by type of school³³

Type of university	Type of school	A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	STEM	None
Russell Group	Independent	0.26	0.11	0.51	0.51	0.50	0.32	0.35
	State	0.30	0.08	0.32	0.45	0.30	0.26	0.23
Sutton Trust Top-30	Independent	0.31	0.12	0.59	0.67	0.73	0.43	0.42
	State	0.34	0.09	0.39	0.54	0.36	0.32	0.29
Oxbridge	Independent	0.03	0.02	0.11	0.14	0.06	0.03	0.10
	State	0.05	0.03	0.14	0.15	0.06	0.03	0.14
High ranked university	Independent	0.80	0.73	0.87	0.93	0.90	0.84	0.79
	State	0.78	0.72	0.78	0.86	0.79	0.76	0.74

The relationship between the uptake of individual A Level subjects and enrolment in different types of institutions was also investigated via regression analyses. Regression models were fitted for the following outcome variables: enrolment at an institution of the Russell Group, enrolment at a Sutton Trust Top-30 institution, enrolment at Oxford/Cambridge, and enrolment at a high ranked institution. The independent variables included in the models were a series of indicators of uptake of individual A Level subjects (e.g., Mathematics, taking the value 1 if the student achieved an A Level in the subject, and 0 if the student did not). Students' characteristics (e.g., gender, type of school, prior attainment, parental education, and A Level performance) were controlled for.

For each of the A Level subjects taken by at least 1 per cent of the A Level cohort, the figures below (Figure 7 to Figure 10) show their effect on the probability of enrolment at different types of institutions. However, instead of the coefficient estimates, odds ratios (which are easier to interpret) are presented.

³² These probabilities are for students in state schools, who achieved three A Levels (two in facilitating subjects) and with average attainment at Key Stage 4 and at A Level. Note that, although the probabilities are slightly different, the patterns (in terms of differences between male and female students) were the same for students in independent schools.

³³ These probabilities are for female students, who achieved three A Levels (two in facilitating subjects) and with average attainment at Key Stage 4 and at A Level. Note that, although the probabilities are slightly different, the patterns (in terms of the differences between students in independent and state schools) were the same for male students.

The odds ratios represent the factor of increase in the odds of enrolling in HE when the student has achieved some specific A Level subject, compared to not have achieved it. The actual magnitude of the odds ratios is difficult to interpret (see Osborne [2006] for an extended discussion); however, the relative magnitude of the odds ratios can be very informative. An odds ratio greater than 1 indicates an increase in the likelihood of enrolling in HE, with a greater odds ratio indicating a greater likelihood. Conversely, an odds ratio less than 1 indicates a decrease in the likelihood of enrolling in HE, with a smaller odds ratio indicating a smaller likelihood. Finally, an odds ratio equal to 1 indicates an equal likelihood of enrolling in HE.

For example, for the subjects at the top of Figure 7 (e.g., Art & Design; Media/Film/TV Studies; Business Studies; Psychology; Law) the odds ratios are below one and, therefore, those subjects had a negative effect on the probability of enrolling in a university of the Russell Group. However, STEM subjects, Languages, English Language, English Literature, History and Geography (“facilitating” subjects) increased the probability of enrolment (odds ratios bigger than one). Similar results were found for the probability of enrolling in a Sutton Trust Top-30 institution (Figure 8).

Figure 9 shows the effects of each individual subject on the probability of attending Oxford or Cambridge universities. After controlling for other factors, such as GCSE and A Level attainment, the A Level subjects with the highest (bigger than one), odds ratios were, again, the more academic A Levels. The effect of subjects such as Art & Design, Media/Film/TV Studies or Sociology, although being positive, was not statistically significant. Having an A Level in Business Studies (odds ratio = 0.27) decreased significantly the probability of attending Oxford or Cambridge universities.

Finally, Figure 10 shows the effects of each individual subject on the probability of attending high ranked institutions. Contrary to the findings discussed above for institutions in the Russell Group or in the Sutton Trust Top-30 group, having A Levels in Business Studies, Economics, Sociology or Psychology increased the probability of enrolment (odds ratios bigger than one). The effect of the “academic” A Levels (e.g., English Literature, English Language, STEM subjects, Languages) was also positive. There was only one subject that had a statistically significant and negative effect on the probability of enrolment: Physical Education. The effect of the subjects between Art & Design, Textiles and Media/Film/TV Studies (see Figure 10) was not statistically significant.

The statistical significance of all the effects displayed in the figures below is shown in Table E7, in Appendix E.

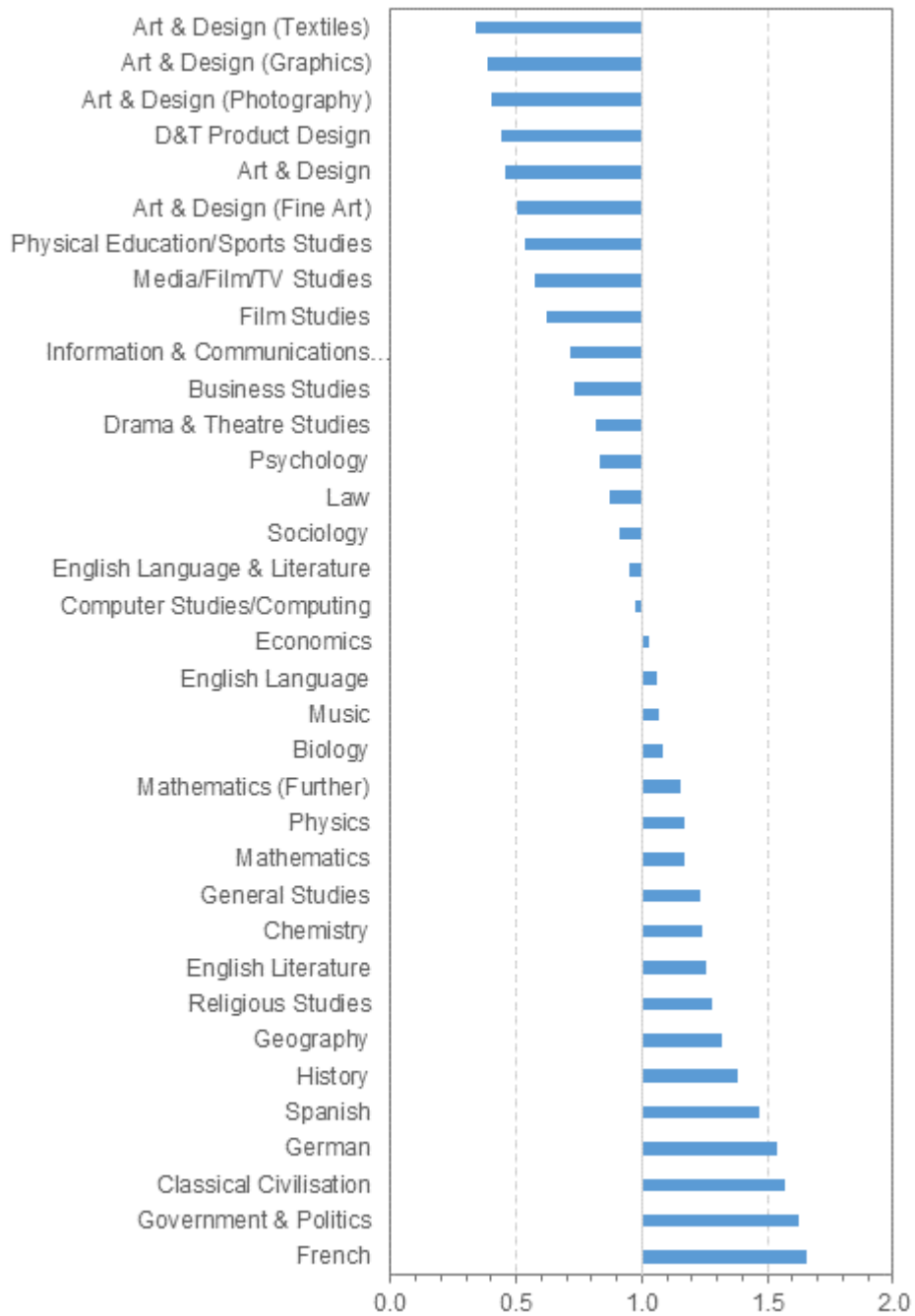


Figure 7: Enrolment in Russell Group institutions, by A Level subject ~ odds ratios (having an A Level in subject vs. not having it)

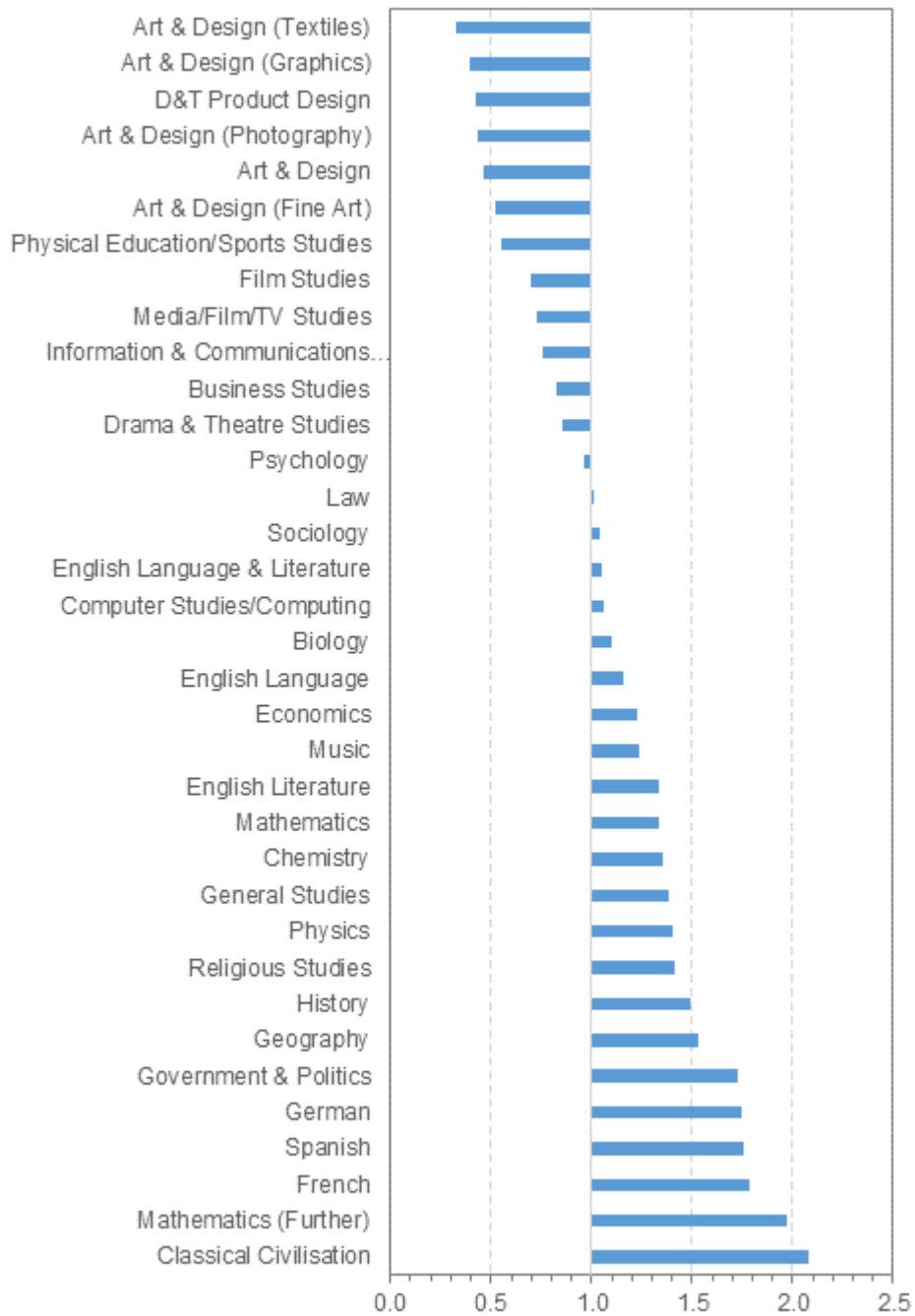


Figure 8: Enrolment in Sutton Trust Top-30 institutions, by A Level subject ~ odds ratios (having an A Level in subject vs. not having it)

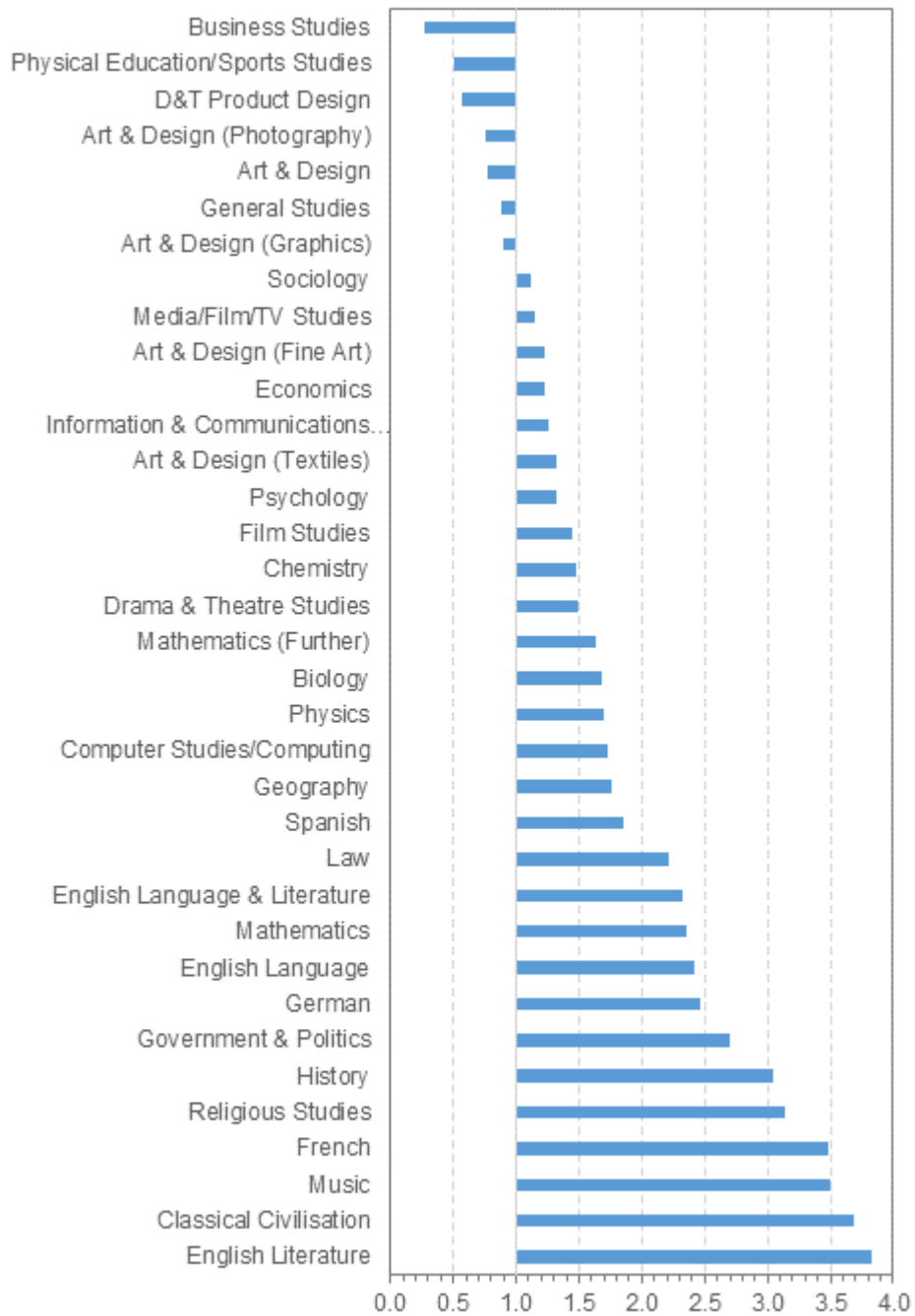


Figure 9: Enrolment in Oxbridge, by A Level subject ~ odds ratios (having an A Level in subject vs. not having it)

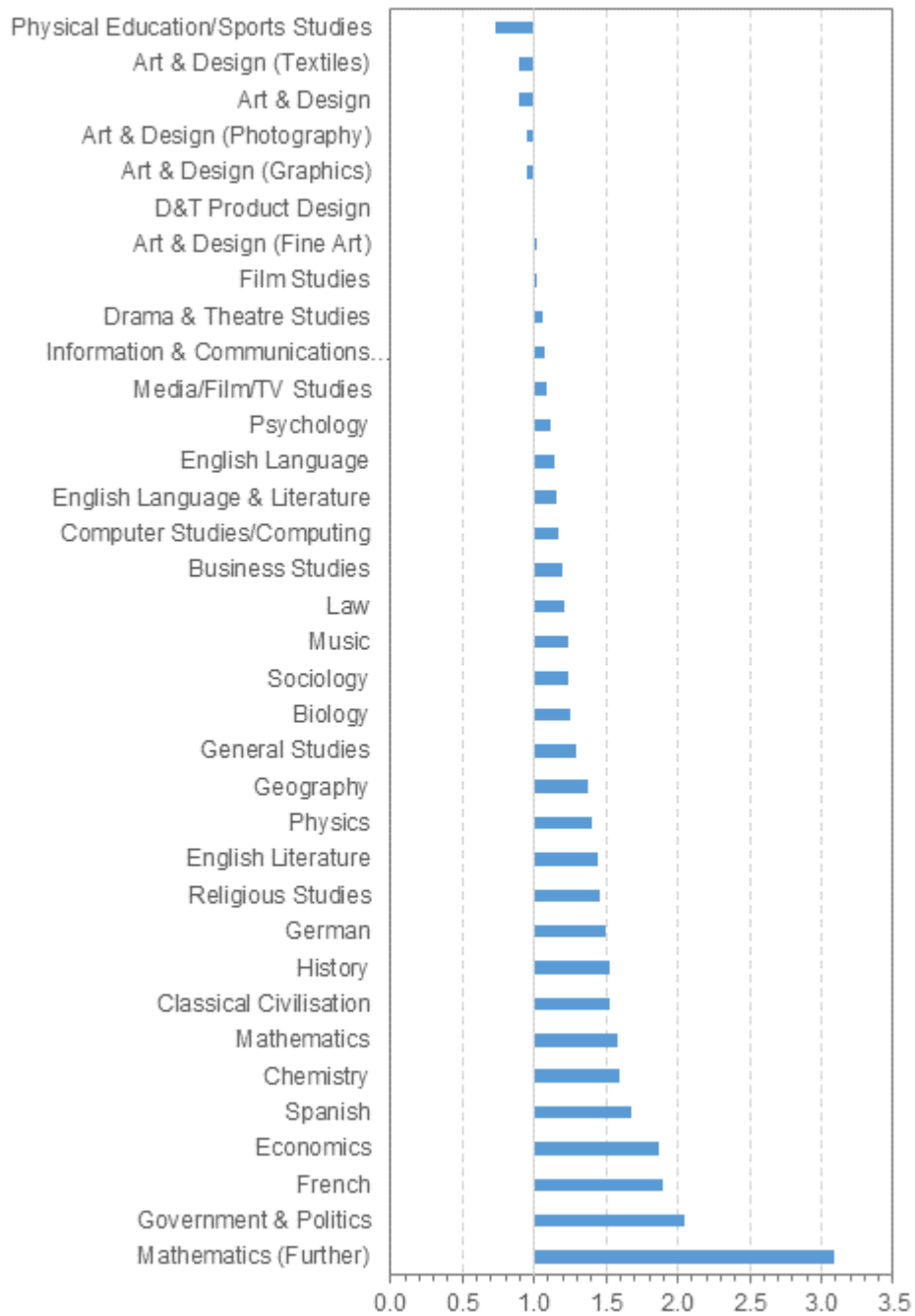


Figure 10: Enrolment in high ranked institutions, by A Level subject ~ odds ratios (having an A Level in subject vs. not having it)

4. Conclusions and discussion

The process of application and admission to universities in the UK places a relatively strong weight on the type of A Level subjects achieved by students. As a result, A Level choice is a key factor influencing progression from secondary education to HE. This research aimed to provide quantitative evidence to show how different A Level subjects (and combinations of A Level subjects) are used by students to access HE and, in particular, different types of HE institutions.

A great deal of the research carried out into progression to HE in England in recent years has focused on the ability of traditional (academic) vs. non-traditional (vocational) qualifications to support students' progression (e.g., Hayward & Hoelscher, 2011; Chowdry et al., 2013; Vidal Rodeiro, Sutch, & Zanini, 2015; McCoy & Adamson, 2016; Hupkau et al., 2016). However, little work on the role of A Level subject choice in access to HE (and different types of HE) has been published to date. Vidal Rodeiro and Sutch (2013) investigated, using data from UCAS³⁴, the proportions of students who held each A Level subject when applying for a place at university. The outcomes of that research provided information about the usefulness of specific A Level subjects or combinations of A Level subjects as currency for university study. In a more recent study, Sutch, Zanini, and Vidal Rodeiro (2016) examined how students' choice of A Level subjects and attainment influenced their HE destinations (specific types of HE institutions; specific fields of study). The statistical analyses carried out in their research revealed that there was a relationship between A Level subject specialism and the type of university attended. In particular, specialising in STEM or multiple subject areas greatly increased the likelihood of studying in a Russell Group university. This also held for Languages and Humanities, although in this case the magnitude of the association was smaller. Dilnot (2018) examined the relationship between league table score of university attended and A Level subject choices. She found that holding more "facilitating" A Levels was associated with attending a higher ranked university and suggested that more research was needed to further understand these relationships.

In the current research, HESA data gathered at individual level and covering all full-time, first year undergraduates, domiciled in England, studying at UK universities in the 2016/17 academic year was considered. This data was linked to NPD extracts to include records of the qualifications taken at school (both at Key Stage 4 and at Key Stage 5) and students' background characteristics. Having background data (e.g., type of school; prior attainment; level of deprivation; parental education) allowed the investigation of the uptake of A Level subjects/combinations by specific subgroups of undergraduate students such as those with higher/lower academic ability, those in independent/state schools or those living in income-deprived areas.

Together with simple descriptive statistics which showed the popularity of A Level subjects and combinations of A Level subjects in relation to university participation, multilevel logistic regressions were employed to study the likelihood of students with different combinations of A Levels to study in specific HE institutions, once students' characteristics had been accounted for.

The key results of the analyses presented in this report are summarised and discussed below.

³⁴ Universities and Colleges Admissions Service.

Uptake of A Level subjects

The most popular subjects amongst university students were Mathematics, Psychology, Biology, History, Chemistry and English Literature. However, these A Level subjects were represented in different proportions in HE and particularly in the different institution types. For example, students in Cambridge and Oxford universities held A Levels in STEM subjects and in Foreign Languages in higher proportions than students in other universities. There was also variation in the uptake of applied subjects (e.g., Design & Technology, Art & Design, Business Studies, ICT, Media Studies) and Humanities (e.g., Psychology, Sociology) between the different types of HE institutions. Overall, higher proportions of students not in Russell Group, Oxbridge and the Sutton Trust Top-30 group universities held A Levels in those subjects than students in such institutions. There was also variation on the popularity of the A Level subjects by the different university rankings. For example, STEM subjects were more popular amongst students in institutions of high research quality and high graduation prospects than in institutions with lower rankings in these areas. However, Biology and Chemistry were more popular amongst students in institutions of low student satisfaction than in institutions rated high by their students. The opposite patterns were found in subjects such as physical education or law.

The uptake figures summarised above show that subject choice has a significant effect on the type of HE institution attended. This supports the view, argued previously (e.g., Purcell et al., 2008; Fazackerly & Chant, 2008; Russell Group, 2017; Dilnot, 2018), that careful choice of subjects post-16 is crucial to avoid students inadvertently closing their options down prematurely.

The number of A Level subjects held by students also varied across the different types of HE institutions considered in this research. Students at Oxford and Cambridge held the highest number of A Level subjects and students attending low ranking institutions the lowest. Similar patterns were found for A Levels in facilitating subjects. In particular, the number of A Levels in facilitating subjects increased with the increasing overall ranking of the HE institution and the number of less suitable A Levels decreased. Similar results were found in Dilnot (2018), which showed that each facilitating subject was associated with being at a university with a Times Good University Guide score 14 points higher, even when A Level performance, prior attainment at GCSE and school type were accounted for.

Previous research (e.g., Sutch, Zanini, & Vidal Rodeiro, 2016) showed that students with more academic backgrounds were more likely to go to universities in the Russell Group and those holding vocational qualifications were more likely to study in other types of universities. The current study supports this. In fact, over half of the students in Oxbridge were specialist in STEM (achieved two or more A Levels in this subject area) and the percentages of specialist in STEM and Language subjects increased with the increasing ranking of the HE institutions. It should be noted that one reason for this could be that STEM degrees courses are more common in high ranking and prestigious HE institutions and the more applied/vocational degrees are over-represented in other types of HE institutions. Candidates with A Levels in less academic or applied subjects could be, for example, more attracted to the latter types of degrees and therefore their university choices are determined by their degree choices.

Performance in A Level subjects

As expected, the outcomes of the analyses looking at performance in individual A Level subjects showed that top A Level grades (A*; at least grade A) were more common among university students than among non-university students and that there was huge variation by type of HE institution attended. Similarly, when looking at the students who achieved the AAB threshold, the analyses showed that over half of the Russell Group students and almost all students in Oxbridge (96 per cent) were holding AAB or above. However, only 3 per cent

of students in universities with an overall ranking of medium reached the threshold. This gulf between the grade distributions of students attending universities in the Russell Group and students attending other institutions had already been reported by Vidal Rodeiro and Sutch (2013).

Variation in admissions offers across degree subject areas is likely to account for much of the relationship between degree subject at university and performance at A Level. The current research showed, for example, that over 90 per cent of the students enrolled in a Medicine and Dentistry degree and almost 80 per cent of those in Veterinary Science achieved AAB or above. Both these degree subject areas are particularly competitive so it is not surprising that the A Level attainment of the students pursuing them was very high. Students doing degrees in Mathematical or Physical Sciences and degrees in Languages also had high A Level attainment. Students with the lowest A Level attainment were enrolled, generally, in degrees in the areas of Mass Communications and Documentation, Computer Science, Creative Arts and Design, and Education.

Factors affecting enrolment in HE

The regression analyses carried out in this research revealed that there was a relationship between A Level subject specialism and the type of university attended and that this association holds even after controlling for other variables, such as attainment and type of school attended.

In particular, students specialising in expressive subjects were significantly less likely to enrol in HE, and to attend an institution in the Russell Group, than students with no specialism were. On the contrary, students with Humanities, Languages or STEM specialisms and those with a multiple specialism were significantly more likely to enrol at a HE institution than students with no specialism. The same patterns were found for the Sutton Trust Top-30 institutions and for high ranked institutions. The A Level specialism effect was slightly different for students enrolling at Oxbridge. For example, students with no specialism were more likely to enrol in Oxbridge than students specialising in STEM or expressive subjects and students specialising in Languages and Humanities were significantly more likely to enrol at Oxbridge than students with no specialism.

Across all the models fitted in this work, a common result emerged: the probability of attending any HE institution increased significantly with the number of A Levels achieved and with the number of A Levels in facilitating subjects. This was, again, consistent with previous research (Vidal Rodeiro & Sutch, 2013; Dilnot, 2018) and suggests that, studying A Levels in facilitating subjects may be a sensible choice for students wanting to attend prestigious and high ranked HE institutions.

Although not the main focus of this work, the regression analyses showed that there was a significant gender effect on the probability of enrolling in HE. Male students were significantly less likely than female students with the same prior attainment and same background characteristics to enrol in HE. However, if they enrol at all, male students were significantly more likely than female students to attend institutions in the Russell Group, institutions at the Sutton Trust Top-30, Oxford/Cambridge and institutions with a high overall ranking.

As expected, and in line with previous research (e.g., HEFCE, 2003; Smith & Naylor, 2005; Crawford, 2014; Vidal Rodeiro & Zanini, 2015), A Level performance was strongly associated to participation in HE and to attendance to specific types of HE institutions. Specifically, the higher the average A Level score, the higher the probability of enrolment in HE overall and, for those who enrol, the probability of attending more prestigious institutions. Similarly, performance at Key Stage 4 was found to be an important factor for university entry, even after taking into account the performance at A Level.

Although, all else being equal, students in independent schools were less likely to enrol HE immediately after completing their A Levels, the probability of attending prestigious or high ranked institutions was higher for them compared to similar students in state-maintained schools. This is important from a widening participation point of view, as it supports other research findings (e.g., Sutton Trust, 2011; Chowdry et al., 2013; Sullivan et al., 2014) in providing evidence that young people from state, rather than independent, schools continue to be under-represented at high-status universities. However, in contrast, there was not an effect of school type (independent vs. state) on the probability of attending Oxford or Cambridge.

In an attempt to investigate whether or not gender and school type interacted with the A Level specialism to influence the type of HE institution attended, further regression models including an interaction term between A Level specialism and these student characteristics were fitted.

The results of this set of models showed that, when prior schooling and other background characteristics were accounted for, the likelihood of enrolling in HE by students with each of the A Level specialisms varied, indeed, by gender and type of school.

Male students specialising in STEM and expressive subjects were more likely than female students specialising in the same areas to enrol in HE. On the contrary, female students were more likely to enrol in HE than male students if they were specialist in applied, Humanities or Language A Level subjects. Female students were also more likely to enrol in HE if they had multiple specialisms or did not specialise at all. Although these patterns were fairly similar for the likelihood of enrolling in different types of HE institutions, there were a few differences: the probability of attending an institution in the Russell Group or being at Oxbridge for a specialist in STEM was almost identical for males and females; and female students were less likely to enrol in Oxbridge than male students were if they specialised in Language subjects at A Level or if they had multiple specialisms.

Regarding type of school, its interaction with A Level specialism was also significantly associated with the type of HE institution attended. For example, STEM specialists were more likely to attend Russell Group or Sutton Trust Top-30 institutions if they took their A Levels in an independent school than if they did so in a state school. However, for these students, the probability of attending Oxbridge did not vary by the type of school they attended.

This research has showed a clear relationship between A Level specialism and the type of HE institution attended and that this relationship varied by gender and school type. However, the multilevel logistic regression, as any regression technique, can only ascertain relationships, but never be sure about the underlying causal mechanism. Therefore, caution must be taken when interpreting the results of the regression analyses presented in this work. There might be other factors that cannot be measured and that might have a direct impact on university participation that this work did not take into account (though the most relevant identified by the literature in this field were accounted for).

The above results confirm that, although careful choice of A Level subjects/specialisms is crucial for enrolling in HE and, in particular, for enrolling in specific HE institutions, background characteristics such as gender and school type are still part of the explanation for differential participation in HE in the UK. While the access gap between students from different backgrounds has narrowed somewhat in recent years due to widening participation activities, the gap in the most selective institutions remains (Boliver et al., 2017). Contextualising admissions (i.e., taking into account a candidate's background when making decisions) might be one way to make progress towards narrowing the gap. Some HE institutions had already changed their admissions requirements for state school students and for students from disadvantaged backgrounds (Ogg, Zimdars, & Heath, 2009; Boliver et al.,

2017) and continue with this practice. However, there is still scope to improve the use of contextual data in the admission processes to widen access and to reduce the differences in participation between students with different backgrounds, particularly at elite and highly selective institutions such as those in the Russell Group or the Sutton Trust Top-30.

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Appendix A: Uptake of A Level subjects ~ breakdowns by students' background characteristics

Tables A1 to A6 below show the background characteristics (gender, prior attainment at GCSE, level of deprivation and type of school) of the A Level students in this study, overall and by the type of HE institution attended.

Table A1: A Level cohort and students enrolling in HE, by background characteristics

Background characteristics		All students (N=276,705)		University students (N=159,790)		Non-University students (N=116,910)	
		N	%	N	%	N	%
Gender	Female	154,285	55.76	91,210	57.08	63,080	53.95
	Male	122,420	44.24	68,585	42.92	53,835	46.05
Prior attainment	Low	89,355	33.33	43,700	27.68	45,655	41.42
	Medium	88,820	33.13	52,520	33.27	36,300	32.93
	High	89,920	33.54	61,650	39.05	28,275	25.65
Deprivation	Low	78,555	33.33	46,405	33.12	32,150	33.65
	Medium	78,590	33.35	45,250	32.29	33,335	34.89
	High	78,520	33.32	48,470	34.59	30,055	31.46
Type of school	State	240,480	86.91	142,000	88.87	98,480	84.23
	Independent	36,225	13.09	17,790	11.13	18,435	15.77

Table A2: Students in different types of HE institutions, by background characteristics

Background characteristics		Russell Group				Sutton Trust Top-30			
		Yes (N=51,870)		No (N=107,925)		Yes (N=60,500)		No (N=99,260)	
		N	%	N	%	N	%	N	%
Gender	Female	28,425	54.80	62,785	58.17	32,840	54.28	58,365	58.78
	Male	23,445	45.20	45,140	41.83	27,660	45.72	40,925	41.22
Prior attainment	Low	2,780	5.44	40,920	38.32	3,760	6.31	39,940	40.64
	Medium	10,775	21.10	41,745	39.09	13,420	22.52	39,100	39.78
	High	37,520	73.46	24,130	22.60	42,405	71.17	19,240	19.58
Deprivation	Low	16,690	40.97	29,710	29.90	19,990	41.62	26,415	28.68
	Medium	13,280	32.59	31,970	32.17	15,780	32.85	29,470	32.00
	High	10,775	26.44	37,695	37.93	12,265	25.53	36,205	39.31
Type of school	State	41,080	79.20	100,920	93.51	48,460	80.09	93,545	94.21
	Independent	10,785	20.80	7,005	6.49	12,045	19.91	5,750	5.79

Table A2 (continued): Students in different types of HE institutions, by background characteristics

Background characteristics		Oxbridge			
		Yes (N=3,920)		No (N=155,875)	
		N	%	N	%
Gender	Female	1,925	49.09	89,285	57.28
	Male	1,995	50.91	66,590	42.72
Prior attainment	Low	10	0.26	43,690	28.36
	Medium	40	0.97	52,485	34.07
	High	3,780	98.77	57,870	37.57
Deprivation	Low	1,215	48.77	45,190	32.83
	Medium	860	34.50	44,395	32.25
	High	415	16.73	48,050	34.91
Type of school	State	2,480	63.36	139,520	89.51
	Independent	1,435	36.64	16,355	10.49

Table A3: Students in HE institutions with different overall rankings, by background characteristics

Background characteristics		Overall Ranking					
		Low (N=29,670)		Medium (N=49,830)		High (N=77,565)	
		N	%	N	%	N	%
Gender	Female	18,645	62.85	28,950	58.10	41,770	53.85
	Male	11,020	37.15	20,880	41.90	35,795	46.15
Prior attainment	Low	14,710	50.05	20,100	40.70	7,820	10.23
	Medium	11,150	37.95	20,350	41.21	20,075	26.27
	High	3,530	12.01	8,930	18.09	48,515	63.49
Deprivation	Low	7,605	27.13	14,090	30.51	24,040	37.87
	Medium	8,800	31.39	15,035	32.56	20,660	32.55
	High	11,630	41.48	17,060	36.93	18,770	29.58
Type of school	State	28,490	96.03	46,940	94.21	64,110	82.65
	Independent	1,180	3.97	2,890	5.79	13,460	17.35

Table A4: Students in HE institutions with different student satisfaction rankings, by background characteristics

Background characteristics		Student Satisfaction					
		Low (N=41,095)		Medium (N=60,340)		High (N=55,630)	
		N	%	N	%	N	%
Gender	Female	24,565	59.77	34,205	56.69	30,600	55.01
	Male	16,530	40.23	26,135	43.31	25,030	44.99
Prior attainment	Low	13,305	32.86	15,845	26.55	13,475	24.50
	Medium	13,160	32.50	20,465	34.29	17,950	32.64
	High	14,030	34.65	23,370	39.16	23,575	42.86
Deprivation	Low	10,000	27.62	18,415	34.61	17,320	35.88
	Medium	11,290	31.19	17,160	32.25	16,045	33.23
	High	14,915	41.20	17,630	33.14	14,910	30.89
Type of school	State	36,775	89.49	53,935	89.39	48,830	87.78
	Independent	4,320	10.51	6,405	10.61	6,800	12.22

Table A5: Students in HE institutions with different research quality rankings, by background characteristics

Background characteristics		Research Quality					
		Low (N=29,680)		Medium (N=57,670)		High (N=69,320)	
		N	%	N	%	N	%
Gender	Female	18,775	63.26	32,415	56.21	37,925	54.71
	Male	10,905	36.74	25,255	43.79	31,400	45.29
Prior attainment	Low	14,520	49.29	22,125	38.78	5,775	8.45
	Medium	11,280	38.29	23,520	41.23	16,650	24.38
	High	3,660	12.42	11,410	19.99	45,860	67.16
Deprivation	Low	8,630	30.73	15,090	28.31	21,895	39.14
	Medium	9,330	33.21	16,675	31.28	18,335	32.78
	High	10,130	36.06	21,545	40.41	15,700	28.07
Type of school	State	28,530	96.12	54,150	93.89	56,495	81.49
	Independent	1,150	3.88	3,520	6.11	12,830	18.51

Table A6: Students in HE institutions with different graduation prospects rankings, by background characteristics

Background characteristics		Graduation Prospects					
		Low (N=34,720)		Medium (N=49,985)		High (N=72,360)	
		N	%	N	%	N	%
Gender	Female	22,010	63.40	28,525	57.06	38,835	53.67
	Male	12,710	36.60	21,460	42.94	33,520	46.33
Prior attainment	Low	16,750	48.71	17,735	35.83	8,140	11.42
	Medium	13,180	38.32	20,465	41.34	17,930	25.15
	High	4,460	12.96	11,300	22.83	45,220	63.43
Deprivation	Low	9,240	28.31	14,755	32.20	21,740	36.70
	Medium	10,360	31.75	15,170	33.11	18,965	32.01
	High	13,030	39.94	15,895	34.69	18,530	31.28
Type of school	State	33,230	95.71	46,505	93.04	59,805	82.65
	Independent	1,490	4.29	3,480	6.96	12,550	17.35

Uptake of A Level subjects and combinations of A Level subjects by different background characteristics are reported in Statistics Reports published in the Cambridge Assessment website (and therefore not included in this report). For example, Carroll and Gill (2017) investigated the uptake of A Level subjects in 2016. Their analyses included:

- number of A Levels by school type, prior attainment and deprivation group;
- uptake of individual A Levels by gender, school type, prior attainment and deprivation group;
- uptake of the most common combinations of A Level subjects by gender;
- uptake of subject areas by gender and prior attainment; and
- number of “facilitating” subjects taken, by gender, prior attainment, school type and deprivation.

Tables A7 to A12 (1-3) below report the students’ A Level specialism by background characteristics, and broken down by type of HE institution.

Table A7: A Level specialism, by background characteristics ~ university students

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	0.82	3.05	52.77	1.22	1.25	20.28	20.60
	Male	2.03	1.55	33.75	0.77	1.46	21.25	39.19
Prior attainment	Low	1.96	4.00	48.96	0.30	0.51	36.71	7.56
	Medium	1.87	2.67	51.75	0.48	0.88	20.22	22.13
	High	0.46	1.06	35.81	1.91	2.32	9.74	48.70
Deprivation	Low	1.40	2.37	45.68	0.87	1.64	18.36	29.67
	Medium	1.31	2.61	45.60	0.65	1.38	21.03	27.41
	High	1.39	2.21	44.44	0.52	0.95	24.42	26.07
Type of school	State	1.38	2.43	45.18	0.71	1.33	21.37	27.59
	Independent	1.04	2.22	40.00	3.55	1.42	15.27	36.49

Table A8: A Level specialism, by background characteristics ~ non-university students

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	0.92	5.66	42.64	1.00	0.81	34.02	14.94
	Male	2.61	2.20	30.63	0.65	1.10	37.31	25.48
Prior attainment	Low	1.93	5.89	36.43	0.28	0.51	49.74	5.22
	Medium	2.28	3.86	43.45	0.54	0.72	31.11	18.04
	High	0.76	1.82	34.85	1.83	1.86	17.15	41.72
Deprivation	Low	2.15	4.31	40.09	0.54	1.03	33.40	18.49
	Medium	1.65	4.63	39.38	0.42	0.78	36.21	16.93
	High	1.26	3.96	35.65	0.44	0.77	40.59	17.34
Type of school	State	1.68	4.31	38.14	0.49	0.87	36.92	17.59
	Independent	1.83	2.76	31.64	2.70	1.37	28.17	31.54

Table A9: A Level specialism, by background characteristics ~ students in Russell Group institutions

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	0.44	0.53	50.31	2.78	2.26	9.59	34.09
	Male	0.78	0.24	30.00	1.54	2.14	7.40	57.90
Prior attainment	Low	1.91	1.19	56.12	0.94	0.61	22.41	16.83
	Medium	1.40	0.79	56.94	1.10	0.96	10.79	28.02
	High	0.27	0.23	35.71	2.57	2.67	6.88	51.66
Deprivation	Low	0.59	0.38	41.77	1.77	2.61	7.79	45.09
	Medium	0.67	0.42	41.59	1.44	2.21	7.85	45.82
	High	0.81	0.40	40.52	1.13	1.91	8.86	46.38
Type of school	State	0.69	0.40	41.42	1.55	2.30	8.14	45.51
	Independent	0.23	0.42	40.02	4.77	1.85	10.37	42.33

Table A10: A Level specialism, by background characteristics ~ students in Sutton Trust-Top 30 institutions

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	0.46	0.58	50.91	2.62	2.17	10.26	33.01
	Male	0.84	0.25	30.34	1.50	2.10	8.36	56.61
Prior attainment	Low	2.00	1.22	55.71	0.98	0.67	24.87	14.55
	Medium	1.41	0.78	57.27	1.04	1.00	11.73	26.77
	High	0.27	0.25	35.48	2.48	2.62	7.22	51.68
Deprivation	Low	0.64	0.37	41.93	1.64	2.46	8.39	44.58
	Medium	0.70	0.48	42.30	1.35	2.23	8.62	44.32
	High	0.84	0.45	41.29	1.18	1.81	10.46	43.97
Type of school	State	0.72	0.42	41.92	1.48	2.23	9.05	44.19
	Independent	0.27	0.47	39.85	4.65	1.79	10.74	42.22

Table A11: A Level specialism, by background characteristics ~ students in Oxbridge

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	0.00	0.16	38.12	8.68	4.58	7.59	40.87
	Male	0.10	0.15	20.66	4.96	4.16	4.26	65.70
Prior attainment	Low	10.00	0.00	60.00	10.00	0.00	0.00	20.00
	Medium	0.00	0.00	67.57	0.00	0.00	0.00	32.43
	High	0.03	0.16	29.02	6.80	4.42	5.80	53.77
Deprivation	Low	0.16	0.16	28.85	6.18	4.45	3.63	56.55
	Medium	0.00	0.00	32.28	2.45	4.20	4.90	56.18
	High	0.00	0.24	36.06	4.09	3.61	4.09	51.92
Type of school	State	0.08	0.12	31.31	4.75	4.35	4.23	55.16
	Independent	0.00	0.21	25.64	10.31	4.39	8.78	50.66

Table A12-1: A Level specialism, by background characteristics ~ overall ranking of the institution: high overall ranking

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	0.53	0.85	52.42	2.23	1.93	11.21	30.81
	Male	1.03	0.42	31.62	1.27	1.88	10.74	53.04
Prior attainment	Low	1.89	1.78	54.23	0.68	0.66	26.62	14.13
	Medium	1.38	0.97	55.76	0.85	0.96	13.00	27.08
	High	0.33	0.35	35.86	2.28	2.49	7.60	51.08
Deprivation	Low	0.79	0.63	43.15	1.46	2.27	9.57	42.14
	Medium	0.83	0.75	43.69	1.13	1.97	10.38	41.25
	High	0.89	0.53	43.01	0.93	1.52	13.27	39.86
Type of school	State	0.84	0.64	43.34	1.24	1.96	10.95	41.03
	Independent	0.40	0.71	40.35	4.40	1.68	11.20	41.26

Table A12-2: A Level specialism, by background characteristics ~ overall ranking of the institution: medium overall ranking

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	1.10	5.30	52.57	0.35	0.77	26.94	12.97
	Male	3.04	2.81	35.91	0.23	1.16	30.61	26.24
Prior attainment	Low	2.04	4.75	47.62	0.23	0.52	38.21	6.63
	Medium	2.20	3.92	48.60	0.26	0.96	24.00	20.06
	High	0.96	3.86	34.89	0.46	1.80	16.64	41.38
Deprivation	Low	2.13	4.30	47.62	0.26	1.14	26.44	18.11
	Medium	1.78	4.53	46.25	0.27	1.04	28.60	17.54
	High	1.67	3.34	44.61	0.26	0.67	30.42	19.02
Type of school	State	1.85	4.08	45.92	0.27	0.96	28.69	18.24
	Independent	2.87	7.17	40.21	0.83	0.55	25.01	23.35

Table A12-3: A Level specialism, by background characteristics ~ overall ranking of the institution: low overall ranking

Background characteristics		A Level specialism						
		Applied	Expressive	Humanities	Languages	Multi	None	STEM
Gender	Female	1.10	4.08	55.03	0.34	0.54	28.99	9.92
	Male	3.41	2.59	36.79	0.17	0.75	36.10	20.18
Prior attainment	Low	2.01	3.91	48.71	0.21	0.42	39.38	5.35
	Medium	2.22	3.07	51.26	0.23	0.62	25.43	17.17
	High	0.91	3.32	37.94	0.54	1.45	18.65	37.21
Deprivation	Low	2.06	3.85	50.59	0.21	0.68	29.84	12.77
	Medium	1.72	3.40	49.58	0.18	0.67	31.86	12.59
	High	1.87	3.00	47.08	0.26	0.46	32.64	14.69
Type of school	State	1.87	3.42	48.68	0.25	0.61	31.61	13.56
	Independent	3.99	6.11	37.95	1.02	0.85	32.26	17.83

Appendix B: Classification of A Level subjects

Dilnot's taxonomy

A Level subjects were categorised using the following taxonomy proposed by Dilnot (2018):

Facilitating

Arabic
Bengali
Biblical Hebrew
Biology
Chemistry
Chinese
Classical Greek
Welsh second Language
Dutch
English Literature
French
Further Mathematics
Geography
German
Greek (Modern)

Useful

Ancient History
Archaeology
Classical Civilisation
Classics
Computing
Welsh first Language
Economics
Economics and Business
English Language and Literature
English Language
Environmental Science
Geology
Government and Politics
History of Art
Music

More limited suitability

Art and Design
Business Studies
DT³⁵: Product Design (3-D Design)
DT: Product Design (Textiles)
DT: Systems and Control Technology
Drama and Theatre Studies
Electronics
Film Studies
ICT
Law
Media Studies
Music Technology
Physical Education
World Development

Less effective preparation

Accounting
Anthropology
Applied Art and Design (double award)
Applied Art and Design
Applied Business (double award)
Applied Business
Applied ICT (double award)
Applied ICT
Applied Science (double award)
Applied Science
Citizenship Studies
Communication and Culture
Creative Writing
Dance
DT: Food Technology

Non-counting

Critical Thinking
General Studies

³⁵ Design and Technology

Bramley's taxonomy

A Level subjects were categorised, based on content, using the following taxonomy proposed by Bramley (2014):

Applied

Accounting and Finance
Applied Art & Design
Applied Business
Applied Engineering
Applied ICT
Applied Science
Business Studies
Business Studies and Economics
Food Studies
Health and Social Care
Home Economics
Law
Leisure and Recreation
Physical Education
Travel and Tourism
World Development

Expressive

Art & Design
Design & Technology
Music
Performance Studies

Humanities

Archaeology
Classical Studies
Critical Thinking
Drama and Theatre Studies
Economics
English Language
English Language & Literature
English Literature
Environmental Studies
General Studies
Geography
Government & Politics
History
History of Art
Media/Film/TV Studies
Other Communication Studies
Other Social Studies
Philosophy
Psychology
Religious Studies
Sociology

Languages

French
German
Other Modern Languages
Spanish

STEM

Biology
Chemistry
Computer Studies
Further Mathematics
Geology
Human Biology
ICT
Mathematics
Physics
Science

Note that there were some subjects that could not be unambiguously allocated to a category. For example, Geology (classified as STEM), Psychology (classified as a Humanity) and Applied Science (classified as Applied) could have been assigned to a different category. The Expressive categorisation was problematic in that Design & Technology could perhaps also fit in the STEM or Applied categories, and that in some cases it is perhaps doubtful whether knowledge, skills and understanding are expressed mainly through performances and artefacts (as opposed to through written responses). See Bramley (2014) for more details on how these categorisations were devised.

Appendix C: Combinations of A Level subjects taken by students in each degree subject area

Table C1: Top-10 combinations of A Level subjects, students enrolled in Agriculture and related subjects

Combination of A Level subjects	%	Overall %	Overall Rank
Biology + Chemistry + Mathematics	12.01	5.62	1
Biology + Chemistry + Geography	5.68	0.85	6
Biology + Chemistry + Psychology	5.19	1.65	4
Biology + Geography + Psychology	3.25	0.46	19
Biology + Chemistry + History	2.11	0.54	14
Biology + Chemistry + Physics	1.62	0.53	15
Biology + Geography + Mathematics	1.62	0.35	35
Biology + Business Studies: Single + Geography	1.30	0.07	208
Art & Design (Photography) + Biology + Psychology	1.14	0.04	374
Biology + Psychology + Sociology	1.14	0.38	28

Table C2: Top-10 combinations of A Level subjects, students enrolled in Architecture, Building and Planning

Combination of A Level subjects	%	Overall %	Overall Rank
Art & Design (Fine Art) + Mathematics + Physics	3.21	0.10	141
Art & Design + Mathematics + Physics	1.88	0.07	209
D&T Product Design + Mathematics + Physics	1.83	0.40	26
Art & Design (Fine Art) + Geography + Mathematics	1.73	0.05	331
Art & Design (Fine Art) + D&T Product Design + Mathematics	0.97	0.05	342
D&T Product Design + Geography + Mathematics	0.82	0.06	268
Chemistry + Mathematics + Physics	0.76	2.63	2
Biology + Chemistry + Mathematics	0.71	5.62	1
Art & Design (Graphics) + Mathematics + Physics	0.66	0.03	466
Economics + Geography + Mathematics	0.66	0.49	17

Table C3: Top-10 combinations of A Level subjects, students enrolled in Biological Sciences

Combination of A Level subjects	%	Overall %	Overall Rank
Biology + Chemistry + Mathematics	10.83	5.62	1
Biology + Chemistry + Psychology	5.06	1.65	4
Biology + Mathematics + Psychology	2.29	0.55	13
Biology + Chemistry + Geography	2.22	0.85	6
Biology + Physical Education/Sports Studies + Psychology	1.77	0.33	39
English Literature + Psychology + Sociology	1.75	0.57	12
Biology + Geography + Psychology	1.72	0.46	19
Biology + Psychology + Sociology	1.63	0.38	28
Biology + English Literature + Psychology	1.56	0.38	30
Biology + Chemistry + History	1.45	0.54	14

Table C4: Top-10 combinations of A Level subjects, students enrolled in Business and Administration Studies

Combination of A Level subjects	%	Overall %	Overall Rank
Business Studies: Single + Economics + Mathematics	1.55	0.29	41
Biology + Chemistry + Mathematics	1.27	5.62	1
Business Studies: Single + Economics + Geography	1.23	0.17	77
Economics + Mathematics + Physics	0.88	0.63	10
Chemistry + Economics + Mathematics	0.87	0.42	25
Biology + Economics + Mathematics	0.84	0.38	31
Business Studies: Single + Economics + History	0.84	0.12	114
Business Studies: Single + Economics + Psychology	0.81	0.10	147
Business Studies: Single + Psychology + Sociology	0.78	0.19	69
Business Studies: Single + English Literature + History	0.75	0.12	112

Table C5: Top-10 combinations of A Level subjects, students enrolled in Creative Arts and Design

Combination of A Level subjects	%	Overall %	Overall Rank
Drama & Theatre Studies + English Literature + History	0.95	0.25	47
Drama & Theatre Studies + English Literature + Media/Film/Tv Studies	0.74	0.11	124
Drama & Theatre Studies + English Literature + Psychology	0.70	0.16	82
Art & Design (Fine Art) + English Literature + History	0.66	0.17	76
Art & Design (Fine Art) + Art & Design (Photography) + Media/Film/Tv Studies	0.60	0.05	279
D&T Product Design + Mathematics + Physics	0.58	0.40	26
Art & Design (Fine Art) + Art & Design (Photography) + English Literature	0.53	0.05	341
English Literature + History + Music	0.52	0.07	213
Art & Design (Fine Art) + English Literature + Psychology	0.50	0.11	123
Art & Design (Fine Art) + English Literature + Religious Studies	0.44	0.08	193

Table C6: Top-10 combinations of A Level subjects, students enrolled in Education

Combination of A Level subjects	%	Overall %	Overall Rank
English Language + Psychology + Sociology	2.00	0.38	29
English Literature + Psychology + Sociology	1.66	0.57	12
Psychology + Religious Studies + Sociology	1.41	0.43	24
English Literature + History + Psychology	1.36	0.82	7
English Literature + Religious Studies + Sociology	1.22	0.23	52
English Literature + History + Sociology	0.97	0.45	22
English Language + Geography + Psychology	0.88	0.11	128
English Language + Religious Studies + Sociology	0.88	0.12	117
English Language + English Literature + Psychology	0.83	0.20	64
English Literature + Geography + Psychology	0.83	0.23	58

Table C7: Top-10 combinations of A Level subjects, students enrolled in Engineering and Technology

Combination of A Level subjects	%	Overall %	Overall Rank
Chemistry + Mathematics + Physics	18.30	2.63	2
Mathematics + Mathematics (Further) + Physics	10.29	2.13	3
Chemistry + Mathematics + Mathematics (Further) + Physics	6.82	1.32	5
Biology + Chemistry + Mathematics	5.55	5.62	1
D&T Product Design + Mathematics + Physics	4.28	0.40	26
Biology + Mathematics + Physics	3.76	0.66	9
Geography + Mathematics + Physics	3.17	0.45	21
Economics + Mathematics + Physics	2.88	0.63	10
Computer Studies/Computing + Mathematics + Physics	2.01	0.50	16
Electronics + Mathematics + Physics	1.79	0.14	97

Table C8: Top-10 combinations of A Level subjects, students enrolled in Languages

Combination of A Level subjects	%	Overall %	Overall Rank
English Literature + History + Psychology	2.67	0.82	7
English Literature + History + Religious Studies	2.62	0.66	8
English Language + English Literature + History	2.13	0.29	42
English Literature + Government & Politics + History	1.45	0.62	11
English Literature + French + History	1.33	0.22	59
English Literature + History + Sociology	1.33	0.45	22
English Literature + Geography + History	1.29	0.37	32
English Language + English Literature + Psychology	1.13	0.20	64
Classical Civilisation + English Literature + History	1.02	0.15	88
Drama & Theatre Studies + English Literature + History	1.01	0.25	47

Table C9: Top-10 combinations of A Level subjects, students enrolled in Medicine and Dentistry

Combination of A Level subjects	%	Overall %	Overall Rank
Biology + Chemistry + Mathematics	46.22	5.62	1
Biology + Chemistry + Mathematics + Physics	6.71	0.44	23
Biology + Chemistry + Psychology	4.17	1.65	4
Biology + Chemistry + Geography	3.28	0.85	6
Biology + Chemistry + General Studies + Mathematics	3.18	0.29	43
Biology + Chemistry + Physics	2.77	0.53	15
Biology + Chemistry + Mathematics + Mathematics (Further)	2.74	0.25	48
Biology + Chemistry + History	2.57	0.54	14
Biology + Chemistry + English Literature	1.57	0.34	36
Biology + Chemistry + Economics	1.47	0.23	53

Table C10: Top-10 combinations of A Level subjects, students enrolled in Law

Combination of A Level subjects	%	Overall %	Overall Rank
Law + Psychology + Sociology	2.18	0.33	38
English Literature + History + Psychology	1.73	0.82	7
History + Law + Psychology	1.53	0.17	80
English Literature + Government & Politics + History	1.42	0.62	11
English Literature + History + Law	1.39	0.16	85
English Literature + History + Religious Studies	1.39	0.66	8
English Literature + Law + Psychology	1.34	0.14	98
English Literature + History + Sociology	1.05	0.45	22
English Language + Law + Psychology	1.04	0.11	134
English Language + History + Law	0.94	0.08	176

Table C11: Top-10 combinations of A Level subjects, students enrolled in Mathematical Sciences

Combination of A Level subjects	%	Overall %	Overall Rank
Mathematics + Mathematics (Further) + Physics	21.34	2.13	3
Chemistry + Mathematics + Mathematics (Further) + Physics	7.14	1.32	5
Chemistry + Mathematics + Mathematics (Further)	6.98	0.46	18
Biology + Chemistry + Mathematics	4.20	5.62	1
Economics + Mathematics + Mathematics (Further)	3.88	0.38	27
Chemistry + Mathematics + Physics	3.21	2.63	2
Biology + Mathematics + Mathematics (Further)	1.89	0.11	135
Economics + Mathematics + Mathematics (Further) + Physics	1.41	0.23	56
Economics + Mathematics + Physics	1.41	0.63	10
General Studies + Mathematics + Mathematics (Further) + Physics	1.23	0.09	153

Table C12: Top-10 combinations of A Level subjects, students enrolled in Mass Communications and Documentation

Combination of A Level subjects	%	Overall %	Overall Rank
English Literature + History + Media/Film/Tv Studies	2.07	0.18	73
English Literature + Media/Film/Tv Studies + Sociology	1.69	0.13	108
English Language + Media/Film/Tv Studies + Sociology	1.50	0.11	125
English Language + English Literature + Media/Film/Tv Studies	1.46	0.10	138
English Literature + Film Studies + Media/Film/Tv Studies	1.42	0.06	233
English Language + Film Studies + Media/Film/Tv Studies	1.19	0.06	238
Art & Design (Photography) + Film Studies + Media/Film/Tv Studies	1.15	0.06	246
English Language & Literature + Media/Film/Tv Studies + Sociology	1.11	0.09	162
Drama & Theatre Studies + English Literature + Media/Film/Tv Studies	1.08	0.11	124
Art & Design (Photography) + English Language + Media/Film/Tv Studies	1.04	0.07	201

Table C13: Top-10 combinations of A Level subjects, students enrolled in Computer Science

Combination of A Level subjects	%	Overall %	Overall Rank
Computer Studies/Computing + Mathematics + Physics	10.10	0.50	16
Mathematics + Mathematics (Further) + Physics	4.94	2.13	3
Computer Studies/Computing + Mathematics + Mathematics (Further)	3.99	0.19	70
Computer Studies/Computing + Mathematics + Mathematics (Further) + Physics	3.66	0.23	57
Chemistry + Mathematics + Physics	2.83	2.63	2
Computer Studies/Computing + Economics + Mathematics	2.03	0.10	143
Chemistry + Computer Studies/Computing + Mathematics	1.88	0.08	186
Biology + Chemistry + Mathematics	1.85	5.62	1
Chemistry + Mathematics + Mathematics (Further) + Physics	1.40	1.32	5
Biology + Mathematics + Physics	1.13	0.66	9

Table C14: Top-10 combinations of A Level subjects, students enrolled in combined subjects

Combination of A Level subjects	%	Overall %	Overall Rank
Biology + Chemistry + Mathematics	3.27	5.62	1
Chemistry + Mathematics + Mathematics (Further) + Physics	1.40	1.32	5
English Literature + Government & Politics + History	1.19	0.62	11
Chemistry + Mathematics + Physics	1.17	2.63	2
Mathematics + Mathematics (Further) + Physics	1.12	2.13	3
English Literature + History + Religious Studies	0.91	0.66	8
English Literature + History + Psychology	0.85	0.82	7
Economics + Geography + Mathematics	0.73	0.49	17
Economics + Government & Politics + History	0.70	0.32	40
Biology + Chemistry + Psychology	0.69	1.65	4

Table C15: Top-10 combinations of A Level subjects, students enrolled in Historical and Philosophical studies

Combination of A Level subjects	%	Overall %	Overall Rank
English Literature + History + Religious Studies	4.42	0.66	8
English Literature + History + Psychology	3.04	0.82	7
English Literature + Government & Politics + History	3.01	0.62	11
English Literature + Geography + History	2.30	0.37	32
English Literature + History + Sociology	1.79	0.45	22
Biology + English Literature + History	1.31	0.25	50
Economics + English Literature + History	1.28	0.23	54
Economics + Government & Politics + History	1.28	0.32	40
English Literature + History + Mathematics	1.28	0.25	49
History + Psychology + Religious Studies	1.14	0.21	62

Table C16: Top-10 combinations of A Level subjects, students enrolled in Physical Sciences

Combination of A Level subjects	%	Overall %	Overall Rank
Chemistry + Mathematics + Physics	13.75	2.63	2
Biology + Chemistry + Mathematics	8.73	5.62	1
Mathematics + Mathematics (Further) + Physics	5.20	2.13	3
Chemistry + Mathematics + Mathematics (Further) + Physics	5.12	1.32	5
Biology + Chemistry + Geography	2.24	0.85	6
Biology + Chemistry + Psychology	1.82	1.65	4
Biology + Mathematics + Physics	1.81	0.66	9
Geography + Mathematics + Physics	1.81	0.45	21
Chemistry + Geography + Mathematics	1.69	0.24	51
Biology + Geography + Mathematics	1.44	0.35	35

Table C17: Top-10 combinations of A Level subjects, students enrolled in Social Studies

Combination of A Level subjects	%	Overall %	Overall Rank
Economics + Geography + Mathematics	2.85	0.49	17
Economics + History + Mathematics	2.45	0.45	20
Economics + Mathematics + Physics	1.80	0.63	10
Biology + Economics + Mathematics	1.66	0.38	31
Chemistry + Economics + Mathematics	1.66	0.42	25
Business Studies: Single + Economics + Mathematics	1.09	0.29	41
English Literature + Psychology + Sociology	1.05	0.57	12
Economics + Mathematics + Psychology	1.02	0.26	46
English Literature + Government & Politics + History	1.01	0.62	11
Economics + Government & Politics + Mathematics	0.97	0.18	71

Table C18: Top-10 combinations of A Level subjects, students enrolled in subjects allied to Medicine

Combination of A Level subjects	%	Overall %	Overall Rank
Biology + Chemistry + Mathematics	20.82	5.62	1
Biology + Chemistry + Psychology	9.88	1.65	4
Biology + Chemistry + Geography	3.07	0.85	6
Biology + Chemistry + History	2.15	0.54	14
Biology + Mathematics + Psychology	1.86	0.55	13
Biology + Chemistry + Physics	1.84	0.53	15
Biology + Chemistry + English Literature	1.80	0.34	36
Biology + Psychology + Sociology	1.51	0.38	28
Biology + Chemistry + Religious Studies	1.44	0.23	55
Biology + Physical Education/Sports Studies + Psychology	1.22	0.33	39

Table C19: Top-10 combinations of A Level subjects, students enrolled in Veterinary Science

Combination of A Level subjects	%	Overall %	Overall Rank
Biology + Chemistry + Mathematics	43.07	5.62	1
Biology + Chemistry + Geography	12.09	0.85	6
Biology + Chemistry + Physics	7.37	0.53	15
Biology + Chemistry + General Studies + Mathematics	5.01	0.29	43
Biology + Chemistry + Psychology	5.01	1.65	4
Biology + Chemistry + History	2.65	0.54	14
Biology + Chemistry + Mathematics + Physics	2.65	0.44	23
Biology + Chemistry + Spanish	2.06	0.13	106
Biology + Chemistry + English Literature	1.77	0.34	36
Biology + Chemistry + Mathematics + Mathematics (Further)	1.77	0.25	48

Appendix D: Performance in A Level subjects ~ breakdowns by students' background characteristics

Figures D1 to D5 below show the A Level performance (measured by the percentages of students who achieved the AAB threshold) by background characteristics, and broken down by type of HE institution.

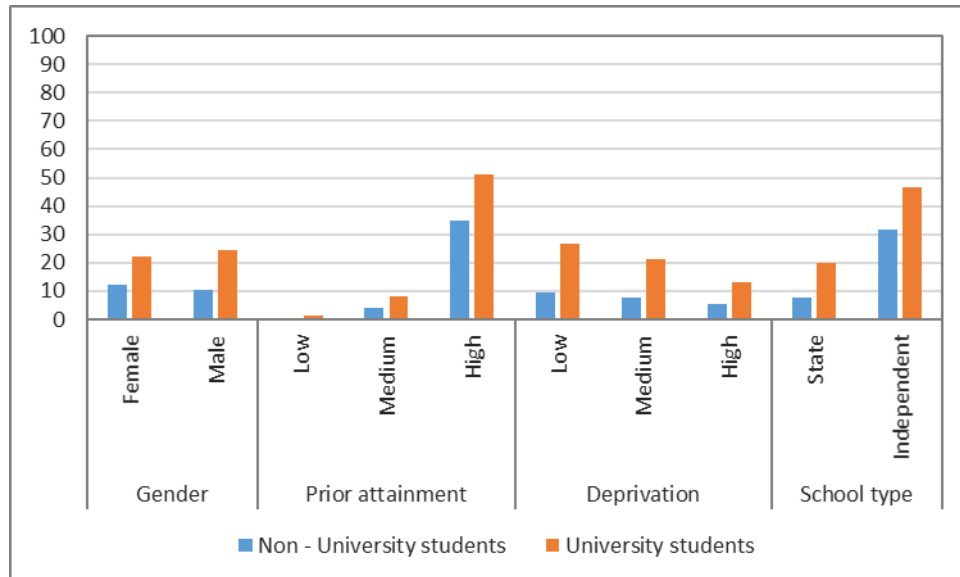


Figure D1: A Level performance, by background characteristics

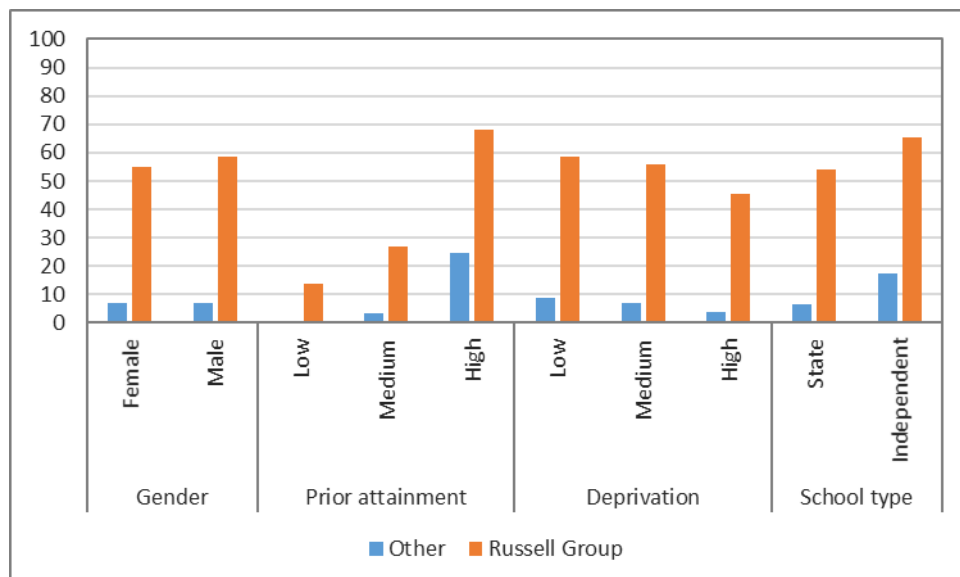


Figure D2: A Level performance, by background characteristics ~ students in Russell Group institutions

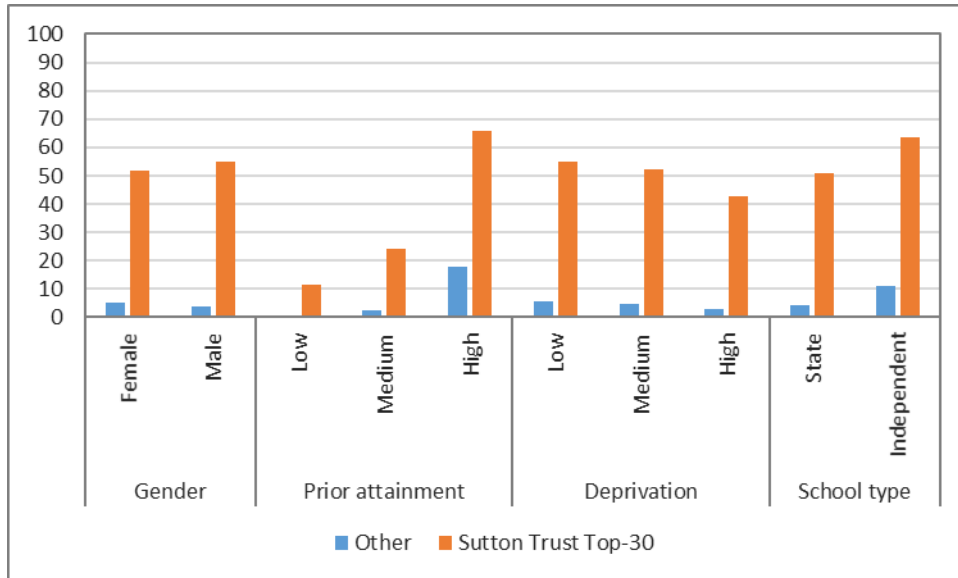


Figure D3: A Level performance, by background characteristics ~ students in Sutton Trust Top-30 institutions

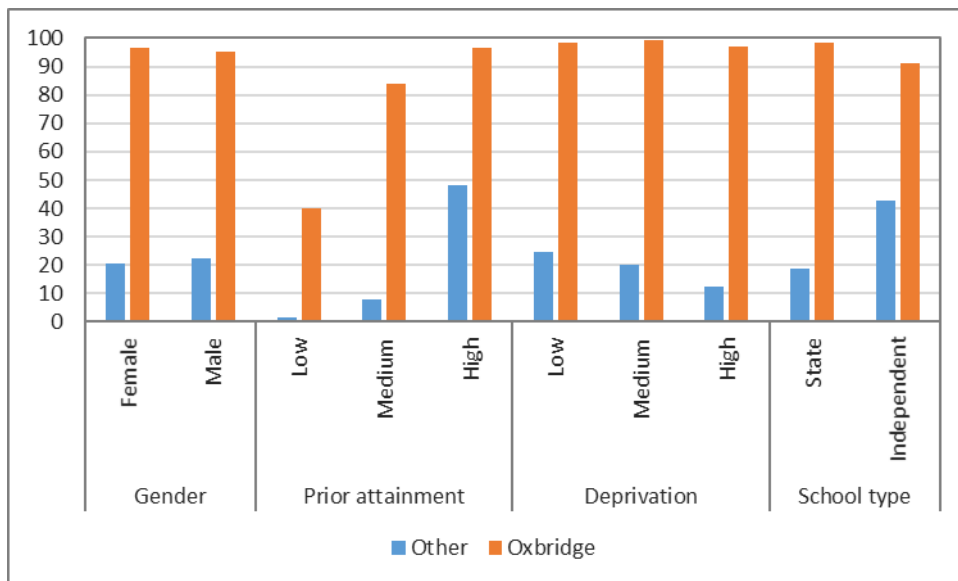


Figure D4: A Level performance, by background characteristics ~ students in Oxbridge

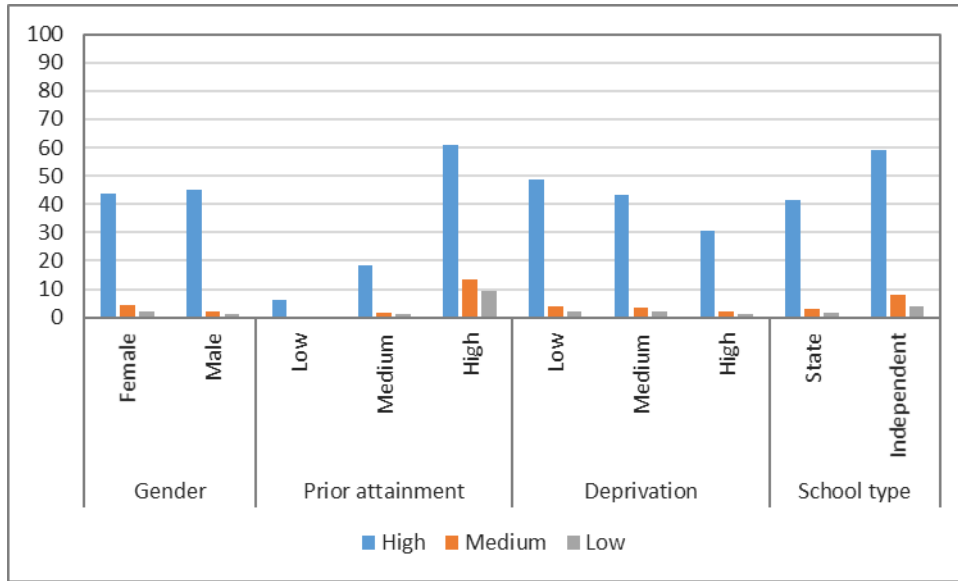


Figure D5: A Level performance, by background characteristics ~ overall ranking of the institution

Appendix E: Factors affecting enrolment in HE ~ regression analyses results

Table E1: Enrolment in HE ~ regression analyses including level of deprivation

Variable		Model A	
		Estimate (Standard Error)	p-value
Intercept		-1.229 (0.058)	<.0001
Gender	Male [Female]	-0.090 (0.010)	<.0001
Type of school	Independent [State]	-0.405 (0.056)	<.0001
Prior attainment		0.017 (0.001)	<.0001
Number of A Levels	2	0.163 (0.018)	<.0001
	3	0.194 (0.022)	<.0001
	4	0.497 (0.033)	<.0001
	5+ [1]	0.624 (0.085)	<.0001
Number of A Levels in facilitating subjects	1	0.070 (0.012)	<.0001
	2	0.107 (0.017)	<.0001
	3	0.175 (0.023)	<.0001
	4+ [0]	0.158 (0.051)	0.0019
A Level performance		0.026 (0.000)	<.0001
A Level specialism	Applied	-0.040 (0.038)	0.2977
	Expressive	-0.340 (0.028)	<.0001
	Humanities	0.162 (0.014)	<.0001
	Languages	0.092 (0.064)	0.1492
	Multi	0.054 (0.050)	0.2777
	STEM [None]	0.142 (0.020)	<.0001
Deprivation	High	-0.129 (0.013)	<.0001
	Medium	-0.129 (0.012)	<.0001
	[Low]		

Table E2: Enrolment in HE (students with 3+ A Levels) ~ regression analyses

Variable			Model A		Model B	
			Estimate (Standard Error)	p-value	Estimate (Standard Error)	p-value
Intercept			-0.862 (0.069)	<.0001	-0.898 (0.071)	<.0001
Gender	Male [Female]		-0.060 (0.011)	<.0001	-0.048 (0.031)	0.1228
Type of school	Independent [State]		-0.742 (0.031)	<.0001	-0.688 (0.049)	<.0001
Prior attainment			0.006 (0.002)	0.0001	0.006 (0.002)	<.0001
Number of A Levels	4		0.186 (0.022)	<.0001	0.187 (0.022)	<.0001
	5+ [3]		0.062 (0.067)	0.3582	0.067 (0.068)	0.3244
Number of A Levels in facilitating subjects	1		0.089 (0.016)	<.0001	0.087 (0.016)	<.0001
	2		0.118 (0.018)	<.0001	0.117 (0.018)	<.0001
	3		0.151 (0.023)	<.0001	0.154 (0.023)	<.0001
	4+ [0]		0.048 (0.044)	0.2776	0.062 (0.045)	0.1678
A Level performance			0.034 (0.000)	<.0001	0.033 (0.000)	<.0001
A Level specialism	Applied		-0.065 (0.039)	0.1007	0.006 (0.068)	0.9266
	Expressive		-0.293 (0.032)	<.0001	-0.416 (0.040)	<.0001
	Humanities		0.138 (0.017)	<.0001	0.179 (0.024)	<.0001
	Languages		0.097 (0.051)	0.0595	0.150 (0.075)	0.0449
	Multi		0.063 (0.049)	0.2028	0.175 (0.070)	0.0129
	STEM [None]		0.152 (0.021)	<.0001	0.114 (0.029)	<.0001
Type of school * A Level specialism	Independent	Applied			-0.160 (0.118)	0.1748
		Expressive			0.404 (0.097)	<.0001
		Humanities			-0.003 (0.046)	0.9504
		Languages			-0.123 (0.105)	0.2418
		Multi			-0.512 (0.122)	<.0001
		STEM [None]			-0.145 (0.048)	0.0025
Gender * A Level specialism	Male	Applied			-0.075 (0.082)	0.3614
		Expressive			0.349 (0.070)	<.0001
		Humanities			-0.102 (0.034)	0.0031
		Languages			-0.056 (0.106)	0.5974
		Multi			-0.060 (0.092)	0.5138
		STEM [None]			0.096 (0.036)	0.0076

Table E3: Enrolment at Russell Group institutions ~ regression analyses

Variable			Model A		Model B	
			Estimate (Standard Error)	p-value	Estimate (Standard Error)	p-value
Intercept			-11.256 (0.119)	<.0001	-11.196 (0.123)	<.0001
Gender	Male		0.120 (0.018)	<.0001	-0.021 (0.057)	0.7138
	[Female]					
Type of school	Independent		0.568 (0.036)	<.0001	0.561 (0.076)	<.0001
	[State]					
Prior attainment			0.091 (0.003)	<.0001	0.091 (0.003)	<.0001
Number of	4		0.017 (0.031)	0.5935	0.023 (0.031)	0.4637
A Levels	5+		0.212 (0.103)	0.0391	0.221 (0.103)	0.0315
	[3]					
Number of	1		0.428 (0.029)	<.0001	0.425 (0.029)	<.0001
A Levels in	2		0.820 (0.031)	<.0001	0.813 (0.031)	<.0001
facilitating	3		1.180 (0.037)	<.0001	1.170 (0.037)	<.0001
subjects	4+		1.151 (0.066)	<.0001	1.146 (0.066)	<.0001
	[0]					
A Level performance			0.125 (0.001)	<.0001	0.125 (0.001)	<.0001
A Level specialism	Applied		0.276 (0.079)	0.0005	0.324 (0.124)	0.009
	Expressive		-1.203 (0.089)	<.0001	-1.217 (0.110)	<.0001
	Humanities		0.532 (0.030)	<.0001	0.445 (0.041)	<.0001
	Languages		0.840 (0.081)	<.0001	0.981 (0.107)	<.0001
	Multi		0.347 (0.072)	<.0001	0.342 (0.095)	0.0003
	STEM		0.165 (0.034)	<.0001	0.130 (0.045)	0.0042
	[None]					
Parental Education	HE		0.040 (0.016)	0.0141	0.042 (0.016)	0.01
	[No HE]					
Type of school	Independent	Applied			-0.724 (0.276)	0.0088
*		Expressive			-0.294 (0.225)	0.1916
A Level specialism		Humanities			0.211 (0.079)	0.0076
		Languages			-0.301 (0.178)	0.0907
		Multi			0.284 (0.260)	0.2753
		STEM			-0.242 (0.081)	0.0029
		[None]				
Gender	Male	Applied			0.081 (0.159)	0.6117
*		Expressive			0.191 (0.198)	0.3361
A Level specialism		Humanities			0.147 (0.062)	0.017
		Languages			-0.234 (0.170)	0.1689
		Multi			-0.037 (0.136)	0.7873
		STEM			0.154 (0.062)	0.0136
		[None]				

Table E4: Enrolment at Sutton Trust Top-30 most selective institutions ~ regression analyses

Variable			Model A		Model B	
			Estimate (Standard Error)	p-value	Estimate (Standard Error)	p-value
Intercept			-12.122 (0.121)	<.0001	-12.056 (0.124)	<.0001
Gender	Male		0.244 (0.018)	<.0001	0.106 (0.055)	0.0552
	[Female]					
Type of school	Independent		0.650 (0.036)	<.0001	0.571 (0.076)	<.0001
	[State]					
Prior attainment			0.107 (0.003)	<.0001	0.107 (0.003)	<.0001
Number of	4		0.095 (0.032)	0.0032	0.098 (0.032)	0.0023
A Levels	5+		0.257 (0.119)	0.0307	0.266 (0.119)	0.0255
	[3]					
Number of	1		0.453 (0.028)	<.0001	0.453 (0.028)	<.0001
A Levels in	2		0.791 (0.030)	<.0001	0.793 (0.030)	<.0001
facilitating	3		1.166 (0.037)	<.0001	1.166 (0.037)	<.0001
subjects	4+		1.378 (0.076)	<.0001	1.368 (0.076)	<.0001
	[0]					
A Level performance			0.136 (0.001)	<.0001	0.136 (0.001)	<.0001
A Level specialism	Applied		0.152 (0.075)	0.0436	0.197 (0.120)	0.1000
	Expressive		-1.443 (0.084)	<.0001	-1.407 (0.103)	<.0001
	Humanities		0.509 (0.030)	<.0001	0.432 (0.040)	<.0001
	Languages		1.032 (0.090)	<.0001	1.041 (0.116)	<.0001
	Multi		0.356 (0.076)	<.0001	0.282 (0.100)	0.0046
	STEM		0.190 (0.034)	<.0001	0.103 (0.045)	0.0226
	[None]					
Parental Education	HE		0.136 (0.016)	<.0001	0.136 (0.016)	<.0001
	[No HE]					
Type of school	Independent	Applied			-0.689 (0.260)	0.0080
*		Expressive			-0.262 (0.215)	0.2230
A Level specialism		Humanities			0.220 (0.081)	0.0065
		Languages			-0.041 (0.213)	0.8470
		Multi			1.001 (0.325)	0.0020
		STEM			-0.090 (0.085)	0.2908
		[None]				
Gender	Male	Applied			0.077 (0.152)	0.6091
*		Expressive			-0.027 (0.191)	0.8866
A Level specialism		Humanities			0.119 (0.060)	0.0456
		Languages			-0.042 (0.196)	0.8303
		Multi			0.021 (0.143)	0.8832
		STEM			0.197 (0.061)	0.0013
		[None]				

Table E5: Enrolment at Oxbridge ~ regression analyses

Variable		Model A		Model B	
		Estimate (Standard Error)	p-value	Estimate (Standard Error)	p-value
Intercept		-35.021 (0.638)	<.0001	-34.589 (0.639)	<.0001
Gender	Male [Female]	0.225 (0.047)	<.0001	-0.417 (0.228)	0.0673
Type of school	Independent [State]	-0.096 (0.057)	0.0954	-0.370 (0.208)	0.0751
Prior attainment		0.325 (0.011)	<.0001	0.323 (0.011)	<.0001
Number of A Levels	4 5+ [3]	0.198 (0.062) 0.219 (0.114)	0.0014 0.0548	0.177 (0.062) 0.222 (0.114)	0.0043 0.051
Number of A Levels in facilitating subjects	1 2 3 4+ [0]	0.423 (0.246) 0.976 (0.239) 1.491 (0.243) 1.947 (0.254)	0.0859 <.0001 <.0001 <.0001	0.379 (0.240) 0.944 (0.233) 1.442 (0.237) 1.907 (0.248)	0.114 <.0001 <.0001 <.0001
A Level performance		0.259 (0.006)	<.0001	0.260 (0.006)	<.0001
A Level specialism	Applied Expressive Humanities Languages Multi STEM [None]	-0.483 (0.941) -1.488 (0.679) 0.281 (0.106) 0.455 (0.143) -0.548 (0.153) -1.277 (0.112)	0.6079 0.0284 0.0081 0.0014 0.0003 <.0001	-1.086 (1.578) -1.673 (0.895) 0.023 (0.140) 0.103 (0.205) -0.977 (0.215) -1.617 (0.145)	0.4912 0.0617 0.8708 0.6163 <.0001 <.0001
Parental Education	HE [No HE]	-0.115 (0.046)	0.0127	-0.119 (0.046)	0.0103
Type of school *	Independent				
A Level specialism	Applied Expressive Humanities Languages Multi STEM [None]			-0.199 (4.877) -0.065 (1.443) 0.114 (0.221) 0.256 (0.283) 0.442 (0.312) 0.373 (0.215)	0.9675 0.9643 0.6053 0.3672 0.1568 0.0825
Gender *	Male				
A Level specialism	Applied Expressive Humanities Languages Multi STEM [None]			0.919 (2.046) 0.730 (1.423) 0.622 (0.240) 1.025 (0.306) 0.648 (0.311) 0.673 (0.235)	0.6534 0.6081 0.0096 0.0008 0.0373 0.0041

Table E6: Enrolment at high ranked institutions ~ regression analyses

Variable			Model A		Model B	
			Estimate (Standard Error)	p-value	Estimate (Standard Error)	p-value
Intercept			-6.900 (0.107)	<.0001	-6.881 (0.109)	<.0001
Gender	Male		0.382 (0.017)	<.0001	0.386 (0.047)	<.0001
	[Female]					
Type of school	Independent		0.502 (0.040)	<.0001	0.273 (0.076)	0.0003
	[State]					
Prior attainment			0.097 (0.002)	<.0001	0.097 (0.002)	<.0001
Number of	4		0.136 (0.034)	<.0001	0.135 (0.034)	<.0001
A Levels	5+		0.567 (0.155)	0.0002	0.568 (0.155)	0.0002
	[3]					
Number of	1		0.166 (0.022)	<.0001	0.163 (0.022)	<.0001
A Levels in	2		0.400 (0.026)	<.0001	0.397 (0.026)	<.0001
facilitating	3		0.726 (0.035)	<.0001	0.727 (0.035)	<.0001
subjects	4+		1.215 (0.105)	<.0001	1.210 (0.105)	<.0001
	[0]					
A Level performance			0.073 (0.001)	<.0001	0.073 (0.001)	<.0001
A Level specialism	Applied		0.158 (0.058)	0.0064	0.232 (0.095)	0.0147
	Expressive		-0.112 (0.051)	0.027	-0.078 (0.063)	0.2136
	Humanities		0.278 (0.026)	<.0001	0.249 (0.035)	<.0001
	Languages		0.735 (0.115)	<.0001	0.761 (0.144)	<.0001
	Multi		0.214 (0.083)	0.0097	0.285 (0.113)	0.0114
	STEM		0.167 (0.032)	<.0001	0.109 (0.043)	0.0117
	[None]					
Parental Education	HE		0.041 (0.016)	0.0091	0.043 (0.016)	0.0069
	[No HE]					
Type of school	Independent	Applied			-0.146 (0.202)	0.4707
*		Expressive			-0.220 (0.160)	0.1681
A Level specialism		Humanities			0.360 (0.084)	<.0001
		Languages			0.448 (0.308)	0.1455
		Multi			0.627 (0.338)	0.0633
		STEM			0.202 (0.093)	0.0292
		[None]				
Gender	Male	Applied			-0.119 (0.118)	0.3135
*		Expressive			-0.053 (0.109)	0.6270
A Level specialism		Humanities			-0.022 (0.051)	0.6654
		Languages			-0.342 (0.251)	0.1729
		Multi			-0.259 (0.154)	0.0929
		STEM			0.053 (0.056)	0.3359
		[None]				

Table E7: Enrolment at a HE institution ~ effect of individual A Level subjects

A Level subject	Russell Group			Sutton Trust Top-30			Oxbridge			High Ranked		
	Estimate	Standard Error	p-value	Estimate	Standard Error	p-value	Estimate	Standard Error	p-value	Estimate	Standard Error	p-value
Mathematics	0.157	0.040	<.0001	0.289	0.043	<.0001	0.855	0.081	<.0001	0.459	0.044	<.0001
Psychology	-0.181	0.039	<.0001	-0.038	0.042	0.3704	0.281	0.110	0.0104	0.108	0.042	0.0108
Biology	0.083	0.039	0.0331	0.091	0.043	0.0344	0.522	0.078	<.0001	0.222	0.044	<.0001
History	0.323	0.038	<.0001	0.400	0.042	<.0001	1.114	0.073	<.0001	0.420	0.043	<.0001
English Literature	0.231	0.039	<.0001	0.285	0.043	<.0001	1.343	0.078	<.0001	0.363	0.043	<.0001
Chemistry	0.213	0.038	<.0001	0.306	0.043	<.0001	0.387	0.069	<.0001	0.469	0.045	<.0001
Geography	0.274	0.040	<.0001	0.423	0.044	<.0001	0.562	0.088	<.0001	0.323	0.045	<.0001
Sociology	-0.089	0.043	0.0384	0.039	0.046	0.3909	0.105	0.197	0.5944	0.214	0.045	<.0001
Physics	0.157	0.041	0.0001	0.339	0.045	<.0001	0.527	0.074	<.0001	0.336	0.048	<.0001
Economics	0.029	0.041	0.4852	0.205	0.045	<.0001	0.207	0.082	0.0114	0.626	0.047	<.0001
Business Studies	-0.311	0.045	<.0001	-0.187	0.048	<.0001	-1.303	0.446	0.0035	0.184	0.046	<.0001
Religious Studies	0.245	0.042	<.0001	0.345	0.046	<.0001	1.143	0.097	<.0001	0.373	0.046	<.0001
English Language	0.061	0.045	0.1732	0.148	0.048	0.0020	0.880	0.157	<.0001	0.136	0.047	0.0036
Media/Film/TV	-0.555	0.056	<.0001	-0.314	0.056	<.0001	0.133	0.412	0.7472	0.078	0.048	0.1079
A&D Fine Art	-0.688	0.055	<.0001	-0.655	0.057	<.0001	0.206	0.152	0.1758	0.017	0.053	0.7509
Mathematics: Further	0.146	0.043	0.0007	0.680	0.052	<.0001	0.490	0.068	<.0001	1.128	0.069	<.0001
Government & Politics	0.486	0.046	<.0001	0.548	0.050	<.0001	0.994	0.102	<.0001	0.719	0.052	<.0001
A&D Photography	-0.920	0.075	<.0001	-0.834	0.072	<.0001	-0.273	0.574	0.6341	-0.054	0.056	0.3307
General Studies	0.210	0.041	<.0001	0.326	0.041	<.0001	-0.135	0.097	0.1671	0.257	0.041	<.0001
English Language & Literature	-0.054	0.055	0.3227	0.048	0.056	0.3920	0.846	0.221	0.0001	0.147	0.052	0.0046
Drama & Theatre Studies	-0.204	0.055	0.0002	-0.155	0.057	0.0061	0.401	0.192	0.0368	0.060	0.053	0.2609
Physical Education/Sports Studies	-0.625	0.057	<.0001	-0.588	0.058	<.0001	-0.673	0.424	0.1126	-0.307	0.053	<.0001
Law	-0.138	0.053	0.0092	0.010	0.055	0.8525	0.796	0.223	0.0004	0.190	0.051	0.0002
Product Design	-0.819	0.067	<.0001	-0.849	0.068	<.0001	-0.569	0.302	0.0594	-0.015	0.059	0.8018
French	0.503	0.053	<.0001	0.578	0.058	<.0001	1.250	0.085	<.0001	0.643	0.064	<.0001
Spanish	0.383	0.054	<.0001	0.563	0.059	<.0001	0.613	0.106	<.0001	0.514	0.064	<.0001
Art & Design	-0.778	0.070	<.0001	-0.779	0.071	<.0001	-0.264	0.244	0.2793	-0.111	0.062	0.0743
Film Studies	-0.482	0.080	<.0001	-0.359	0.077	<.0001	0.368	0.416	0.3757	0.022	0.062	0.7233
ICT	-0.340	0.072	<.0001	-0.281	0.071	<.0001	0.231	0.608	0.7037	0.070	0.059	0.2357
Computer Studies /Computing	-0.027	0.062	0.6618	0.054	0.066	0.4072	0.542	0.156	0.0005	0.162	0.064	0.0119
A&D Graphics	-0.953	0.100	<.0001	-0.929	0.096	<.0001	-0.109	0.531	0.8370	-0.053	0.071	0.4577
Music	0.069	0.069	0.3212	0.210	0.073	0.0039	1.253	0.142	<.0001	0.213	0.074	0.0041
Classical Civilisation	0.453	0.068	<.0001	0.734	0.072	<.0001	1.303	0.156	<.0001	0.426	0.074	<.0001
A&D Textiles	-1.091	0.117	<.0001	-1.110	0.112	<.0001	0.278	0.607	0.6464	-0.118	0.079	0.1346
German	0.431	0.072	<.0001	0.558	0.078	<.0001	0.899	0.115	<.0001	0.400	0.085	<.0001

