

Widening Participation at the University of Edinburgh (2): entry, progression and degree outcomes of A-level qualified students

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Summary

The aim to increase levels of participation in higher education by disadvantaged students is a priority for the Scottish Government and Scottish Higher Education institutions. The University of Edinburgh is committed to widening participation, and has developed a number of initiatives to encourage more prospective students from under-represented groups. Since 2004 the University has pioneered the use of contextual data during the admissions process to identify disadvantage students with the potential to benefit from the academic experience it offers, and enable their entry with slightly lower prior qualifications. This report describes a statistical analysis of patterns of the entry, progression and degree outcomes of a sample of young students with GCE A-level qualifications entering the University at the start of this policy.

- A-level qualified students comprised almost half (45%) of the sample of students studying programmes selected for the analysis.
- The background characteristics of A-level qualified students differed from the SQA-qualified: they tended to be older, were more likely to be female, and were less likely to have attended a comprehensive school (26% vs 76%).
- Only 8% of the A-level qualified sample was from a non-traditional background relevant to widening participation policy (WP-indicated), compared with 34% of the SQA-qualified sample.
- Differences in average prior qualification scores between WP-indicated and other A-level qualified students were quite small, but WP-indicated students were less likely to have achieved AAA (29% of WP-indicated students had three or more A-grade passes compared with 43% of other A-level qualified students).
- The majority of A-level qualified students, including WP-indicated students, achieved good degrees.
- Prior qualifications were the main factor predicting degree outcomes, and WP-indicated students achieved as good outcomes as their peers with the same prior qualification scores.

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- In Humanities and Social Science (HSS) WP-indicated students were more likely to have achieved a 1st class degree – all other things being equal.
- Comparison of degree outcomes from the Highers and A-level qualified samples suggests that WP-indicated students with A-levels were not disadvantaged to the same extent as those who were SQA qualified. The analysis raises questions about the characteristics of WP-indicated students entering the University, and their levels of preparedness for degree-level study.

Introduction

Widening participation in higher education (HE) is a priority for the Scottish Government and Scottish HE institutions. HE provides many benefits to graduates, including access to professional occupations and higher earning potential. HE also provides benefits to society in terms of a well-educated population and highly skilled workforce (Milburn 2009). For too long the benefits of HE have been unequally distributed, with very low levels of participation among young people from low social class backgrounds or areas of deprivation (Cree et al 2006). Current policies recognise the need to widen participation in the interests of equality, fairness and social justice.

Strategies for widening participation have placed increasing emphasis on the policies and practices of individual universities. Institutions are encouraged to engage in outreach activities to raise aspirations, to develop new pathways into HE, to adopt recruitment strategies which may widen participation, to introduce 'fair admissions' procedures, to offer bursaries, fee waivers and other forms of financial support, and to organise their programmes in a way to attract members of under-represented groups. Most recently, in Scotland the Post-16 Education Bill (passed in 2013) places considerable emphasis on widening access and reinforces the duty on universities to recruit and retain more students from disadvantaged backgrounds by including clearly defined targets in the outcome agreements set between the Scottish Funding Council (SFC) and each individual university (Universities Scotland 2012).

The University of Edinburgh is committed to widening participation, increasing diversity and providing equality of opportunity for all prospective and current students (UofE Strategic Plan). It has developed a number of initiatives to encourage more prospective students from under-represented groups (Hood 2010). Initially, a major obstacle was the low level of applications from prospective students in the less advantaged groups, which in turn was linked to their relatively low prior qualifications (Cree et al 2006). In order to address this problem, in 2004 the University introduced the use of contextual data during the admissions process to identify disadvantaged students with

the potential to benefit from the academic experience it offers, and enable their entry with slightly lower prior qualifications.

This Report describes a statistical analysis of patterns of the entry, progression and degree outcomes of a sample of young students with GCE qualifications entering the University since the introduction of contextual data in admissions.

About the study

The aim of the study was to explore patterns of entry, progression and outcomes, and identify similarities and differences between students admitted to the University on the basis of contextual data and other students. The analysis is based on student records for a sample of young students who started their degree courses in selected subjects between 2004 – 2006. The subjects included were:

Humanities & Social Science (HSS)	Science & Engineering (SE)	Medicine & Veterinary Medicine (MVM)
Architecture	Biology	Medicine
Business Studies	Chemistry	Veterinary Medicine
Divinity	Mathematics	
English Literature	Physics	
History		
Law		
Psychology		
Sociology		

This report focuses on students whose main prior qualifications were from General Certificate of Education (GCE) A-level – 45% of the total sample - most of whom were not domiciled in Scotland but in the rest of the United Kingdom (RUK).

The report looks first at the indicators of widening participation that are used to identify students from disadvantaged backgrounds (WP-indicated) and describes differences in entry qualifications between WP-indicated and other students. It then describes their progression and degree outcomes, and statistical models used to analyse differences in outcomes associated with prior qualifications and WP-indicators.

The use of contextual data to widen participation

The use of contextual data is an attempt to make admission to the University fairer and more socially inclusive. Normal entry requirements to the University are extremely high, and the strong competition for places favours highly-qualified applicants from high social class backgrounds and schools with a strong tradition of university entry. However, applicants from disadvantaged backgrounds and schools may have academic potential that is obscured by their relatively lower entry qualifications (Admissions to HE Review 2004). Since 2004 the University of Edinburgh has contextual data to identify disadvantaged students during the admissions process. For entry to the Colleges of Humanities & Social Science and Science & Engineering, all offers are made within a range (e.g. from BBB to AAA). An offer made to a WP-indicated applicant may state conditions at the lower end of the range.

The availability of contextual data differs according to country of domicile. For students who are not Scottish domiciled there are two contextual measures used as widening-participation (WP) indicators in admissions:

(1) The two lowest quintiles of a classification of schools based on average prior qualifications per school. (This is slightly different to the classification of schools used for Scottish-domiciled students, which is based on average participation). There are considerable differences between schools in the average qualifications of their pupils and in the proportion who go on to HE. For example, students from independent schools and grammar schools have very high average qualifications and very high entry rates to the most prestigious universities. Studies elsewhere have identified school effects on prior qualifications, and suggested that students who enter university from low performing schools are likely to achieve more highly than would be predicted by their prior qualifications (Hoare & Johnston 2010, Naylor and Smith 2002, Ogg et al 2009).

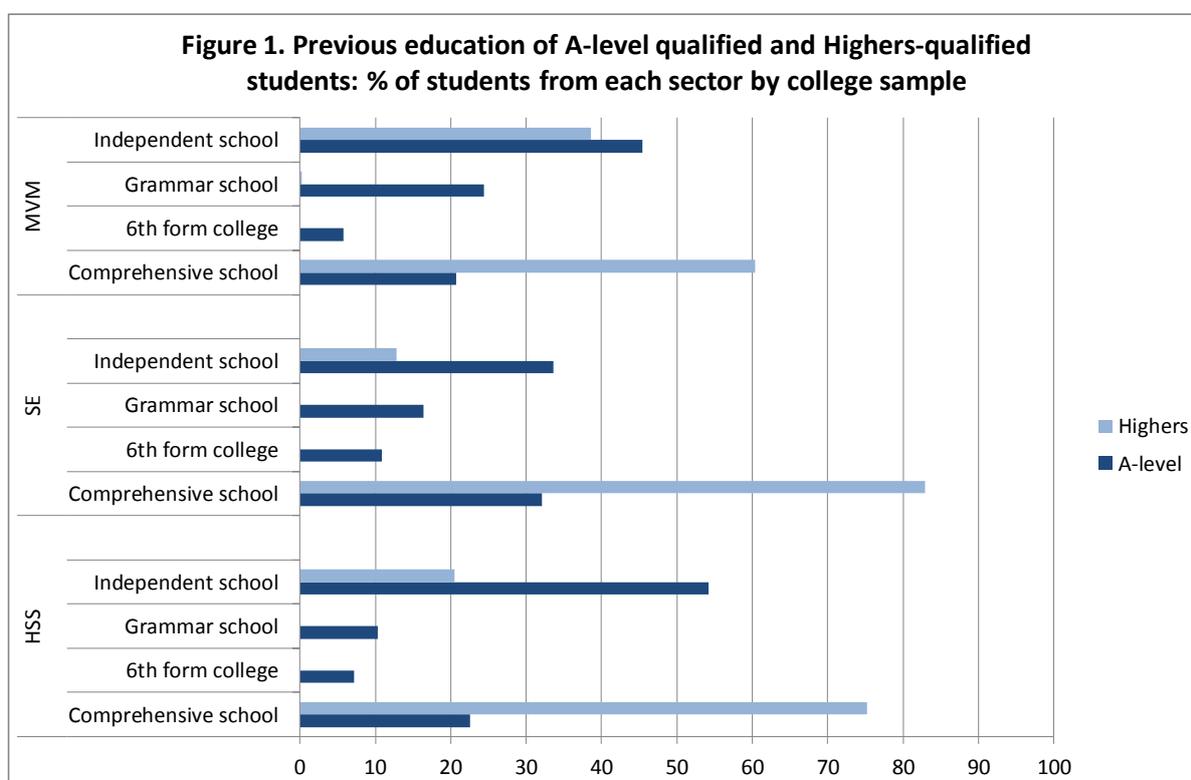
(2) The lowest quintile of the “young participation rate” (YPR) based on a measure of “participation in local areas” (POLAR2)¹ provided by the Higher Education Funding Council for England (HEFCE). The YPR is based on the HE participation rates of people who were aged 18 between 2000 and 2004 and entered an HE course in a UK higher education institution or GB further education college, aged 18 or 19, between academic years 2000-01 and 2005-06. The YPR is divided into quintiles with 1 representing the lowest participation.

¹ <http://www.hefce.ac.uk/whatwedo/wp/ourresearch/polar/polar2/>

Patterns of entry

The study found that just 8% of the A-level qualified students in the sample had at least one WP-indicator (compared with 34% of SQA-qualified students). There were fewer WP-indicated students in Medicine and Veterinary Medicine (MVM: 3%) than in Science and Engineering (SE: 8%) or Humanities and Social Science (HSS: 10%).

A-level and Highers-qualified students also differed with respect to the types of school they had attended (Figure 1). Although school type is not used to contextualise admissions, it may be a source of educational advantage/disadvantage that influences students' prior qualifications, progression and outcomes. Just over a quarter of A-level qualified students had previously attended a comprehensive school compared with three-quarters of the Highers-qualified sample. In MVM a substantial minority of students came from independent schools (45% of A-level qualified and 39% of Highers-qualified). In SE a smaller proportion of both A-level and Highers-qualified students had attended independent schools (34% of A-level qualified and 13% of Highers-qualified). However, the largest contrast is in HSS, where 54% of A-level qualified (and 21% of Highers-qualified) students had previously attended independent schools.

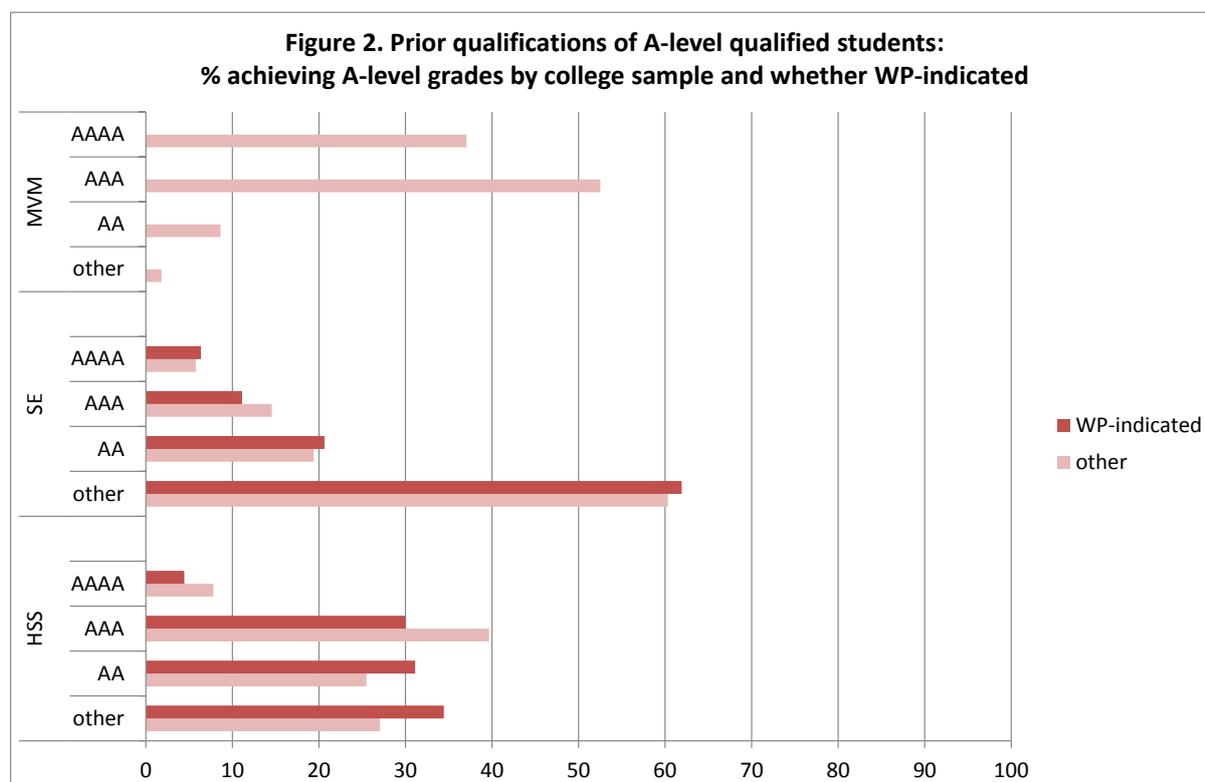


There were also demographic differences between the A-level and Highers-qualified samples: A-level qualified students were more likely to be female (61% vs 56%) and older (41% compared with 9% were aged 19 or over).

Prior qualifications

Prior qualifications are the main criterion for entry to the University, with most courses requiring A-level qualified entrants to achieve three A-levels at grades A or B. Analysis of the student records show the range of prior qualifications was much narrower for A-level qualified students than was the case for Highers-qualified students. Although WP-indicated entrants tended to have lower prior attainment than other students, the differences were quite small (Figure 2).

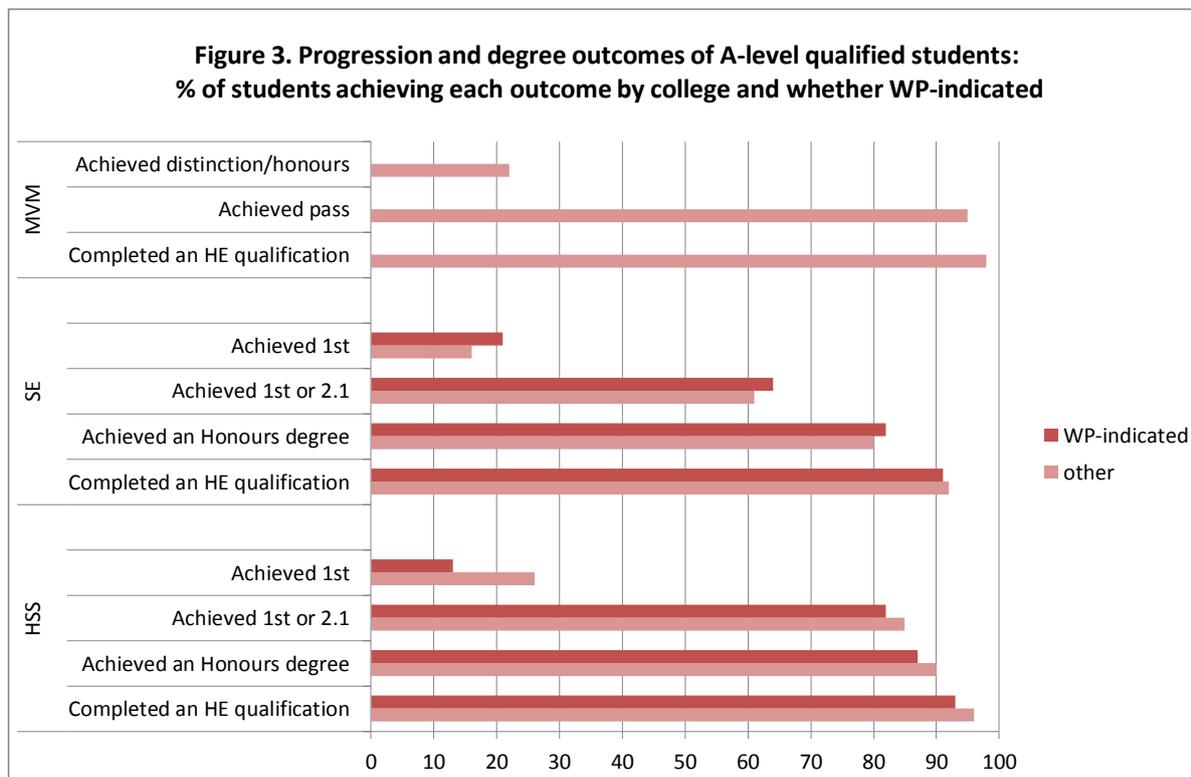
Some 90% of entrants to MVM had achieved three or more A-level passes at grade A². Average prior attainment was lower in SE than MVM: one fifth of SE students had three or more A-level passes at grade A (17% of WP-indicated students and 20% of other students). The attainment gap between WP-indicated students and other students was wider in HSS (34% of WP-indicated students achieved 3+ A-levels at grade A compared with 47% of other students).



² In MVM the numbers of WP-indicated students in the A-level qualified sample are too small to report.

Progression and degree outcomes

Most students, including those who were WP-indicated, successfully completed an HE qualification, and there was little difference in the outcome of WP-indicated students and other students. The types of degree awarded differed between colleges, as shown by Figure 3.



In MVM the degrees awarded to the majority of students were classed simply as a pass, with a very small minority passing “with distinction” or “honours”. In SE and HSS degrees were differentiated into classes of Honours: in SE WP-indicated students appear slightly more likely than other A-level qualified students to achieve the higher classes of Honours, whereas in HSS WP-indicated students appear less likely to achieve the highest classes of Honours.

Factors influencing progression and degree outcomes

Statistical models enable us to analyse the effects of contextual variables and prior qualifications on students’ progression and outcomes while controlling for all other factors. Detailed results of the models are shown in the Appendix. The first model looked at the overall effect of WP, and showed the following results:

- Prior qualifications were the key factors influencing each degree outcome.
- After taking account of prior qualifications, there was no difference between WP-indicated students and their peers in the likelihood of achieving any of the degree outcomes.

A further statistical model considered the effect of each contextual variable separately, and gave broadly similar results, with prior qualifications being the most significant factors.

- There was no difference in any of the outcomes for students from low participation neighbourhoods.
- Students from school band E were less likely to achieve the top two classes of degree than other students, and students from school band D were less likely to get a top class degree. School band made no difference to whether they completed a qualification or gained an Honours degree.
- Among A-level qualified students, those for whom school band is not recorded (possibly because they did not come straight from school) were less likely to achieve a top class degree – this contrasts with the findings for the Highers-qualified sample (for whom school band unrecorded was associated with a greater chance of getting a top degree).
- After taking account of prior qualifications and school band, the type of school attended did not have further influence on any of the four outcomes.

Further statistical models focused on progression and outcomes in each college, but the numbers of WP-indicated students in MVM were too small for analysis.

- In HSS only: WP-indicated students were more likely than their peers to achieve a 1st class degree, all other things being equal. (The results of the model contradict the apparent disadvantage suggested by Figure 3).
- In SE there was no difference between WP and other students in achievement of any of the four outcomes.

Issues arising from the study

The results confirm that prior qualifications are the main factor determining degree outcomes, so that students with the highest A-level qualifications are most likely to progress and achieve good degree outcomes. On average, WP-indicated students had slightly lower prior qualifications than other students, and achieved similar outcomes to their peers with the same levels of prior qualifications.

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However, it is encouraging to note that there is evidence of WP-indicated students in HSS being more likely to achieve a 1st class degree than would have been predicted by their prior qualifications. It would be interesting to investigate further the factors leading to this positive result.

There were relatively few WP-indicated students with A-level qualifications, but these appear to have been less disadvantaged in their progression and outcomes than was the case for WP-indicated students with Highers qualifications. Whereas analysis of the Highers-qualified sample found a negative effect of WP on achieving the top two classes of degree, there was no matching effect in the analysis of the A-level qualified sample. We may speculate that these differences arise from personal characteristics of students in each sample (eg more A-level qualified students come from the rest of the UK, and this may indicate more considered and determined choice of institution and programme), or the level of preparedness for degree-level study associated with more specialist A-level courses.

References

- Admissions to Higher Education Review (2004) **Fair admissions to higher education: recommendations for good practice** (The Schwartz report), <http://www.admissions-review.org.uk/>
- Cree, V.E, Croxford, L., Halliwell, J., Iannelli, C., Kendall, L. and Winterstein, D. (2006) Widening Participation at an Ancient Scottish University, *Scottish Affairs*, 56 (Summer 2006), 102-130
- Hoare, A. and Johnston, R. (2010) Widening participation through admissions policy – a British study of school and university performance, *Studies in Higher Education* 2010, 1-21.
- Hood, K. (2010) **The University of Edinburgh Widening Participation Background Briefing**, www.sra.ed.ac.uk
- Milburn, A. (2010) **Unleashing Aspirations: The Final report of the panel on fair Access to the Professions**, <http://www.bis.gov.uk/assets/biscore/corporate/migratedd/publications/p/panel-fair-access-to-professions-final-report-21july09.pdf>
- Naylor, R. and Smith, J. (2002) **Schooling Effects on Subsequent University Performance: evidence from the UK University Population**, Warwick Economic Research Papers, no 657, University of Warwick.
- Ogg, T., Zimdars, A. and Heath, A. (2009) Schooling effects on degree performance: a comparison of the predictive validity of aptitude testing and secondary school grades at Oxford University, *British Educational Research Journal*, 35 (5) 781-807.
- SFC (2011) **Learning for All: Fifth update report on measures of success**, www.sfc.ac.uk
- Universities Scotland (2012) **“Outcome agreements demonstrate level of university commitment to deliver for Scotland”**. <http://www.universities-scotland.ac.uk/index.php?mact=News,cntnt01,detail,0&cntnt01articleid=134&cntnt01returnid=23>

Appendix

Appendix Table 1. Binary Logistic regression model to predict outcomes (all students in selected programmes)

Completed a qualification				
	B	S.E.	Sig.	Exp(B)
WP-indicated	0.38	0.32	0.24	1.46
A-level score	0.38	0.11	0.00	1.47
% achieved outcome per subject	0.11	0.02	0.00	1.11
Reference category	2.30	0.62	0.00	10.02
Achieved Honours degree (HSS & SE only)				
	B	S.E.	Sig.	Exp(B)
WP-indicated	0.20	0.25	0.42	1.22
A-level score	0.55	0.08	0.00	1.74
% achieved outcome per subject	0.05	0.01	0.00	1.06
Reference category	1.74	0.47	0.00	5.67
Achieved top two classes of degree (2.1 or 1st, Pass in MVM)				
	B	S.E.	Sig.	Exp(B)
WP-indicated	0.19	0.21	0.36	1.21
A-level score	0.64	0.07	0.00	1.89
% achieved outcome per subject	0.05	0.00	0.00	1.05
Reference category	1.13	0.40	0.01	3.08
Achieved top class degree (1st class honours, of Honours/Distinction in MVM)				
	B	S.E.	Sig.	Exp(B)
WP-indicated	0.40	0.23	0.08	1.50
A-level score	0.63	0.07	0.00	1.87
% achieved outcome per subject	0.05	0.00	0.00	1.05
Reference category	-2.26	0.45	0.00	0.10

Notes

The reference category is:

- not WP-indicated;
- has A-level score at the mean level for the sample;
- studying a subject for which outcomes are at the mean for the sample.

A-level score is a normal score, and the estimates represent the effect of a score that is one standard deviation above the sample mean.

“% achieved outcome per subject” is a subject-level variable, and the estimates represent the effect of a subject where the % achieving the outcome is 1% above the sample mean.

Appendix Table 2. Binary logistic regression model to predict effects of WP indicators on outcomes (all students in selected programmes)

Achieved an Honours degree (HSS & SE only)				
	B	S.E.	Sig.	Exp(B)
Low participation neighbourhood	0.21	0.43	0.62	1.23
School band D	-0.09	0.34	0.79	0.91
School band E	-0.91	0.56	0.10	0.40
School band not recorded	-0.33	0.31	0.30	0.72
Independent school	0.28	0.18	0.13	1.32
6th form college	-0.02	0.25	0.95	0.98
Grammar school	0.06	0.23	0.79	1.06
A-level score	0.55	0.08	0.00	1.73
% achieved outcome per subject	0.05	0.01	0.00	1.05
Reference category	2.02	0.15	0.00	7.55
Achieved top two classes of degree (2.1 or 1st, Pass in MVM)				
	B	S.E.	Sig.	Exp(B)
Low participation neighbourhood	-0.37	0.32	0.25	0.69
School band D	0.03	0.31	0.93	1.03
School band E	-1.22	0.51	0.02	0.29
School band not recorded	-0.31	0.28	0.27	0.73
Independent school	-0.04	0.15	0.81	0.96
6th form college	-0.03	0.22	0.91	0.97
Grammar school	-0.32	0.19	0.09	0.72
A-level score	0.65	0.07	0.00	1.92
% achieved outcome per subject	0.05	0.00	0.00	1.05
Reference category	1.60	0.13	0.00	4.97
Achieved top class degree (1st class honours, of Honours/Distinction in MVM)				
	B	S.E.	Sig.	Exp(B)
Low participation neighbourhood	-0.01	0.34	0.97	0.99
School band D	-0.81	0.34	0.02	0.44
School band E	-0.84	0.67	0.21	0.43
School band not recorded	-0.80	0.34	0.02	0.45
Independent school	-0.23	0.15	0.13	0.79
6th form college	0.10	0.23	0.66	1.11
Grammar school	-0.01	0.19	0.94	0.99
A-level score	0.64	0.07	0.00	1.90
% achieved outcome per subject	0.05	0.00	0.00	1.05
Reference category	-1.32	0.12	0.00	0.27

Notes for Table 2

The Reference category is:

- YPR 2-5
- School band A-C
- Comprehensive school
- has an A-level score at the mean level for the sample;
- studying a subject for which outcomes are at the mean for the sample.