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Does what you study at age 14–16 matter for educational transitions post-16?

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ABSTRACT

This paper considers whether subject choice at 14–16 influences post-16 transitions, taking into account prior academic attainment and school characteristics, and if so, whether this accounts for socioeconomic, gender, and ethnic differences in access to post-16 education. We consider post-16 progression to full-time education, A-levels, and studying two or more facilitating subjects at A-level. We use ‘Next Steps’, a study of 16,000 people born in England in 1989–1990, linked to administrative education records (the National Pupil Database). We find that students pursuing an EBacc-eligible curriculum at 14–16 had a greater probability of progression to all post-16 educational outcomes, while the reverse was true for students taking an applied GCSE subject. Curriculum differences did not explain the social class differences in post-16 progression, but an academic curriculum was equally valuable for working-class as for middle-class pupils. Pursuing an EBacc-eligible curriculum particularly strongly increased the chances of girls and white young people staying in the educational pipeline, whereas applied subjects were particularly detrimental for girls. An EBacc-eligible curriculum at age 14–16 increased the chances of studying subjects preferred by Russell Group universities at A-level.

KEYWORDS

Subject choice; EBacc; applied subjects; curriculum; post-16 transitions

Introduction

The 2002 Education Act, and the 2001 White Paper *Schools achieving success* (Department for Education and Skills, 2001) which preceded it, promoted choice and diversity in the curriculum. Stated aims were to ‘break down the traditional prejudice against vocational education’ and to encourage schools to provide ‘a broader range of options, more suited to the individual student’s needs’ (p. 33). The planned curricular diversity was to operate both within and between schools, so that the education system could ‘cater significantly better for the diverse requirements and aspirations of today’s young people’ (Department for Education and Skills, 2001). Young people continued to study for GCSEs (General Certificate of Secondary Education), but numerous new qualifications were introduced, including vocational GCSEs. The subsequent Conservative government has moved to revert to a more

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traditional curriculum, which has also proved controversial. Amidst this rapidly changing policy landscape, an empirical assessment of the consequences of curriculum diversity at 14–16 on pupils' subsequent transitions is required.

This paper examines the impact of the curriculum studied by pupils aged 14–16 on whether they continued in education post-16, and if so, what kind of 16–18 curriculum they pursued. We consider post-16 progression to the following outcomes: (1) full-time education or training; (2) A-levels (A-levels remain the standard 'university-track' qualification in England);¹ and (3) A-level subjects which have been identified as highly valued by elite universities ('facilitating' subjects). This paper makes a novel contribution in a number of ways. Firstly, it examines the effect of choices during compulsory education, before young people are able to 'select out' of education. In addition, whereas previous literature has focused on participation in individual GCSE subjects (Davies, Telhaj, Hutton, Adnett, & Coe, 2008), this paper explores the impact of taking an academic or applied curriculum as a whole.

The combination of the proliferation of GCSE and 'equivalent' qualifications in the early 2000s with league tables of school performance led to concerns regarding schools maximising their performance at the benchmark five A*–C level by putting students in for 'soft' options, and avoiding more challenging subjects (Wolf, 2011). Institutional constraints are likely to be one factor determining students' curriculum 'choices', and there is evidence that schools that performed badly on the raw five+ GCSE grade A*–C measure moved most rapidly towards vocational courses and made the most substantial gains as a result (Jin, Muriel, & Sibieta, 2011). Other papers in this Special Issue suggest that pupils' choices may be shaped by their school (Anders, Henderson, Moulton, & Sullivan, 2018; Barrance & Elwood, 2018; Smyth, 2018).

Our key question in this paper is whether 14–16 subject 'choices' had an effect on subsequent educational transitions. Did taking 'lower status' subjects have a direct influence on progression to post-16 education, and on access to those curricula and qualifications which in turn are likely to open the door to higher education?

Literature review

The existing literature shows that subject choice at age 16–18 matters for educational trajectories, income, and social mobility (for example Chevalier, 2011; Dilnot, 2016; Dolton & Vignoles, 2002). Previous research has found that there are large differentials in subject choice by social background at GCSE (e.g. Henderson, Sullivan, Anders, & Moulton, 2017) and A-level (e.g. Dilnot, 2016). More specifically, young people from higher socioeconomic backgrounds (SES) are more likely to take facilitating subjects (see for example, Dilnot, 2016; Toth, Sammons, & Sylva, 2015; Vidal Rodeiro, 2007). Moreover, there is a particular preference for maths and sciences among these higher SES groups (Gill & Bell, 2013; Gorard & See, 2009). These differences are partially explained by prior attainment at GCSE, but may also be related to GCSE subject choice, as early educational choices matter for later ones (Dilnot, 2016), in particular for access to higher status universities (Crawford, Dearden, Micklewright, & Vignoles, 2017).

Facilitating subjects are important, given the strong steer by the Russell Group about groups of preferred A-level subjects. Their high status is related to their perceived difficulty (Coe, Searle, Barmby, Jones, & Higgins, 2008). Within this special issue, Dilnot finds that taking facilitating subjects at A-level is positively associated with getting a place at a higher status

university and that taking maths A-level is particularly advantageous. In addition Anders, Henderson, Moulton, and Sullivan (2017) find that GCSE subject choice matters for university attendance and the prestige of the university attended.

Gender segregation of curricula and qualifications has persisted despite girls' increased absolute educational attainment. Much research in this area has focused on girls' participation in STEM subjects (Codioli McMaster, 2017). Henderson et al. (2017) found that girls have lower odds of taking three or more STEM subjects and higher odds of taking applied GCSEs compared to boys with the same level of prior attainment. With respect to ethnic differences, there is some evidence of complex patterns for educational attainment and participation in certain subjects (Heath & Brinbaum, 2007; Plewis, 2009; Rothon, 2005; Sullivan, Zimdars, & Heath, 2010). More specifically Noden, Shiner, and Modood (2014) argue that the qualifications taken by some minority ethnic groups disadvantage them in the university admissions process. However, there is, to our knowledge, no existing literature which examines the relationship between ethnicity and GCSE subject choice on educational trajectories.

Research questions

We characterise the 14–16 curriculum in terms of both the most prestigious academic subjects (the EBacc-eligible subjects) and applied GCSEs. While much attention has focused on the EBacc, there is evidence of a detrimental influence of applied subjects for young people's future chances (Vidal Rodeiro, Sutch, & Zanini, 2013). However, advocates of applied subjects argue that they are more 'relevant' to working-class pupils, and more likely to engage them with school, in which case we might expect working-class pupils who take applied subjects to be more likely to stay on post-16, even if they are less likely to pursue a highly academic route. We therefore examine whether any such differential benefit of both EBacc and applied subjects exists. We consider post-16 progression to the following outcomes: (1) full-time education; (2) studying A-levels; and (3) taking 'facilitating' subjects at A-level.

- (1) Does the 14–16 curriculum influence pupils' transitions at age 16?
- (2) Does school composition influence age 16 transitions, either via the 14–16 curriculum, or over and above any such effect?
- (3) Are social class, gender, and ethnic differences in 16-plus transitions accounted for to any degree by differences in the 14–16 curricula pursued by different groups of pupils?
- (4) Are there interactions between social class, gender, ethnicity, and the 14–16 curriculum, i.e. did the effect of the curriculum studied on subsequent transitions vary for young people from different groups?

Methods

Participants

We use Next Steps (formerly the Longitudinal Study of Young People in England), which follows a cohort of children born in 1989/1990, resulting in seven waves of data. This cohort of young people can be linked with the National Pupil Database (NPD) which provides a census of children attending state schools in England. Next Steps began in 2004 when the

sample members were aged between 13 and 14. Respondents were selected to be representative of young people in England using a stratified random sample, with oversampling for deprived schools. Schools were the primary sampling units, then children within schools. The two-stage sampling design that Next Steps uses presents a possible clustering effect due to between-school differences; therefore, all models are adjusted for the school clusters, sample design, and attrition weights. As the NPD was used along with school level data only state schools were included in the study.

At wave 4 (2007–2008) when the young people were aged 16–17, a total of 11,801 young people responded to the survey. We excluded cases if the following information was missing: GCSE subjects; Key Stage 3 (age 14 tests) and Key Stage 4 scores; post-16 outcomes. Responses for parental education, parental class, and housing tenure were taken from the first available information given by respondents. We analyse three dependent variables, resulting in three analytic samples. Our first two analytic samples were $n=9937$ for ‘staying in full-time education’, and $n=9920$ for ‘studying A-levels’. The third analytic sample was $n=4180$ for ‘taking two or more facilitating subjects’ at A-level, based on all young people who took AS-levels by subject, derived from the appended NPD examination results.

Measures

We examine three post-16 transitions: *staying in full-time education*, *studying A-levels*, and *taking two or more facilitating subjects at A-level*. We assess the influence of the type of 14–16 curriculum on these educational transitions. Over three-quarters of the sample stayed in full-time education (77%), under a half (47%) studied A-levels, and of those students taking A-levels, over a third (37%) took two or more facilitating subjects. *Staying in full-time education* was measured at wave 4 when the young people were in Year 12. As well as A-levels, these young people could be studying National Vocational Qualifications (NVQs), Business and Technology Education Courses (BTECs), City and Guilds, and other vocational courses at school or Further Education (FE) colleges. *Studying A-levels* in Year 12 was also measured at wave 4. The *two or more facilitating subjects* post-16 outcome was constructed from NPD Key Stage 5 data. *Facilitating subjects* include maths, English, biology, chemistry, physics, English literature, history, geography, and modern and classical languages. The file contains a record of each examination taken by students at Key Stage 5 and is appended to the Next Steps data on condition that the participant was still taking part in the study at wave 7. For this cohort, A-levels consisted of an examination at AS-level at the end of Year 12, and an A2-level at the end of Year 13 (House of Commons Select Committee Education and Skills, 2003). We focus on the post-16 transition to AS-level. Facilitating subjects were outlined by the Russell Group (RG)² of universities in their *Informed choices* guidance as the A-level subjects which are most frequently required for admission to university courses (Russell Group, 2015). *Informed choices* identifies four science subjects (biology, human biology, chemistry, physics), three mathematics (further mathematics, mathematics, pure mathematics), 20 modern languages, and three classical languages (Latin, classical Greek, Hebrew) as well as English literature, geography, and history as facilitating subjects. We exclude first languages spoken at home.

The 14–16 curriculum was captured at wave 2 of Next Steps (2005–2006), when the young people had made their subject choices, but prior to taking their Key Stage 4 examinations. An *EBacc-eligible curriculum* consisted of studying core GCSE subjects in English,

mathematics, history, or geography, two sciences,³ and a modern or ancient language. In 2010, EBacc was introduced as a performance measure (achieved by gaining a C grade or above in all of the core subjects). Our measure of an EBacc-eligible curriculum is binary, capturing whether the full set of subjects was studied or not.

In 2002, the following eight vocational subjects were introduced to the GCSE curriculum: applied art and design, applied business, engineering, health and social care, applied ICT, leisure and tourism, manufacturing, and applied science. We use a binary measure, capturing whether at least one applied subject was taken at GCSE. We also conducted supplementary analysis (available on request) assessing the sensitivity of our results to alternative cut-offs, and found a broadly similar pattern of results.

We use the first four waves of Next Steps to capture the individual and family characteristics of social class, parental education, equivalised permanent income, housing tenure, ethnicity, gender, and special educational needs (SEN). *Social class* is measured using the three-category National Statistics Socio Economic Classification (NS-SEC), which consists of managerial and professional occupations, intermediate occupations, and routine and manual occupations (Rose & Pevalin, 2005). The measure of equivalised permanent income is derived by taking an average of the household income over the first four waves of Next Steps and dividing by the square root of the household size. Young people's attainment was measured using their individual capped Key Stage 4 scores from the NPD. The scores were standardised, with a mean of zero and a standard deviation of one. Finally, school characteristics included in the study were grammar school status, average class size, the proportion of young people eligible for free school meals (FSM) in the school, and whether the school was single-sex or co-educational.

Analytic approach

We begin by showing descriptive information on the sample according to the curriculum studied at 14–16 and according to the outcomes post-16. Then, for each of the post-16 transitions we fit a series of multiple logistic regression models. We present changes in predicted probabilities set at the average sample characteristics (known as marginal effects at means) to aid interpretation. The first model regressed these outcomes on the young person's individual and family characteristics. We then added the different types of 14–16 curriculum, to assess whether curriculum choices influenced pupils' transitions at age 16. We also examined whether including the 14–16 curriculum accounted for any differences in age 16 transitions by different groups of pupils. From model 3 we include school characteristics, to assess whether the composition of the school influenced age 16 transitions, either via the 14–16 curriculum, or over and above any such effect. Finally, model 4 adjusted for attainment at Key Stage 4 to establish whether 14–16 curriculum influences remained after accounting for attainment and all the other covariates. Since the examinations young people sit at age 16 are influenced by the subjects they study, we acknowledge that attainment at Key Stage 4 may well have been shaped by this. As a robustness check, we conducted further analysis, using earlier measures of attainment at age 14 (Key Stage 3) and at age 11 (Key Stage 2), before subject choices were made, in place of the Key Stage 4 measure. We found that using Key Stage 3 attainment makes almost no difference to our results, while using Key Stage 2 attainment makes only a small difference.⁴

To test for gender, class, and ethnic⁵ differences in the ‘effects’ of the 14–16 curriculum on post-16 transactions we included two-way interaction terms in the final models (accounting for all the covariates).

Results

Descriptives

The descriptives for the overall analytic sample and for those in full-time education post-16, taking A-levels, and taking two or more facilitating A-levels, are shown in Table 1. Generally,

Table 1. Sample descriptives (weighted).

	Sample overall (<i>n</i> =9937)% or mean	In full-time education (<i>n</i> =7654)% or mean	Taking A-levels (<i>n</i> =5287)% or mean	Two or more facilitating subjects at A-level (<i>n</i> =1569)% or mean
<i>Gender</i>				
Male	49.6	46.2	44.6	47.8
Female	50.4	53.8	55.4	52.2
<i>Ethnicity</i>				
White	86.0	83.5	82.8	84.2
Mixed	2.3	2.4	2.4	2.4
Indian	2.2	2.9	3.4	3.2
Pakistani	2.3	2.7	2.6	2.4
Bangladeshi	1.0	1.1	1.2	1.0
Black Caribbean	1.5	1.7	1.4	0.6
Black African	2.0	2.7	2.7	1.6
Other	2.7	3.4	3.6	4.5
Special Educational Needs	7.2	6.1	2.4	1.7
<i>Social class (NS-SEC)</i>				
Managerial	21.5	25.4	31.1	38.1
Intermediate	25.8	26.2	28.1	29.0
Routine	52.7	48.4	40.8	32.9
<i>Parental education</i>				
Degree or equivalent	18.7	23.5	30.3	39.7
Other HE qualification	13.5	14.5	16.1	16.0
A-level	10.4	11.3	11.9	10.3
GCSE A–C	39.5	34.4	28.8	23.5
Level 1 and below	17.9	16.2	12.9	10.4
Household income (per £10,000 mean)	1.5	1.6	1.8	1.9
Owens property outright/mortgage	68.1	72.9	80.2	87.1
<i>14–16 curriculum</i>				
EBacc eligible	26.8	32.3	41.7	57.7
One or more applied	47.2	42.9	36.2	26.1
<i>School characteristics</i>				
Grammar school	4.3	5.7	8.4	13.4
Single sex school	9.9	11.6	13.8	15.0
Average class size (mean)	22.0	22.0	21.8	21.8
% FSM in school (mean)	14.5	13.9	12.2	10.6
Key Stage 4 attainment (mean)	301.3	330.6	368.3	399.2

Source: Secure Lab: First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access (SN7104).

Table 2. Proportion of young people taking EBacc-eligible or applied subjects at 14–16 by gender, class, and ethnicity (weighted).

	EBacc		Applied	
	Total	CI	Total	CI
<i>Total %</i>	26.81	[24.91–28.79]	47.24	[45.17–49.32]
<i>Gender</i>				
Male %	26.43	[24.12–28.88]	45.15	[42.76–47.55]
Female %	27.18	[25.01–29.47]	49.30	[46.79–51.81]
<i>Class</i>				
Managerial %	39.81	[37.06–42.62]	37.35	[34.72–40.07]
Intermediate %	24.78	[22.59–27.11]	48.93	[46.14–51.73]
Routine %	16.29	[14.54–18.20]	55.15	[52.70–57.58]
<i>Ethnicity</i>				
White %	27.15	[25.12–29.27]	47.26	[45.02–49.51]
Mixed %	24.98	[20.05–30.66]	46.50	[39.99–53.14]
Indian %	30.49	[24.74–36.92]	46.86	[41.86–51.93]
Pakistani %	27.01	[21.85–32.87]	53.84	[48.58–59.02]
Bangladeshi %	16.79	[12.15–22.75]	55.91	[48.68–62.90]
Black Caribbean %	15.23	[11.24–20.31]	51.22	[43.75–59.63]
Black African %	18.76	[14.31–24.20]	48.91	[42.10–55.75]
Other %	30.31	[24.06–37.38]	35.51	[28.80–42.83]
Observations	9937		9937	

Source: EUL, First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access.

as post-16 transitions become more selective, young people are more likely to have higher attainment, attend grammar school, and come from more advantaged backgrounds, and to have studied EBacc-eligible GCSEs, and are less likely to have studied applied GCSEs.

Table 2 shows the proportion of students by type of curriculum studied at age 14–16, broken down by social class, gender, and ethnic group. Just over a quarter of pupils (26.8%) took an EBacc-eligible set of GCSEs, while 47.2% took one or more applied subjects. In this bivariate analysis, there were no gender differences, however, strong class and ethnic differences are apparent. Students from the routine class were less likely to study EBacc-eligible subjects compared to students from both the intermediate and managerial classes. In contrast, students from the routine class (55.2%) were more likely to study at least one applied subject, compared to the intermediate (48.9%) and managerial (37.4%) classes. Black Caribbean, Bangladeshi, and black African students were less likely to take EBacc-eligible subjects compared to Indian and white students. Students from black Caribbean, Bangladeshi, Pakistani, and white backgrounds were more likely to take an applied subject than students from the other ethnic backgrounds. Finally, only a few young people (6.6%) pursued both an EBacc-eligible curriculum and an applied GCSE subject, while just under a third (32.5%) took neither.

Transition to full-time education post-16

Table 3 presents the models for students' progression to full-time education post-16. Model 1 shows that young people from more disadvantaged backgrounds had a lower probability of being in full-time education post-16 than their more advantaged peers. Girls were 10 percentage points more likely than boys to be in full-time education at age 16. White students had a substantially lower probability of being in full-time education compared to students from all other ethnic groups, for example, black Caribbean students were 16 percentage points more likely than whites to stay on.

Table 3. Logistic regression predicting full-time education post-16 (marginal effects at means).

	Family and individual		School composition				Attainment: Key Stage 4		
	14–16 curriculum		EBacc		Applied		EBacc		
	Model 1	Model 2i	Model 2ii	Model 3i	Model 3ii	Model 4i	Model 4ii	Applied	
<i>Family characteristics</i>									
Ref: Managerial									
Intermediate	-0.05** (0.02)	-0.04** (0.02)	-0.05** (0.02)	-0.04** (0.02)	-0.05** (0.02)	-0.03+ (0.02)	-0.03+ (0.02)	-0.03+ (0.02)	(0.02)
Routine	-0.05** (0.02)	-0.04* (0.02)	-0.05** (0.02)	-0.04* (0.02)	-0.04* (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	(0.02)
Ref: Degree or equivalent									
Other HE qualification	-0.10*** (0.02)	-0.09*** (0.02)	-0.10*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.08*** (0.02)	-0.08*** (0.02)	-0.08*** (0.02)	(0.02)
A-level	-0.08*** (0.02)	-0.08*** (0.02)	-0.08*** (0.02)	-0.07*** (0.02)	-0.08*** (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.06** (0.02)	(0.02)
GCSE A-C	-0.20*** (0.01)	-0.18*** (0.01)	-0.19*** (0.01)	-0.18*** (0.01)	-0.18*** (0.01)	-0.13*** (0.01)	-0.13*** (0.02)	-0.14*** (0.02)	(0.02)
Level 1 and below	-0.20*** (0.02)	-0.18*** (0.02)	-0.19*** (0.02)	-0.17*** (0.02)	-0.18*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.10*** (0.02)	(0.02)
Household income (per £10,000)	0.03*** (0.01)	0.02** (0.01)	0.03*** (0.01)	0.02** (0.01)	0.03** (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)	(0.01)
Ref: Owns property									
Rent/other	-0.09*** (0.01)	-0.08*** (0.01)	-0.09*** (0.01)	-0.07*** (0.01)	-0.08*** (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	(0.01)
<i>Individual characteristics</i>									
Ref: White									
Mixed	0.05+ (0.03)	0.06+ (0.03)	0.05+ (0.03)	0.06+ (0.03)	0.06+ (0.03)	0.05+ (0.03)	0.05+ (0.03)	0.05 (0.03)	(0.03)
Indian	0.23*** (0.01)	0.23*** (0.01)	0.23*** (0.01)	0.22*** (0.01)	0.23*** (0.01)	0.20*** (0.01)	0.20*** (0.01)	0.20*** (0.01)	(0.01)
Pakistani	0.19*** (0.01)	0.18*** (0.01)	0.19*** (0.01)	0.19*** (0.01)	0.20*** (0.01)	0.18*** (0.01)	0.18*** (0.01)	0.18*** (0.01)	(0.01)
Bangladeshi	0.21*** (0.02)	0.21*** (0.02)	0.21*** (0.02)	0.21*** (0.02)	0.22*** (0.02)	0.18*** (0.02)	0.18*** (0.02)	0.18*** (0.02)	(0.02)
Black	0.16*** (0.03)	0.16*** (0.03)	0.16*** (0.03)	0.16*** (0.03)	0.16*** (0.02)	0.16*** (0.02)	0.16*** (0.02)	0.16*** (0.02)	(0.02)
Caribbean									
Black African	0.26*** (0.01)	0.26*** (0.01)	0.26*** (0.01)	0.26*** (0.01)	0.26*** (0.01)	0.24*** (0.01)	0.24*** (0.01)	0.24*** (0.01)	(0.01)
Other	0.20*** (0.02)	0.20*** (0.02)	0.20*** (0.02)	0.20*** (0.02)	0.20*** (0.02)	0.18*** (0.02)	0.18*** (0.02)	0.18*** (0.02)	(0.02)
Ref: Male									
Female	0.10*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	(0.01)
Special Education Needs	-0.06** (0.02)	-0.04+ (0.02)	-0.05** (0.02)	-0.03+ (0.02)	-0.05* (0.02)	0.16*** (0.02)	0.16*** (0.02)	0.16*** (0.02)	(0.02)

(Continued)



Table 3. (Continued).

	Family and individual		School composition			Attainment: Key Stage 4	
	Model 1	14–16 curriculum EBacc Model 2i	Applied Model 2ii	EBacc Model 3i	Applied Model 3ii	EBacc Model 4i	Applied Model 4ii
<i>14–16 curriculum</i>							
EBacc-eligible		0.16*** (0.01)		0.14*** (0.01)		0.07*** (0.01)	
One or more applied			–0.08*** (0.01)		–0.07*** (0.01)		–0.04*** (0.01)
<i>School characteristics</i>							
Ref:							
Comprehensive school				0.16*** (0.02)	0.17*** (0.02)	0.09*** (0.03)	0.10*** (0.03)
Grammar school				0.03 (0.02)	0.03 (0.02)	0.02 (0.02)	0.02 (0.02)
Ref: Co-ed school				–0.00 (0.01)	–0.01 (0.01)	–0.00 (0.01)	–0.00 (0.01)
Average class size (SD)				–0.01+ (0.01)	–0.02** (0.01)	0.01 (0.01)	0.01 (0.01)
% FSM in school (SD)							
<i>Attainment</i>							
Key Stage 4							
Observations	9937	9937	9937	9937	9937	9937	9937
						0.19*** (0.01)	0.19*** (0.01)

Notes: Standard errors reported in parentheses. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$. All predictors are set at the mean value.

Source: Secure Lab: First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access.

Model 2 (i and ii) shows that students who followed an EBacc-eligible curriculum had a 16 percentage point higher probability of being in full-time education. Those who studied an applied GCSE were eight percentage points less likely to remain in full-time education. Although the curriculum influenced whether the individual was in full-time education or not, the type of curriculum students pursued did not explain the social class, gender, and ethnic differences in staying in full-time education at age 16.

Model 3 (i and ii) adjusts for: school type, single-sex school, size of class, and the percentage of students in the school with FSM. Students attending a grammar school had an increased chance of being in full-time education than those in a comprehensive school. None of the other school characteristic variables were significant at the 5% level. The inclusion of the school characteristics did not explain the differential chances of the individual being in full-time education according to their family and individual characteristics, nor did they greatly explain the influence of the 14–16 curriculum on staying in full-time education post-16.

Once prior attainment is taken into account (models 4i and 4ii), social class, parental income, and housing tenure were no longer significant at the 5% level, while significant differences remained for gender, ethnicity, parental education, and school type. After adjusting for all the covariates, students following an EBacc-eligible curriculum were seven percentage points more likely to be in full-time education post-16 than students not studying all the EBacc subjects. In contrast, studying any applied subject at age 14–16 was related to a reduction of four percentage points in the probability of continuing in full-time education post-16.

University-track curriculum (A-levels)

Table 4 presents the models for students taking A-levels post-16. As with staying in full-time education, parental background (model 1) was associated with studying A-levels. In addition, girls were 10 percentage points more likely than boys to study A-levels, while white students had a lower probability of studying A-levels than Bangladeshi, Indian, black African, Pakistani young people, and those from other ethnic backgrounds.

Following an EBacc-eligible curriculum at age 14–16 (model 2i) increased the students chances of studying A-levels by 29 percentage points. Model 2ii shows that including one applied subject or more in their subject choice reduced the probability by 16 percentage points. As with staying in full-time education, the 14–16 curriculum did not explain the social class and gender differences. This was also mainly true of ethnic differences, although compared to white students if black Caribbean students followed an EBacc-eligible curriculum they were significantly more likely to be studying A-levels.

Students attending a grammar school, as opposed to a comprehensive, had a greater chance of studying A-levels post-16 (models 3i and 3ii). In addition, attending a school with smaller class sizes and a lower proportion of FSM students increased the chances of studying A-levels. However, the inclusion of school characteristics did not change the probability of studying A-levels by family and individual characteristics, neither did they substantially explain the influence of the 14–16 curriculum on the young person's transition to A-levels.

Models 4i and 4ii account for students' attainment at Key Stage 4. Income, housing tenure, and social class were no longer significant predictors of the transition to A-levels, and attainment also partly explained differences in the chances of studying A-levels by parental



Table 4. Logistic regression predicting studying A-levels at age 16 (marginal effects at means).

	Family and individual		14–16 curriculum				School composition				Attainment: Key Stage 4			
	Model 1	EBacc		Applied		EBacc		Applied		EBacc		Applied		
			Model 2i	Model 2ii	Model 2ii	Model 2ii	Model 3i	Model 3i	Model 3iii	Model 3iii	Model 4i	Model 4i	Model 4ii	Model 4ii
<i>Family characteristics</i>														
Ref: Managerial														
Intermediate	-0.04*	(0.02)	-0.04+	(0.02)	-0.04*	(0.02)	-0.04*	(0.02)	-0.04*	(0.02)	-0.04*	(0.02)	-0.04*	(0.02)
Routine	-0.09***	(0.02)	-0.07***	(0.02)	-0.08***	(0.02)	-0.06**	(0.02)	-0.07***	(0.02)	-0.07***	(0.02)	-0.07***	(0.02)
Ref: Degree or equivalent														
Other HE qualification	-0.16***	(0.02)	-0.15***	(0.02)	-0.15***	(0.02)	-0.14***	(0.02)	-0.15***	(0.02)	-0.15***	(0.02)	-0.08**	(0.03)
A-level	-0.16***	(0.02)	-0.16***	(0.03)	-0.16***	(0.02)	-0.15***	(0.02)	-0.15***	(0.02)	-0.15***	(0.02)	-0.09**	(0.03)
GCSE A-C	-0.31***	(0.02)	-0.28***	(0.02)	-0.29***	(0.02)	-0.28***	(0.02)	-0.28***	(0.02)	-0.28***	(0.02)	-0.16***	(0.02)
Level 1 and below	-0.31***	(0.02)	-0.28***	(0.02)	-0.29***	(0.02)	-0.26***	(0.02)	-0.27***	(0.02)	-0.10**	(0.03)	-0.10***	(0.03)
Household income (per £10,000)	0.07***	(0.01)	0.06***	(0.01)	0.07***	(0.01)	0.06***	(0.01)	0.06***	(0.01)	0.06***	(0.01)	0.02	(0.01)
Ref: Owns property outright/ mortgage														
Rent/other Individual	-0.15***	(0.02)	-0.14***	(0.02)	-0.15***	(0.02)	-0.13***	(0.02)	-0.13***	(0.02)	-0.13***	(0.02)	-0.01	(0.02)
<i>Individual characteristics</i>														
Ref: White														
Mixed	0.03	(0.04)	0.04	(0.04)	0.03	(0.04)	0.05	(0.04)	0.05	(0.04)	0.05	(0.04)	0.05	(0.04)
Indian	0.31***	(0.03)	0.32***	(0.03)	0.32***	(0.03)	0.33***	(0.03)	0.33***	(0.03)	0.30***	(0.03)	0.31***	(0.04)
Pakistani	0.20***	(0.03)	0.19***	(0.03)	0.21***	(0.03)	0.24***	(0.03)	0.26***	(0.03)	0.34***	(0.04)	0.35***	(0.04)
Bangladeshi	0.33***	(0.03)	0.33***	(0.03)	0.33***	(0.03)	0.39***	(0.02)	0.41***	(0.02)	0.39***	(0.04)	0.39***	(0.04)
Black	0.06	(0.04)	0.09*	(0.04)	0.06	(0.04)	0.12**	(0.04)	0.11**	(0.04)	0.21***	(0.05)	0.20***	(0.05)
Caribbean														
Black African	0.28***	(0.04)	0.29***	(0.03)	0.28***	(0.04)	0.33***	(0.03)	0.34***	(0.03)	0.38***	(0.05)	0.38***	(0.05)
Other	0.28***	(0.03)	0.27***	(0.03)	0.25***	(0.03)	0.28***	(0.03)	0.28***	(0.04)	0.25***	(0.06)	0.25***	(0.06)
Ref: Male														
Female	0.10***	(0.01)	0.11***	(0.01)	0.11***	(0.01)	0.12***	(0.01)	0.12***	(0.01)	0.05***	(0.01)	0.05***	(0.01)
Special Education Needs	-0.40***	(0.03)	-0.36***	(0.03)	-0.39***	(0.03)	-0.36***	(0.03)	-0.39***	(0.03)	-0.03	(0.04)	-0.03	(0.04)

14–16 curriculum	0.29***	(0.02)	-0.16***	(0.01)	0.26***	(0.02)	-0.14***	(0.01)	0.10***	(0.02)	-0.06***	(0.01)
EBacc-eligible												
One or more												
applied												
School												
characteristics												
Ref:												
Comprehensive												
school												
Grammar												
school												
Ref: Co-ed												
school												
Single sex												
school												
Average class size												
(SD)												
% FSM in school												
(SD)												
Attainment												
Key Stage 4												
Observations	9920	9920	9920	9920	9920	9920	9920	9920	9920	9920	9920	9920

Notes: Standard errors reported in parentheses. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$. Reporting marginal effects with all other predictors set at their mean values.
 Source: Secure Lab: First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access.

education, young people's SEN, and gender, as well as type of school and proportion of FSM eligible students. Pakistani and black Caribbean compared to white students had a greater chance of studying A-levels once Key Stage 4 attainment was accounted for. In the final models, students pursuing an EBacc-eligible curriculum had a greater chance (by 10 percentage points) of studying A-levels, whereas choosing an applied GCSE subject led to a six percentage point decrease in the probability of studying A-levels.

Two or more facilitating subjects at A-level

The models in Table 5 compare students who took examinations in two or more facilitating subjects at AS-level (as recorded in the NPD) with those who took one or no facilitating subjects. In model 1, students from the higher compared to the routine class, and with more highly educated parents and parents who owned their own homes, had a higher probability of taking facilitating subjects at A-level. Black Caribbean students had a 16 percentage point lower chance and the 'other' ethnic group a 14 percentage point greater chance of studying facilitating subjects than white students. Girls were four percentage points less likely than boys to take two or more facilitating subjects at A-level.

Students taking an EBacc-eligible curriculum (model 2i) had a 20 percentage point greater probability of taking two or more facilitating A-levels. In contrast, students taking any applied subjects (model 2ii) had a 13 percentage point lower chance of pursuing two or more facilitating subjects post age 16. However, the 14–16 curriculum did not explain any of the social class, gender, or ethnic differences.

Students attending a grammar school, as opposed to a comprehensive, had a greater chance of studying two or more facilitating subjects (models 3i and 3ii). However, none of the other school predictors were significant at the 5% level. Accounting for school characteristics did not change the probability of taking two facilitating A-level subjects by class, gender, or ethnicity. Neither did it substantially explain the influence of the 14–16 curriculum on post-16 transitions.

Over and above prior attainment, boys and students from the 'other' ethnic group had a greater chance of taking facilitating subjects. Although prior attainment partly explained the influence of the 14–16 curriculum on taking facilitating A-level subjects, students' prior curriculum choices were important. Students following an EBacc-eligible curriculum had a 13 percentage point higher probability of taking facilitating subjects, while studying applied subjects was related to a seven percentage point decrease in the likelihood of this outcome.

In summary, as shown in Figure 1, pursuing an EBacc-eligible curriculum at 14–16 increased the probability of staying in full-time education, studying A-levels, and taking facilitating subjects at A-level, while choosing an applied subject significantly reduced the likelihood of these outcomes. Curriculum choices at 14–16 increase in importance as the educational transitions become more selective.

Influence of curriculum by gender, class, and ethnicity

We ran further models including interaction terms for gender, class, and ethnicity, and the two types of 14–16 curriculum (Figures 2–4). There were differences in the influence of curriculum choice on particular groups of pupils. Figure 2 shows the average marginal effect

Table 5. Logistic regression predicting students taking two or more facilitating subjects at AS-level (marginal effects at means).

	Family and individual		14–16 curriculum		School composition		Attainment: Key Stage 4					
	Model 1	EBacc	Model 2i	Applied	Model 2ii	EBacc	Model 3i	Applied	Model 4i	Applied	Model 4ii	
												Model 3ii
<i>Family characteristics</i>												
Ref: Managerial												
Intermediate	-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	0.03 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	0.02 (0.03)	0.01 (0.03)	0.01 (0.03)	
Routine	-0.06* (0.03)	-0.05* (0.03)	-0.06* (0.03)	-0.06* (0.03)	0.03 (0.03)	-0.05+ (0.03)	-0.05+ (0.03)	-0.05* (0.03)	-0.03 (0.03)	-0.04 (0.03)	-0.04 (0.03)	
Ref: Degree or equivalent												
Other HE qualification	-0.11*** (0.03)	-0.10*** (0.03)	-0.10*** (0.03)	-0.11*** (0.03)	0.03 (0.03)	-0.10*** (0.03)	-0.10*** (0.03)	-0.10*** (0.03)	-0.04 (0.03)	-0.04 (0.03)	-0.04 (0.03)	
A-level	-0.13*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	0.03 (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	-0.08* (0.03)	-0.08* (0.03)	-0.08* (0.03)	
GCSE A–C	-0.14*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	0.03 (0.03)	-0.11*** (0.03)	-0.11*** (0.03)	-0.11*** (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	
Level 1 and below	-0.08* (0.03)	-0.06 (0.04)	-0.06 (0.04)	-0.07* (0.04)	0.04 (0.04)	-0.05 (0.04)	-0.05 (0.04)	-0.06 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	
Household income (per £10,000)	-0.00 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	-0.02+ (0.01)	-0.02+ (0.01)	-0.02+ (0.01)	
Ref: Owns property outright/mortgage												
Rent/other	-0.08** (0.03)	-0.07* (0.03)	-0.07* (0.03)	-0.07** (0.03)	0.03 (0.03)	-0.06* (0.03)	-0.06* (0.03)	-0.06* (0.03)	-0.03 (0.03)	-0.04 (0.03)	-0.04 (0.03)	
<i>Individual characteristics</i>												
Ref: White												
Mixed	0.01 (0.04)	0.03 (0.04)	0.03 (0.04)	0.01 (0.04)	0.04 (0.04)	0.03 (0.04)	0.03 (0.04)	0.02 (0.04)	0.03 (0.05)	0.02 (0.05)	0.02 (0.05)	
Indian	-0.01 (0.03)	-0.00 (0.04)	-0.00 (0.04)	-0.00 (0.04)	0.04 (0.04)	0.00 (0.04)	0.00 (0.04)	0.00 (0.04)	-0.01 (0.04)	-0.00 (0.04)	-0.00 (0.04)	
Pakistani	0.00 (0.04)	0.01 (0.04)	0.01 (0.04)	0.02 (0.04)	0.04 (0.04)	0.01 (0.05)	0.01 (0.05)	0.04 (0.05)	0.08 (0.05)	0.10+ (0.06)	0.10+ (0.06)	
Bangladeshi	-0.04 (0.05)	-0.02 (0.05)	-0.02 (0.05)	-0.03 (0.05)	0.05 (0.06)	-0.02 (0.06)	-0.02 (0.06)	-0.01 (0.06)	-0.03 (0.06)	-0.02 (0.06)	-0.02 (0.06)	
Black Caribbean	-0.16** (0.06)	-0.14* (0.06)	-0.14* (0.06)	-0.15* (0.06)	0.06 (0.06)	-0.13* (0.06)	-0.13* (0.06)	-0.14* (0.06)	-0.07 (0.08)	-0.07 (0.08)	-0.07 (0.09)	
Black African	-0.04 (0.05)	-0.02 (0.06)	-0.02 (0.06)	-0.03 (0.06)	0.05 (0.05)	-0.02 (0.06)	-0.02 (0.06)	-0.02 (0.06)	0.01 (0.07)	0.01 (0.07)	0.01 (0.07)	
Other	0.14** (0.05)	0.15** (0.05)	0.15** (0.05)	0.14** (0.05)	0.05 (0.05)	0.15** (0.06)	0.15** (0.06)	0.15** (0.06)	0.15* (0.06)	0.16* (0.06)	0.16* (0.07)	
Ref: Male												
Female	-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)	0.02 (0.02)	-0.03+ (0.02)	-0.03+ (0.02)	-0.03+ (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	
Special Education Needs	-0.18** (0.06)	-0.16** (0.06)	-0.16** (0.06)	-0.18** (0.06)	0.06 (0.06)	-0.16** (0.06)	-0.16** (0.06)	-0.17** (0.06)	-0.10 (0.06)	-0.11+ (0.06)	-0.11+ (0.06)	
<i>14–16 curriculum</i>												
EBacc-eligible												
One or more applied												
<i>School characteristics</i>												
Ref: Comprehensive school												
Grammar school												
Ref: Co-ed												

(Continued)



Table 5. (Continued).

	Family and individual		14–16 curriculum		School composition		Attainment: Key Stage 4	
	EBacc	Applied	EBacc	Applied	EBacc	Applied	EBacc	Applied
Model 1	Model 2i	Model 2ii	Model 3i	Model 3ii	Model 4i	Model 4ii		
4180	4180	4180	4180	4180	4180	4180	4180	4180
Single sex school			–0.06 (0.05)	–0.06 (0.05)	–0.08 (0.05)	–0.08 (0.05)	–0.08 (0.05)	–0.08 (0.05)
Average class size (SD)			0.01 (0.01)	0.02 (0.01)	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)
% FSM in school (SD)			0.00 (0.02)	–0.01 (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)
Attainment								
Key Stage 4								
Observations	4180	4180	4180	4180	4180	4180	0.48*** (0.03)	0.49*** (0.03)

Notes: Standard errors reported in parentheses. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$. Reporting marginal effects with all other predictors set at their mean values.
Source: Secure Lab: First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access.

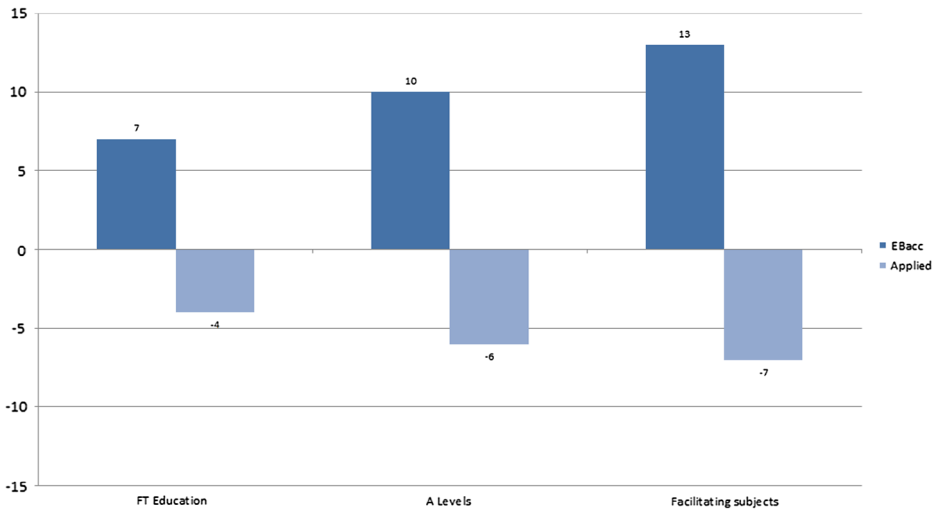


Figure 1. Predicting post-16 transitions by 14–16 curricula (predicted probabilities).

at the mean of staying in full-time education, taking A-levels, and two or more facilitating subjects at A-level for young people pursuing an EBacc-eligible curriculum or an applied subject by their gender (the predicted probabilities are available on request).

Taking an EBacc-eligible curriculum was advantageous for both boys and girls, while studying an applied subject was a disadvantage, particularly for girls. As shown in Figure 2, curriculum choice at 14–16 was more influential for girls than boys. Compared to boys, girls pursuing an EBacc-eligible curriculum were more likely than not to be in full-time education (though this only holds at the 10% significance level $\chi^2=2.84$, $P<0.10$). In addition, pursuing an EBacc-eligible curriculum was especially strongly linked to taking facilitating subjects at A-level for girls; the probability for girls increased by 15 percentage points, compared to a seven percentage point greater chance for boys of taking facilitating A-level subjects ($\chi^2=5.04$, $P<0.05$). Girls who had taken an applied GCSE were seven percentage points less likely to be studying facilitating A-level subjects, while for boys, one applied subject was not enough to generate a disadvantage. However, if boys increased the number of applied subjects to two or more they were 12 percentage points less likely to be studying facilitating subjects. The increase in number of applied subjects did not change the probability of taking facilitating subjects for girls, although, compared to boys, girls taking an applied subject were significantly less likely to be studying A-levels ($\chi^2=4.85$, $P<0.05$).

As shown in Figure 3, the advantages of pursuing an EBacc-eligible curriculum and the disadvantages of taking an applied subject in all post-16 educational outcomes were equal across all social classes.

There were, however, ethnic differences as shown in Figure 4. White pupils were significantly (by six percentage points) more likely to stay in full-time education and take A-levels if they had studied EBacc-eligible subjects than if they had not. For white pupils, pursuing an applied subject at 14–16 reduced their chances of staying in full-time education (by four percentage points) or taking A-levels (by three percentage points). Conversely, the influence of curriculum choice on staying in full-time education and taking A-levels for non-white

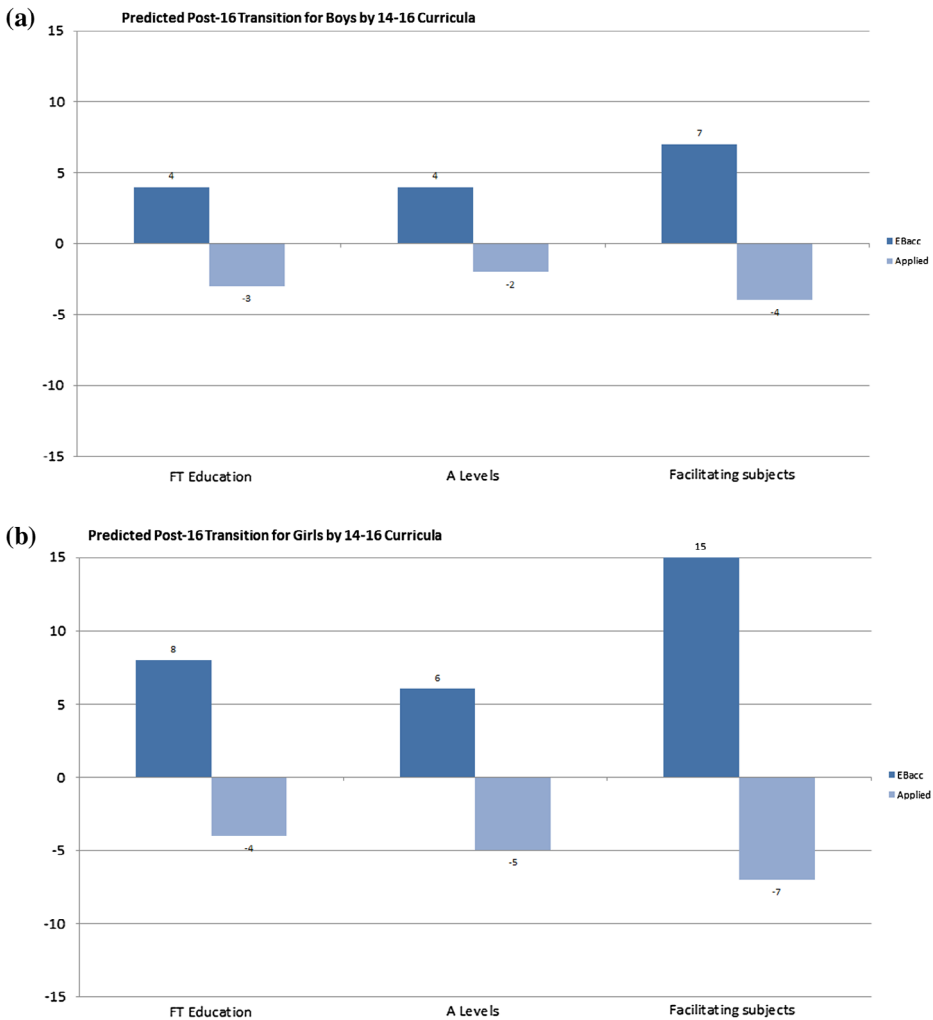


Figure 2. Predicting post-16 transitions for boys and girls by 14–16 curricula (predicted probabilities).

pupils was not significant. White pupils had a significantly higher probability of staying in full-time education (but only at the 10% significance level, $\chi^2=3.73$, $P<0.10$) and studying A-levels ($\chi^2=4.74$, $P<0.05$), compared to non-white pupils if they followed an EBacc-eligible curriculum. However, for both white and non-white pupils, choosing EBacc-eligible subjects increased the probability of taking facilitating subjects at A-level. In contrast, studying an applied subject at age 14–16 significantly reduced the probability of white students taking facilitating A-level subjects, by six percentage points if they took one or more, and by 12 percentage points if they took two or more, but made no significant difference for non-white students.

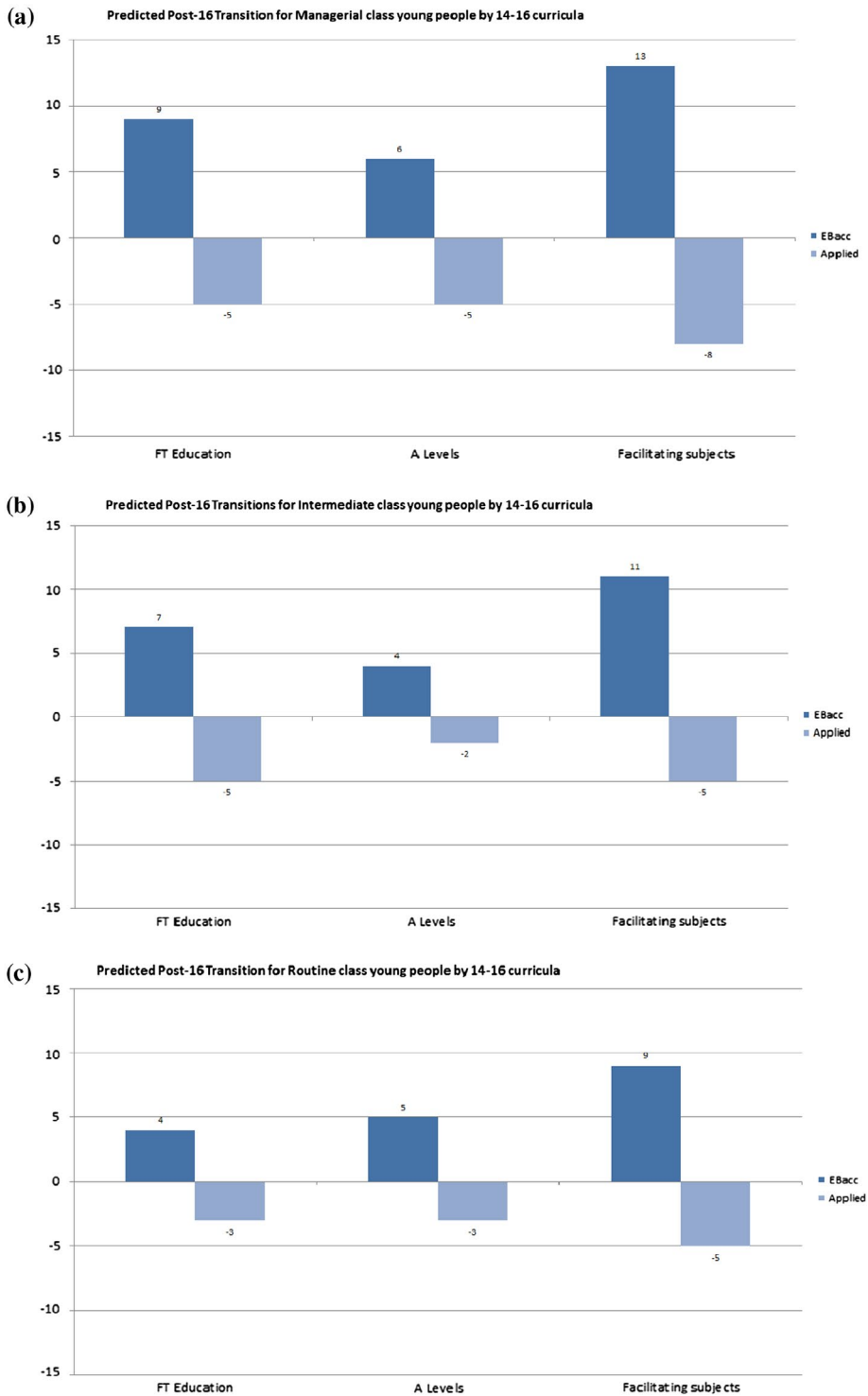


Figure 3. Predicting post-16 transitions for managerial, intermediate, and routine class young people by 14–16 curricula (predicted probabilities). Source: Secure Lab: First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access.

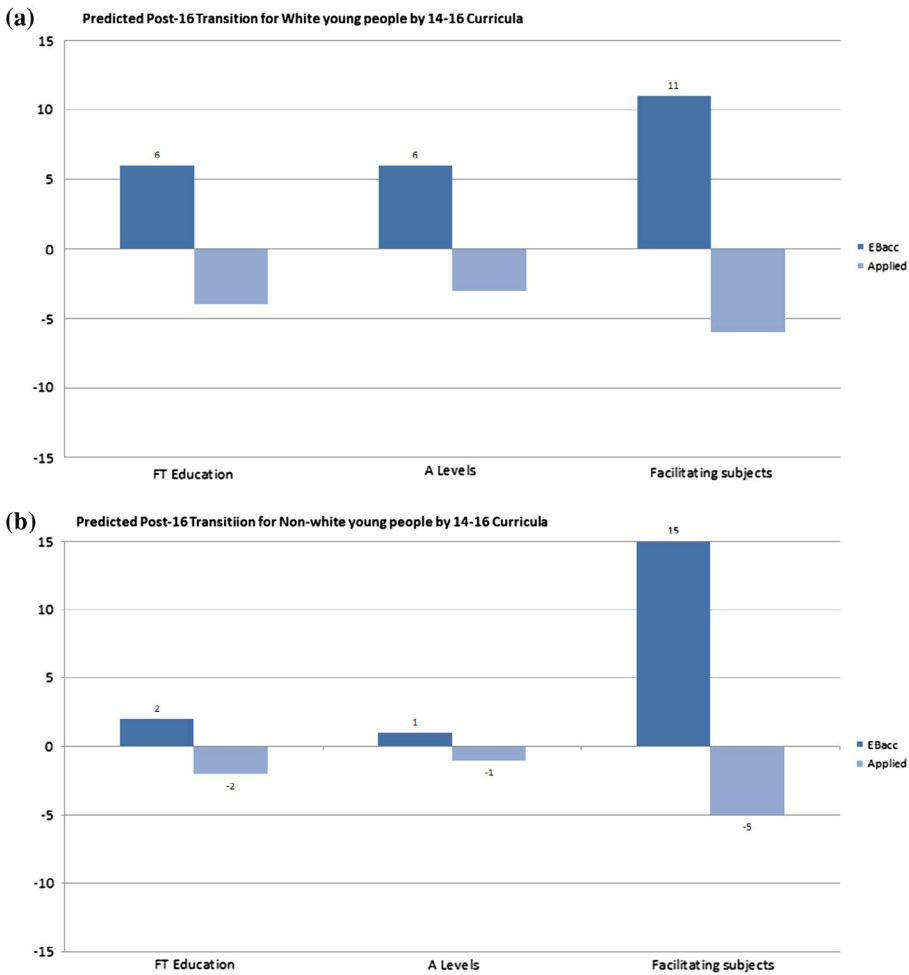


Figure 4. Predicting post-16 transitions for white and non-white young people by 14–16 curricula (predicted probabilities). Source: Secure Lab: First Longitudinal Study of Young People in England, Waves One to Seven, 2004–2010, Secure Access.

Conclusions

Previous work suggests that subject ‘choice’ at age 14–16 could have a potential role in exacerbating inequalities, rather than simply reflecting advantages and disadvantages that were already apparent earlier in the school career (Henderson et al., 2017). This paper examined the impact of the curriculum studied by pupils aged 14–16 on whether they continued in education post-16, and if so, what kind of 16–18 curriculum they pursued. Using data from ‘Next Steps’ and education records from the NPD, we considered students’ post-16 progression to full-time education, A-levels, and studying highly valued facilitating subjects, while controlling for individual, family, and school characteristics, as well as the pupils’ prior attainment. Strengths of our study include the use of longitudinal data to address educational trajectories over time, and the interrogation of interaction effects to assess differences in the effects of the curriculum on boys and girls, and on different ethnic and social class groups.

A potential weakness, as with any observational study, is that our results are dependent on the quality of our controls.

Leaks in the educational pipeline increase as post-16 transitions become more selective; over three-quarters of young people were in full-time education (77%), and under a half (47%) pursued a university-track curriculum, studying A-levels. Of those students taking A-levels only just over a third (37%) took two or more facilitating subjects, thus according to the Russell Group, '... keeping a wide range of degree courses and career options open to them'. Not surprisingly, prior attainment was the most important factor in explaining all post-16 transitions. Students with more educated parents, from minority ethnic backgrounds, girls, and young people with SEN were more likely to be in full-time education and studying A-levels post-16. The 14–16 curriculum influenced pupils' transitions into staying in full-time education, studying A-levels, and the type of A-levels that pupils took. Importantly, pursuing an EBacc-eligible curriculum increased the chances of progressing into all three post-16 educational outcomes, while choosing applied subjects significantly reduced the probability. Moreover, curriculum choices become more important as the educational transitions become more selective. Choosing an EBacc-eligible curriculum at 14–16 increased the chances of a more academic track, while applied subject choices appear to contribute to leaks in the educational pipeline. This is likely to be partly simply due to the fact that the subjects included in the EBacc curriculum allow pupils to choose facilitating subjects at A-level, while students taking a more vocational route may be ineligible to pursue more highly valued A-levels, due to not having studied these subjects at GCSE.

School characteristics partly explained pupils' post-16 transitions. After adjusting for prior attainment, attending a grammar school increased the chances of staying in full-time education and studying A-levels, but did not influence the chance of pursuing facilitating subjects. In addition, attending a school with smaller class sizes and a lower proportion of pupils with FSM partly explained the chances of making the transition to A-levels. Nevertheless, school characteristics did not explain away the 'effect' of curriculum choice on post-16 progression.

The choice of curriculum had a greater influence on post-16 outcomes for some groups of pupils than for others. Although there were more girls than boys in full-time education, the relationship between pursuing an EBacc-eligible curriculum and staying in full-time education was stronger for girls than boys. Similarly, taking applied subjects reduced the chances of progressing to A-levels more for girls than for boys. For girls, the advantage of following an EBacc-eligible curriculum seems to be greatest in promoting facilitating A-level subjects, which may increase their chances of gaining access to higher education and in particular the Russell Group and higher ranked universities (Dilnot, 2018; Vidal Rodeiro et al., 2013). This may be driven by the fact that girls who did not study an EBacc-eligible curriculum were particularly unlikely to take science A-levels. This link between the 14–16 curriculum and science progression for girls is highly policy-relevant, and should be investigated further in future research.

Interestingly, the advantages of studying an EBacc-eligible curriculum, and disadvantages of taking applied subjects in progressing to all post-16 educational outcomes, were equal across social classes. This does not support the idea that applied or less academic subjects have a special value for working-class pupils. Working-class pupils were less likely to take an EBacc-eligible curriculum, and were also less likely to progress to any of the post-16 educational outcomes. Increasing the proportion of working-class pupils following an

EBacc-eligible curriculum could be a potential lever to increase the educational participation of this group (Dilnot, 2018).

White pupils were less likely to stay in full-time education than other ethnic groups, and their chances of staying increased if they took an EBacc-eligible curriculum. This pattern also persisted for white young people in their progression to studying A-levels. The curriculum studied appeared to be less influential for non-white pupils than for whites. However, for both white and non-white pupils, pursuing an EBacc-eligible curriculum increased their chances of taking facilitating A-level subjects.

Our results suggest that the introduction of the EBacc may improve the educational trajectories of the current student body, although it is possible that this increase in uptake may devalue the 'effect' of combinations of subjects if it is partly due to signalling. In other words, to the extent that the difference due to studying EBacc subjects stems from marking out more academically able and motivated students, making it universal will make it less informative.

An important conclusion from our results is that we are unable to find evidence to support the value of a less academic curriculum, not just on average, but for any social group, including working-class pupils. In fact, such a curriculum appears particularly disadvantageous for white pupils and girls. Policy makers have experimented with the curriculum, often without evidence regarding the average effects, let alone the implications for particular groups of pupils. Our findings suggest that such policies may have an unforeseen and long-term influence on young people's educational trajectories, with implications for inequalities in the life course.

Notes

1. Although A-levels are the most widely held qualification among 18 year old acceptances from the UK, there are other routes to university. A minority of 18 year olds in 2016 were also accepted holding BTECs, and a combination of A-levels and BTECs (UCAS, 2016).
2. At the time, an elite group of 20 research universities in the United Kingdom, now increased to 24 universities.
3. The two science subjects can either be in core and additional science GCSEs; or in GCSE double science awards across all three major science subjects; or two single sciences in biology, chemistry, computer science, or physics. However, the Next Steps data do not include a measure of computer science.
4. Benton (2015) suggests that more complex methods of aggregation of attainment scores are unlikely to do a better job of predicting future outcomes.
5. In the models including interactions, the sample sizes for some of the ethnic group categories were very small (or empty), therefore ethnicity was measured as a dichotomous variable where white was compared to all other ethnic groups.

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References

- Anders, J., Henderson, M., Moulton, V., & Sullivan, A. (2017). *Incentivising specific combinations of subjects: Does it make any difference to university access?* (Centre for Longitudinal Studies Working Paper). London: UCL Institute of Education.
- Anders, J., Henderson, M., Moulton, V., & Sullivan, A. (2018). The role of schools in explaining individuals' subject choices at age 14. *Oxford Review of Education*, 44(1).
- Barrance, R., & Elwood, J. (2018). Inequalities and the curriculum: young people's views on choice and fairness through their experiences of curriculum as examination specifications at GCSE. *Oxford Review of Education*, 44(1).
- Benton, T. (2015). Can we do better than using 'mean GCSE grade' to predict future outcomes? An evaluation of Generalised Boosting Models. *Oxford Review of Education*, 41, 587–607.

- Chevalier, A. (2011). Subject choice and earnings of UK graduates. *Economics of Education Review*, 30, 1187–1201.
- Codioli McMaster, N. (2017). Who studies STEM subjects at A level and degree in England? An investigation into the intersections between students' family background, gender and ethnicity in determining choice. *British Educational Research Journal*, 43, 528–553.
- Coe, R., Searle, J., Barmby, P., Jones, K., & Higgins, S. (2008). *Relative difficulty of examinations in different subjects*. Durham: Centre for Evaluation and Monitoring, Durham University [Online]. Retrieved <http://www.cem.org/attachments/SCORE2008report.pdf>
- Crawford, C., Dearden, L., Micklewright, J., & Vignoles, A. (2017). *Family background and university success: Differences in higher education access and outcomes in England*. Oxford: Oxford University Press.
- Davies, P., Telhaj, S., Hutton, D., Adnett, N., & Coe, R. (2008). Socioeconomic background, gender and subject choice in secondary schooling. *Educational Research*, 50, 235–248.
- Department for Education and Skills. (2001). *Schools achieving success*. London: DfES Publications.
- Dilnot, C. (2016). How does the choice of A-level subjects vary with students' socio-economic status in English state schools? *British Educational Research Journal*, 42, 1081–1106.
- Dilnot, C. (2018). The relationship between A-level subject choice and ranking of university attended: the 'facilitating', the 'less suitable' and the counter-intuitive. *Oxford Review of Education*, 44(1).
- Dolton, P. J., & Vignoles, A. (2002). The return on post-compulsory school mathematics study. *Economica*, 69(273), 113–142.
- Gill, T., & Bell, J. F. (2013). What factors determine the uptake of A-level physics? *International Journal of Science Education*, 35, 753–772.
- Gorard, S., & See, B. H. (2009). The impact of socio-economic status on participation and attainment in science. *Studies in Science Education*, 45, 93–129.
- Heath, A., & Brinbaum, Y. (2007). Explaining ethnic inequalities in educational attainment. *Ethnicities*, 7, 291–305.
- Henderson, M., Sullivan, A., Anders, J., & Moulton, V. (2017). Social class, gender and ethnic differences in subjects taken at age 14. *The Curriculum Journal*, 1–21.
- House of Commons Education and Skills Select Committee. (2003). Third report.
- Jin, W., Muriel, A., & Sibieta, L. (2011). *Subject and course choices at ages 14 and 16 amongst young people in England: Insights from behavioural economics*. London: Department for Education: DfE Research Reports.
- Noden, P., Shiner, M., & Modood, T. (2014). University offer rates for candidates from different ethnic categories. *Oxford Review of Education*, 40, 349–369.
- Plewis, I. (2009). *Ethnic differences in educational attainments and progress revisited* (CCSR Working Paper 2009-01). Manchester: Cathie Marsh Centre for Census and Survey Research.
- Rose, D., & Pevalin, D. (2005). *The national statistics socio-economic classification: Origins, development and use*. London: Office of National Statistics. Retrieved from <http://www.ons.gov.uk/ons/guide-method/classifications/archived-standard-classifications/soc-and-sec-archive/the-national-statistics-socio-economic-classification-origins-development-and-use.pdf>
- Rothon, C. (2005). *Black and minority ethnic educational attainment and engagement with school in Britain* (DPhil Sociology thesis). Oxford University, Oxford.
- Russell Group. (2015/16). *Informed choices*. Retrieved from <http://russellgroup.ac.uk/media/5320/informedchoices.pdf>
- Smyth, E. (2018). Working at a different level? Curriculum differentiation in Irish lower secondary education. *Oxford Review of Education*, 44(1).
- Sullivan, A., Zimdars, A., & Heath, A. F. (2010). The social structure of the 14–16 curriculum in England. *International Studies in Sociology of Education*, 20, 5–21.
- Toth, K., Sammons, P., & Sylva, K. (2015). *Subject to background*. London: Sutton Trust [Online]. Retrieved from <http://www.suttontrust.com/researcharchive/subject-to-background/>
- UCAS. (2016). *End of cycle report 2006*. Cheltenham: UCAS Analysis and Research. Retrieved from <https://www.ucas.com/file/86541/download?token=PQnaA15f>
- Vidal Rodeiro, C. (2007). *A level subject choice in England: Patterns of uptake and factors affecting subject preferences*. Cambridge: Cambridge Assessment [Online]. Retrieved from <http://www>.

cambridgeassessment.org.uk/images/111069-a-level-subject-choice-in-england-patterns-of-uptake-and-factors-affecting-subject-preferences.pdf

Vidal Rodeiro, C., Sutch, T., & Zanini, N. (2013). *Prior learning of undergraduates in UK higher education institutions*. Cambridge: University of Cambridge Local Examinations Syndicate [Online]. Retrieved from <http://www.cambridgeassessment.org.uk/Images/230030-prior-learning-of-undergraduates-in-uk-higher-education-institutions.pdf>

Wolf, A. (2011). *Review of vocational education: The Wolf report*. London: DFE-0031.