CAMBRIDGE
UNIVERSITY PRESS & ASSESSMENT

The role of Cambridge Technicals in the post-16 qualifications landscape

Research Report

Carmen Vidal Rodeiro

30 November 2021

Author contact details:

Carmen Vidal Rodeiro
Assessment Research and Development
Research Division
Shaftesbury Road
Cambridge
CB2 8EA
UK

carmen.vidalrodeiro@cambridge.org
https://www.cambridge.org/

As a department of the university, Cambridge University Press & Assessment is respected and trusted worldwide, managing three world-class examination boards, and maintaining the highest standards in educational assessment and learning. We are a not-for-profit organisation.

Cambridge University Press & Assessment is committed to making our documents accessible in accordance with the WCAG 2.1 Standard. We're always looking to improve the accessibility of our documents. If you find any problems or you think we're not meeting accessibility requirements, contact our team: Research Division
If you need this document in a different format contact us telling us your name, email address and requirements and we will respond within 15 working days.

How to cite this publication:

Vidal Rodeiro, C.L. 2021. *The role of Cambridge Technicals in the post-16 qualifications landscape*. Cambridge, UK: Cambridge University Press & Assessment.

Acknowledgements

This work was produced using statistical data from the Office for National Statistics (ONS). The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets that may not exactly reproduce National Statistics aggregates.

Contents

Executive Summary

Background

Cambridge Technicals are vocational qualifications offered by OCR at Levels 2 and 3, for students aged 16 and above. They are designed with the workplace in mind and provide an alternative to A levels. The successful completion of a Cambridge Technical can provide opportunities to progress into employment, onto professional development programmes including apprenticeships, or to continue studying in Higher Education.

Recent studies have highlighted large increases in the uptake of vocational qualifications for 14 to 19 year olds in England. In particular, in the years following their introduction, the uptake of Cambridge Technicals increased significantly. At the same time, however, concerns were raised about the number of different qualifications on offer and the current qualification landscape at Level 3 and below has been described as complex (comprising around 12,100 qualifications of varying types, sizes and design features). Some of the qualifications are well recognised and valued but, as the Wolf and Sainsbury reviews identified, some are poor quality and poorly understood. Furthermore, for some qualifications, links to the world of work and skill needs in the labour market are weak. Recent reforms to vocational qualifications, such as the introduction of new criteria for post-16 performance tables, have only been partially successful in raising standards.

As a result, in 2019, the Department for Education launched a review of post-16 qualifications at Level 3 in England. The aim of this review was to provide clearer qualification choices for young people and adults and to ensure that every qualification approved for public funding had a distinct purpose, was high quality and supported progression to positive outcomes for students. After two consultations, the Government announced their plans to remove funding for the majority of applied general qualifications, including most Cambridge Technicals, and introduce a binary system of T levels and A levels, where most young people pursue one of the qualifications at the age of 16.

While the introduction of T levels has been welcomed by many stakeholders, there are concerns that removing funding for applied general qualifications would leave many students without a viable pathway at the age of 16 and would hamper progress to Higher Education or skilled employment.

Concerns had also been raised about the impact of the Government's plans for disadvantaged students, as research has shown that students from disadvantaged backgrounds had the most to lose if applied general qualifications were to be defunded.

Many young people could be adversely affected by the proposal of having an A level or T level only study programme. As a result, many stakeholders are asking the Department for Education to rethink plans to remove funding for the vast majority of applied general qualifications (including BTECs and Cambridge Technicals) and instead provide assurances that they have an important role to play alongside the equally valuable A levels and T levels.

The current study

This research, therefore, aims to provide further evidence about the types of students who take Cambridge Technicals, and how the qualifications fit into their overall education. The purpose of this work is to inform efforts to increase the support for Cambridge Technicals and their role in the future post-16 qualifications landscape.

This research considered the following research questions:

1) What are the characteristics of Cambridge Technicals candidates?
2) What qualifications do candidates combine with Cambridge Technicals?
3) How do candidates perform in Cambridge Technicals, in comparison with other qualifications taken at the same time?
4) To what extent do Cambridge Technicals support the progression of students, in particular to Further and Higher Education?

Answering these research questions is an important step towards a better understanding of the value of Cambridge Technicals, and will provide further insights into the progression of students with different qualifications and backgrounds.

Data and methods

This study analysed data from three different sources.

The National Pupil Database (NPD) was used to obtain educational data on whole cohorts of students in Key Stage 5. In particular, the research focused on the students who were in Key Stage 5 in 2015/16 or 2016/17. This data was used to investigate the characteristics of students taking Cambridge Technicals, and the qualifications they took alongside them.

The other two sources of data used in this research were the Individualised Learner Record (ILR) database and the Higher Education Statistics Agency (HESA) student records database, which were linked to the NPD. The ILR and HESA data was used to investigate progression from Cambridge Technical qualifications to Further and Higher Education, respectively, from 2016/17 to 2018/19.

A range of descriptive statistics was produced to understand the place and value (progression) of Cambridge Technicals in students' programmes of study, as well as the demographic and educational characteristics (*e.g.*, gender, prior attainment, level of deprivation, ethnicity, type of school attended) of those students. Additionally, multilevel logistic regression models were fitted to understand the relationship between the uptake of Cambridge Technicals and progression to Further and Higher Education.

Findings and conclusions

This research provided evidence to better understand the value of Cambridge Technicals and their role in the post-16 qualifications landscape by investigating the types of students who take them and the progression to Further and Higher Education of students with different qualifications and backgrounds. This is important because of the uncertainty around the future of applied generals and, in particular, of the Cambridge Technicals.

The main findings and conclusions drawn from the research are outlined below:

- The number of candidates with Cambridge Technicals has been steadily increasing in recent years. Furthermore, Cambridge Technicals are part of academically oriented pathways (combined with AS/A levels), as well as part of other more vocational pathways (combined with qualifications such as BTECs and other vocational qualifications). Together, the two statements above show that Cambridge Technicals contribute to a large percentage of students' Key Stage 5 education.

- There were differences between students with and without Cambridge Technicals for most of the background characteristics analysed in this research. This shows the importance of not narrowing the choice of qualifications on offer post-16. All types of students should have high quality options and the breadth of choice that programmes of study combining academic (*e.g.*, A levels) with applied general qualifications (*e.g.*, Cambridge Technicals) can provide.
- There was little evidence that Level 3 Cambridge Technicals targeted low-attaining students. In fact, Cambridge Technicals tended to be more wide-reaching than AS/A levels with regard to candidate attainment, with the largest group of Cambridge Technicals candidates having medium rather than low levels of attainment.
- AS/A levels had decreasing percentages of candidates across low, medium and high deprivation groups, whereas the Cambridge Technicals had a more even balance of candidates in these groups (although, in general, candidates with Cambridge Technicals were associated with greater deprivation levels than candidates with academic qualifications).
- Over 50% of the students whose main qualification during Key Stage 5 was a Level 3 Cambridge Technical progressed to Higher Education. The progression rate was over 60% if AS/A levels were taken alongside the Cambridge Technicals. This shows that Cambridge Technicals are a valuable means of accessing Higher Education.
- Even though overall progression to Further Education was low, it was higher for students with Cambridge Technicals than for students without them, confirming that Cambridge Technicals help students progress onto higher level training such as apprenticeships.
- The overall rates of progression from Level 3 Cambridge Technicals to Higher Education courses and to apprenticeship programmes compared well with rates of progression from other applied general qualifications (*e.g.*, BTECs).
- When looking at performance in Higher Education by the students' main qualification at Key Stage 5, this research showed that the highest graduation rates, and the highest proportions achieving a good degree (first or upper second class), corresponded to students whose main qualification was an A level. Rates for students with a Cambridge Technical as their main qualification were only slightly lower and higher than rates for students with Level 3 BTECs or other Level 3 qualifications. This suggests that Cambridge Technicals can lead to good outcomes (in terms of attainment) in Higher Education.

In conclusion, there is clear evidence that the Cambridge Technicals, and programmes of study combining Cambridge Technicals with other qualifications (*e.g.*, AS/A levels) help students to progress and do not close students' options after Key Stage 5. In particular, Cambridge Technicals can facilitate progression to Higher Education courses and apprenticeships in Further Education settings.

It is important that any restructuring to the post-16 education system ensures that students have clear and abundant information to make their choices, and that there is flexibility in students' trajectories throughout Key Stage 5.

This research has shown that Cambridge Technicals can be a valuable and high quality alternative to A levels and should, therefore, continue to exist within the government's vision of a two track system of post-16 education (academic *vs*. technical education) as it can contribute to a rigorous qualifications landscape which includes high quality qualifications and adequately equips students for progression into Further or Higher Education.

1. Introduction

In 2010, the government in England announced a reform of the vocational qualifications (VQs) offered in secondary education in order to increase their rigour and status (DfE, 2010). The Department for Education (DfE) set out new criteria that vocational qualifications needed to meet, which changed their nature in fundamental ways (*e.g*., content, assessment structure, grading, size and progression requirements). In particular, vocational qualifications now have to include external examinations and cannot be purely assessed by coursework.

Vocational qualifications that adhered to the DfE's approval criteria were grouped in newly introduced categories (DfE, 2015): Technical Awards at Key Stage 4 and Applied Generals, Tech Levels and Technical Certificates at Key Stage 5. These new categories of vocational qualifications were intended to help stakeholders (*e.g*., further education providers, employers) make sense of the diverse range of qualifications that students took and signal the ones that were of high quality. Furthermore, only vocational qualifications that met the criteria for those categories would be approved for the DfE performance tables.

More recently, a major change to vocational education has been introduced (DfE,2017a). A new qualification post-16, the T Level, will aim to improve the teaching and administration of technical education enabling students to directly enter employment when completed. This qualification, developed in collaboration with employers and businesses, will offer students a mixture of classroom learning and 'on-the-job' experience (placement or work-based learning) and will form a technical route at Key Stage 5.

This research focusses on a particular type of vocational qualification: the Cambridge Technical. Cambridge Technicals are vocational qualifications offered by OCR at Levels 2 and 3, for students aged 16 and above. They are designed with the workplace in mind and provide an alternative to A levels. The successful completion of a Cambridge Technical can provide opportunities to progress into employment, onto professional development programmes including apprenticeships, or to continue studying, in Higher Education.

There are two suites of Cambridge Technicals. The qualifications in the first suite have been taught since September 2012 (hereafter, 'the 2012 suite'). A second suite, designed to meet new technical guidance from the DfE, was introduced in September 2016 (hereafter, 'the 2016 suite'). Qualifications at Level 3 from both suites attract UCAS tariff points. The 2012 suite is 100% internally assessed, whereas the 2016 suite includes external assessment and is eligible for inclusion in Key Stage 5 performance tables from 2018/19 onwards[1]. The different qualification sizes and subjects included in the 2012 and 2016 suites are shown in Table 1 and Table 2, respectively.

Recent studies (*e.g.*, Richards, 2016; Kelly, 2017; Universities UK, 2018) have highlighted large increases in the uptake of vocational qualifications for 14 to 19 year olds in England. In particular, in the years following their introduction, the uptake of Cambridge Technicals increased significantly (see, for example, Vidal Rodeiro (2018; 2019; 2021); Williamson and Carroll (2018a)). At the same time, however, concerns were raised about the number of different qualifications on offer at Level 3 and below.

[1] See, for example, DfE (2017b) for further details of the qualifications and their requirements for inclusion in the performance tables.

Table 1: Qualifications in the Cambridge Technicals 2012 suite

Qualification level	Qualification name	GLH[2]	A level size	Subjects							
				Art & Design	Sport	Health & Social Care	Business	IT	Media	Science	Performing Arts
Level 2	Certificate	90		✓	✓	✓	✓	✓	✓	✓	✓
	Extended Certificate	180		✓	✓	✓	✓	✓	✓	✓	✓
	Diploma	360		✓	✓	✓	✓	✓	✓	✓	✓
Level 3	Certificate	180	0.5	✓	✓	✓	✓	✓	✓		✓
	Introductory Diploma	360	1	✓	✓	✓	✓	✓	✓		✓
	Subsidiary Diploma	542	1.5	✓	✓	✓	✓	✓	✓		✓
	Diploma	720	2	✓	✓	✓	✓	✓	✓		✓
	Extended Diploma	1080	3	✓	✓	✓	✓	✓	✓		✓

Table 2: Qualifications in the Cambridge Technicals 2016 suite

Qualification Level	Qualification name	GLH[2]	A level size	Subjects							
				Engineering	Sport & Physical Activity	Health & Social Care	Business	IT	Digital Media	Applied Science	Performing Arts
Level 2	Award	90			✓	✓	✓	✓	✓		
	Certificate	180		✓	✓	✓	✓	✓	✓		
	Diploma	360		✓	✓	✓	✓	✓	✓		
Level 3	Certificate	180	0.5	✓	✓	✓	✓	✓	✓	✓	✓
	Extended Certificate	360	1	✓	✓	✓	✓	✓	✓	✓	✓
	Introductory Diploma	360	1					✓			
	Foundation Diploma	540	1.5	✓	✓	✓	✓	✓	✓	✓	✓
	Diploma	720	2	✓	✓	✓	✓	✓	✓	✓	✓
	Extended Diploma	1080	3	✓	✓	✓	✓	✓	✓	✓	✓

[2] Guided learning hours.

DfE (2019a) described the current qualification landscape at Level 3 and below as complex, comprising around 12,100 qualifications of varying types, sizes and design features. Some of the qualifications are well recognised and valued but, as the Wolf and Sainsbury reviews identified (Wolf, 2011; DfE/BIS, 2016), some are poor quality and poorly understood, and with links to the world of work and skill needs in the labour market being weak. Furthermore, routes into and through post-16 education are unclear, creating an unnecessary barrier to young people choosing an educational route at age 16. Recent reforms, such as the introduction of new criteria for post-16 performance tables mentioned above, have only been partially successful in raising standards.

As a result, in 2019, the Department for Education launched a review of post-16 qualifications at Level 3 in England. The aim of this review was to provide clearer qualification choices for young people and to ensure that every qualification approved for public funding had a distinct purpose, was high quality and supported progression to positive outcomes for students. After two consultations (DfE, 2019b; DfE, 2020) the Government announced their plans to remove funding for the majority of applied general qualifications, including most Cambridge Technicals, and introduce a binary system of T levels and A levels, where most young people pursue one of the qualifications at the age of 16 (DfE, 2021a; DfE, 2021b).

While the introduction of T levels has been welcomed by many stakeholders, there are concerns that removing funding for applied general qualifications, would leave many students without a viable pathway at the age of 16 and would hamper progress to Higher Education or skilled employment[3]. Therefore, it has been suggested that students should still have the option to study applied general qualifications as, for many, they would be a more appropriate route to support progression to higher levels of study or a job than an A level or T level only study programme. In fact, recent research by Vidal Rodeiro and Vitello (2021) showed that vocational qualifications are a substantial part of many students' educational experiences at secondary education and, at Key Stage 5, many students' programmes of study at Level 3 are comprised exclusively of vocational qualifications such as applied generals or tech levels. Applied generals, in particular, were found to have much higher levels of progression from Key Stage 4 than the other categories of vocational qualifications. This provides evidence that this qualification could continue to exist within the governmental vision of a two track system of post-16 education (academic *vs*. technical education).

Concerns had also been raised about the impact of the Government's plans for disadvantaged students, as research has shown that students from disadvantaged backgrounds had the most to lose if applied general qualifications were to be defunded. Recent studies have shown that vocational qualifications, including applied generals, have been viewed by teachers as beneficial for students who are disengaged from schools, for low attainers and for students from economically disadvantaged backgrounds (Smith, Joslin and Jameson, 2015; Hupkau *et al*., 2016; Richards, 2016; Vidal Rodeiro and Vitello, 2020).

Many young people could be adversely affected by the proposal of having an A level or T level only study programme. As a result, many stakeholders are asking the Department for Education to rethink plans to remove funding for the vast majority of applied general qualifications (including BTECs and Cambridge Technicals) and instead provide assurances that they have an important role to play alongside the equally valuable A levels and T levels.

[3] This view is supported, for example, by the "Protect Student Choice" campaign (https://www.protectstudentchoice.org/), a coalition of 18 organisations including, for example, the Independent Schools Council, the Association of School and College Leaders, the Sixth Form College Association, the Schools, Students and Teachers Network, the National Union of Students, the NASUWT Teachers Union, and the Edge Foundation.

This research, therefore, aims to provide further evidence about the types of students who take Cambridge Technicals, and how the qualifications fit into their overall education. The purpose of this work is to inform efforts to increase the support for Cambridge Technicals and their role in the future post-16 qualifications landscape.

1.1 Research questions

This research considered the following research questions:

1) What are the characteristics of Cambridge Technicals candidates?
2) What qualifications do candidates combine with Cambridge Technicals?
3) How do candidates perform in Cambridge Technicals, in comparison with other qualifications taken at the same time?
4) To what extent do Cambridge Technicals support the progression of students, in particular to Further and Higher Education?

Answering these research questions is an important step towards a better understanding of the value of Cambridge Technicals, and will provide further insights into the progression of students with different qualifications and backgrounds.

2. Data and method

2.1 Data

2.1.1 Sources of data

This research used data from the National Pupil Database (NPD), a national database held by the Department for Education, containing details of all students in schools and colleges in England. In particular, its data extracts have information, for each academic year, on the qualifications and attainment at Key Stage 5 for all students in England. Students' characteristics, such as gender, ethnicity, eligibility for free school meals or socio-economic deprivation, are also available in this data.

The data from the NPD was linked to data from the Individualised Learner Record (ILR) database and to data from the Higher Education Statistics Agency (HESA).

The ILR records information about post-16 students' study within colleges and other non-school provision. It contains details of every course started, including apprenticeships and work-based learning programmes.

HESA provides data on students in Higher Education, including the course type (*e.g.*, Foundation Degree; Bachelor of Arts Degree), subject area and Higher Education institution.

2.1.2 Detailed description of the data used in the research

Section 2.1.2.1 below describes the data used to answer research questions 1), 2) and 3), which focussed on the characteristics of students with Cambridge Technicals and the qualifications they took alongside them. These analyses used only data from the Key Stage 5 extracts of the NPD.

Section 2.1.2.2 describes the data used to answer research question 4), which explored progression to Further Education (FE) and Higher Education (HE). These analyses used linked NPD-ILR-HESA data.

2.1.2.1 Characteristics of students taking Cambridge Technicals

Candidates

The analyses looking at the characteristics of students taking Cambridge Technicals, and the qualifications they took alongside them, focussed on the cohort of students who were in Key Stage 5 in the academic year 2016/17.

Only Cambridge Technical qualifications awarded in 2016/17 were included in this work. Note that the students who were in Key Stage 5 in the academic year 2016/17 were the first cohort who could have achieved Cambridge Technicals from the 2016 suite. Therefore, the Cambridge Technicals candidates included in these analyses took their qualifications primarily from the 2012 suite.

Two reference groups against which Cambridge Technicals candidates could be compared were created: *i*) candidates who achieved an A level in the academic year 2016/17; and *ii*) candidates in the Key Stage 5 NPD extract who had achieved at least one qualification in the academic year 2016/17 (irrespective of qualification type or level). A level candidates were chosen as a comparator group because A levels are the conventional academic route at Key Stage 5. The Key Stage 5 group allowed comparisons to be made against the range of Key Stage 5 candidates, who included those taking both vocational and academic qualifications.

Candidate characteristics

Prior attainment

The prior attainment (Key Stage 4) of students in this research was measured by several achievement indicators, which are briefly described below:

- *Average GCSE and equivalents point score*, as provided in the NPD (for details on how this is calculated, see DfE (2017c)). This measure was used to divide students into five approximately equally sized groups. These quintiles divided the students into groups of relative attainment (lowest, low, medium, high and highest attainment).
- *GCSE A*-C*. Average point score is one possible measure of attainment, but the attainment of certain 'benchmarks' is also important. In particular, gaining five GCSEs at grades A*-C (9-4 in the reformed GCSEs), and five GCSEs at grades A*-C including both English and Maths are key benchmarks that have been used to indicate attainment in previous analyses of vocational qualification candidates (*e.g.*, De Coulon *et al*., 2017; Hupkau *et al*., 2016). Consequently, the indicators of attaining five GCSEs at grades A*-C (or 9-4) and of attaining five GCSEs at grades A*-C (or 9-4) including English and Maths available in the NPD were used.

Level of income-related deprivation

The level of income-related deprivation was measured by two different indicators:

- *IDACI deprivation*: The level of income-related deprivation that students experience was inferred using the Income Deprivation Affecting Children Index (IDACI)[4]. This index is based on the student's home postcode and describes the percentage of children in a very small geographical area (Lower Layer Super Output Area or LSOA) living in low income families. It varies between 0 and 1 and indicates how income deprived the area in which a student lives is. It cannot, however, indicate how income deprived the student actually is. This measure was used to divide students into five approximately equally sized groups: lowest deprivation (more affluent), low, medium, high and highest deprivation.
- *Free School Meals (FSM)*: The NPD provides a flag to indicate if a student has ever been recorded as eligible for free school meals on census day in any termly or annual school census in the last six years up to the students' current year. This measure can be used as a proxy for the level of deprivation (Ilie, Sutherland and Vignoles, 2017).

Type of school

The NPD listed the centre at which candidates gained their qualifications, indicated by the centre's Unique Reference Number (URN). This number was used to match candidates to the Department for Education's register of educational establishments in England and Wales, providing information on the type of school (Gill, 2017).

Based on their type, schools were classified into six groups: comprehensive schools, selective schools, independent schools, sixth form colleges, further education (FE) colleges and other centres.

[4] 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.

Other variables used from the NPD were:

- Gender: male/female.
- Age: This was defined as the candidate's age at the start of the academic year in which their qualification was certificated. Candidates included in these analyses were either 16, 17 or 18 years old.
- Ethnicity: This was the student's major ethnic group, as provided by the NPD: Asian (not Chinese), Black, Chinese, White, Mixed or Other.

Note that some of the variables described above are collected as part of the annual school census (which is linked to the NPD), so they are primarily available only for students at state-maintained schools (which do not include independent schools and many sixth-form and further education colleges). This can lead to large amounts of missing data for some variables (*e.g.*, IDACI deprivation, FSM or ethnicity).

Qualifications alongside Cambridge Technicals

In investigating the qualifications taken alongside Cambridge Technicals, we considered candidates' complete programme of study during Key Stage 5, not just the qualifications candidates took in the same year as their Cambridge Technicals.

Qualifications taken during Key Stage 5 were grouped by type. Some qualifications of particular interest (*e.g*., A levels, BTECs) were not aggregated into more general groups. The classifications used are shown in Table 3 below:

Table 3: Qualifications alongside Cambridge Technicals

Qualifications	Examples of qualifications included
A level	GCE A level
AS level	GCE AS level
Applied A level	Applied GCE A level Double Award
Applied AS level	Applied GCE AS level Double Award
GCSE in English or Maths	GCSE English Language / GCSE Mathematics
GCSE (other)	GCSE in any other subject
BTEC L1/L2	BTEC Level 1 / Level 2
BTEC L3	Level 3 BTEC
Cambridge National	OCR Cambridge National
Below L2	Level 1 Functional Skills
Other L1/L2	Level 2 Free Standing Maths
Other L3	Level 3 Core Maths

Performance in Cambridge Technicals and other qualifications

In this work, performance in Cambridge Technicals and in other qualifications taken alongside them during Key Stage 5 was also investigated. Analyses focused primarily on performance in Level 3 qualifications (specifically Cambridge Technicals, A levels and BTECs), since Cambridge Technicals were most commonly studied at Level 3, and in combination with other Level 3 qualifications.

Candidates' achievements in A levels, BTECs and Cambridge Technicals were compared by calculating individual candidates' average grade achieved in each type of qualification, as suggested by Williamson and Carroll (2018a) – see example on Figure 1 below. The average grades were computed using the UCAS tariff points allocated to qualification results (UCAS, 2017), since the UCAS tariff incorporates information about both level of performance and qualification size.

Qualification	Result	Size	UCAS points
Cambridge Technical Introductory Diploma	M	1 x A level	32
Cambridge Technical Diploma	D*D*	2 x A level	112
		TOTAL	144
UCAS points per A level sized qualification = 144 / 3 = 48 Grade corresponding to 48 points, for a Cambridge Technical the size of 1 A level = D			

Figure 1: Example of calculation of average grade in Cambridge Technicals (Williamson and Carroll, 2018a)

2.1.2.2 Progression to and performance in Further and Higher Education

Candidates

At the time the data for this research was requested to the DfE (January 2020), the most recent available HESA and ILR data was for academic year 2018/19. Students included in this data will have appeared in the 2017/18 NPD or earlier. Therefore, analyses investigating progression to and performance in Further or Higher Education focussed on the following two cohorts of students:

- Students in Year 13 in 2015/16, who turned 18 during 2015/16
  These students, whose Key Stage 5 results were in the 2015/16 NPD were followed up for three years (2016/17 to 2018/19) in the ILR and HESA records.
- Students in Year 13 in 2016/17, who turned 18 during 2016/17
  These students, whose Key Stage 5 results were in the 2016/17 NPD were followed up for two years (2017/18 to 2018/19) in the ILR and HESA records.

Note that the students who started Further or Higher Education in 2016/17 were the first cohort who could have achieved Cambridge Technicals from the 2016 suite. They were followed up only for two years due to data availability at the time the research was planned.

With the aim of focusing attention on the qualifications that helped students to progress, we considered only qualifications of at least equivalent to AS level in size, and only where the student had received a result for the qualification. Students without at least one qualification of at least AS level in size (and hence, at Level 3) were excluded from the cohorts analysed.

Candidate characteristics

Prior attainment

Students were ranked according to their *average GCSE and equivalents point score* scores, as described in Section 2.1.2.1, and each year group was then split into terciles in order to form a low, medium and high prior attainment classification

Level of income-related deprivation

As described in Section 2.1.2.1 above, students were classified according to whether they came from areas of low, medium or high income-related deprivation. Students were, therefore, ranked within their Key Stage 5 year group according to their IDACI scores, and each year group then split into terciles in order to form the low, medium and high income-related deprivation groups.

Key Stage 5 educational pathway

Key Stage 5 educational pathways were defined, as in Vidal Rodeiro and Williamson (2019), according to the percentage of each student's learning hours accounted for by academic and vocational qualifications. In order to create the pathways, each qualification was coded as either academic or vocational. Five mutually exclusive pathways were defined as follows:

- Academic only: all learning hours in academic qualifications
- Mostly academic: between 2/3 and all learning hours in academic qualifications
- Vocational only: all learning hours in vocational qualifications
- Mostly vocational: between 2/3 and all learning hours in vocational qualifications
- Mixed: between 1/3 and 2/3 of learning hours in vocational qualifications

Main qualification at Key Stage 5

The main qualification at Key Stage 5 was determined using the variable *KS5_points* in the Key Stage 5 extracts of the NPD. This variable records the number of performance points awarded per qualification result, as allocated by the Department for Education, taking into account both the size of the qualification and the level of achievement. The qualification type of the individual result that received the highest number of points was deemed to be the student's main qualification. In cases where the Key Stage 5 points achieved did not uniquely define the main qualification, the main qualification was recorded as "mixed".

Other classification variables

Higher Education institution type

Higher Education institutions were considered in two groups: Russell Group and "Other" universities. The Russell Group[5] 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.

Higher Education institutions were also classified as being (or not) in the Sutton Trust Top-30 most selective universities (Boliver *et al*., 2017). 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 institutions.

Related subject indicator

A variable to indicate if the candidates progressed to a programme in the same subject, or a related subject, to the subject in which they had taken their Cambridge Technical was created. This variable was created at the level of the qualification and not the candidate (*i.e*., if a student had taken multiple Cambridge Technicals, we investigated progression from each of them).

[5] 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/).

The subject of study in Further Education was provided in a list of 15 broad areas, which related to the subject of the student's qualification. These were: Health, Public Services and Care; Science and Mathematics; Agriculture, Horticulture and Animal Care; Engineering and Manufacturing Technologies; Construction, Planning and the Built; Environment; Information and Communication Technology; Retail and Commercial Enterprise; Leisure, Travel and Tourism; Arts, Media and Publishing; History, Philosophy and Theology; Social Sciences; Languages, Literature and Culture; Education and Training; Preparation for Life and Work; Business, Administration and Law.

The subject of study in Higher Education was provided in a list of 19 broad degree areas, which as above related to the principal subject of the student's qualification. 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 relatedness of subject areas between Cambridge Technicals and Further/Higher Education courses was a judgement rather than a calculation made by the researcher. Table 4 shows the Further and Higher Education subject areas which were considered the related subject areas for each Cambridge Technicals subject.

Level of the Further/Higher Education course

The courses students took in either Further or Higher Education were classified by their level, as follows:

- Higher Education
    - Courses were classified as being Level 6 or above (equivalent to a bachelor's degree or above) or not.
    - Courses were also classified as being an apprenticeship in Higher Education or not.
- Further Education
    - Courses were classified as being Level 4 or above (*e.g.*, higher apprenticeships or above, which are equivalent to a foundation degree or above) or not.

2.2 Method

The statistical methods used in this research comprised simple descriptive statistics alongside multilevel regression analyses. Details of the different methods and analyses carried out are given below.

2.2.1 Characteristics of students taking Cambridge Technicals

Descriptive statistics showing the uptake of Cambridge Technicals, broken down by suite, size (certificate, diploma, etc.), subject and level of the Cambridge Technical (Level 2 / Level 3) were calculated. These were first reported for the overall cohorts, and then broken down by the background characteristics of the candidates. Details of the background characteristics of students with A levels and students in Key Stage 5 (as described in Section 2.1.2.1) were also given as reference.

Table 4: Further and Higher Education subjects related to Cambridge Technical subjects

Cambridge Technical subject	Subjects in FE	Subjects in HE
Art & Design	Arts, Media and Publishing	Creative Arts & Design Architecture, Building & Planning
Business	Business, Administration and Law Retail and Commercial Enterprise Leisure, Travel and Tourism	Business & Administrative Studies
Engineering	Engineering and Manufacturing Technologies Construction, Planning and the Built Environment	Engineering & Technology Physical Sciences
Health & Social Care	Health, Public Services and Care Social Sciences	Medicine & Dentistry Subjects allied to Medicine Biological Sciences Social Studies
Information Technology	Information and Communication Technology	Computer Science Engineering & Technology
Media / Digital Media	Arts, Media and Publishing	Creative Arts & Design Mass Communications & Documentation
Performing Arts	Arts, Media and Publishing	Creative Arts & Design
Sport / Sport & Physical Activity	Leisure, Travel and Tourism	Business & Administrative Studies Biological Sciences

Candidates' qualifications (*e.g.*, combinations of Cambridge Technicals) and qualifications and combinations of qualifications taken alongside Cambridge Technicals were reported broken down by suite and by the subject of the Cambridge Technical.

Finally, comparisons of the performance in Cambridge Technicals (by suite), A levels and BTECs was presented in tables and graphs. These tables/graphs showed, for example, grade distributions for the different groups of students, frequency of candidates by their average A level grade and average Level 3 Cambridge Technical grade, and the average UCAS points per qualification.

2.2.2 Progression to and performance in Further and Higher Education

2.2.2.1 Progression

Descriptive statistics showing the percentages of students with Cambridge Technicals progressing either to Further Education or Higher Education) were calculated. Progression of students without Cambridge Technicals was also reported to provide context and comparisons with other groups of students. More details of the progression indicators used in this work are given in Sections 3.2 and 3.3.

Progression analyses were also carried out broken down by students' background characteristics (*e.g.*, gender, prior attainment, type of school attended or level of deprivation).

To gain a better understanding of the results from the simple analyses above, we assessed the relationship between the uptake of Cambridge Technical qualifications and the different progression routes (*e.g.*, Further Education; Higher Education) using regression analyses. The regression analyses differ from the descriptive analyses in that they take into account students' background characteristics (*e.g.*, gender, prior attainment or level of deprivation) when looking at the probability of progression.

The outcome for the regression analyses was progression and several models for different outcomes variables were fitted (*e.g.*, progression to Further Education; progression to Higher Education). As the data in this research is hierarchical (*i.e.*, there is clustering of students within schools), multilevel regression models were used. In particular, as the outcome variables were dichotomous (1 if the student progressed; 0 if the student did not progress), multilevel logistic regression models were used. These regression models have the following general form:

$$log\left(\frac{p_{ij}}{1-p_{ij}}\right) = \beta_0 + \beta_1 X1_{ij} + \beta_2 X2_{ij} + \cdots + \beta_k Xk_{ij} + u_j$$

where p_{ij} is the probability of student i from school j progressing to a specific destination, $X1$ to Xk are the independent variables (including students' characteristics and the uptake of Cambridge Technical qualifications), β_1 to β_k are the regression coefficients and u_j is a random effect at school level.

2.2.2.2 Performance

The 2015/16 cohort of students could have graduated from Higher Education after three years. Therefore, graduation and performance at Higher Education was also considered for that cohort of students. More details of the performance indicators used in this work are given in Section 3.2.

Performance (graduation from Higher Education) was not investigated for the 2016/17 cohort, as these students would not have graduated until 2019/20 at the earliest and data was not available at the time this research started.

Data on performance (*e.g.*, course completion) in the ILR is patchy and difficult to interpret. Therefore, performance in Further Education was not investigated.

Descriptive statistics showing the percentages of students with Cambridge Technicals achieving specific performance measures in Higher Education (*e.g.*, graduation; first class degree) were calculated. Performance in Higher Education of students without Cambridge Technicals was also reported to provide context and comparisons with other groups of students.

As above, performance analyses were also carried out broken down by students' background characteristics (*e.g.*, gender, prior attainment, type of school attended or level of deprivation).

The relationship between the uptake of Cambridge Technical qualifications and performance in Higher Education was also investigated using regression analyses. The outcome variables for the regression analyses looking at performance were indicators of achievement in HE and several models for different achievement measures were fitted (*e.g.*, graduation; first class degree). The regression models have the same form as the models described in Section 2.2.2.1 above, with students clustered within Higher Education institutions rather than within schools.

Note about Statistical Disclosure Controls

To ensure confidentiality of the data, statistical disclosure controls have been applied to the results of all analyses.

- **For results in Section 3.1 (analysis only using data from the National Pupil Database), counts below ten and percentages based on counts below ten have either been suppressed or merged with other counts.**
- **For results in Sections 3.2 and 3.3 (analysis using linked NPD-ILR-HESA data), the "linked DfE-HESA" disclosure control policies have been applied (for more details, see https://www.hesa.ac.uk/about/regulation/data-protection/rounding-and-suppression-anonymise-statistics).**

Percentages were rounded to the nearest one decimal point. As a result of rounded figures and/or suppression, the percentages shown in tables may not necessarily add up to 100.

3. Results

3.1 Characteristics of students taking Cambridge Technicals

3.1.1 Overall uptake figures

There were 22,315 individual candidates who obtained at least one Cambridge Technical qualification in the academic year 2016/17, based on the data available in the 2016/17 Key Stage 5 NPD extracts. These candidates could have achieved the qualifications from either the 2012 or the 2016 suites. Table 5 below shows the breakdown by suite. Note that the total number of candidates in Table 5 (22,387) is slightly higher than the number of individual candidates above (22,315), due to some candidates achieving at least one Cambridge Technical in each of the suites.

Table 5: Candidates with Cambridge Technicals in 2016/17, by suite

Qualification Level	2012 Suite		2016 Suite	
	N	%	N	%
Level 2	6802	33.9	0	0.0
Level 3	13291	66.2	2294	100.0
Total	*20093*		*2294*	

Table 6 shows that the total number of Cambridge Technical awards was 24,465. Of these, the majority were from the 2012 suite (just over 90%). 2016 Cambridge Technicals were available for first teaching in September 2016 and therefore, the 2016/17 cohort was the first to achieve these qualifications. Since then, the uptake of 2016 Cambridge Technicals has been increasing strongly. In particular, Vidal Rodeiro (2021) showed that there were 14,035 Cambridge Technical awards from the 2016 suite in the academic year 2017/18 and that in 2018/19 this number rose to 18,938; in comparison just below 11,000 awards in each of these two academic years were from the 2012 suite.

Level 3 Cambridge Technical qualifications from the 2012 suite were more common than Level 2 qualifications, with almost twice as many awarded. In 2016/17, however, there were no Level 2 Cambridge Technicals awarded from the 2016 suite.

When awards were broken down by qualification size, the majority of the Cambridge Technicals at Level 2 were Diplomas (Table 6). At Level 3, Introductory Diplomas (equivalent to one A level) were the most common qualifications from the 2012 suite, but when looking at the 2016 suite qualifications, Certificates (equivalent to one AS level) were more common probably because they are studied over one year (and 2016/17 was the first year of the awarding of the qualifications in this suite) whereas Introductory Diplomas are often studied over two years.

Table 7 shows that, when awards are broken down by subject, IT was the most popular Cambridge Technical at Level 2, followed by Business and Health & Social Care. At Level 3, a similar pattern can be observed for awards from the 2012 suite. However, amongst candidates taking qualifications from the 2016 suite, Business was the most popular Cambridge Technical, followed closely by IT.

Table 6: Cambridge Technical awards 2016/17, by size and suite[6]

Qualification Level	Qualification Size	2012 Suite		2016 Suite	
		N	%	N	%
Level 2	Certificate	822	11.39		
	Extended Certificate	1715	23.75		
	Diploma	4683	64.86		
	All sizes	*7220*			
Level 3	Certificate	1966	13.25	1931	80.26
	Extended Certificate			312	12.97
	Introductory Diploma	7924	53.4	42	1.75
	Foundation Diploma			96	3.99
	Subsidiary Diploma	1395	9.4		
	Diploma	1974	13.3	25	1.04
	Extended Diploma	1580	10.65		
	All sizes	*14839*		*2406*	
All Levels		*22059*		*2406*	

Table 7: Cambridge Technical awards 2016/17, by subject and suite

Qualification Level	Qualification Subject	2012 Suite		2016 Suite	
		N	%	N	%
Level 2	Art & Design	442	6.1		
	Business	1431	19.8		
	Health & Social Care	1187	16.4		
	Information Technology	1913	26.5		
	Media / Digital Media	1058	14.7		
	Performing Arts	184	2.6		
	Science / Applied Science	266	3.7		
	Sport / Sport & Physical Activity	739	10.2		
	All subjects	*7220*			
Level 3	Art & Design	463	3.1		
	Business	3202	21.6	746	31.0
	Engineering			133	5.5
	Health & Social Care	2796	18.8	325	13.5
	Information Technology	5333	35.90	675	28.1
	Media / Digital Media	1470	9.90	158	6.6
	Performing Arts	101	0.7	< 60	-
	Science / Applied Science			< 10	-
	Sport / Sport & Physical Activity	1474	9.9	312	13.0
	All subjects	*14839*		*2406*	
All Levels		*22059*		*2406*	

[6] Blank cells indicate no data was available (*e.g.*, qualifications not offered); "-" indicates suppressed due to low counts, following statistical disclosure controls.

Note that the numbers of candidates with Cambridge Technicals (Table 5) are lower than the total number of awards (Table 6 and Table 7), as some candidates could have taken multiple subjects at a given qualification size, or could have taken multiple qualifications of different sizes within the same subject.

3.1.2 Background characteristics of candidates with Cambridge Technicals

To better understand the value of the Cambridge Technicals and their role in the post-16 qualifications landscape, the types of students who take them were investigated. In this section of the report, demographic/background characteristics of candidates with Cambridge Technicals were compared to characteristics of candidates with A level qualifications and characteristics of candidates with qualifications in Key Stage 5. As discussed in Section 2.1.2, A level candidates were chosen as a comparator group because A levels are the conventional academic route at Key Stage 5 and the Key Stage 5 group allowed comparisons to be made against the range of Key Stage 5 candidates.

Figure 2 shows that for both suites, and at both Level 2 and Level 3, there were more male than female candidates taking Cambridge Technicals: 40% of candidates at Level 2 and between 41% and 45% of candidates at Level 3 were female (see detailed figures in Table A1 in Appendix A). This contrasted with A levels (55% female) and the Key Stage 5 cohort (50% female).

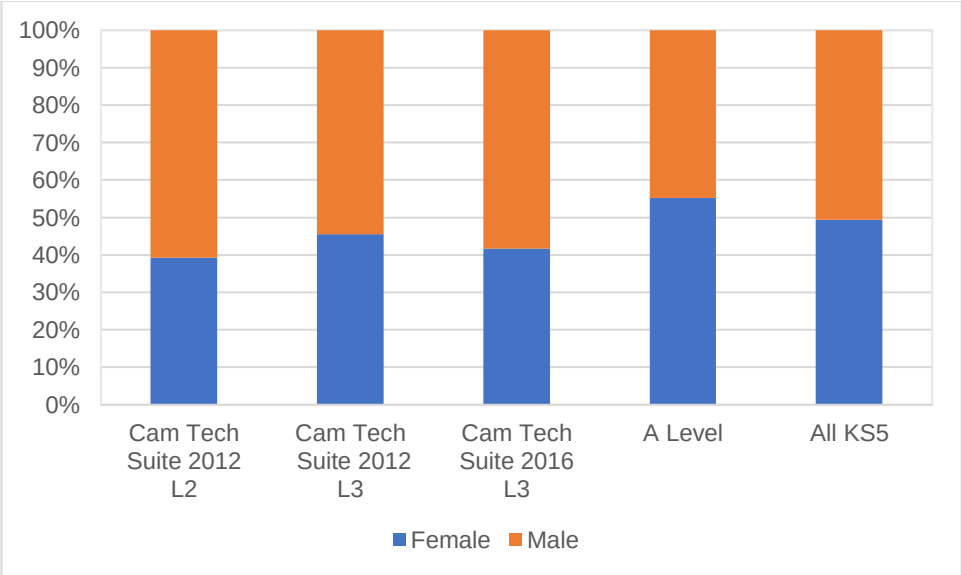


Figure 2: Candidates' characteristics ~ Gender

Figure 3 shows that the majority of Level 2 Cambridge Technicals candidates were aged 16 (74% were aged 16; see Table A2 in Appendix A for details). A similar age distribution was found for Level 3 Cambridge Technicals from the 2016 suite (77% of the candidates were aged 16). This probably reflects the number of Certificates awarded in the first year of teaching the qualifications in this suite. Candidates who obtained a Level 3 Cambridge Technical qualification from the 2012 suite were predominantly aged 17 (73%).

These patterns contrasted with patterns for A levels, for which 91% of candidates were aged 17, and for the Key Stage 5 cohort, which showed more even proportions of 16- and 17-year-olds (44% aged 16, 46% aged 17).

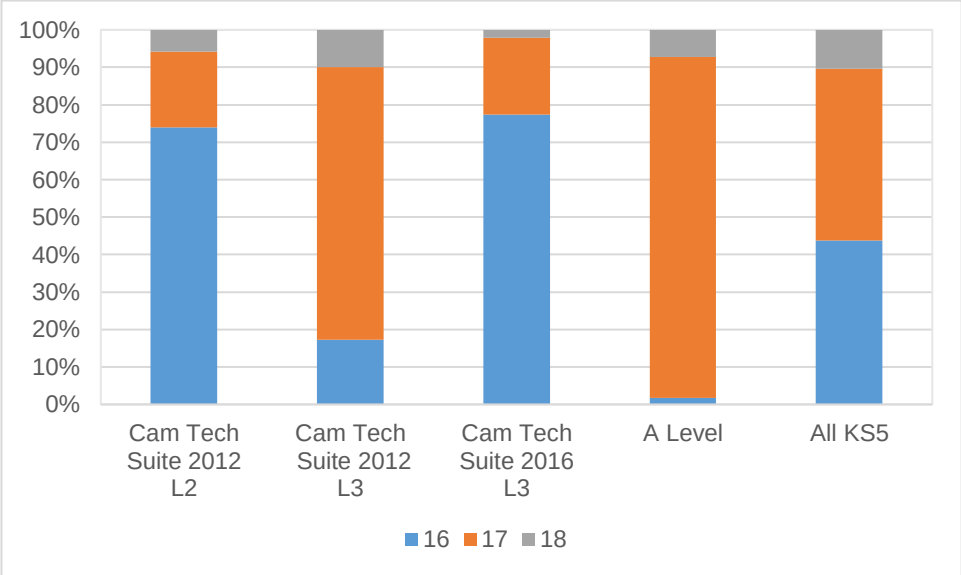


Figure 3: Candidates' characteristics ~ Age

As described in Section 2.1.2, candidates' prior attainment was calculated using the average GCSE and equivalents point score. Using this measure, five groups – from lowest to highest prior attainment – were calculated. Figure 4 (and Table A3 in Appendix A) shows that the majority of the Level 2 Cambridge Technicals candidates were from low attainment groups, with 78% in the lowest quintile. Level 3 candidates with 2012 Cambridge Technicals had much higher prior attainment than Level 2 candidates (74% in the high or highest quintile). This contrast with the attainment of Level 3 candidates who achieved a 2016 Cambridge Technical. The latter had a much lower distribution of prior attainment.

The above patterns differ to those for A level candidates, who were primarily from high attainment groups (73% of A level candidates were in the highest prior attainment group). Across the whole Key Stage 5 cohort prior attainment was evenly distributed.

Prior attainment was also calculated by considering the proportion of candidates achieving 5+ GCSEs at grades A*-C (Figure 5 and Table A4 in Appendix A) or achieving 5+ GCSEs at grades A*-C, including English and maths (Figure 6 and Table A5 in Appendix A).

Of the Level 2 Cambridge Technicals candidates, only 4% had 5+ GCSEs at grades A*-C. At Level 3, proportions were much higher: 76% of candidates with 2012 Cambridge Technicals at this level and 83% of the candidates with 2016 Cambridge Technicals achieved 5+ GCSEs at grades A*-C. These proportions were slightly higher than those for the Key Stage 5 cohort (68%). However, the proportion of A level candidates with 5+ GCSEs at grades A*-C was between 10 and 15 percentage points higher than that for candidates with Level 3 Cambridge Technicals.

Figure 6, which displays the prior attainment based on the measure 5+ GCSEs at grades A*-C including English and maths, shows very similar patterns. However, the percentages achieving the measure were lower than in Figure 5 in all instances.

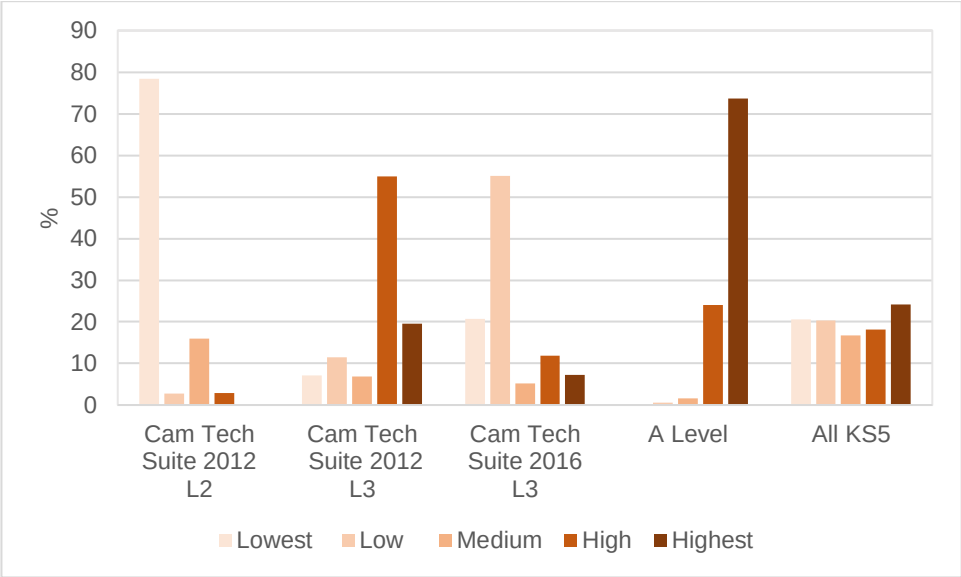


Figure 4: Candidates' characteristics ~ Prior attainment: Key Stage 4 points[7]

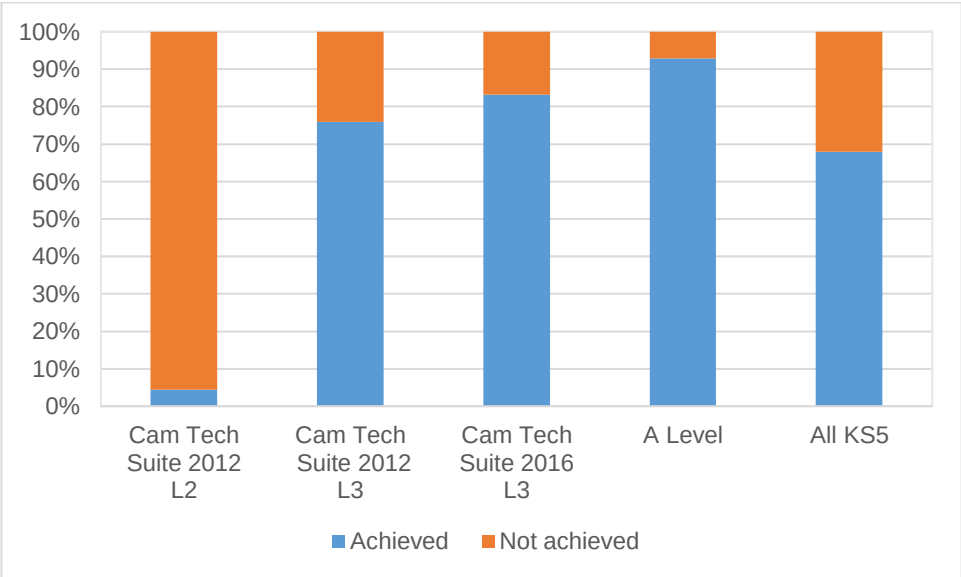


Figure 5: Candidates' characteristics ~ Prior attainment: candidates achieving 5+ GCSEs at grades A*-C

[7] Note that for Level 2 candidates, the group "High" includes high and highest. This was done to comply with statistical disclosure controls.

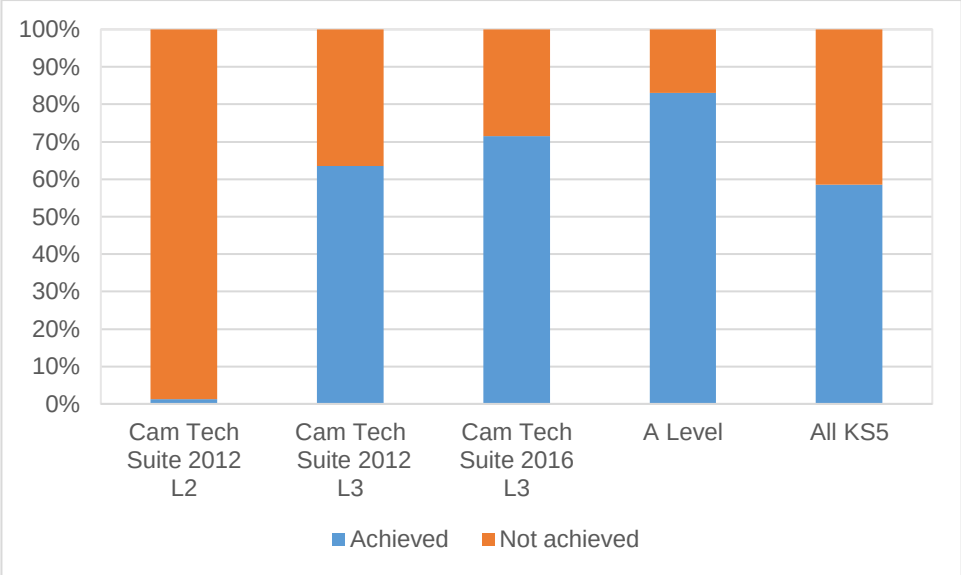


Figure 6: Candidates' characteristics ~ Prior attainment: candidates achieving 5+ GCSEs at grades A*-C, including English and maths

Figure 7 shows that the ethnic distribution of candidates with Level 3 Cambridge Technicals (from either suite), candidates with A levels and the whole Key Stage 5 cohort was very similar. Nevertheless, whilst White candidates made up the largest proportion of candidates with Level 2 Cambridge Technicals, the proportion was lower than amongst candidates with Level 3 qualifications. The proportions of Asian and Black candidates were, however, higher. More details on the ethnicity distributions are given in Table A6 (Appendix A).

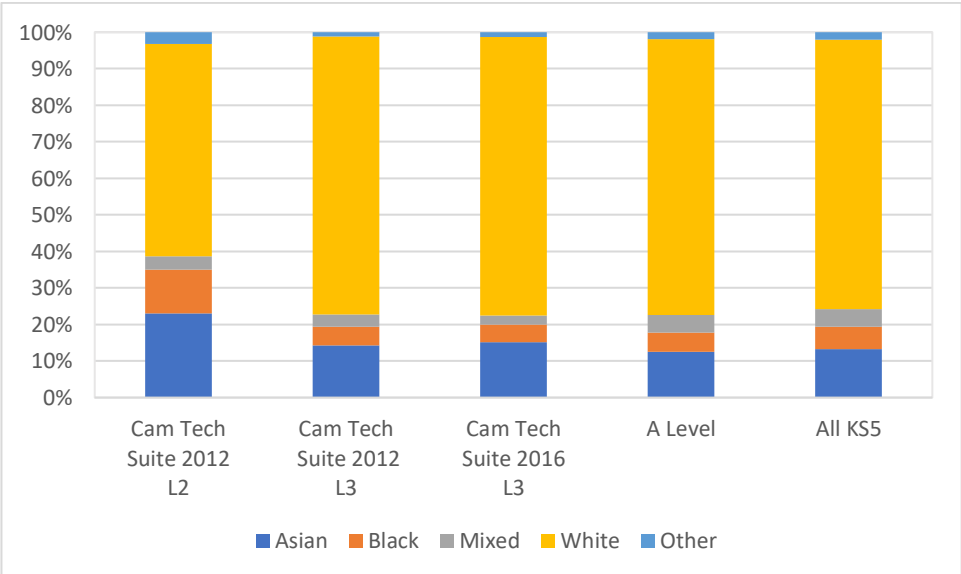


Figure 7: Candidates' characteristics ~ Ethnicity[8]

[8] Chinese candidates have been added to the "Asian" category to comply with statistical disclosure controls.

As described in Section 2.1.2, two measures of socio-economic deprivation were considered in this work: IDACI and eligibility for free school meals.

Firstly, Figure 8 (and Table A7 in Appendix A) shows that candidates with Level 2 Cambridge Technicals were typically from the groups with highest levels of deprivation. On the contrary, candidates with Level 3 qualifications, independently of the suite, were relatively evenly spread throughout the deprivation groups. A level candidates and the whole Key Stage 5 cohort showed higher proportions of candidates in the lower deprivation groups, with this more pronounced for A levels.

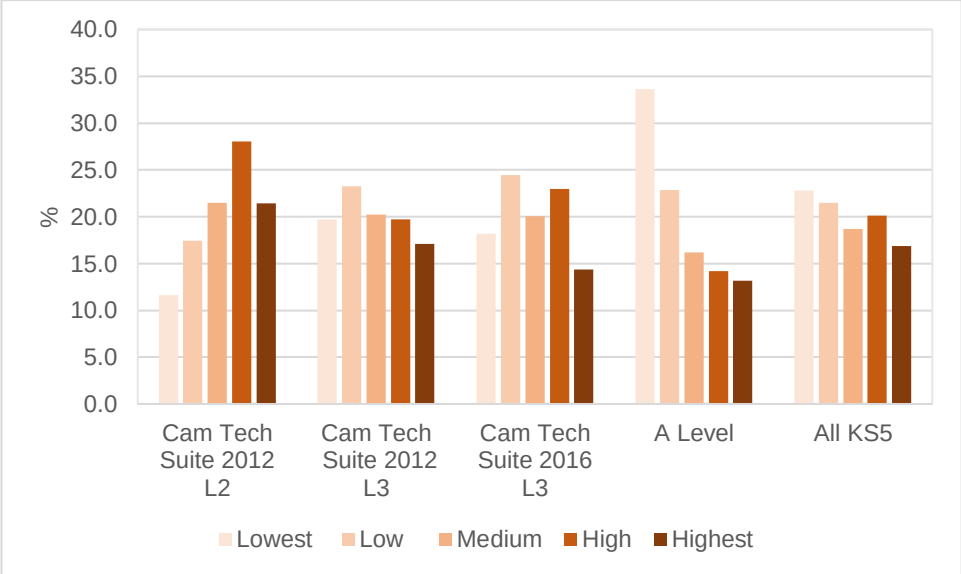


Figure 8: Candidates' characteristics ~ Socio-economic deprivation: IDACI

Regarding eligibility for free school meals, Figure 9 (and Table A8 in Appendix A) shows that, of the Level 2 Cambridge Technicals candidates, 34% were eligible. At Level 3, proportions were smaller (just below 20%). These proportions were slightly higher than those for the A level candidates (12%) and similar to the proportion amongst the whole Key Stage 5 cohort (22%).

Finally, Figure 10 (and Table A9 in Appendix A) shows that Level 2 Cambridge Technicals were mainly achieved in FE colleges: 68% compared to 15% in comprehensive schools and 16% in sixth forms colleges. Level 3 Cambridge Technicals, particularly those from the 2016 suite, were primarily achieved in comprehensive schools (61% of the qualifications from the 2012 suite; 88% of the qualifications from the 2016 suite). It is worth noting, however, that just under 20% of the 2012 Level 3 Cambridge Technicals were achieved in sixth form or FE colleges.

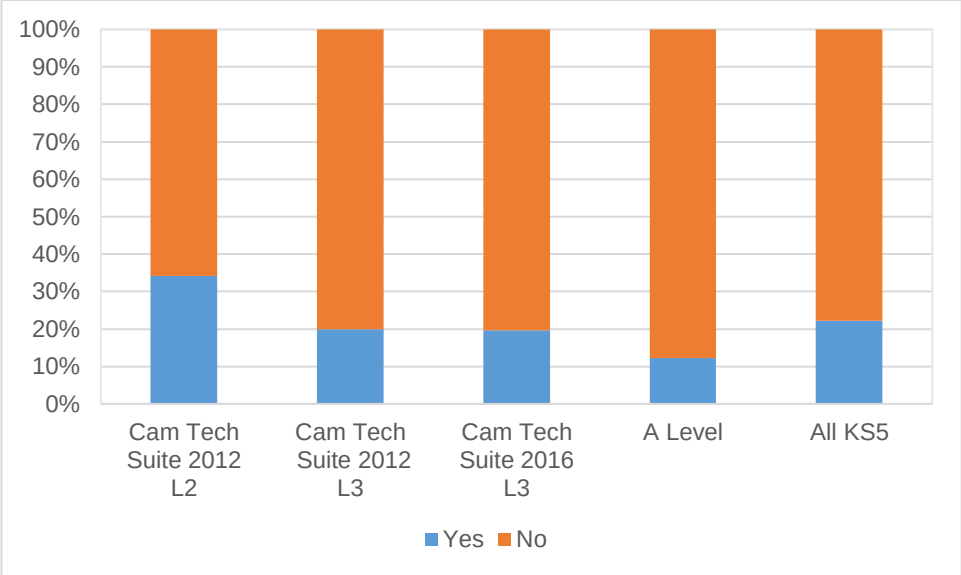


Figure 9: Candidates' characteristics ~ Socio-economic deprivation: FSM

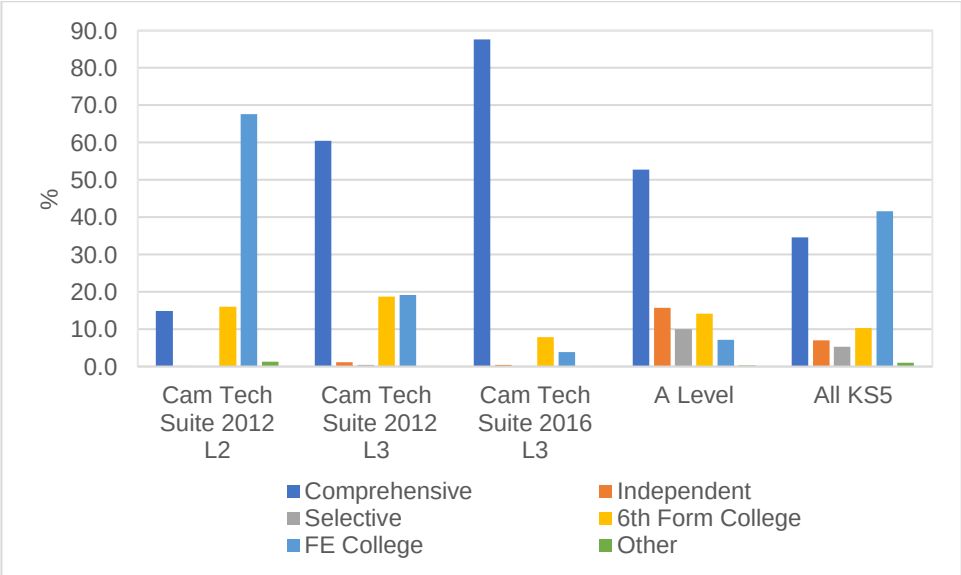


Figure 10: Candidates' characteristics ~ Type of school[9]

3.1.3 Combinations of Cambridge Technicals

As mentioned in Section 3.1.2, some candidates took multiple Cambridge Technicals (*e.g.*, multiple subjects at a given qualification size, or multiple qualifications of different sizes within the same subject). This section of the report looks, therefore, at combinations of Cambridge Technicals with other Cambridge Technical qualifications.

[9] Candidates with Level 3 Cambridge Technicals, Suite 2016, in selective schools have been added to the independent category to comply with the statistical disclosure controls.

Independently of the suite, the majority of the Cambridge Technicals candidates took only one Cambridge Technical (Table 8). A small percentage (8%) took two Cambridge Technicals and a further 1% took three or more.

66% of the candidates with 2012 Cambridge Technicals took the qualifications only at Level 3 (Table 9). The proportion of candidates taking only Level 2 Technicals was smaller (34%). The proportion of candidates taking Cambridge Technicals at both Level 2 and Level 3 during their Key Stage 5 education was very small.

Table 8: Number of Cambridge Technicals, by suite

Number of Cambridge Technicals	2012 Suite		2016 Suite		All [10]	
	N	%	N	%	N	%
1	18238	91.1	2154	95.4	20392	91.4
2	1599	8.0	95	4.2	1727	7.7
3	155	0.8	-	-	167	0.7
4+	29	0.1	-	-	29	0.1
Number of candidates	*20021*		*2257*		*22315*	

Table 9: Combinations of Cambridge Technicals, by suite and level

Cambridge Technical level	2012 Suite		2016 Suite	
	N	%	N	%
Only Level 2	6764	33.8		
Only Level 3	13222	66.0	2257	100.0
Mixed	35	0.2		
Number of candidates	*20021*		*2257*	

Table 10 shows the number of Cambridge Technicals by level (only for the 2012 suite, as 2016 Cambridge Technicals at Level 2 were not awarded in the academic year 2016/17). The figures in the table show that, for each level, the largest percentage of candidates took only one Cambridge Technical, with the percentage slightly higher at Level 2 (94% at Level 2 *vs*. 90% at Level 3).

Candidates with multiple Cambridge Technicals could have combined them in many different ways. In fact, there were 59 combinations of Cambridge Technicals from the 2012 suite and 12 different combinations of Cambridge Technicals from the 2016 suite. Table 11 shows the most popular combinations of 2012 Cambridge Technicals (taken by more than 100 candidates) and Table 12 the most popular combinations of 2016 Cambridge Technicals (taken by more than 10 candidates). Note that the combinations considered the size and level of the qualifications, but not the subject.

[10] There were 37 candidates who had Cambridge Technicals from both Suites. They are not included in the "suite" columns, but they are in the "All" columns. Therefore, the "2012 Suite" and the "2016 Suite" columns do not add up to the "All" column.

The Introductory Diploma at Level 3 (equivalent in size to one A level qualification) and the Diploma at Level 2 were, by far, the most popular combinations of qualifications from the 2012 suite. The most popular combination of two or more 2012 Cambridge Technicals was taken only by 2% of the candidates and corresponded to two Introductory Diplomas at Level 3. Similarly, Table 12 shows that the most popular combination of 2016 Cambridge Technicals was the Certificate at Level 3 (equivalent in size to one AS qualification). The most popular combination of two or more 2016 Cambridge Technicals was taken only by 4% of the candidates and corresponded to two Certificates at Level 3.

Table 10: Number of Cambridge Technicals, by level (2012 Suite only)

Cambridge Technical level	Number of Cambridge Technicals	N	%
Only Level 2 (N=6764)	1	6372	94.2
	2	369	5.5
	3+	23	0.3
Only Level 3 (N=13222)	1	11866	89.7
	2	1197	9.1
	3+	159	1.2
Mixed (N=35)	1	0	0.0
	2+	35	100.0

Table 11: Most popular combinations of individual Cambridge Technicals, 2012 Suite

Combinations of Cambridge Technicals	Frequency	Percent (out of candidates N = 20021)
Introductory Diploma at Level 3	6206	31.0
Diploma at Level 2	4609	23.0
Diploma at Level 3	1542	7.7
Certificate at Level 3	1510	7.5
Extended Diploma at Level 3	1458	7.3
Extended Certificate at Level 2	1251	6.2
Subsidiary Diploma at Level 3	1150	5.7
Certificate at Level 2	512	2.6
Introductory Diploma at Level 3 + Introductory Diploma at Level 3	440	2.2
Introductory Diploma at Level 3 + Diploma at Level 3	273	1.4
Certificate at Level 3 + Introductory Diploma at Level 3	188	0.9
Certificate at Level 2 + Extended Certificate at Level 2	158	0.8
Extended Certificate at Level 2 + Extended Certificate at Level 2	102	0.5

Table 12: Most popular combinations of individual Cambridge Technicals, 2016 Suite

Combinations of Cambridge Technicals	Frequency	Percent (out of candidates N = 2257)
Certificate at Level 3	1697	75.2
Extended Certificate at Level 3	305	13.5
Foundation Diploma at Level 3	91	4.0
Certificate at Level 3 + Certificate at Level 3	85	3.8
Introductory Diploma at Level 3	37	1.6
Diploma at Level 3	24	1.1

The following table (Table 13) shows whether the candidates with multiple Cambridge Technicals took them in the same subject (*e.g.*, several qualifications of different levels and sizes in the same subject) or in different subjects. This analysis is only presented for qualifications in the 2012 suite, as the number of 2016 Cambridge Technicals candidates with two or more qualifications was small and most results would have needed suppression to comply with the statistical disclosure controls.

Table 13 shows that the majority of candidates who took more than one 2012 Cambridge Technical took two Cambridge Technicals in different subjects: over 60% of candidates with multiple Cambridge Technicals took two Technicals, both in the same subject, and further 8% took three or more Technicals, with two in the same subject.

Table 13: Subject combinations of Cambridge Technicals (candidates with two or more Cambridge Technicals), 2012 Suite

Number of Cambridge Technicals	Subjects	2012 Suite	
		N	%
2	All different	1139	63.8
	Two the same	463	25.9
3+	All different	37	2.1
	Two the same	147	8.2

Table 14 shows the subjects taken by candidates with two or more 2012 Cambridge Technicals in the same subject (as above, this analysis is only presented for qualifications in the 2012 suite). The most common subjects were IT, Media, Business and Health & Social Care, reflecting the popularity of these subjects in Cambridge Technicals entries overall. Almost 90% of candidates who took two Level 3 Cambridge Technicals in the same subject did so in one of these subjects.

Table 14: Candidates taking two or more Cambridge Technicals in the same subject, 2012 Suite

Cambridge Technical subject	N	%
Art & Design	<10	-
Business	102	16.7
Health & Social Care	79	13.0
Information Technology	259	42.5
Media / Digital Media	110	18.0
Performing Arts	<10	-
Science / Applied Science	0	0.0
Sport / Sport & Physical Activity	48	7.9

3.1.4 Qualifications taken alongside Cambridge Technicals

In this section, the qualifications candidates took alongside Cambridge Technicals during Key Stage 5 were explored. These qualifications could have been taken in the same year as the Cambridge Technicals or at any other time during Key Stage 5.

Table 15 shows the proportion of Level 3 Cambridge Technicals candidates, by suite, who took each other type of qualification (at any level). For both suites, the qualifications most widely studied alongside Level 3 Cambridge Technicals were AS and A levels, followed by Level 3 BTECs. However, the proportion of candidates with A levels was highest amongst candidates taking 2012 Cambridge Technicals and the proportion of candidates with AS levels was highest amongst candidates taking 2016 Cambridge Technicals. This reflects the age distribution of the different groups of candidates (see Figure 3). There were also high proportions of candidates taking a GCSE in either English or maths alongside Level 3 Cambridge Technicals (between 11% and 24%) and other qualifications at Level 2 or below (*e.g.*, 14.5% of the 2012 Cambridge Technicals candidates studied qualifications below Level 2).

Table 15: Qualifications taken alongside Cambridge Technicals at Level 3, by suite

Qualifications	2012 Suite		2016 Suite	
	N	%	N	%
A level	5262	39.6	260	11.3
AS level	1728	13.0	1247	54.4
Applied A level	653	4.9	20	0.9
Applied AS level	167	1.3	55	2.4
GCSE in English or Maths	3166	23.8	258	11.2
GCSE (other)	5913	44.5	261	11.4
BTEC L1/L2	724	5.4	43	1.9
BTEC L3	3386	25.5	365	15.9
Cambridge National	421	3.2	16	0.7
Below L2	1932	14.5	120	5.2
Other L1/L2	1730	13.0	99	4.3
Other L3	1235	9.3	240	10.5
Total number of candidates	*13291*		*2294*	

Table 16 shows the qualifications taken alongside Level 2 Cambridge Technicals. GCSE English and maths were very commonly taken alongside these qualifications, as were other GCSE qualifications, BTECs at Levels 1 or 2, and other qualifications below or at Level 2.

Table 16: Qualifications taken alongside Cambridge Technicals at Level 2 (2012 suite)

Qualifications	2012 Suite	
	N	%
A level	21	0.3
AS level	20	0.3
Applied A level	< 10	-
Applied AS level	< 10	-
GCSE in English or Maths	3936	57.9
GCSE (other)	901	13.2
BTEC L1/L2	568	8.4
BTEC L3	59	0.9
Cambridge National	53	0.8
Below L2	2233	32.8
Other L1/L2	934	13.7
Other L3	32	0.5
Total number of candidates	*6802*	

Table 17 to Table 19 show the qualifications taken alongside Cambridge Technicals according to the subject of the Cambridge Technical. From the figures in these tables, it is clear that Combinations of Cambridge Technicals with other qualifications at Level 2 and/or 3 varied by the subject of the Cambridge Technical.

Table 17: Qualifications taken alongside Cambridge Technicals at Level 3 (2012 Suite)[11]

Qualifications	Art & Design		Business		Health & Social Care		IT		Media Digital Media		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%
A level	154	33.5	1212	38.8	852	31.2	2490	49.0	453	33.7	368	25.8
AS level	45	9.8	480	15.4	274	10.0	666	13.1	172	12.8	160	11.2
Applied A level	13	2.8	135	4.3	81	3.0	325	6.4	34	2.5	92	6.5
Applied AS level	-	-	49	1.6	24	0.9	58	1.1	-	-	40	2.8
GCSE in English or Maths	110	23.9	708	22.6	781	28.6	1168	23.0	312	23.2	315	22.1
GCSE (other)	163	35.4	1289	41.2	1274	46.7	2490	49.0	557	41.4	612	42.9
BTEC L1/L2	34	7.4	118	3.8	179	6.6	358	7.1	53	3.9	41	2.9
BTEC L3	83	18.0	811	25.9	453	16.6	1739	34.3	251	18.7	261	18.3
Cambridge National	-	-	78	2.5	96	3.5	239	4.7	-	-	25	1.8
Below L2	88	19.1	414	13.2	417	15.3	736	14.5	207	15.4	221	15.5
Other L1/L2	50	10.9	370	11.8	583	21.4	446	8.8	139	10.3	228	16.0
Other L3	38	8.3	302	9.7	201	7.4	539	10.6	68	5.1	144	10.1
Total number of candidates	*460*		*3127*		*2727*		*5077*		*1344*		*1426*	

[11] Table 17 does not include qualifications taken alongside Cambridge Technicals in Performing Arts, as counts were very small and most would have needed to be suppressed.

Table 18: Qualifications taken alongside Cambridge Technicals at Level 3 (2016 Suite)[12]

Qualifications	Business		Engineering		Health & Social Care		IT		Media Digital Media		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%
A level	53	7.1	90	68.2	28	8.6	52	7.7	17	10.8	23	7.4
AS level	407	54.6	70	53.0	159	49.1	428	63.4	91	57.6	103	33.0
Applied A level	-	-	0	0.0	-	-	11	1.6	-	-	-	-
Applied AS level	27	3.6	0	0.0	-	-	14	2.1	-	-	-	-
GCSE in English or Maths	83	11.1	20	15.2	33	10.2	73	10.8	16	10.1	30	9.6
GCSE (other)	54	7.2	55	41.7	31	9.6	65	9.6	29	18.4	23	7.4
BTEC L1/L2	-	-	10	7.6	-	-	-	-	-	-	-	-
BTEC L3	121	16.2	-	-	72	22.2	64	9.5	25	15.8	78	25.0
Cambridge National	-	-	-	-	0	0.0	-	-	-	-	0	0.0
Below L2	21	2.8	23	17.4	31	9.6	18	2.7	-	-	28	9.0
Other L1/L2	24	3.2	-	-	17	5.2	25	3.7	-	-	12	3.8
Other L3	54	7.2	37	28.0	34	10.5	68	10.1	19	12.0	34	10.9
Total number of candidates	*746*		*132*		*324*		*675*		*158*		*312*	

[12] Table 18 does not include qualifications taken alongside Cambridge Technicals in Performing Arts or in Science / Applied Science, as counts were very small and most would have needed to be suppressed.

Table 19: Qualifications taken alongside Cambridge Technicals at Level 2 (2012 suite)[13]

Qualifications	Art & Design		Business		Health & Social Care		IT		Media Digital Media		Science		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
GCSE in English or Maths	261	59.3	823	58.9	682	58.0	1079	56.6	611	58.2	149	56.0	427	57.9
GCSE (other)	44	10.0	166	11.9	152	12.9	300	15.7	152	14.5	46	17.3	60	8.1
BTEC L1/L2	19	4.3	181	13.0	79	6.7	145	7.6	114	10.9	25	9.4	51	6.9
BTEC L3	-	-	17	1.2	-	-	-	-	26	2.5	-	-	-	-
Cambridge National	-	-	12	0.9	15	1.3	13	0.7	-	-	-	-	-	-
Below L2	176	40.0	390	27.9	415	35.3	615	32.2	297	28.3	92	34.6	254	34.5
Other L1/L2	48	10.9	212	15.2	118	10.0	242	12.7	161	15.3	64	24.1	130	17.6
Other L3	-	-	-	-	-	-	18	0.9	-	-	-	-	0	0.0
Total number of candidates	*440*		*1397*		*1175*		*1907*		*1050*		*266*		*737*	

[13] Table 19 does not include A/AS levels and Applied AS/A as counts for these qualifications were very small and most would have needed to be suppressed. For the same reason, Table 19 does not include qualifications taken alongside Cambridge Technicals in Performing Arts.

The remaining analyses in this section investigated the uptake of combinations of other qualifications alongside Cambridge Technicals.

Table 20 shows the most popular combinations of Level 3 qualifications taken alongside Level 3 Cambridge Technicals, by suite. In particular, 32% of 2012 Cambridge Technicals candidates had AS or A levels alongside their Cambridge Technicals; 15% took Level 3 BTECs alongside their Cambridge Technicals; and 31% took no other Level 3 qualifications. These patterns were very similar for candidates with 2016 Cambridge Technicals, although the percentage taking AS or A level was higher (48%) and the percentages taking BTECs or no other Level 3 qualifications were smaller (8% and 24%, respectively).

Some Level 3 Cambridge Technicals candidates also took qualifications below Level 3. Table 21 shows the most common combinations of qualifications at Level 2 or below combined with Level 3 Cambridge Technicals. In particular, Table 21 shows that 15% of the 2012 Cambridge Technicals candidates took GCSEs alongside them and just below 8% took Cambridge National qualifications; the pattern was opposite for the candidates with Cambridge Technicals from the 2016 suite. Table 21 also shows that over a quarter the candidates with a 2012 Cambridge Technical did not take any qualifications at Level 2 or below This contrasts with 65% of the 2016 Cambridge Technicals candidates no taking qualifications below Level 3.

Finally, Table 22 shows the combinations of qualifications at Level 2 or below taken alongside Level 2 Cambridge Technicals. The most common combination of qualifications was GCSE in English or maths, qualifications below Level 2 and combinations of GCSE in English or maths with qualifications at Levels 1 and 2 that were *not* BTECs or Cambridge Nationals.

Table 23 to Table 27 show the combinations of qualifications taken alongside Cambridge Technicals according to the subject of the Cambridge Technical.

Table 20: Most popular combinations of Level 3 qualifications taken alongside Cambridge Technicals at Level 3, by suite

Combinations of qualifications (Level 3 only)	2012 Suite		2016 Suite	
	N	%	N	%
AS or A level	4252	32.0	1110	48.4
No other L3 qualifications	4165	31.3	560	24.4
BTEC L3	1996	15.0	189	8.2
AS or A level + BTEC L3	986	7.4	130	5.7
AS or A level + Other L3	617	4.6	139	6.1
AS or A level + Applied AS or A level	281	2.1	34	1.5
Other L3	250	1.9	53	2.3
Applied AS or A level	261	2.0	24	1.0
BTEC L3 + Other L3	181	1.4	28	1.2
AS or A level + BTEC L3 + Other L3	98	0.7	11	0.5
Applied AS or A level + BTEC L3	104	0.8	< 10	-
Applied AS or A level + Other L3	39	0.3	< 10	-
AS or A level + Applied AS or A level + Other L3	40	0.3	< 10	-
AS or A level + Applied AS or A level + BTEC L3	11	0.1	< 10	-
Total number of candidates	*13291*		*2294*	

Table 21: Most popular combinations of Level 2 (or below) qualifications taken alongside Cambridge Technicals at Level 3, by suite

Combinations of qualifications (Level 2 or below)	2012 Suite		2016 Suite	
	N	%	N	%
No qualifications at L2 or below	3580	26.9	1477	64.4
GCSE	2006	15.1	93	4.1
Cambridge National	1015	7.6	255	11.1
GCSE in English or Maths	720	5.4	130	5.7
GCSE + Cambridge National	792	6.0	25	1.1
GCSE + GCSE in English or Maths	764	5.7	38	1.7
Below L2	432	3.3	45	2.0
Other L1/L2	379	2.9	33	1.4
GCSE + Below L2	391	2.9	21	0.9
GCSE + GCSE in English or Maths + Cambridge National	368	2.8	17	0.7
GCSE + Other L1/L2	315	2.4	18	0.8
GCSE in English or Maths + Cambridge National	220	1.7	33	1.4
GCSE + GCSE in English or Maths + Other L1/L2	202	1.5	< 10	-
Below L2 + Cambridge National	172	1.3	< 10	-
GCSE + GCSE in English or Maths + Below L2	159	1.2	< 10	-
Total number of candidates	*13291*		*2294*	

Table 22: Most popular combinations of qualifications (Level 2 or below) taken alongside Cambridge Technicals at Level 2 (2012 suite)

Combinations of qualifications (Level 2 or below)	2012 Suite	
	N	%
GCSE in English or Maths	2119	31.2
No other qualifications	1103	16.2
Below L2	798	11.7
GCSE in English or Maths + Below L2	727	10.7
GCSE in English or Maths + GCSE	257	3.8
GCSE in English or Maths + Other L1/L2	185	2.7
Other L1/L2	181	2.7
GCSE	154	2.3
Below L2 + Other L1/L2	148	2.2
GCSE in English or Maths + BTEC L1/L2	124	1.8
GCSE in English or Maths + GCSE + Below L2	123	1.8
BTEC L1/L2	100	1.5
GCSE in English or Maths + Below L2 + Other L1/L2	88	1.3
GCSE + Below L2	88	1.3
Total number of candidates	*6802*	

Table 23: Most popular combinations of Level 3 qualifications taken alongside Cambridge Technicals at Level 3 (2012 Suite)[14]

Combinations of qualifications (Level 3 only)	Art & Design		Business		Health & Social Care		IT		Media Digital Media		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%
AS or A level	113	24.6	1051	33.6	791	29.0	1784	35.1	431	32.1	359	25.2
No other L3 qualifications	228	49.6	904	28.9	1229	45.1	939	18.5	577	42.9	591	41.4
AS or A level + BTEC L3	34	7.4	214	6.8	107	3.9	509	10.0	86	6.4	43	3.0
AS or A level + Other L3	21	4.6	151	4.8	121	4.4	252	5.0	38	2.8	55	3.9
AS or A level + Applied AS or A level	-	-	72	2.3	31	1.1	137	2.7	12	0.9	24	1.7
Other L3	-	-	73	2.3	48	1.8	78	1.5	18	1.3	56	3.9
BTEC L3 + Other L3	-	-	33	1.1	16	0.6	112	2.2	-	-	19	1.3
AS or A level + BTEC L3 + Other L3	-	-	28	0.9	10	0.4	42	0.8	-	-	-	-
AS or A level + Applied AS or A level + Other L3	-	-	-	-	-	-	24	0.5	-	-	-	-
Applied AS or A level + Other L3	-	-	-	-	-	-	25	0.5	-	-	-	-
Total number of candidates	*460*		*3127*		*2727*		*5077*		*1344*		*1426*	

[14] Table 23 does not include combinations of qualifications for students with Cambridge Technicals in Performing Arts, as counts were very small and most would have needed to be suppressed.

Table 24: Most popular combinations of Level 3 qualifications taken alongside Cambridge Technicals at Level 3 (2016 Suite)[15]

Combinations of qualifications (Level 3 only)	Business		Engineering		Health & Social Care		IT		Media Digital Media		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%
AS or A level	368	49.3	85	64.4	136	42.0	382	56.6	77	48.7	77	24.7
No other L3 qualifications	185	24.8	-	-	90	27.8	147	21.8	38	24.1	126	40.4
AS or A level + Other L3	28	3.8	29	22.0	18	5.6	46	6.8	-	-	12	3.8
AS or A level + BTEC L3	40	5.4	-	-	27	8.3	21	3.1	12	7.6	28	9.0
Other L3	18	2.4	-	-	-	-	12	1.8	-	-	13	4.2
AS or A level + Applied AS or A level	16	2.1	-	-	0	0.0	12	1.8	-	-	0	0.0
BTEC L3 + Other L3	-	-	0	0.0	-	-	-	-	-	-	-	-
AS or A level + BTEC L3 + Other L3	-	-	-	-	-	-	0	0.0	-	-	-	-
Applied AS or A level + Other L3	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
AS or A level + Applied AS or A level + BTEC L3	-	-		0.0		0.0	-	-	0	0.0	0	0.0
Total number of candidates	*746*		*132*		*324*		*675*		*158*		*312*	

[15] Table 24 does not include combinations of qualifications for students with Cambridge Technicals in Art & Design and Performing Arts, as counts were very small and most would have needed to be suppressed.

Table 25: Most popular combinations of Level 2 (or below) qualifications taken alongside Cambridge Technicals at Level 3 (2012 Suite)[16]

Combinations of qualifications (Level 2 or below)	Business		Health & Social Care		IT		Media Digital Media		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%
No qualifications at L2	925	29.6	654	24.0	1153	22.7	440	32.7	422	29.6
GCSE	482	15.4	434	15.9	772	15.2	224	16.7	233	16.3
GCSE + Cambridge National	170	5.4	67	2.5	474	9.3	75	5.6	53	3.7
GCSE + GCSE in English or Maths	176	5.6	169	6.2	311	6.1	77	5.7	76	5.3
GCSE + Below L2	74	2.4	80	2.9	163	3.2	21	1.6	61	4.3
Other L1/L2	51	1.6	163	6.0	63	1.2	26	1.9	80	5.6
GCSE + GCSE in English or Maths + Cambridge National	67	2.1	61	2.2	171	3.4	41	3.1	38	2.7
GCSE + Other L1/L2	68	2.2	100	3.7	92	1.8	30	2.2	31	2.2
GCSE + GCSE in English or Maths + Other L1/L2	49	1.6	82	3.0	51	1.0	11	0.8	27	1.9
GCSE + GCSE in English or Maths + Below L2	30	1.0	56	2.1	54	1.1	17	1.3	11	0.8
Total number of candidates	*3127*		*2727*		*5077*		*1344*		*1426*	

[16] Table 25 does not include combinations of qualifications for students with Cambridge Technicals in Art & Design and Performing Arts, as counts were very small and most would have needed to be suppressed.

Table 26: Most popular combinations of Level 2 (or below) qualifications taken alongside Cambridge Technicals at Level 3 (2016 Suite)[17]

Combinations of qualifications (Level 2 or below)	Business		Engineering		Health & Social Care		IT		Media Digital Media		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%
No qualifications at L2	508	68.1	54	40.9	196	60.5	493	73.0	100	63.3	180	57.7
GCSE	18	2.4	27	20.5	11	3.4	21	3.1	-	-	-	-
GCSE + GCSE in English or Maths	-	-	-	-	-	-	13	1.9	-	-	-	-
Other L1/L2	12	1.6	0	0.0	-	-	-	-	-	-	-	-
GCSE + Cambridge National	-	-	0	0.0	-	-	-	-	-	-	-	-
GCSE + Below L2	-	-	-	-	-	-	-	-	-	-	-	-
GCSE + Other L1/L2	-	-	-	-	-	-	-	-	-	-	-	-
GCSE + GCSE in English or Maths + Cambridge National	-	-	-	-	-	-	-	-	-	-	-	-
Below L2 + Other L1/L2	-	-	-	-	-	-	-	-	-	-	-	-
GCSE + GCSE in English or Maths + Below L2	-	-	-	-	0	0.0	-	-	-	-	-	-
Total number of candidates	*746*		*132*		*324*		*675*		*158*		*312*	

[17] Table 26 does not include combinations of qualifications for students with Cambridge Technicals in Art & Design and Performing Arts, as counts were very small and most would have needed to be suppressed.

Table 27: Most popular combinations of qualifications (L2 and below) taken alongside Cambridge Technicals at Level 2 (2012 suite)[18]

Combinations of qualifications (Level 2 or below)	Art & Design		Business		Health & Social Care		IT		Media Digital Media		Science		Sport Sport & Physical Activity	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
No other qualifications	65	14.8	265	19.0	204	17.4	309	16.2	179	17.0	38	14.3	111	15.1
GCSE in English or Maths + GCSE	17	3.9	51	3.7	39	3.3	92	4.8	45	4.3	12	4.5	11	1.5
GCSE in English or Maths + Other L1/L2	12	2.7	51	3.7	37	3.1	32	1.7	31	3.0	10	3.8	33	4.5
Other L1/L2	-	-	38	2.7	18	1.5	48	2.5	30	2.9	16	6.0	39	5.3
GCSE	-	-	29	2.1	25	2.1	65	3.4	29	2.8	-	-	-	-
Below L2 + Other L1/L2	12	2.7	31	2.2	20	1.7	35	1.8	24	2.3	-	-	21	2.8
GCSE + GCSE in English or Maths + Below L2	-	-	19	1.4	21	1.8	39	2.0	18	1.7	-	-	14	1.9
GCSE in English or Maths + Below L2 + Other L1/L2	-	-	17	1.2	10	0.9	34	1.8	13	1.2	-	-	-	-
GCSE + Below L2	-	-	11	0.8	22	1.9	26	1.4	16	1.5	-	-	-	-
BTEC L1/L2 + Other L1/L2	-	-	20	1.4	-	-	16	0.8	11	1.0	-	-	-	-
Total number of candidates	*440*		*1397*		*1175*		*1907*		*1050*		*266*		*737*	

[18] Table 27 does not include combinations of qualifications for students with Cambridge Technicals in Performing Arts, as counts were very small and most would have needed to be suppressed.

As shown above, Level 3 Cambridge Technicals were most frequently combined with A levels, AS levels and Level 3 BTECs. The following tables show the numbers of Cambridge Technicals, A levels and BTECs that candidates typically studied.

First of all, Table 28 shows that 43% of candidates (out of the candidates with at least one A level) took one Cambridge Technical with two A levels (this percentage was slightly higher for candidates with 2016 Cambridge Technicals than for candidates with 2012 Cambridge Technicals: 47% *vs*. 43%). The percentage of candidates with one Cambridge Technical and one A level were very similar.

Just below 5% of the candidates with one Cambridge Technical took three or more A levels and 8% of the candidates with two Cambridge Technicals took one A level.

Table 28: Combinations of A levels with Cambridge Technicals at Level 3, by suite

Number of Cambridge Technicals	Number of A levels	2012 Suite		2016 Suite		All	
		N	%	N	%	N	%
1	1	2270	43.1	110	42.3	2365	42.8
	2	2280	43.3	123	47.3	2399	43.4
	3+	225	4.3	23	8.8	248	4.5
2+	1	-	-	-	-	421	7.6
	2+	-	-	-	-	89	1.6
Number of candidates with A levels		*5262*		*260*		*5522*	

Table 29 shows that around 70% of the candidates (out of the candidates with at least one BTEC) took one Cambridge Technical and one BTEC (this percentage was higher for candidates with 2016 Cambridge Technicals than for candidates with 2012 Cambridge Technicals: 88% *vs*. 69%). The percentage of candidates with one Cambridge Technical and two or more BTECs was much smaller, around 20%. Table 29 also shows that a little below 10% of the candidates with two Cambridge Technicals took one BTEC.

Table 29: Combinations of BTECs with Cambridge Technicals at Level 3, by suite

Number of Cambridge Technicals	Number of L3 BTECs	2012 Suite		2016 Suite		All	
		N	%	N	%	N	%
1	1	2328	68.8	321	87.9	2643	70.5
	2+	724	21.4	33	9.0	757	20.2
2+	1	313	9.2	11	3.0	330	8.8
	2+	21	0.6	0	0.0	21	0.6
Number of candidates with BTECs		*3386*		*365*		*3751*	

Table 30 shows the numbers of each qualification type held by Level 3 Cambridge Technical candidates who had Level 3 BTECs as well as (possibly) A levels. The most common combination among these candidates was one Cambridge Technical, no A levels and one BTEC. The second most commonly seen combination was one Cambridge Technical, one or more A levels and one BTEC.

Table 30: Combinations of A levels and BTECs with Cambridge Technicals at Level 3 (2012 and 2016 suites combined[19])

Number of Cambridge Technicals	Number of A levels	Number of L3 BTECs	All	
			N	%
1	0	1	1714	45.7
		2+	701	18.7
	1+	1	929	24.8
		2+	56	1.5
2+	0	1	300	8.0
		2+	< 20	-
	1+	1	30	0.8
		2+	< 10	-
Number of candidates with A levels and BTECs			*3751*	

3.1.5 Performance in Cambridge Technicals

This section focuses on performance in Level 3 Cambridge Technicals. Furthermore, as shown in Section 3.1.4, the qualifications most frequently taken alongside Cambridge Technicals were A levels and Level 3 BTECs, the performance of Cambridge Technicals candidates on these qualifications is also reported here for comparison.

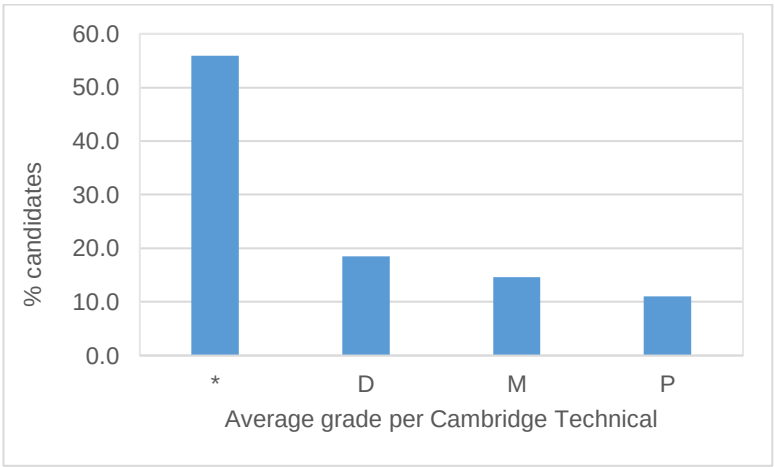
Table 31 and Figure 11 show Cambridge Technicals candidates' average grade per Level 3 Cambridge Technical, by suite. The average grade was calculated as described in Section 2.1.2 (Figure 1), using the points awarded to qualification results in the UCAS tariff, since this incorporates information about both level of performance and qualification size.

Interestingly, amongst candidates with 2012 Cambridge Technicals, 56% averaged a grade * (Distinction*) in their Level 3 Cambridge Technicals, whereas for candidates with 2016 Cambridge Technicals, the proportion was much lower, just below 5%. As shown in Figure 11, the grade distributions for the two suites were completely different. Note that the cohort of students who achieved 2016 Cambridge Technicals was the first one to do so after the reforms to vocational qualifications. The introduction of external assessment in the 2016 suite could partly explain these differences in performance.

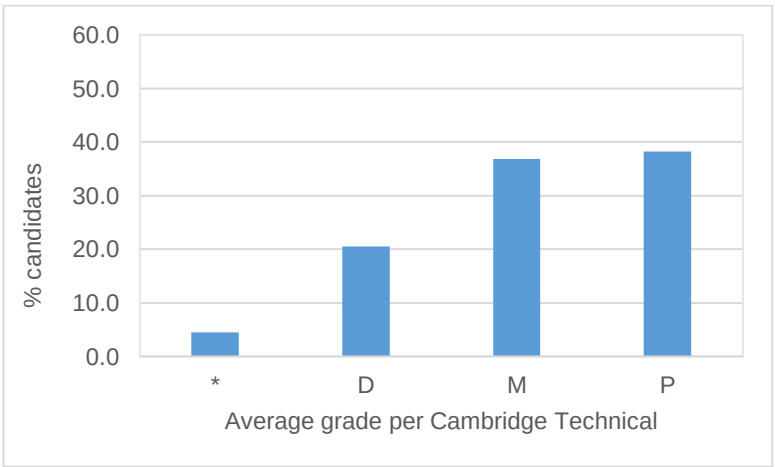
[19] Breakdowns by suite are not reported due to small counts that would not comply with the statistical disclosure controls.

Table 31: Average grade in Cambridge Technicals, by suite

Average grade per Cambridge Technical	2012 Suite		2016 Suite	
	N	%	N	%
* (Distinction *)	7433	55.9	95	4.5
D (Distinction)	2459	18.5	437	20.5
M (Merit)	1939	14.6	784	36.8
P (Pass)	1464	11.0	814	38.2



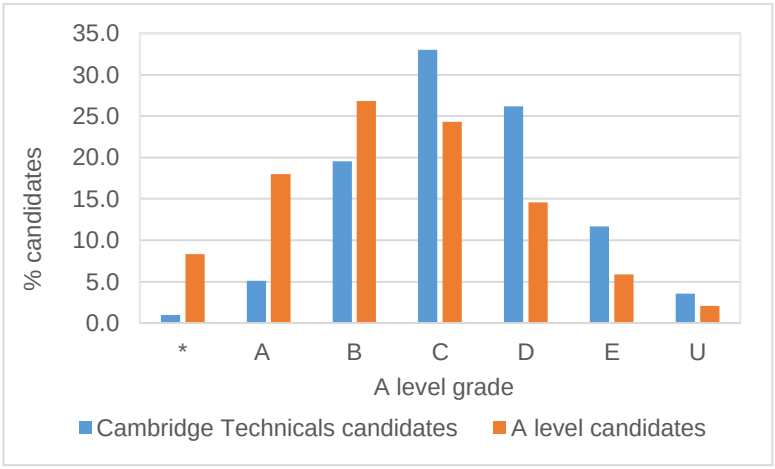
(a) 2012 Suite



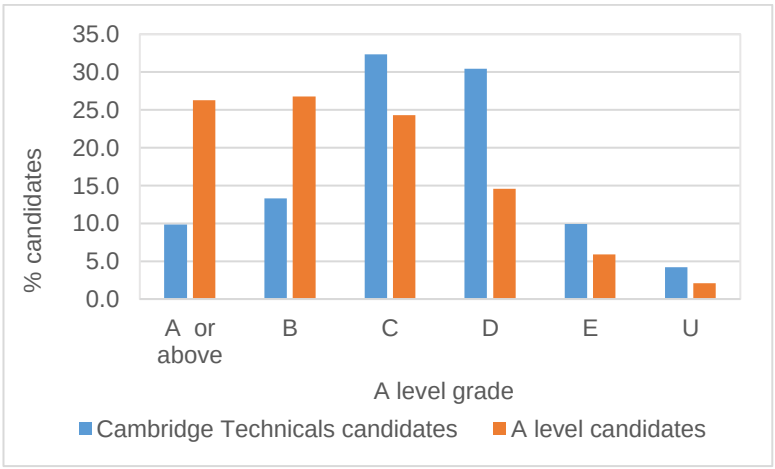
(b) 2016 suite

Figure 11: Average grade in Cambridge Technicals, by suite

Figure 12 below (and Table B1 in Appendix B) compared the A level grade distributions of Cambridge Technicals candidates (in blue) with the A level grade distributions of all 16-19 candidates in England (in orange)[20]. The figure shows that the A level grades achieved by Cambridge Technicals candidates (independently of the suite) were lower than those achieved by candidates overall. It also showed that a very high proportion of A level grades achieved by Cambridge Technicals candidates were in the range B to D.



(a) Candidates with 2012 Cambridge Technicals



(b) Candidates with 2016 Cambridge Technicals[21]

Figure 12: A level grades for candidates with and without Cambridge Technicals

Table 32 and Table 33 show, for the 2012 and 2016 suites respectively, the frequency of candidates by their average A level grade and their average Level 3 Cambridge Technicals grade.

[20] A level grade distribution for 2016/17 (DfE, 2017d).

[21] The number of candidates with A* was below 10 and to comply with the statistical disclosure controls, the A* and A categories were combined in this graph.

The first point to note in Table 32 is that the majority of 2012 Cambridge Technicals candidates who took A levels averaged a Distinction* in their Cambridge Technicals qualifications. Within this group, 35% averaged a grade C in their A levels, and over 80% averaged between grades B and D. For candidates who averaged a Distinction in their Level 3 Cambridge Technicals, 34% had an average grade C in their A levels. Almost 80% still averaged between grades B and D, but with a higher proportion of candidates achieving an average grade D (30%) than an average grade B (24%).

Table 33 depicts a similar picture: for candidates who averaged a Distinction or Distinction* in their Level 3 2016 Cambridge Technicals, 36% had an average grade C in their A levels. Just over 70% averaged between grades B and D, with a higher proportion of candidates achieving an average grade D (20%) than an average grade B (15%).

Overall, both tables (Table 32 and Table 33) show that candidates averaging higher grades on their Level 3 Cambridge Technicals tended to achieve higher average grades on their A levels.

Table 32: Average Level 3 Cambridge Technicals grade *vs*. average A level grade, candidates with 2012 Cambridge Technicals

Average Level 3 Cambridge Technical grade		Average A level grade							Total
		*	A	B	C	D	E	U	
*	N	43	222	826	1247	854	319	95	*3606*
	% row	1.2	6.2	22.9	34.6	23.7	8.8	2.6	
	% col	84.3	81.6	79.0	70.8	61.1	51.1	49.7	
D	N	< 10	< 35	126	318	284	136	42	*945*
	% row	-	-	13.3	33.7	30.1	14.4	4.4	
	% col	-	-	12.1	18.0	20.3	21.8	22.0	
M	N	< 10	< 15	61	128	183	114	30	*530*
	% row	-	-	11.5	24.2	34.5	21.5	5.7	
	% col	-	-	5.8	7.3	13.1	18.3	15.7	
P	N	< 10	< 10	32	69	77	55	24	*262*
	% row	-	-	12.2	26.3	29.4	21.0	9.2	
	% col	-	-	3.1	3.9	5.5	8.8	12.6	
Total		-	*272*	*1045*	*1762*	*1398*	*624*	*191*	*5343*

Table 33: Average Level 3 Cambridge Technicals grade *vs*. average A level grade, candidates with 2016 Cambridge Technicals

Average Level 3 Cambridge Technical grade		Average A level grade						Total
		*	A	B	C	D	E or below	
D and above	N	< 10	19	16	38	21	< 10	*105*
	% row	-	18.1	15.2	36.2	20.0	-	
	% col	-	90.5	47.1	46.9	26.6	-	
M	N	< 10	< 10	< 10	21	35	14	*78*
	% row	-	-	-	26.9	44.9	17.9	
	% col	-	-	-	25.9	44.3	41.2	
P	N	< 10	< 10	10	22	23	12	*69*
	% row	-	-	14.5	31.9	33.3	17.4	
	% col	-	-	29.4	27.2	29.1	35.3	
Total		-	-	-	*81*	*79*	*34*	*252*

The UCAS points awarded to each qualification result were used to compare candidates' relative performance in Cambridge Technicals, A levels and Level 3 BTECs.

Table 34, Figure 13 and Figure 14 show that candidates who averaged higher grades on their Level 3 Cambridge Technicals (suite 2012) tended not only to achieve higher grades on their A levels, but also on Level 3 BTECs. Furthermore, Cambridge Technicals candidates (all candidates) had similar performance in their Level 3 BTECs and Level 3 Cambridge Technicals, in terms of UCAS points per qualification of A level size, though the average points achieved were slightly higher in Cambridge Technicals. The average UCAS points achieved per A level were substantially lower, with an average of 29, compared to 46 for Level 3 Cambridge Technicals and 45 for Level 3 BTECs.

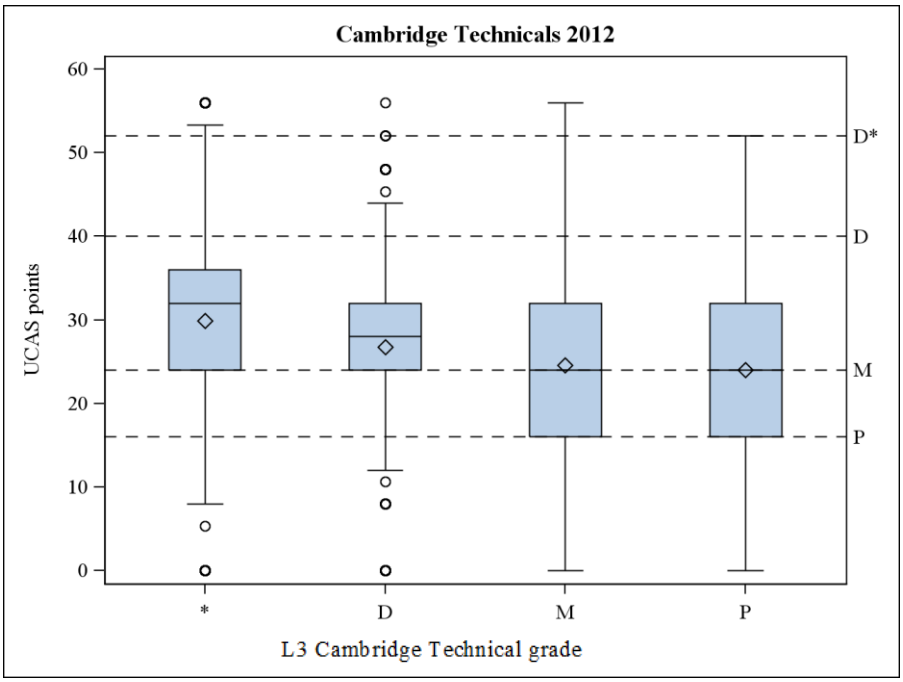
Table 34: Average UCAS points per qualification, 2012 Suite

Cambridge Technicals candidates with each grade		UCAS points per L3 Cambridge Technical of A level size	UCAS points per A level	UCAS points per BTEC of A level size
D*	N	7433	3606	2053
	Mean	55.6	29.9	49.5
D	N	2459	945	716
	Mean	46.8	26.8	43.7
M	N	1939	530	506
	Mean	31.5	24.5	38.5
P	N	1464	262	355
	Mean	16.6	24.0	33.4
All candidates	N	13295	5343	3630
	Mean	46.2	28.5	45.2

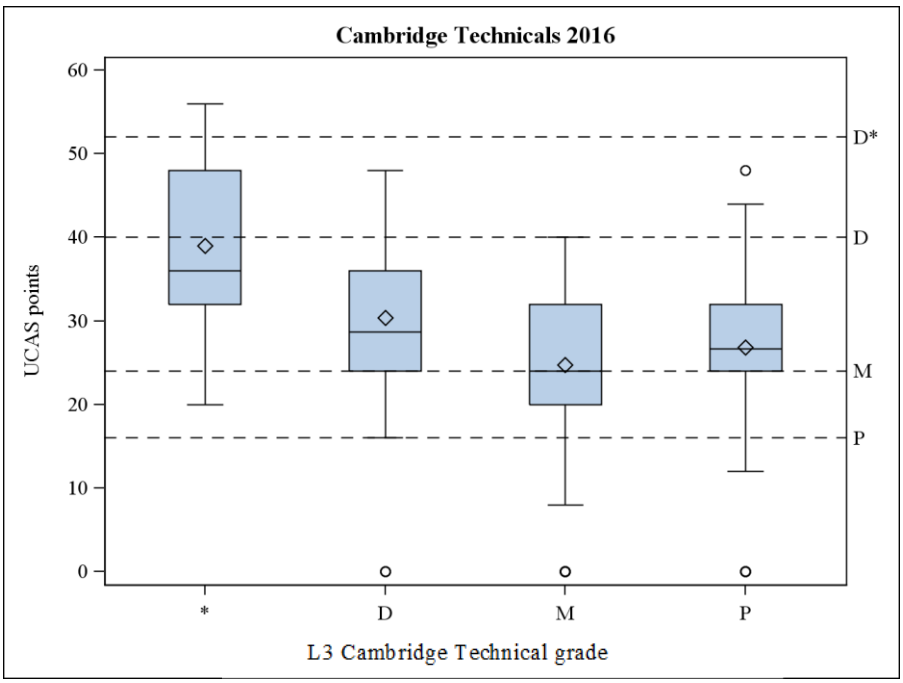
Table 35, Figure 13 and Figure 14 show a different picture for qualifications of the 2016 suite. In this case, Cambridge Technicals candidates (all candidates) had similar performance in their A levels and Level 3 Cambridge Technicals, in terms of UCAS points per qualification of A level size (slightly higher performance at A level). The average UCAS points achieved per BTEC was slightly higher, with an average of 35, compared to 28 for Level 3 Cambridge Technicals.

Table 35: Average UCAS points per qualification, 2016 Suite

Cambridge Technicals candidates with each grade		UCAS points per L3 Cambridge Technical of A level size	UCAS points per A level	UCAS points per BTEC of A level size
D*	N	95	25	16
	Mean	55.9	39.0	48.8
D	N	437	80	54
	Mean	47.3	30.3	39.1
M	N	784	78	159
	Mean	31.5	24.7	32.4
P	N	814	69	123
	Mean	16.0	26.9	35.8
All candidates	N	2289	263	381
	Mean	27.8	28.4	34.9

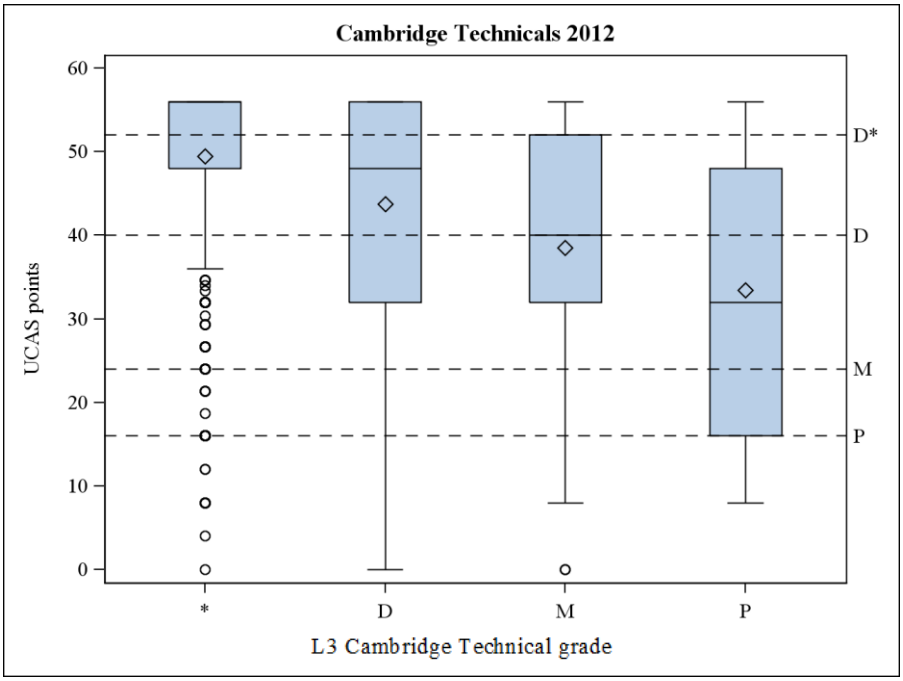


(a) Cambridge Technicals 2012

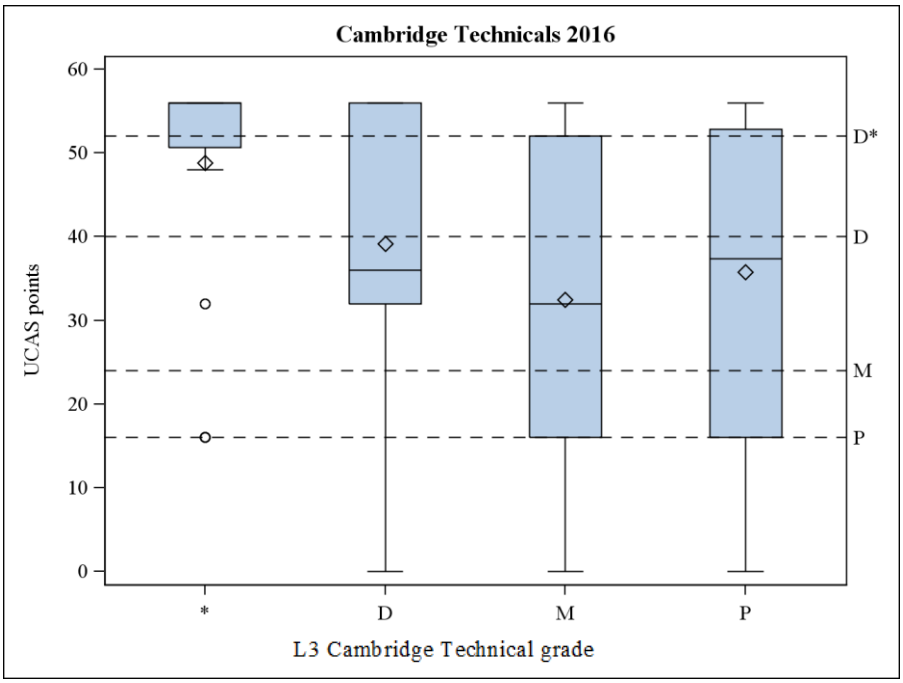


(b) Cambridge Technicals 2016

Figure 13: UCAS points per A level, by average Level 3 Cambridge Technical grade



(a) Cambridge Technicals 2012



(b) Cambridge Technicals 2016

Figure 14: UCAS points per BTEC, by average Level 3 Cambridge Technical grade

3.2 Progression to and performance in Higher Education

In order to investigate the progression to and performance in HE of students who achieved Cambridge Technicals, two cohorts of students (those who achieved a Cambridge Technical in the academic years 2015/16 or in the academic year 2016/17) were followed up in the HESA student records for the subsequent academic years, as follows:

- 2015/16 Cambridge Technicals cohort was followed up in the academic years 2016/17, 2017/18 and 2018/19.
- 2016/17 Cambridge Technicals cohort was followed up in the academic years 2017/18 and 2018/19.

Note that the students who started HE in 2016/17 were the first cohort who could have achieved Cambridge Technicals from the 2016 suite. They were followed up in HE only for two years due to data availability at the time the research was planned.

In order to look at progression to HE, the following progression indicators were considered:

- In HE (at any point in the follow-up period)
- In HE – all years
- In HE – enrolled after gap year(s)
- In HE – dropped out after first year
- In HE – dropped out after second year (only applicable to the 2015/16 cohort)

For the indicators above, numbers and percentages (out of all students in the data) are provided in tables or graphs.

Students in the 2015/16 cohort of students could have graduated from HE after three years, in the academic year 2018/19. The following indicators of graduation and performance at HE were also considered for that cohort of students:

- Graduated in three years
- Graduated with a first class degree
- Graduated with an upper second class degree
- Graduated with a lower second class degree
- Graduated with a third class degree

3.2.1 Progression to Higher Education

This first sub-section reports rates of progression to HE for all students (both students with and without at least a Level 3 Cambridge Technical). The results are also broken down by students' background characteristics.

In this section, graphs show the results for the first progression indicator (in HE at any point in the follow-up period) and the subsequent tables present the results for the remaining four indicators of progression. The "Total number of candidates" in the tables in Section 3.2 indicate the total number of candidates, including those who did not progress to Higher Education.

First of all, Figure 15 shows the overall rates of progression to HE for students with and without a Cambridge Technical at Level 3. Progression to HE was lower for students with a Cambridge Technical than for students without it. Figure 15 also shows that progression to HE decreased slightly over time for both groups of students.

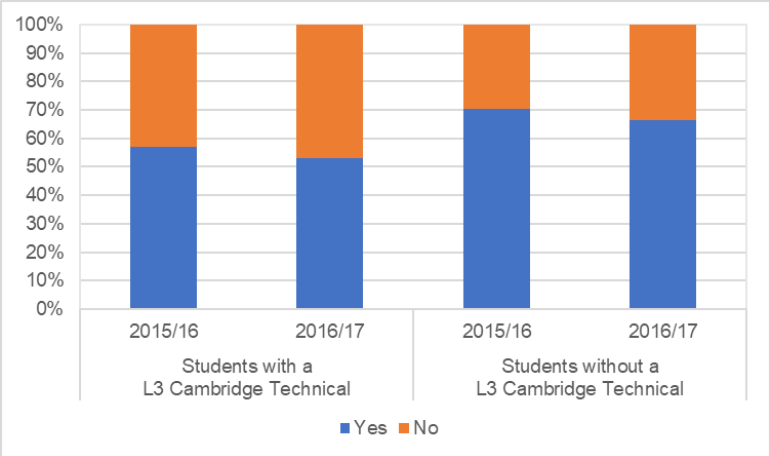


Figure 15: Overall progression to Higher Education, by cohort

Table 36 shows, in more detail, the rates of progression to HE courses for students who did or did not hold a Level 3 Cambridge Technical. For the cohort of students who achieved the Cambridge Technical in 2015/16, just under 40% progressed to HE and continued enrolled in a HE course during the follow-up period. Just under 14% of the students in this cohort progressed to HE the year after. The percentages amongst students without Cambridge Technicals were higher (46% and 20%, respectively). Regarding dropping out after one or two years, percentages were slightly higher amongst students with Cambridge Technicals, but still fairly low (around 3%). The patterns of progression were fairly similar for the 2016/17 cohort.

Table 36: Overall progression to Higher Education, by cohort

Progression		Level 3 Cambridge Technical	
		Yes	No
2015/16 cohort	In HE – all years	37.3	46.3
	In HE – enrolled after gap year(s)	13.9	20.0
	In HE – dropped out after first year	3.0	2.1
	In HE – dropped out after second year	2.7	1.9
	Total number of candidates	*8815*	*346230*
2016/17 cohort	In HE – all years	39.1	48.7
	In HE – enrolled after gap year(s)	10.8	15.6
	In HE – dropped out after first year	3.3	2.0
	Total number of candidates	*9935*	*351105*

Table 37 shows that the percentage of students with Cambridge Technicals from the 2012 suite enrolling in HE was higher than the percentage of students with qualifications from the 2016 suite (53% *vs*. 49%). This could be due to 2016/17 being the first year 2016 suite qualifications were awarded. However, progression to HE after a gap year was highest amongst students with Cambridge Technicals from the 2016 suite. Percentages of students dropping out after the first year were higher for those with 2012 Cambridge Technicals.

Table 37: Progression to Higher Education, by Cambridge Technical Suite

Cohort	Progression	2012 Suite		2016 Suite	
		N	%	N	%
2016/17	In HE – all years	3760	39.7	120	26.7
	In HE – enrolled after gap year(s)	975	10.3	90	19.8
	In HE – dropped out after first year	315	3.3	10	2.6
	Total number of candidates	*9460*		*455*	

3.2.1.1 Progression by demographic characteristics

The figures and tables in this section show rates of progression to HE according to students' demographic and school characteristics. They include all students, broken down by whether or not they took a Level 3 Cambridge Technical qualification.

Regarding gender, Figure 16 shows that female students with Cambridge Technical qualifications were more likely than male students to progress to HE. This result was independent of the cohort (2015/16 or 2016/17).

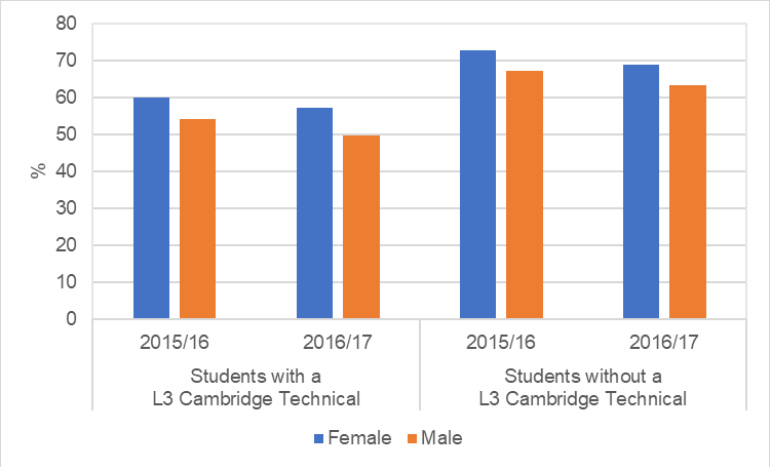


Figure 16: Overall progression to Higher Education, by cohort and by gender

Table 38, also reporting on progression to HE by gender, shows that female students with Cambridge Technical qualifications were more likely than male students to progress to HE after gap years and they were less likely to drop out. This result was, again, independent of the cohort (2015/16 or 2016/17).

Figure 17 shows that students without Cambridge Technical qualifications, obtained in 2015/16, who live in areas of low income-related deprivation were more likely to have enrolled in HE than those from areas of high deprivation. The pattern was reversed for students with Cambridge Technicals but similar over time. Table 39 shows, however, when looking at enrolments after a gap year (or gap years), that students from low income-related deprivation areas, whether they had a Cambridge Technical or not, were more likely to enrolled in HE than those from areas of high deprivation. Table 39 also shows that percentages of students dropping out were highest amongst

students from low income-related deprivation areas and that the patterns of progression were very similar for both cohorts of students (2015/16 and 2016/17).

Table 38: Progression to Higher Education, by cohort and by gender

Cohort	Level 3 Cambridge Technical	Progression	Gender	
			Female (%)	Male (%)
2015/16 cohort	No	In HE – all years	49.2	43.0
		In HE – enrolled after gap year(s)	20.1	19.9
		In HE – dropped out after first year	2.1	2.2
		In HE – dropped out after second year	1.6	2.2
		Total number of candidates	*18516*	*161070*
	Yes	In HE – all years	40.6	34.6
		In HE – enrolled after gap year(s)	14.2	13.5
		In HE – dropped out after first year	2.8	3.2
		In HE – dropped out after second year	2.4	2.9
		Total number of candidates	*4040*	*4775*
2016/17 cohort	No	In HE – all years	51.2	45.8
		In HE – enrolled after gap year(s)	15.8	15.4
		In HE – dropped out after first year	1.9	2.1
		Total number of candidates	*188090*	*163065*
	Yes	In HE – all years	42.8	36.0
		In HE – enrolled after gap year(s)	11.3	10.4
		In HE – dropped out after first year	3.1	3.4
		Total number of candidates	*4505*	*5435*

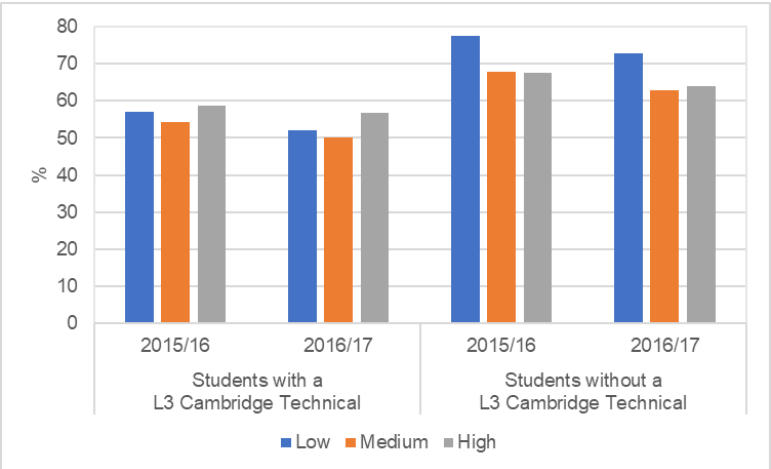


Figure 17: Overall progression to Higher Education, by cohort and by level of deprivation

Table 39: Progression to Higher Education, by cohort and by level of deprivation

Cohort	Level 3 Cambridge Technical	Progression	Deprivation		
			Low (%)	Medium (%)	High (%)
2015/16 cohort	No	In HE – all years	52.5	46.0	43.5
		In HE – enrolled after gap year(s)	21.8	18.1	19.1
		In HE – dropped out after first year	1.7	2.0	2.6
		In HE – dropped out after second year	1.3	1.7	2.5
		Total number of candidates	*98965*	*111985*	*126815*
	Yes	In HE – all years	36.4	35.3	39.4
		In HE – enrolled after gap year(s)	15.6	13.8	12.9
		In HE – dropped out after first year	2.8	2.7	3.4
		In HE – dropped out after second year	2.2	2.4	3.1
		Total number of candidates	*1705*	*3130*	*3915*
2016/17 cohort	No	In HE – all years	53.6	46.7	46.8
		In HE – enrolled after gap year(s)	17.6	14.1	14.7
		In HE – dropped out after first year	1.6	2.0	2.4
		Total number of candidates	*114700*	*114305*	*114300*
	Yes	In HE – all years	37.2	36.2	43.2
		In HE – enrolled after gap year(s)	12.2	10.8	9.9
		In HE – dropped out after first year	2.9	3.0	3.7
		Total number of candidates	*2300*	*3660*	*3895*

As expected, students with high prior attainment relative to their Key Stage 5 peers (Figure 18 and Table 40) were far more likely than those with low prior attainment to progress to HE (whether they had a Cambridge Technical or not) and less likely to drop out after the first or second year. Cambridge Technical students with low attainment progressed to HE at similar rates as low attainment students without the qualification. Progression was slightly lower for the 2016/17 cohort but the main patterns by prior attainment remained unchanged.

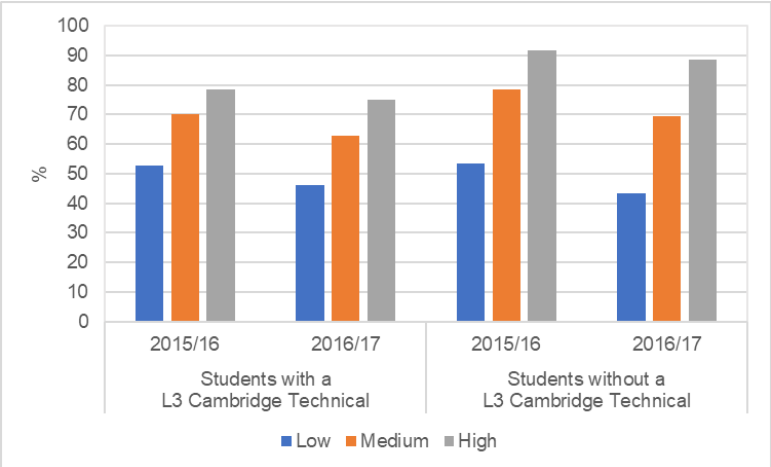


Figure 18: Overall progression to Higher Education, by cohort and by prior attainment

Table 40: Progression to Higher Education, by cohort and by prior attainment

Cohort	Level 3 Cambridge Technical	Progression	Prior attainment		
			Low (%)	Medium (%)	High (%)
2015/16 cohort	No	In HE – all years	29.8	54.0	71.0
		In HE – enrolled after gap year(s)	18.3	20.8	18.7
		In HE – dropped out after first year	2.8	2.1	1.2
		In HE – dropped out after second year	2.7	1.7	0.9
		Total number of candidates	*150880*	*98265*	*85145*
	Yes	In HE – all years	33.3	49.7	66.0
		In HE – enrolled after gap year(s)	13.2	15.6	10.5
		In HE – dropped out after first year	3.1	3.1	1.5
		In HE – dropped out after second year	2.9	1.9	0.5
		Total number of candidates	*6695*	*1810*	*200*
2016/17 cohort	No	In HE – all years	27.4	51.3	70.3
		In HE – enrolled after gap year(s)	13.4	16.1	17.1
		In HE – dropped out after first year	2.6	2.2	1.1
		Total number of candidates	*112875*	*128445*	*101835*
	Yes	In HE – all years	33.2	47.0	60.9
		In HE – enrolled after gap year(s)	9.8	12.4	10.6
		In HE – dropped out after first year	3.2	3.4	3.4
		Total number of candidates	*5960*	*3510*	*380*

Recent research on the destinations of students with different educational backgrounds (*e.g.*, Vidal Rodeiro and Williamson, 2019) has shown that progression rates decreased as the percentage of vocational qualifications in a student's programme of study increased. This is confirmed by the results in Figure 19, which shows rates of progression according to students' Key Stage 5 educational pathway and whether or not they had a Level 3 Cambridge in 2015/16 or 2016/17. However, Figure 19 also shows that, for students following a vocational pathway at Key Stage 5, rates of progression to HE were higher among students with a Cambridge Technical than among students without a Cambridge Technical. For students on a mixed or mostly academic pathway, rates of progression to HE were similar for students with and without Level 3 Cambridge Technicals.

Table 41 shows, in more detail, the progression to HE by educational pathway at Key Stage 5. As for Figure 19, Cambridge Technical students with vocational only backgrounds were more likely than students with other backgrounds (in particular, mostly academic) to stay in HE for the follow-up period but were less likely to enrol in HE after gap year(s). Regarding percentages dropping out, Table 41 shows that these were highest for students with mostly vocational or vocational pathways at Key Stage 5, independently of having a Cambridge Technical qualification.

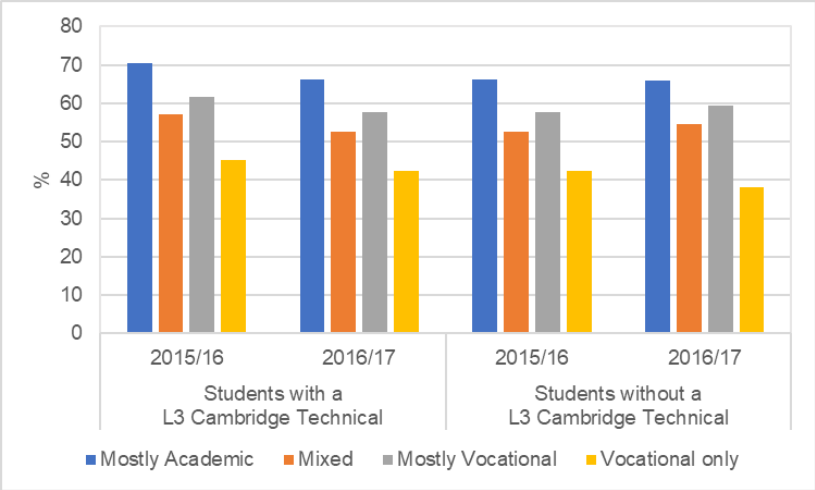


Figure 19: Overall progression to Higher Education, by cohort and by educational pathway at Key Stage 5

Figure 20 and Table 42 show that students with Cambridge Technicals achieved in 2015/16 in FE colleges were less likely to progress to HE than students who achieved their qualifications in other types of schools or colleges. This pattern was also observed for students without Cambridge Technicals. The difference in progression between students with and without Cambridge Technicals was highest amongst students from selective schools and sixth form colleges and lowest amongst those from FE colleges and comprehensive schools. For students with Cambridge Technicals in the 2015/16 cohort there were higher percentages dropping out after the first year in HE amongst those who were in in comprehensive and independent schools than in other types of centres.

Students who achieved Cambridge Technicals in 2016/17 were also less likely to enrol in HE if they had attended a FE college. However, in this case, the difference in progression between students with and without Cambridge Technicals was highest in FE colleges and lowest in selective schools.

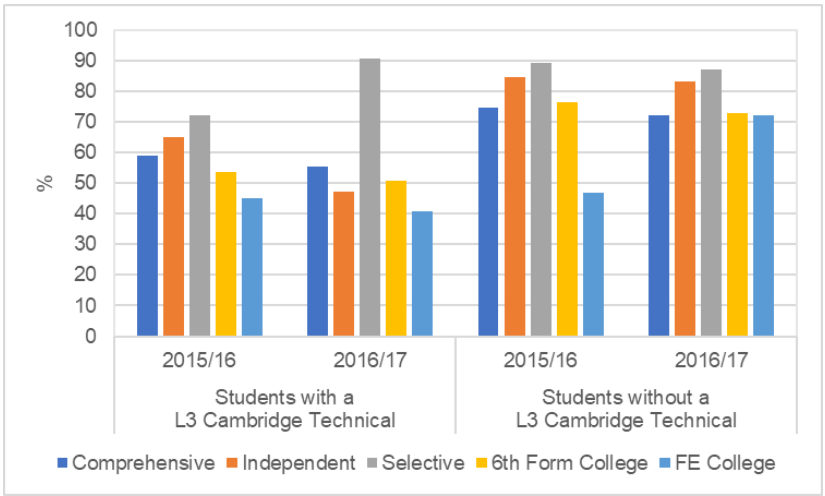


Figure 20: Overall progression to Higher Education, by cohort and by type of school

Table 41: Progression to Higher Education, by cohort and by educational pathway at Key Stage 5

Cohort	Level 3 Cambridge Technical	Progression	Educational Pathway at Key Stage 5				
			Academic only (%)	Mostly Academic (%)	Mixed (%)	Mostly Vocational (%)	Vocational only (%)
2015/16 cohort	No	In HE – all years	56.8	49.1	38.4	40.7	20.1
		In HE – enrolled after gap year(s)	21.9	16.1	17.0	15.8	16.7
		In HE – dropped out after first year	1.7	3.0	2.8	3.5	2.9
		In HE – dropped out after second year	1.4	2.2	2.7	3.3	2.9
		Total number of candidates	*223310*	*17820*	*8345*	*10525*	*85880*
	Yes	In HE – all years	-	52.0	38.6	40.9	25.0
		In HE – enrolled after gap year(s)	-	14.5	13.7	14.1	13.4
		In HE – dropped out after first year	-	2.3	2.1	4.0	3.5
		In HE – dropped out after second year	-	1.6	2.6	2.8	3.4
		Total number of candidates	*0*	*2415*	*1280*	*1595*	*3515*
2016/17 cohort	No	In HE – all years	60.1	51.4	39.0	44.7	23.1
		In HE – enrolled after gap year(s)	17.7	11.8	12.5	10.9	12.4
		In HE – dropped out after first year	1.5	2.7	3.1	3.8	2.7
		Total number of candidates	*219025*	*19040*	*7340*	*11830*	*93590*
	Yes	In HE – all years	-	51.4	38.3	44.4	28.5
		In HE – enrolled after gap year(s)	-	11.7	11.6	10.0	10.3
		In HE – dropped out after first year	-	3.2	2.7	3.3	3.5
		Total number of candidates	*0*	*2720*	*1260*	*1935*	*4020*

Table 42: Progression to Higher Education, by cohort and by type of school

Cohort	Level 3 Cambridge Technical	Progression	Type of school					
			Comprehensive (%)	Independent (%)	Selective (%)	6th Form College (%)	FE College (%)	Other (%)
2015/16 cohort	No	In HE – all years	50.8	53.5	68.7	51.5	25.3	42.6
		In HE – enrolled after gap year(s)	19.5	28.9	18.1	21.0	16.5	14.3
		In HE – dropped out after first year	2.3	1.3	1.2	2.3	2.4	3.2
		In HE – dropped out after second year	1.9	0.8	1.1	1.9	2.5	2.4
		Total number of candidates	*132950*	*34485*	*23760*	*36790*	*59970*	*1045*
	Yes	In HE – all years	40.4	36.5	44.4	28.9	24.0	-
		In HE – enrolled after gap year(s)	12.7	23.8	25.0	20.1	15.3	-
		In HE – dropped out after first year	3.2	3.2	0.0	2.6	2.8	-
		In HE – dropped out after second year	2.6	1.6	2.8	2.2	2.9	-
		Total number of candidates	*5290*	*65*	*35*	*820*	*715*	*0*
2016/17 cohort	No	In HE – all years	55.6	59.3	70.3	53.3	55.6	41.7
		In HE – enrolled after gap year(s)	14.4	22.8	15.4	17.5	14.4	12.8
		In HE – dropped out after first year	2.2	1.1	1.2	2.1	2.2	2.8
		Total number of candidates	*132435*	*34430*	*23420*	*37680*	*132435*	*1200*
	Yes	In HE – all years	42.8	31.4	79.1	31.5	23.2	-
		In HE – enrolled after gap year(s)	9.0	12.9	9.3	17.0	15.1	-
		In HE – dropped out after first year	3.5	2.9	2.3	2.3	2.3	-
		Total number of candidates	*5995*	*70*	*45*	*1020*	*1030*	*10*

Figure 21 shows the progression to HE by main qualification for both cohorts of students considered in this work. Between 50% and 60% of the students whose main qualification was a Level 3 Cambridge Technical in 2015/16 or 2016/17 progressed to a HE course. This was a lower rate than for students whose main qualification was an Applied A level (over 60%) or an A level (over 80%), but a higher rate than from students whose main qualification was a Level 3 BTEC (below 50%). Progression rates to HE of students whose main qualification was a Level 3 Cambridge Technical was slightly higher in 2016/17 than in the previous year.

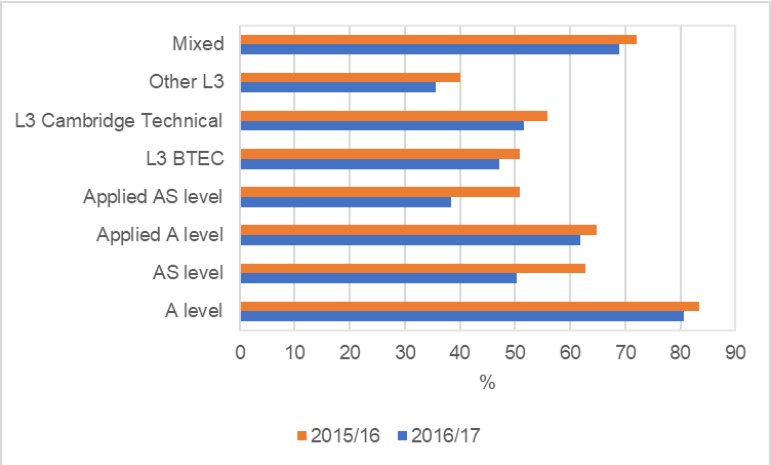


Figure 21: Overall progression to Higher Education, by cohort and by main qualification

Table 43 and Table 44 show, in more detail, the progression to HE by main qualification for the 2015/16 and 2016/17 cohorts, respectively. In particular, for both cohorts of students, around 3% of the students whose main qualification was a Level 3 Cambridge Technical dropped out from HE after the first year. This was a higher percentage than for students whose main qualification was an Applied A level (around 2.5%) or an A level (below 2%), but a similar percentage to that of students whose main qualification was a Level 3 BTEC.

Table 43: Progression to Higher Education, 2015/16 cohort ~ by main qualification

Main qualification at Key Stage 5	Number of students	In HE All years	In HE Enrolled after gap year(s)	In HE Dropped out after first year	In HE Dropped out after second year
A level	199580	61.3	18.9	1.8	1.5
AS level	15310	0.5	62.0	0.1	0.1
Applied A level	6770	46.4	13.7	2.6	2.2
Applied AS level	900	1.3	49.2	0.0	0.2
L3 BTEC	105595	27.6	17.0	3.2	3.0
L3 Cambridge Technical	6030	35.9	14.4	3.1	2.5
Other L3	14095	23.2	14.6	1.2	1.0
Mixed	6730	51.2	16.7	2.2	2.1

Table 44: Progression to Higher Education, 2016/17 cohort ~ by main qualification

Main qualification at Key Stage 5	Number of students	In HE All years	In HE Enrolled after gap year(s)	In HE Dropped out after first year
A level	202005	63.2	15.9	1.6
AS level	11165	0.8	49.4	0.1
Applied A level	5460	49.2	10.2	2.4
Applied AS level	390	1.8	36.2	0.3
L3 BTEC	105310	31.5	12.5	3.1
L3 Cambridge Technical	6730	37.4	11.0	3.1
Other L3	23135	22.5	12.0	1.2
Mixed	6870	53.7	12.7	2.4

3.2.1.2 Progression of Cambridge Technical students

Figure 22, Table 45 and Table 46 show progression rates to HE for Level 3 Cambridge Technicals students only, according to the qualifications taken alongside. Only the most frequently observed qualification combinations are shown here.

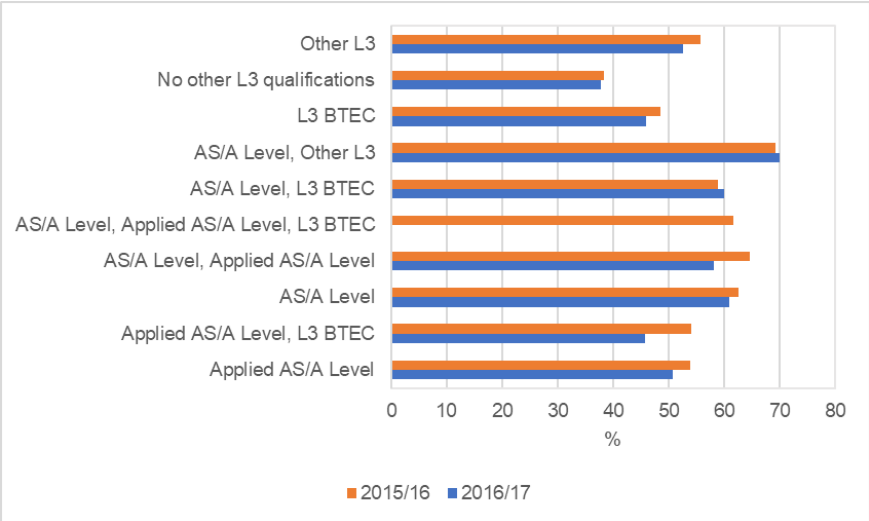


Figure 22: Overall progression to Higher Education, by cohort and by qualifications taken alongside Cambridge Technicals

Regarding overall progression to HE, Figure 22 shows that, for students in the 2015/16 cohort, those who combined their Cambridge Technicals with an AS/A Level and other Level 3 qualification were the most likely to progress to HE. They were closely followed by those who combined them with AS/A level, Applied AS/A level and a Level 3 BTEC. However, these two groups represent a small number of students. The large subset of students (in absolute numbers) who combined Cambridge Technicals with AS/A levels only were the most likely to progress to HE.

Rates of progression to HE for other combinations including AS/A levels were generally only slightly lower than the rates of progression for students with Cambridge Technicals and AS/A levels only. Rates of progression to HE were substantially lower for students without AS/A levels alongside their Cambridge Technicals.

Similar results were found for the 2016/17 cohort. The was on exception: the group of students taking AS/A level, Applied AS/A level and Level 3 BTEC was very small, possible reflecting the overall decline in uptake of Applied AS/A levels.

Table 45 and Table 46 also show that the percentages dropping out after the first year were highest for students who had Applied AS/A level or Applied AS/A level and Level 3 BTECs alongside their Cambridge Technicals. These percentages were generally lower if the Cambridge Technicals were combined with AS/A levels.

Figure 23 shows rates of progression to HE for students with Level 3 Cambridge Technicals in particular subjects. Rates of progression to HE varied between subjects, but also between years, probably reflecting the increase in uptake of Cambridge Technicals and the introduction of the 2016 suite of qualifications.

In 2015/16, the proportion of students progressing to HE was highest for those whose Level 3 Cambridge Technical was in IT and Media. The lowest rates of progression to HE were, on the other hand, for students with Cambridge Technicals in Art & Design and Performing Arts.

In 2016/17, the proportion of students progressing to HE was highest for those whose Level 3 Cambridge Technical was in Engineering (a new subject in the 2016 suite) and Health & Social Care. Progression rates were similar for those with a Cambridge Technical in IT. As for the earlier cohort, the proportion of students progressing to HE was lowest overall for those whose Level 3 Cambridge Technical was in Art & Design.

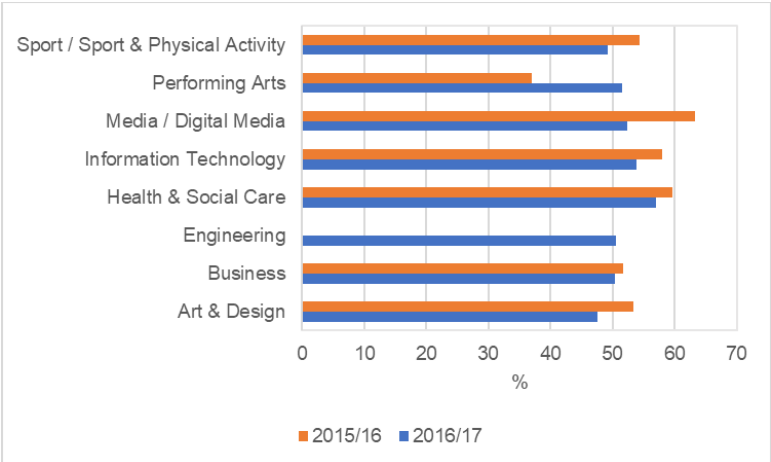


Figure 23: Overall progression to Higher Education, by cohort and by Cambridge Technical subject

Table 47 and Table 48 show rates of progression to HE for students with Level 3 Cambridge Technicals in particular subjects in a bit more detail than Figure 23 did. In particular, they show that the percentages of students dropping out were highest for those whose Cambridge Technical was in Sport, followed by those with a qualification in Health & Social Care or in Business. Despite progression being low for students with a Cambridge Technical in Performing Arts and Art & Design, the percentages dropping out were some of the lowest.

Table 45: Progression to Higher Education, 2015/16 cohort ~ by qualifications taken alongside Cambridge Technicals

Level 3 qualifications taken alongside Cambridge Technicals	Number of students	In HE All years	In HE Enrolled after gap year(s)	In HE Dropped out after first year	In HE Dropped out after second year
Applied AS/A Level	100	35.3	9.8	5.9	2.9
Applied AS/A Level, L3 BTEC	85	41.4	6.9	4.6	1.1
AS/A Level	3405	41.9	16.8	2.1	1.8
AS/A Level, Applied AS/A Level	450	47.0	12.0	3.1	2.7
AS/A Level, Applied AS/A Level, L3 BTEC	100	48.5	9.1	1.0	3.0
AS/A Level, L3 BTEC	1615	39.1	12.9	3.9	3.0
AS/A Level, Other L3	525	50.5	13.8	3.1	1.9
L3 BTEC	1070	29.4	9.6	4.2	5.2
No other L3 qualifications	1265	19.3	13.1	3.1	2.8
Other L3	195	38.6	10.2	3.6	3.6

Table 46: Progression to Higher Education, 2016/17 cohort ~ by qualifications taken alongside Cambridge Technicals

Level 3 qualifications taken alongside Cambridge Technicals	Number of students	In HE All years	In HE Enrolled after gap year(s)	In HE Dropped out after first year
Applied AS/A Level	215	37.3	7.4	6.0
Applied AS/A Level, L3 BTEC	105	34.6	5.6	5.6
AS/A Level	3615	46.0	12.1	3.0
AS/A Level, Applied AS/A Level	300	44.2	10.6	3.3
AS/A Level, Applied AS/A Level, L3 BTEC	10	-	-	-
AS/A Level, L3 BTEC	995	47.4	9.7	2.8
AS/A Level, Other L3	540	55.0	11.2	3.7
L3 BTEC	1705	32.7	8.4	4.9
No other L3 qualifications	2085	23.4	11.9	2.6
Other L3	360	42.1	9.4	1.1

Table 47: Progression to Higher Education, 2015/16 cohort ~ by Cambridge Technical subject

Subject of Level 3 Cambridge Technical	Number of students	In HE All years	In HE Enrolled after gap year(s)	In HE Dropped out after first year	In HE Dropped out after second year
Art & Design	225	30.8	19.8	1.3	1.3
Business	1990	32.6	13.3	3.1	2.6
Health & Social Care	1505	38.0	15.4	3.2	3.1
Information Technology	4410	40.0	12.5	2.9	2.6
Media / Digital Media	565	40.4	16.8	2.8	3.2
Performing Arts	25	14.8	22.2	0.0	0.0
Sport / Sport & Physical Activity	770	33.4	12.2	4.9	3.8

Table 48: Progression to Higher Education, 2016/17 cohort ~ by Cambridge Technical subject

Subject of Level 3 Cambridge Technical	Number of students	In HE All years	In HE Enrolled after gap year(s)	In HE Dropped out after first year
Art & Design	295	28.9	16.7	2.0
Business	2305	35.2	11.9	3.1
Engineering	110	44.0	3.7	2.8
Health & Social Care	1830	43.2	10.3	3.4
Information Technology	4330	41.6	8.8	3.4
Media / Digital Media	905	35.5	13.6	3.3
Performing Arts	70	38.2	13.2	0.0
Sport / Sport & Physical Activity	950	33.8	11.3	4.0

Table 49 shows the progression to HE courses in the same (or related) subject as the Cambridge Technical qualification. Note that some students took level 3 Cambridge Technicals in more than one subject, and therefore the total number of students with a level 3 Cambridge Technical could be lower than the sum of the individual subject counts below.

The proportion of students progressing to a HE course in a related subject area varied by the subject of the Cambridge Technical: for the 2015/16 cohort, 40% of Health & Social Care students progressed to a related HE course compared to, for example, 20% of IT students. The proportion progressing to a related HE course was also high for students whose Level 3 Cambridge Technical was in Sport, Art & Design or Media.

Similar patterns were observed for students who achieved a Cambridge Technical in 2016/17. Engineering, a new subject in for students in this cohort, also led to relatively high rates of progression to a HE course in a related subject.

Table 49: Progression to Higher Education ~ progression to a HE course in a related subject to the Cambridge Technical

Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Progression to related subject in HE		
				Students progressing	% (out of students with the subject in HE)	% (out of students with the subject)
2015/16	Art & Design	225	120	80	65.3	34.8
	Business	1990	1025	520	50.6	26.2
	Health & Social Care	1505	895	600	67.1	40.0
	Information Technology	4410	2555	880	34.5	20.0
	Media / Digital Media	565	355	210	59.1	37.3
	Performing Arts	25	10	5	-	25.9
	Sport / Sport & Physical Activity	770	420	280	67.5	36.7
2016/17	Art & Design	295	140	100	71.4	34.0
	Business	2305	1160	595	51.6	25.9
	Engineering	110	55	40	76.4	38.5
	Health & Social Care	1830	1040	710	67.9	38.7
	Information Technology	4330	2330	815	35.0	18.8
	Media / Digital Media	905	475	290	60.6	31.8
	Performing Arts	70	35	20	57.1	29.4
	Sport / Sport & Physical Activity	950	470	355	75.4	37.1

Table 50 and Table 51 show the percentages of Cambridge Technicals students progressing to a HE institution in the Russell Group or in the Sutton Trust Group, respectively.

Table 50 shows that students holding Cambridge Technicals qualifications did progress to Russell Group institutions, although in small numbers. The students most likely to progress to a Russell Group institution were those whose Cambridge Technicals were in Performing Arts (although these represent a very small number of students), IT, Health & Social Care, or Business (the most popular Cambridge Technicals subjects). Engineering, a new subject in for students in the 2016/17, had the highest rates of progression to an institution in the Russell Group.

Table 51 shows similar patterns for progression to institution in the Sutton Trust Group. This is not surprising as membership of both groups overlaps considerably.

Table 52 shows the percentages of students progressing to a HE course at Level 6 or above, that is, at the level of an undergraduate degree or above. For the majority of the subjects, and independently of the cohort, the majority of Cambridge Technicals students who progressed to HE enrolled on a course at Level 6 or above. The percentages progressing to an apprenticeship in HE were much lower (Table 53).

Table 50: Progression to Higher Education ~ progression to a Russell Group institution

Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Progression to an institution in the Russell Group		
				Students progressing	% (out of students with the subject in HE)	% (out of students with the subject)
2015/16	Art & Design	225	120	5	5.8	3.1
	Business	1990	1025	65	6.4	3.3
	Health & Social Care	1505	895	55	6.1	3.7
	Information Technology	4410	2555	160	6.3	3.6
	Media / Digital Media	565	355	10	3.1	1.9
	Performing Arts	25	10	0	-	7.4
	Sport / Sport & Physical Activity	770	420	20	5.0	2.7
2016/17	Art & Design	295	140	5	3.6	1.7
	Business	2305	1160	95	8.0	4.0
	Engineering	110	55	20	32.7	16.5
	Health & Social Care	1830	1040	65	6.0	3.4
	Information Technology	4330	2330	145	6.1	3.3
	Media / Digital Media	905	475	20	4.6	2.4
	Performing Arts	70	35	5	11.4	5.9
	Sport / Sport & Physical Activity	950	470	15	3.2	1.6

Table 51: Progression to Higher Education ~ progression to an institution in the Sutton Trust Group

Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Progression to an institution in the Sutton Trust Group		
				Students progressing	% (out of students with the subject in HE)	% (out of students with the subject)
2015/16	Art & Design	225	120	0	1.7	0.9
	Business	1990	1025	25	2.9	1.5
	Health & Social Care	1505	895	20	2.5	1.5
	Information Technology	4410	2555	65	3.2	1.8
	Media / Digital Media	565	355	5	3.1	1.9
	Performing Arts	25	10	0	-	3.7
	Sport / Sport & Physical Activity	770	420	10	3.1	1.7
2016/17	Art & Design	295	140	5	3.6	1.7
	Business	2305	1160	130	11.1	5.6
	Engineering	110	55	20	32.7	16.5
	Health & Social Care	1830	1040	90	8.4	4.8
	Information Technology	4330	2330	220	9.5	5.1
	Media / Digital Media	905	475	35	7.2	3.8
	Performing Arts	70	35	5	11.4	5.9
	Sport / Sport & Physical Activity	950	470	25	5.6	2.7

Table 52: Progression to Higher Education ~ by level of the HE course (Honours degree or above)

Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Progression to Level 6 or above (Honours degree or above)		
				Students progressing	% (out of students with the subject in HE)	% (out of students with the subject)
2015/16	Art & Design	225	120	115	96.7	51.5
	Business	1990	1025	1005	98.0	50.6
	Health & Social Care	1505	895	856	95.6	56.9
	Information Technology	4410	2555	2480	97.0	56.2
	Media / Digital Media	565	355	350	97.8	61.8
	Performing Arts	25	10	10	-	37.0
	Sport / Sport & Physical Activity	770	420	405	97.4	52.9
2016/17	Art & Design	295	140	140	98.6	46.9
	Business	2305	1160	1140	98.5	49.5
	Engineering	110	55	50	90.9	45.9
	Health & Social Care	1830	1040	1015	97.3	55.4
	Information Technology	4330	2330	2285	98.2	52.8
	Media / Digital Media	905	475	465	98.1	51.4
	Performing Arts	70	35	35	100.0	51.5
	Sport / Sport & Physical Activity	950	470	460	97.9	48.1

Table 53: Progression to Higher Education ~ by level of the HE course (Apprenticeship in HE)

Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Progression to an Apprenticeship in HE		
				Students progressing	% (out of students with the subject in HE)	% (out of students with the subject)
2015/16	Art & Design	225	120	0	1.7	0.9
	Business	1990	1025	10	0.8	0.4
	Health & Social Care	1505	895	10	1.2	0.7
	Information Technology	4410	2555	15	0.7	0.4
	Media / Digital Media	565	355	5	1.1	0.7
	Performing Arts	25	10	0	-	0.0
	Sport / Sport & Physical Activity	770	420	0	0.5	0.3
2016/17	Art & Design	295	140	0	0.0	0.0
	Business	2305	1160	20	1.6	0.8
	Engineering	110	55	5	9.1	4.6
	Health & Social Care	1830	1040	5	0.4	0.2
	Information Technology	4330	2330	30	1.4	0.7
	Media / Digital Media	905	475	0	0.2	0.1
	Performing Arts	70	35	0	0.0	0.0
	Sport / Sport & Physical Activity	950	470	5	1.1	0.5

3.2.1.3 Progression: regression analyses

As discussed in Section 2.2, regression analyses were carried out to investigate the effect of having a Cambridge Technical qualification on progression to Higher Education, taking into account the background characteristics of the students.

The outcome variable for the regression analyses was progression, defined dichotomously (1 if the student progressed; 0 if the student did not progress). In particular, the following two indicators of progression to HE were considered:

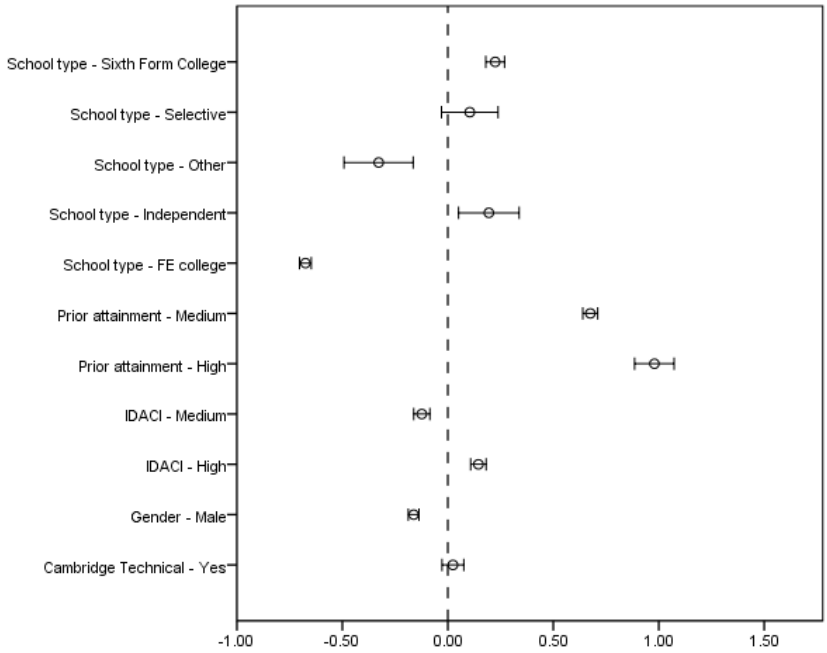
- In HE (at any point in the follow-up period)
- Dropped out from HE (restricted to students that progressed to HE)

Background characteristics (gender, prior attainment at Key Stage 5, school type, socio-economic deprivation, school type) were included in the regression models, alongside a binary variable to indicate the uptake of Cambridge Technicals at Level 3.

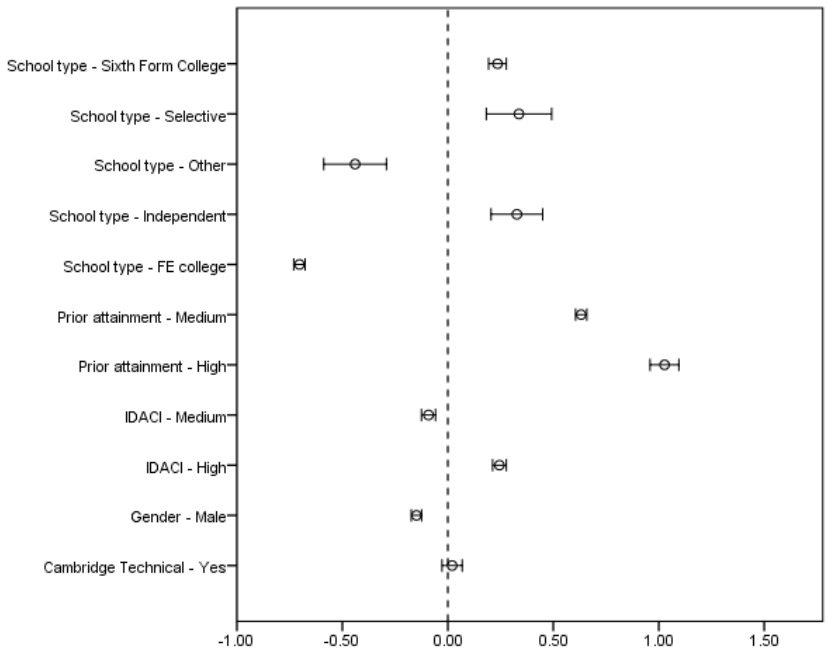
Although the effects of the student and school characteristics, as well as the uptake of Cambridge Technicals on progression to HE, can be understood and interpreted by observing the coefficients from the regression models (see tables in Appendix C for the full results of the regression analyses), plots can be more intuitive. In the graphs presented in this section (Figure 24 and Figure 25 below), these effects are displayed (the x-axis shows the values of the estimated coefficients from the regression models). Any variable whose line intersects with the vertical zero axis can be regarded as not significant and the length of the line gives an indication of the uncertainty in the coefficient (largely influenced by the number of available observations in the group). Positive values imply a positive relationship with the outcome; negative values imply that the probability of progressing decreases with higher values of the student or school characteristic. Furthermore, from these figures, it is possible to see at a glance if the uptake of a Cambridge Technical is related to the probability of progressing, both positively and negatively, and if the relationship is strong or weak, even if it is statistically significant.

So, first of all, looking at progression to HE, Figure 24(a) and Figure 24(b) show, for the cohorts of students who achieved a Cambridge Technical in 2015/16 or 2016/17, respectively, that there is a positive association between having a Level 3 Cambridge Technical and progressing to HE, once the background characteristics of students have been accounted for. However, the effect is fairly small in comparison to that of other factors (*e.g.*, prior attainment, level of deprivation) and not statistically significant.

Figure 25 shows that students with a Cambridge Technical are less likely to drop out from HE than students without it (this result is very similar for both cohorts of students). As above, the effect of having the Cambridge Technical is small and not statistically significant.

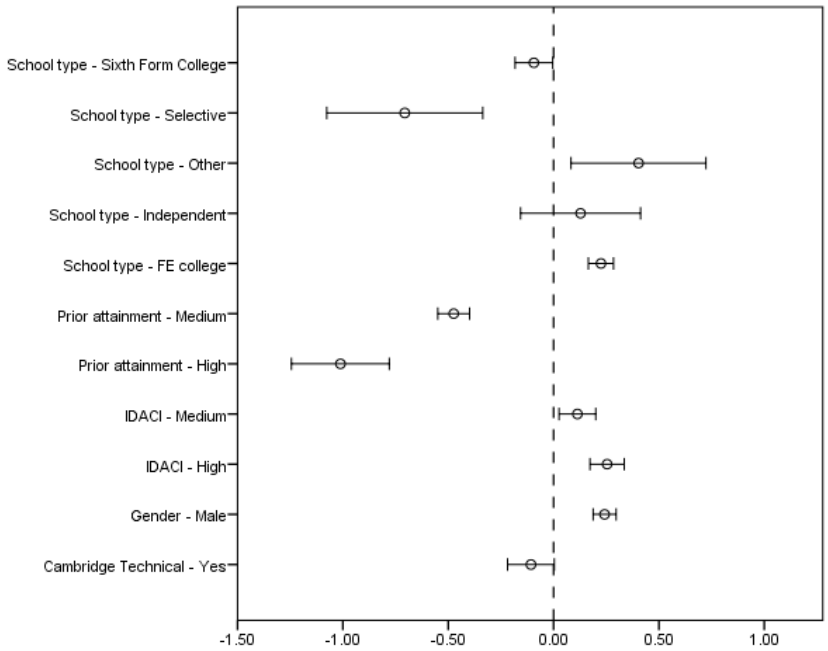


(a) 2015/16 cohort (N = 101788)

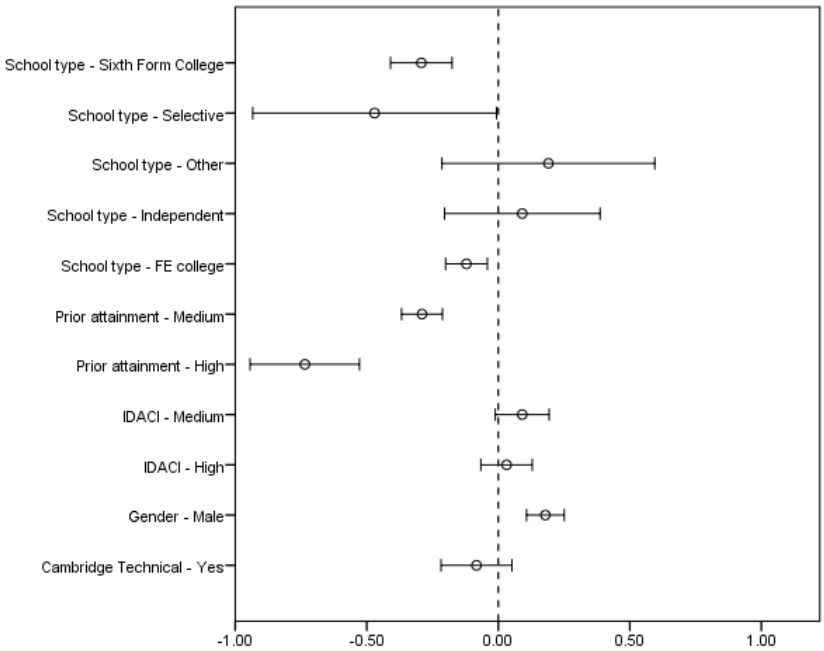


(b) 2016/17 cohort (N=114300)

Figure 24: Progression to Higher Education



(a) 2015/16 cohort (N=51173)



(b) 2016/17 cohort (N=51955)

Figure 25: Dropped out from Higher Education

3.2.2 Performance in Higher Education

This section reports on the performance in HE for students with Level 3 Cambridge Technicals and compares it with the performance of students without the qualifications. In particular, as mentioned above, the following indicators of performance in HE were considered:

- Graduated in three years
- Graduated with a first class degree
- Graduated with an upper second class degree
- Graduated with a lower second class degree
- Graduated with a third class degree

In the tables presented in this section, percentages for "graduated in three years" are of the total number of students in the dataset including those that did not progress to HE at all; percentages for "First", "Upper Second", "Lower Second" and "Third" are out of people graduated in three years.

Looking at overall rated of graduation from HE, Table 54 shows that students with Level 3 Cambridge Technicals were less likely to graduate within three years than students without them. However, the difference was just over 4 percentage points (22% *vs*. 26%). Furthermore, the difference between both groups of students was slightly higher when looking at the class of the degree achieved. In particular, 27% of the students without a Cambridge Technical who graduate within three years achieved a first class degree, compared to 19% of students with Cambridge Technicals. The proportions achieving an upper second class degree were quite similar for both groups of students.

Table 54: Graduation / Performance in Higher Education, 2015/16 cohort

Graduation	Students with a Level 3 Cambridge Technical		Students without a Level 3 Cambridge Technical	
	N	%	N	%
First	350	18.2	24005	26.6
Upper Second	1040	54.3	50335	55.9
Lower Second	455	23.8	14160	15.7
Third	70	3.7	1590	1.8
Graduated in three years	*1920*	*21.8*	*90090*	*26.0*

3.2.2.1 Performance by demographic characteristics

Table 55 to Table 60 show graduation rates according to students' demographic and school characteristics. These tables include all students, broken down by whether or not they took a Cambridge Technical qualification.

Regarding gender, Table 55 shows that female students with Cambridge Technical qualifications were more likely than male students to graduate within three years and to achieve better degrees (*i.e.*, higher percentages of female students achieved first or upper second class degrees). Table 55 also shows that the difference in graduation rates between students with and without Cambridge Technicals was higher for female students but, on the contrary, the difference in the percentages achieving a first class degree was higher for male students.

Table 55: Graduation / Performance in Higher Education, 2015/16 cohort ~ by gender

Level 3 Cambridge Technical	Graduation	Female		Male	
		N	%	N	%
No	First	15165	27.4	8840	25.4
	Upper Second	31765	57.5	18570	53.3
	Lower Second	7620	13.8	6535	18.8
	Third	710	1.3	885	2.5
	Graduated in three years	*55260*	*29.8*	*34830*	*21.6*
Yes	First	200	19.3	150	16.9
	Upper Second	570	55.5	470	52.9
	Lower Second	230	22.2	230	25.6
	Third	30	2.9	40	4.6
	Graduated in three years	*1030*	*25.5*	*890*	*18.6*

Table 56 shows that students with Cambridge Technical qualifications who lived in areas of high income-related deprivation were as likely as those in areas of low deprivation to graduate within three years. However, they were less likely to achieve good degrees (*e.g.*, 15% achieved a first compared to 20%).

Table 56 also shows that the differences in the percentages graduating within three years and in the percentages achieving a first class degree between the groups of students with and without Cambridge Technicals (higher percentages amongst students without Cambridge Technicals) increased as the level of deprivation decreased.

Table 56: Graduation / Performance in Higher Education, 2015/16 cohort ~ by level of deprivation (IDACI)

Level 3 Cambridge Technical	Graduation	Low		Medium		High	
		N	%	N	%	N	%
No	First	8120	28.5	8605	28.7	6965	22.9
	Upper Second	16510	58.0	16675	55.5	16470	54.3
	Lower Second	3500	12.3	4260	14.2	6180	20.4
	Third	345	1.2	480	1.6	735	2.4
	Graduated in three years	*28475*	*28.8*	*30020*	*26.8*	*30350*	*23.9*
Yes	First	75	20.2	140	20.5	130	15.5
	Upper Second	210	56.5	365	52.9	465	54.5
	Lower Second	75	20.2	165	24.0	215	25.2
	Third	10	3.2	20	2.6	40	4.7
	Graduated in three years	*370*	*21.8*	*690*	*22.0*	*850*	*21.7*

As expected, students with high prior attainment relative to their Key Stage 5 peers (Table 57) were far more likely than those with low prior attainment to graduate within three years and to achieve a first class degree (whether they had a Cambridge Technical or not).

Table 57 also shows that students with Cambridge Technicals and high prior attainment at school were more likely to graduate than students of similar attainment without Cambridge Technicals. This was also true for the groups of students with low attainment, although the difference between groups was smaller.

Regarding the types of degrees achieved, Table 57 shows that there was no difference between high attaining students with and without Cambridge Technicals in the proportions of students achieving a first class degree.

Table 57: Graduation / Performance in Higher Education, 2015/16 cohort ~ by prior attainment

Level 3 Cambridge Technical	Graduation	Low		Medium		High	
		N	%	N	%	N	%
No	First	3765	14.5	8355	25.9	11535	37.8
	Upper Second	13895	53.5	19105	59.2	16595	54.4
	Lower Second	7320	28.2	4445	13.8	2160	7.1
	Third	985	3.8	355	1.1	225	0.7
	Graduated in three years	*25965*	*17.2*	*32260*	*32.8*	*30515*	*35.8*
Yes	First	170	13.7	150	25.3	30	38.0
	Upper Second	655	52.4	340	58.2	45	55.7
	Lower Second	365	29.5	80	14.0	5	5.1
	Third	55	4.4	15	2.4	0	1.3
	Graduated in three years	*1245*	*18.6*	*585*	*32.2*	*80*	*39.5*

Table 58 shows that, as expected, the likelihood of graduating within three years or achieving a good degree decreased with the volume of vocational qualifications in the students' programmes of study during Key Stage 5, independently of having a Cambridge Technical or not. However, having a Cambridge Technical slightly increased the likelihood of graduating, with respect to not having a Cambridge Technical, for students from mostly academic, mixed and vocational backgrounds.

Students with Cambridge Technicals were more likely to achieve at least an upper second class degree than students without Cambridge Technicals if they followed a mostly academic, mixed or mostly vocational programme of study during Key Stage 5 (Table 58). However, they were less likely if they followed a vocational programme of study.

Whether they had a Cambridge Technical or not, Table 59 shows that students in FE colleges were less likely to graduate from HE than students in comprehensive schools or students in sixth form colleges. The differences between graduation rates between both groups of students were bigger in sixth form colleges and smallest in FE colleges.

Regarding class of degree obtained, Table 59 shows that students with Cambridge Technicals achieved in sixth form colleges were less likely to receive a first class degree than students in comprehensive schools. This pattern was also observed for students without Cambridge Technicals. However, students with Cambridge Technicals achieved in FE colleges were more likely to achieve a good degree (at least an upper second class degree) than students in FE colleges without a Cambridge Technical qualification.

Table 60 show the performance in HE by main qualification at Key Stage 5. The highest graduation rate corresponded to students whose main qualification was an A level (34%). Graduation rates for students with a Cambridge Technical as their main qualification were slightly lower (21%), but higher than rates for students with Level 3 BTECs (16%) or other Level 3 qualifications (13%).

Similar patterns were found regarding achieving a first class or an upper second class degree: students with A levels had the highest rates, and students with Cambridge Technicals had higher rates than students with Level 3 BTECs.

Table 58: Graduation / Performance in Higher Education, 2015/16 cohort ~ by educational pathway at Key Stage 5

Level 3 Cambridge Technical	Graduation	Academic only		Mostly academic		Mixed		Mostly Vocational		Vocational only	
		N	%	N	%	N	%	N	%	N	%
No	First	20555	29.0	1185	22.2	345	18.9	415	16.6	1505	15.7
	Upper Second	40670	57.4	2945	55.0	970	52.7	1265	50.9	4485	46.7
	Lower Second	8795	12.4	1105	20.7	465	25.4	715	28.7	3070	32.0
	Third	780	1.1	115	2.2	55	3.0	95	3.7	545	5.7
	Graduated in three years	70800	*31.7*	5355	*30.0*	1840	*22.0*	2485	*23.6*	9610	*11.2*
Yes	First	0	-	155	20.2	65	20.9	70	18.4	60	12.6
	Upper Second	0	-	445	58.2	170	55.6	205	51.9	225	49.1
	Lower Second	0	-	135	17.7	65	21.2	105	26.3	155	33.5
	Third	0	-	30	3.8	5	2.3	15	3.3	20	4.8
	Graduated in three years	0	-	760	*31.5*	305	*23.9*	390	*24.5*	460	*13.1*

Table 59: Graduation / Performance in Higher Education, 2015/16 cohort ~ by type of school

Level3 Cambridge Technical	Graduation	Comprehensive		Independent		Selective		6th Form Collee		FE College		Other	
		N	%	N	%	N	%	N	%	N	%	N	%
No	First	10365	26.9	2645	27.2	2645	31.5	2755	26.1	2070	22.6	65	24.2
	Upper Second	21615	56.2	5900	60.7	4850	57.7	5780	54.9	4675	51.2	155	58.0
	Lower Second	5950	15.5	1075	11.1	825	9.8	1780	16.9	2075	22.7	40	15.2
	Third	565	1.5	95	1.0	85	1.0	225	2.1	315	3.4	5	2.7
	Graduated in three years	*38500*	*29.0*	*9715*	*28.2*	*8400*	*35.3*	*10535*	*28.6*	*9135*	*15.2*	*265*	*25.2*
Yes	First	230	18.1	5	-	5	-	20	15.3	20	19.8	0	-
	Upper Second	670	53.4	10	-	5	-	75	62.1	60	57.4	0	-
	Lower Second	305	24.2	0	-	0	-	25	20.2	20	20.8	0	-
	Third	55	4.3	0	-	0	-	5	2.4	0	2.0	0	-
	Graduated in three years	*1255*	*23.8*	*15*	*25.4*	*10*	*27.8*	*125*	*15.1*	*100*	*14.1*	*0*	-

Table 60: Graduation / Performance in Higher Education, 2015/16 cohort ~ by main qualification (all candidates)

Main qualification at Key Stage 5	Number of students	First	Upper Second	Lower Second	Third	*Graduated in three years*
A level	68220	29.1	57.4	12.4	1.1	*34.2*
AS level	30	20.7	41.4	37.9	0.0	*0.2*
Applied A level	1820	22.3	56.8	19.0	2.0	*26.9*
Applied AS level	5	-	-	-	-	*0.7*
L3 BTEC	16660	16.6	49.9	29.1	4.4	*15.8*
L3 Cambridge Technical	1285	18.2	54.4	24.1	3.2	*21.3*
Other L3	1890	25.9	55.4	16.1	2.6	*13.4*
Mixed	2095	28.2	53.9	16.4	1.5	*31.1*

3.2.2.2 Performance of Cambridge Technical students

Table 61 shows graduation rates for Level 3 Cambridge Technicals students only, according to the qualifications taken alongside. Only the most frequently observed qualification combinations are shown here.

For students in 2015/16, those who combined Cambridge Technicals with AS/A levels, Applied AS/A levels and Level 3 BTECs were the most likely to graduate within three years. They were closely followed by those with AS/A levels and other level 3 qualifications. However, these categories represent a small number of students. The large subset of students graduating from HE (in absolute numbers) was the one who combined Cambridge Technicals with AS/A levels only. Graduation rates were substantially lower for students who took just Level 3 BTECs alongside their Cambridge Technical qualifications.

Students with AS/A levels only alongside their Cambridge Technicals were the most likely to achieve a first class degree, although other combinations including AS/A levels had similar rates.

Table 62 shows that graduation rates were different for the different Cambridge Technical subjects. In particular, rates were highest for students with Cambridge Technicals in Media and lowest for students with Cambridge Technicals in Performing Arts or in Business Studies. Art & Design, Heath & Social Care, and IT had similar graduation rates.

Students with Cambridge Technicals in Sport and Health & Social Care were the most likely to achieve at least an upper second class degree.

Table 63 shows the graduation rates in HE courses that were in the same (or related) subject as the Cambridge Technical qualification. These rates varied between Cambridge Technicals subjects: for example, 16% of Media students graduated in a related HE course compared to 5% of IT students or 8% of Business students. The proportion graduating in a related HE course was also relatively high for students whose Level 3 Cambridge Technical was in Sport (15%), Art & Design (16%) or Health & Social Care (13%).

Finally, Table 64 and Table 65 show the percentages of Cambridge Technicals students who graduated within three years in a Russell Group or in a Sutton Trust Group institution, respectively. Table 64 shows that graduation rates were fairly low and varied by the subject of the Cambridge Technical. The students most likely to progress to a Russell Group institution were those Cambridge Technicals were in Performing Arts (although they represent a very small number of students), IT, and Sport. Table 65 shows similar patterns for graduation in an institution in the Sutton Trust Group.

Table 61: Graduation / Performance in Higher Education, 2015/16 cohort ~ by qualifications taken alongside Cambridge Technicals

Level 3 qualifications taken alongside Cambridge Technicals	Number of students	Number of students graduating	First	Upper Second	Lower Second	Third	*Graduated in three years*
Applied AS/A Level	100	25	4.0	64.0	28.0	4.0	*24.5*
Applied AS/A Level, L3 BTEC	85	15	-	-	-	-	*19.5*
AS/A Level	3405	855	20.4	54.5	21.9	3.2	*25.2*
AS/A Level, Applied AS/A Level	450	125	18.9	60.6	16.5	3.9	*28.2*
AS/A Level, Applied AS/A Level, L3 BTEC	100	35	8.8	58.8	23.5	8.8	*34.3*
AS/A Level, L3 BTEC	1615	380	18.0	53.2	25.7	3.2	*23.4*
AS/A Level, Other L3	525	160	19.5	61.0	15.7	3.8	*30.4*
L3 BTEC	1070	160	11.4	43.0	39.9	5.7	*14.8*
No other L3 qualifications	1265	130	16.3	51.2	27.1	5.4	*10.2*
Other L3	195	35	11.4	57.1	28.6	2.9	*17.8*

Table 62: Graduation / Performance in Higher Education, 2015/16 cohort ~ by Cambridge Technical subject

Subject of Level 3 Cambridge Technical	Number of students	Number of students graduating	First	Upper Second	Lower Second	Third	*Graduated in three years*
Art & Design	225	50	14.0	58.0	24.0	4.0	*22.0*
Business	1990	365	16.3	51.2	29.8	2.8	*18.3*
Health & Social Care	1505	335	18.2	54.8	23.8	3.3	*22.3*
Information Technology	4410	990	18.4	53.4	24.0	4.1	*22.4*
Media / Digital Media	565	155	20.9	51.6	22.9	4.6	*27.1*
Performing Arts	25	5	-	-	-	-	*14.8*
Sport / Sport & Physical Activity	770	165	15.0	61.7	19.8	3.6	*21.7*

Table 63: Graduation / Performance in Higher Education, 2015/16 cohort ~ graduation in a HE course in a related subject to the Cambridge Technical

Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Graduation in related subject in HE		
			Students graduating	% (out of students with the subject in HE)	% (out of students with the subject)
Art & Design	225	120	35	29.8	15.9
Business	1990	1025	165	16.2	8.4
Health & Social Care	1505	895	195	22.0	13.1
Information Technology	4410	2555	255	9.9	5.8
Media / Digital Media	565	355	90	25.5	16.1
Performing Arts	25	10	5	-	11.1
Sport / Sport & Physical Activity	770	420	115	27.8	15.1

Table 64: Graduation / Performance in Higher Education, 2015/16 cohort ~ graduation in a Russell Group institution

Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Graduation in Russell Group institution		
			Students graduating	% (out of students with the subject in HE)	% (out of students with the subject)
Art & Design	225	120	0	1.7	0.9
Business	1990	1025	25	2.2	1.2
Health & Social Care	1505	895	20	2.1	1.3
Information Technology	4410	2555	65	2.5	1.5
Media / Digital Media	565	355	5	1.7	1.1
Performing Arts	25	10	0	-	3.7
Sport / Sport & Physical Activity	770	420	10	2.6	1.4

Table 65: Graduation / Performance in Higher Education, 2015/16 cohort ~ graduation in an institution in the Sutton Trust Group

Subject of Level 3 Cambridge Technical	Number of students	Number of students in HE	Graduation in an institution in the Sutton Trust Group		
			Students graduating	% (out of students with the subject in HE)	% (out of students with the subject)
Art & Design	225	120	0	1.7	0.9
Business	1990	1025	25	2.9	1.5
Health & Social Care	1505	895	20	2.5	1.5
Information Technology	4410	2555	65	3.2	1.8
Media / Digital Media	565	355	5	3.1	1.9
Performing Arts	25	10	0	-	3.7
Sport / Sport & Physical Activity	770	420	10	3.1	1.7

3.2.2.3 Performance: regression analyses

As discussed in Section 2.2, regression analyses were carried out to investigate the effect of having a Cambridge Technical qualification on performance in Higher Education, taking into account the background characteristics of the students.

The outcome variables for the regression analyses reported in this section were graduation or achievement of a particular class of degree. These outcomes were dichotomous (1 if the student progressed; 0 if the student did not progress). In particular, the following indicators of performance in HE were considered:

- Graduated from HE within three years (out of all the students in the dataset including those that did not progress to HE at all)
- Achieved an upper second class degree or above (out of students who graduated in three years)
- Achieved a first class degree (out of students who graduated in three years)

Background characteristics (gender, prior attainment at Key Stage 5, school type, socio-economic deprivation, school type) were included in the regression models, alongside a binary variable to indicate the uptake of Cambridge Technicals at Level 3.

As discussed in Section 3.2.1, although the effects of the student and school characteristics, as well as the uptake of Cambridge Technicals on performance in HE, can be understood and interpreted by observing the coefficients from the regression models (see tables in Appendix D for the full results of the regression analyses), plots can be more intuitive. In the graphs presented in this section (Figure 26, Figure 27 and Figure 28 below), these effects are displayed.

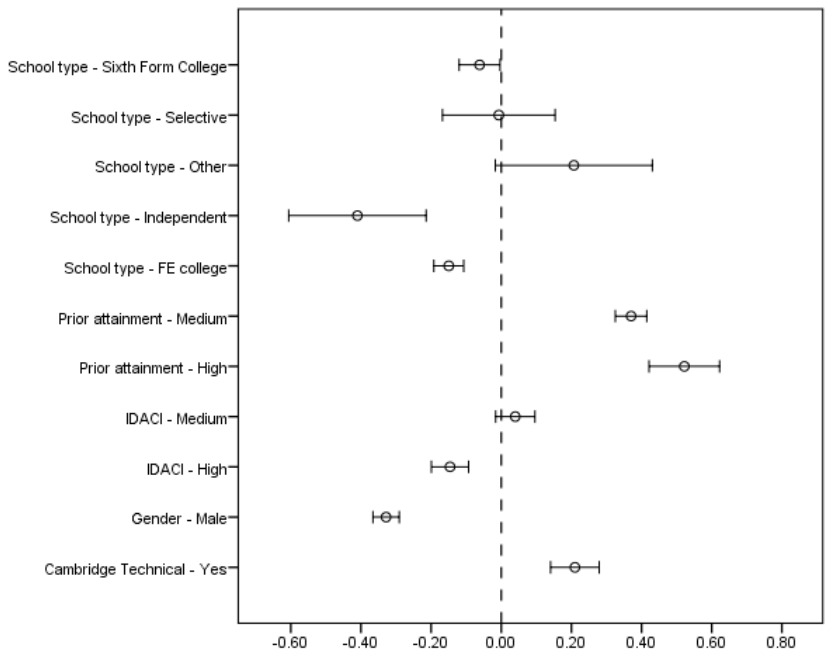


Figure 26: Graduated from Higher Education, 2015/16 cohort (N = 51173)

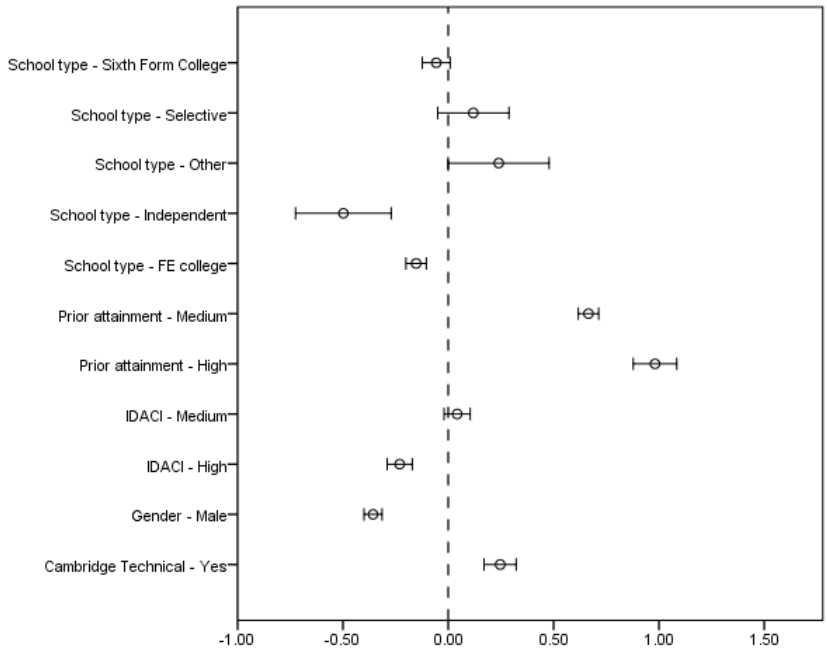


Figure 27: Achieved an upper second class degree or above, 2015/16 cohort (N = 51173)

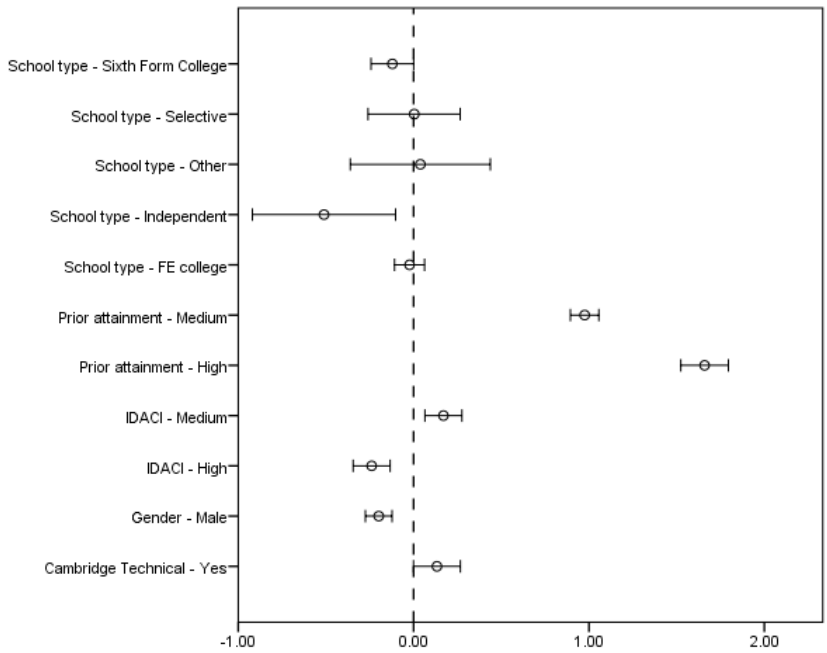


Figure 28: Achieved a first class degree or above, 2015/16 cohort (N = 51173)

Figure 26 shows that there is a positive and statistically significant association between having a Level 3 Cambridge Technical and graduating from HE. Having a Cambridge Technical also increased significantly the probability of achieving an upper second class degree or above (Figure 27) and, to a lower extent, the probability of achieving a first class degree (Figure 28).

3.3 Progression to Further Education

Cambridge Technicals have been designed with the workplace in mind and aim to provide a strong base for progression, not only to Higher Education but also onto Further Education (*e.g.*, apprenticeships) and employment. Although students can progress to different destinations in Further Education, apprenticeships are one of the most common routes. Therefore, the analyses in this section were restricted to progression to apprenticeships.

In order to investigate the progression to FE of students who achieved Cambridge Technicals, two cohorts of students (those who achieved a Cambridge Technical in the academic years 2015/16 or in the academic year 2016/17) were followed up in the ILR data for the subsequent academic years, as follows:

- 2015/16 Cambridge Technicals cohort was followed up in the academic years 2016/17, 2017/18 and 2018/19.
- 2016/17 Cambridge Technicals cohort was followed up in the academic years 2017/18 and 2018/19.

Note that the students who started FE in 2016/17 were the first cohort who could have achieved Cambridge Technicals from the 2016 suite. They were followed up in FE only for two years due to data availability at the time the research was planned.

In order to look at progression to FE, the following progression indicators were considered:

- In FE (at any point in the follow-up period)
- In FE – all years
- In FE – enrolled after gap year(s)
- In FE – dropped out after first year
- In FE – dropped out after second year (only applicable to the 2015/16 cohort)

For the indicators above, numbers and percentages (out of all students in the data) are provided in tables or graphs. As discussed in Section 2.2.2, data on performance (*e.g.*, course completion) in the ILR is patchy and difficult to interpret. Therefore, performance in FE was not investigated.

In this section, graphs show the results for the first progression indicator (in FE at any point in the follow-up period) and the subsequent tables present the results for the remaining four indicators of progression. The "Total number of candidates" in the tables in Section 3.3 indicate the total number of candidates, including those who did not progress to Further Education.

Figure 29 shows the overall rates of progression to FE for students with and without a Cambridge Technical at Level 3. Although progression to FE was low for all groups of students, it was higher for students with a Cambridge Technical than for students without it. Figure 29 also shows that progression to FE decreased slightly over time.

Table 66 shows, in more detail, the progression to FE for students who did and did not hold a Level 3 Cambridge Technical. For the cohort of students who achieved the Cambridge Technical in 2015/16, just under 5% progressed to FE and stayed in the course for the follow-up period, with a further 6% progressing to FE after one (or more) gap year. The percentages amongst students without Cambridge Technicals were lower (3% and 4%, respectively).

Regarding dropping out after one or two years, there higher percentages amongst students with Cambridge Technicals, but these were still fairly low. Interestingly, the percentage of students dropping out almost doubled from first to second year for the 2015/16 cohort.

The patterns of overall progression to FE were fairly similar for the 2016/17 cohort.

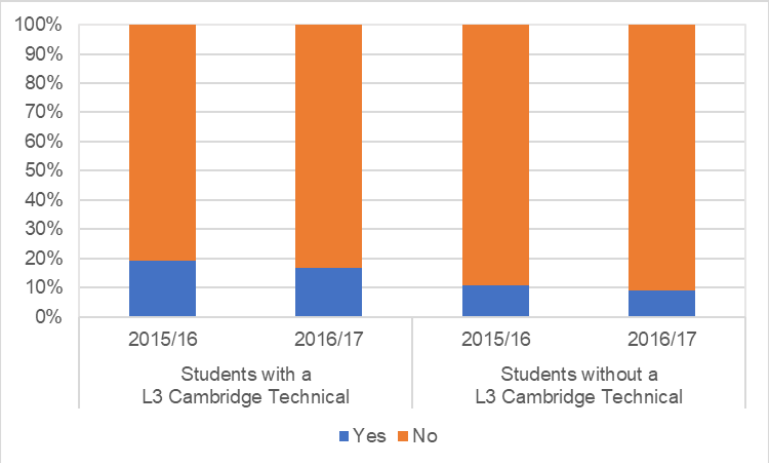


Figure 29: Overall progression to Further Education, by cohort

Table 66: Overall progression to Further Education, by cohort

Progression		Level 3 Cambridge Technical	
		Yes	No
2015/16 cohort	In FE – all years	4.9	2.6
	In FE – enrolled after gap year(s)	5.7	3.8
	In FE – dropped out after first year	2.7	1.4
	In FE – dropped out after second year	6.0	3.0
	Total number of candidates	*8815*	*346230*
2016/17 cohort	In FE – all years	10.6	5.5
	In FE – enrolled after gap year(s)	4.2	2.4
	In FE – dropped out after first year	1.9	1.2
	Total number of candidates	*9935*	*351155*

Progression to FE was higher for students with Cambridge Technicals from the 2016 suite than for students with Cambridge Technicals from the 2012 suite (20% *vs*. 16%). Table 67 below shows, in particular, that a higher percentage of students with Cambridge Technicals from the 2016 suite enrolled and stayed in FE for the follow-up period and a slightly lower percentage progressed to FE after a gap year than students with Cambridge Technicals from the 2012 suite. Along with having lower progression, percentages of students dropping out after the first year were higher for students with 2012 Cambridge Technicals.

Table 67: Progression to Further Education, by Cambridge Technical Suite

Cohort	Progression	2012 Suite		2016 Suite	
		N	%	N	%
2016/17	In FE – all years	975	10.3	70	15.4
	In FE – enrolled after gap year(s)	395	4.2	20	4.0
	In FE – dropped out after first year	185	2.0	5	0.9
	Total number of candidates	*9460*		*455*	

3.3.1 Progression by demographic characteristics

The following graphs and tables show rates of progression according to students' demographic and school characteristics. They include all students, broken down by whether or not they took a Cambridge Technical qualification.

First of all, Figure 30 shows that, amongst students with Cambridge Technicals, male students were more likely to progress to FE than female students in both years. This pattern was also observed amongst students without Cambridge Technicals.

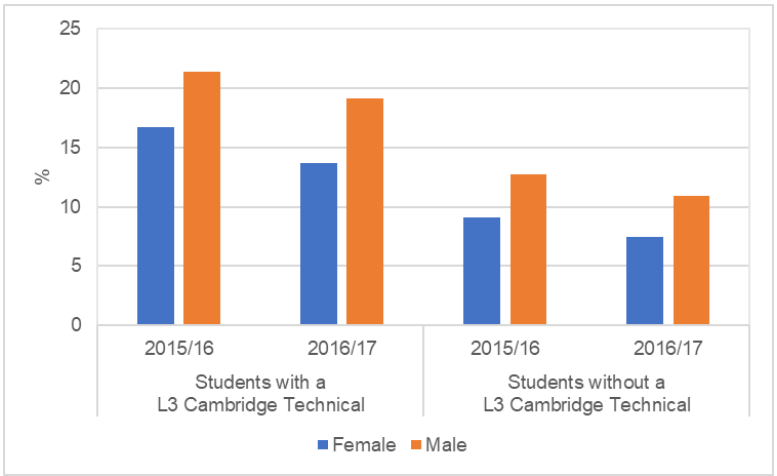


Figure 30: Progression to Further Education, by cohort and by gender

Table 68 shows, in more detail, the progression to FE by gender. In particular, male students were more likely than female students to stay in FE for the follow-up period (independently of whether or not they had a Cambridge Technical) and to enrol in FE after gap year(s). However, the percentages of students dropping out after one or two years did not differ much by gender.

Figure 31 shows that students with Cambridge Technical qualifications who live in areas of low and medium income-related deprivation were more likely to progress to FE than those from areas of high deprivation (independently of the cohort). This contrasts with the progression amongst those without a Cambridge Technical: students from low deprived areas were less likely to progress to FE.

Similarly to Figure 31, Table 69 shows Cambridge Technical students from low and medium socio-economic backgrounds were more likely than students from high socio-economic backgrounds to stay in FE for the follow-up period and also to enrol in FE after gap year(s). Furthermore, the

percentages of students with Cambridge Technicals dropping out were highest amongst students from low income-related deprivation areas. This contrasts with patterns for students without Cambridge Technicals, which are almost reversed.

Table 68: Progression to Further Education, by cohort and by gender

Cohort	Level 3 Cambridge Technical	Progression	Gender	
			Female (%)	Male (%)
2015/16 cohort	No	In FE – all years	1.8	3.6
		In FE – enrolled after gap year(s)	3.1	4.5
		In FE – dropped out after first year	1.3	1.6
		In FE – dropped out after second year	2.9	3.1
		Total number of candidates	*185160*	*161070*
	Yes	In FE – all years	3.6	6.0
		In FE – enrolled after gap year(s)	4.4	6.8
		In FE – dropped out after first year	2.6	2.7
		In FE – dropped out after second year	6.0	5.9
		Total number of candidates	*4040*	*4775*
2016/17 cohort	No	In FE – all years	4.4	6.7
		In FE – enrolled after gap year(s)	2.0	2.9
		In FE – dropped out after first year	1.1	1.2
		Total number of candidates	*188090*	*163065*
	Yes	In FE – all years	8.6	12.2
		In FE – enrolled after gap year(s)	3.3	4.9
		In FE – dropped out after first year	1.9	2.0
		Total number of candidates	*4505*	*5435*

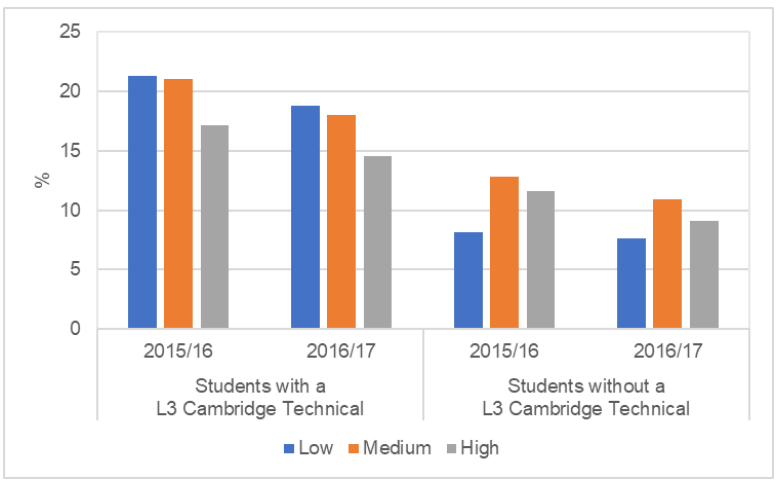


Figure 31: Progression to Further Education, by cohort and by deprivation

Table 69: Progression to Further Education, by cohort and by level of deprivation

Cohort	Level 3 Cambridge Technical	Progression	Deprivation		
			Low (%)	Medium (%)	High (%)
2015/16 cohort	No	In FE – all years	2.1	3.4	2.5
		In FE – enrolled after gap year(s)	2.9	4.3	4.1
		In FE – dropped out after first year	0.9	1.6	1.7
		In FE – dropped out after second year	2.2	3.5	3.3
		Total number of candidates	*98965*	*111985*	*126815*
	Yes	In FE – all years	5.7	5.6	4.1
		In FE – enrolled after gap year(s)	5.9	6.5	5.0
		In FE – dropped out after first year	3.0	2.7	2.5
		In FE – dropped out after second year	6.6	6.3	5.5
		Total number of candidates	*1705*	*3130*	*3915*
2016/17 cohort	No	In FE – all years	4.8	6.7	5.3
		In FE – enrolled after gap year(s)	2.0	2.9	2.5
		In FE – dropped out after first year	0.8	1.3	1.3
		Total number of candidates	*114700*	*114305*	*114300*
	Yes	In FE – all years	12.3	11.7	8.6
		In FE – enrolled after gap year(s)	4.3	4.6	3.7
		In FE – dropped out after first year	2.1	1.7	2.1
		Total number of candidates	*2300*	*3660*	*3895*

Contrary to findings for progression to HE, students with low prior attainment relative to their Key Stage 5 peers (Figure 32 and Table 70) were more likely than those with high prior attainment to progress to FE (whether they had a Cambridge Technical or not) and to drop out after the first or second year. For students with Cambridge Technicals achieved in the 2016/17 academic year, the pattern was slightly different: progression rates to FE were very similar, independently of prior attainment.

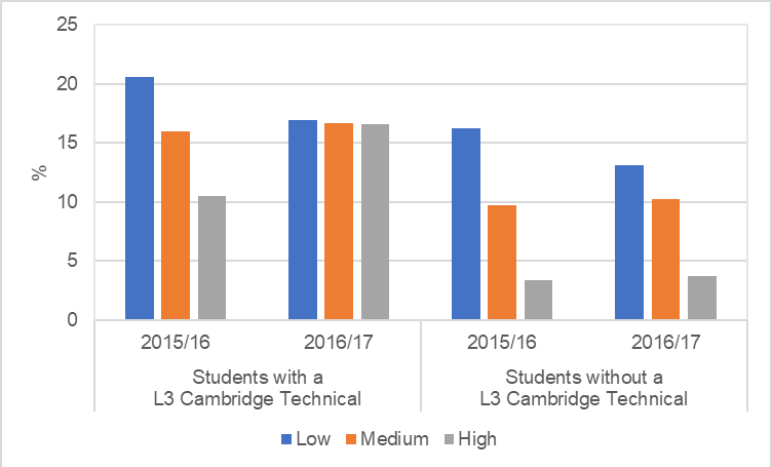


Figure 32: Progression to Further Education, by cohort and by prior attainment

Table 70: Progression to Further Education, by cohort and by prior attainment

Cohort	Level 3 Cambridge Technical	Progression	Prior attainment		
			Low	Medium	High
2015/16 cohort	No	In FE – all years	3.7	2.6	1.0
		In FE – enrolled after gap year(s)	5.6	3.3	1.2
		In FE – dropped out after first year	2.3	1.1	0.3
		In FE – dropped out after second year	4.6	2.7	0.8
		Total number of candidates	*150880*	*98265*	*85145*
	Yes	In FE – all years	5.2	4.4	3.0
		In FE – enrolled after gap year(s)	6.3	3.9	4.0
		In FE – dropped out after first year	2.9	1.9	1.0
		In FE – dropped out after second year	6.2	5.7	2.5
		Total number of candidates	*6695*	*1810*	*200*
2016/17 cohort	No	In FE – all years	7.5	6.4	2.4
		In FE – enrolled after gap year(s)	3.6	2.7	0.9
		In FE – dropped out after first year	2.0	1.1	0.4
		Total number of candidates	*112875*	*128445*	*101835*
	Yes	In FE – all years	10.4	10.8	12.9
		In FE – enrolled after gap year(s)	4.4	4.0	2.6
		In FE – dropped out after first year	2.0	1.9	1.1
		Total number of candidates	*5960*	*3510*	*380*

When considering the educational pathway students had a Key Stage 5, Figure 33 shows that progression to FE was highest for students with vocational only programmes of study and lowest for students with mostly academic programmes. Patterns did not change over time.

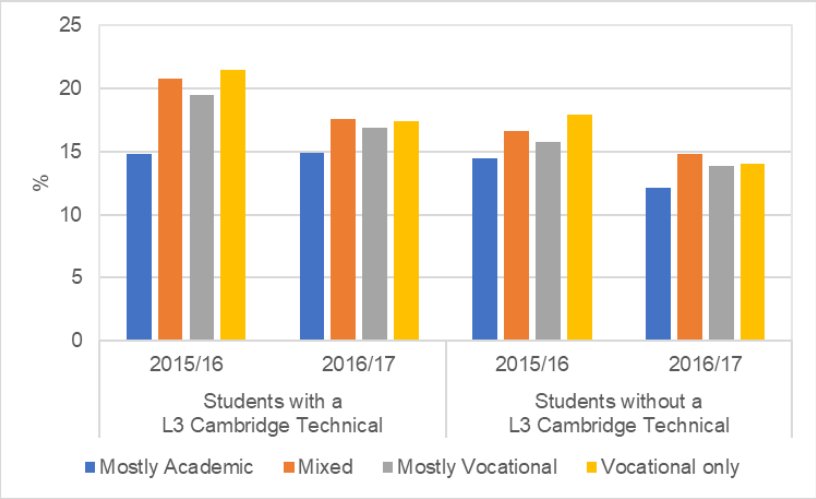


Figure 33: Progression to Further Education, by cohort and by educational pathway at Key Stage 5

Table 71 shows, in more detail, the progression to FE by educational pathway at Key Stage 5. As for Figure 33 above, Cambridge Technical students with vocational only backgrounds were more likely than students with other backgrounds (in particular mostly academic) to stay in FE for the follow-up period and also to enrol in FE after gap year(s). Table 71 also shows that the percentages of students with Cambridge Technicals dropping out were highest amongst students with vocational backgrounds, particularly those in the 2015/16 cohort.

Figure 34 and Table 72 show that students with Cambridge Technicals achieved in 2015/16 or 2016/17 in comprehensive schools were more likely to progress to FE than students who achieved their Cambridge Technicals in other types of schools or colleges. Students who had attended sixth form colleges or FE colleges were closely behind. This pattern was not observed for students without Cambridge Technicals: for this group of students, those who were in FE colleges were the most likely to progress to FE.

Table 72 also shows that amongst students with Cambridge Technicals achieved in 2015/16, the percentages of students dropping out after the first year were higher if the qualifications were achieved in sixth form colleges and comprehensive schools than in other types of centres. These percentages were lowest for students who attended independent and selective schools during Key Stage 5. For students with Cambridge Technicals achieved in 2016/17, the percentages of students dropping out were highest amongst students who attended comprehensive schools or sixth form colleges.

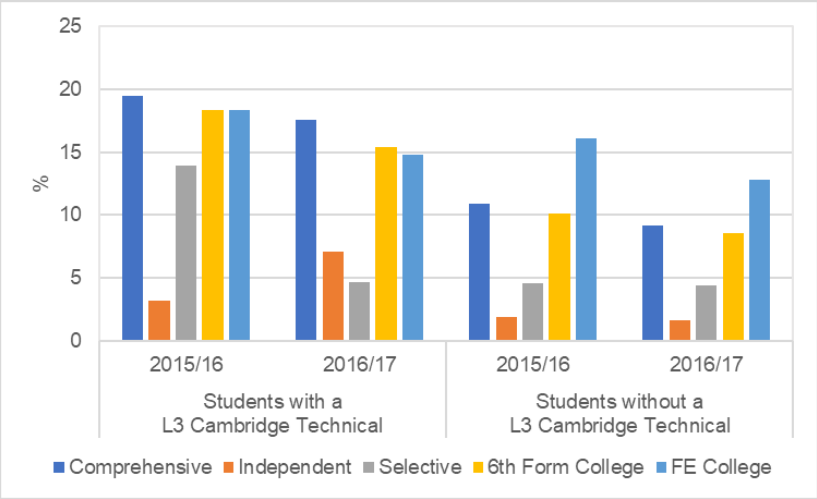


Figure 34: Progression to Further Education, by cohort and by type of school

Table 71: Progression to Further Education, by cohort and by educational pathway at Key Stage 5

Cohort	Level 3 Cambridge Technical	Progression	Educational Pathway at Key Stage 5				
			Academic only (%)	Mostly Academic (%)	Mixed (%)	Mostly Vocational (%)	Vocational only (%)
2015/16 cohort	No	In FE – all years	1.8	3.9	4.5	4.1	4.0
		In FE – enrolled after gap year(s)	2.6	4.5	5.3	5.1	6.3
		In FE – dropped out after first year	0.8	1.6	2.0	1.8	2.8
		In FE – dropped out after second year	2.0	4.5	4.7	4.8	4.8
		Total number of candidates	*223310*	*17820*	*8345*	*10525*	*85880*
	Yes	In FE – all years	-	4.5	4.8	4.9	5.3
		In FE – enrolled after gap year(s)	-	4.3	6.0	5.3	6.7
		In FE – dropped out after first year	-	2.0	2.7	2.8	3.0
		In FE – dropped out after second year	-	4.0	7.4	6.5	6.5
		Total number of candidates	*0*	*2415*	*1280*	*1595*	*3515*
2016/17 cohort	No	In FE – all years	3.9	8.0	9.4	8.9	7.9
		In FE – enrolled after gap year(s)	1.6	2.9	3.5	3.4	3.9
		In FE – dropped out after first year	0.7	1.3	1.9	1.6	2.1
		Total number of candidates	*219025*	*19040*	*7340*	*11830*	*93590*
	Yes	In FE – all years	-	9.7	11.6	10.7	10.8
		In FE – enrolled after gap year(s)	-	3.6	4.4	4.3	4.4
		In FE – dropped out after first year	-	1.7	1.6	1.9	2.3
		Total number of candidates	*0*	*2720*	*1260*	*1935*	*4020*

Table 72: Progression to Further Education, by cohort and by type of school

Cohort	Level 3 Cambridge Technical	Progression	Type of school					
			Comprehensive (%)	Independent (%)	Selective (%)	6th Form College (%)	FE College (%)	Other (%)
2015/16 cohort	No	In FE – all years	2.8	0.3	1.3	2.5	3.8	3.7
		In FE – enrolled after gap year(s)	3.7	0.8	1.8	3.4	5.6	4.3
		In FE – dropped out after first year	1.4	0.3	0.4	1.4	2.3	1.5
		In FE – dropped out after second year	3.1	0.4	1.1	2.8	4.3	4.2
		Total number of candidates	*132950*	*34485*	*23760*	*36790*	*59970*	*1045*
	Yes	In FE – all years	5.2	0.0	0.0	4.6	4.0	-
		In FE – enrolled after gap year(s)	5.6	1.6	8.3	4.9	7.1	-
		In FE – dropped out after first year	2.8	0.0	2.8	2.0	2.0	-
		In FE – dropped out after second year	5.9	1.6	2.8	7.0	5.3	-
		Total number of candidates	*5290*	*65*	*35*	*820*	*715*	*0*
2016/17 cohort	No	In FE – all years	5.8	0.8	2.7	5.4	7.2	7.1
		In FE – enrolled after gap year(s)	2.2	0.5	1.2	2.2	3.8	3.3
		In FE – dropped out after first year	1.1	0.3	0.4	1.0	1.8	1.3
		Total number of candidates	*132435*	*34435*	*23420*	*37680*	*72360*	*1200*
	Yes	In FE – all years	11.5	5.7	2.3	8.9	8.6	-
		In FE – enrolled after gap year(s)	4.0	1.4	2.3	4.9	4.4	-
		In FE – dropped out after first year	2.1	0.0	0.0	1.6	1.8	-
		Total number of candidates	*5995*	*70*	*45*	*1020*	*1030*	*10*

Figure 35 shows that, for the 2015/16 cohort, progression to FE was highest for students with Applied AS levels as their main qualification, followed by students with Cambridge Technicals. Progression to FE was lowest, as expected, for students with A and AS levels.

Table 73 and Table 74 show, in more detail, the progression to FE by main qualification for the 2015/16 and 2016/17 cohorts, respectively. In particular, Table 73 shows that students in the 2015/16 cohort were more likely to dropout from FE if their main qualification was an A or AS level than if their main qualification was, for example, a Cambridge Technical or a BTEC. Percentages of students dropping out were much higher in the second year than in the first year. For students in the 2016/17 cohort Table 74 shows similar patterns in the percentages of students dropping out.

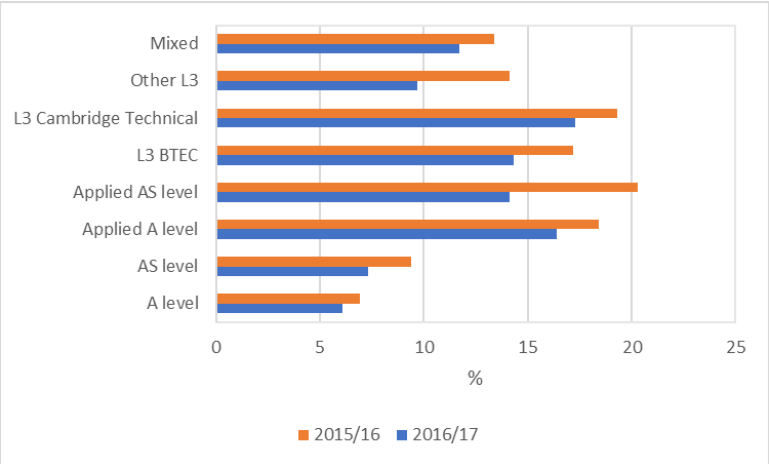


Figure 35: Progression to Further Education ~ by main qualification

Table 73: Progression to Further Education, 2015/16 cohort ~ by main qualification

Main qualification at Key Stage 5	Number of students	In FE All years	In FE Enrolled after gap year(s)	In FE Dropped out after first year	In FE Dropped out after second year
A level	199580	1.8	2.4	0.8	2.0
AS level	15310	1.4	5.0	1.2	1.8
Applied A level	6770	4.7	4.9	2.5	6.2
Applied AS level	900	2.9	9.5	2.8	5.1
Applied AS/A level combined	35	6.1	6.1	3.0	0.0
L3 BTEC	105595	4.1	5.9	2.5	4.8
L3 Cambridge Technical	6030	4.6	5.9	2.8	6.0
Other L3	14095	3.6	5.0	2.2	3.3
Mixed	6730	3.3	4.2	1.6	4.3

Table 74: Progression to Further Education, 2016/17 cohort ~ by main qualification

Main qualification at Key Stage 5	Number of students	In FE All years	In FE Enrolled after gap year(s)	In FE Dropped out after first year
A level	202005	3.9	1.6	0.6
AS level	11165	2.9	3.4	1.0
Applied A level	5460	10.9	3.6	1.8
Applied AS level	390	6.7	4.4	3.1
Applied AS/A level combined	15	-	-	-
L3 BTEC	105310	8.4	3.8	2.0
L3 Cambridge Technical	6730	11.0	4.4	1.9
Other L3	23135	5.5	2.6	1.6
Mixed	6870	7.4	2.9	1.4

3.3.2 Progression of Cambridge Technical students

Figure 36 shows progression rates to FE for Level 3 Cambridge Technicals students only, according to the qualifications taken alongside. Only the most frequently observed qualification combinations are shown here.

For students in the 2015/16 cohort, those who combined Cambridge Technicals with Applied AS/A levels and Level 3 BTECs were the most likely to progress to FE. They were closely followed by those with Applied AS/A levels. For the students in the 2016/17 cohorts, these were also the combinations with highest progression, although in the reverse order. AS/A levels (and combinations with AS/A levels) led to the lowest progression to FE for students in both cohorts.

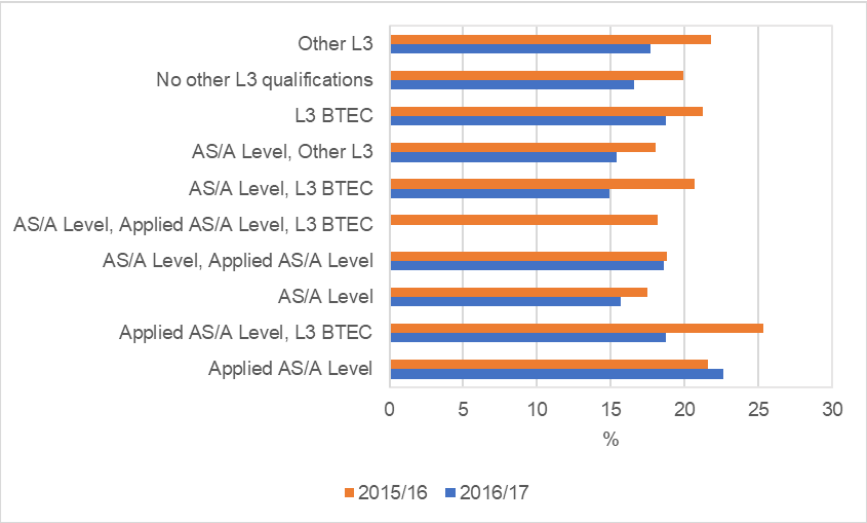


Figure 36: Progression to Further Education ~ by qualifications taken alongside Cambridge Technicals

Table 75 and Table 76 show, in more detail, the progression rates to FE for Level 3 Cambridge Technicals students only, by the qualifications taken alongside. In particular, the percentages of students dropping out after the first year were highest for students who had Applied AS/A levels and Level 3 BTECs alongside their Cambridge Technicals. The percentages of students dropping out were generally lower if the Cambridge Technicals were combined with AS/A levels.

Table 75: Progression to Further Education, 2015/16 cohort ~ by qualifications taken alongside Cambridge Technicals

Level 3 qualifications taken alongside Cambridge Technicals	Number of students	In FE All years	In FE Enrolled after gap year(s)	In FE Dropped out after first year	In FE Dropped out after second year
Applied AS/A Level	100	3.9	10.8	2.0	4.9
Applied AS/A Level, L3 BTEC	85	10.3	5.7	4.6	4.6
AS/A Level	3405	4.3	4.9	2.5	5.8
AS/A Level, Applied AS/A Level	450	4.2	6.4	2.4	5.8
AS/A Level, Applied AS/A Level, L3 BTEC	100	3.0	5.1	3.0	7.1
AS/A Level, L3 BTEC	1615	6.4	5.5	2.4	6.4
AS/A Level, Other L3	525	4.4	5.7	2.5	5.4
L3 BTEC	1070	6.0	5.9	3.4	6.0
No other L3 qualifications	1265	3.8	7.3	2.8	6.0
Other L3	195	6.1	5.6	3.0	7.1

Table 76: Progression to Further Education, 2016/17 cohort ~ by qualifications taken alongside Cambridge Technicals

Level 3 qualifications taken alongside Cambridge Technicals	Number of students	In FE All years	In FE Enrolled after gap year(s)	In FE Dropped out after first year
Applied AS/A Level	215	13.8	5.1	3.7
Applied AS/A Level, L3 BTEC	105	11.2	3.7	3.7
AS/A Level	3615	10.1	4.0	1.7
AS/A Level, Applied AS/A Level	300	12.3	4.0	2.3
AS/A Level, Applied AS/A Level, L3 BTEC	10	-	-	-
AS/A Level, L3 BTEC	995	9.8	3.7	1.4
AS/A Level, Other L3	540	10.4	4.3	0.7
L3 BTEC	1705	12.1	4.2	2.5
No other L3 qualifications	2085	9.6	4.8	2.1
Other L3	360	11.9	3.9	1.9

Figure 37 show rates of progression to FE for students with Level 3 Cambridge Technicals in particular subjects. Rates of progression to FE varied not only by the subject of the Cambridge Technical, but also by cohort, probably reflecting the increase in uptake of Cambridge Technicals and the introduction of the 2016 suite of qualifications.

In 2015/16, the proportion of students progressing to FE was highest for those whose Level 3 Cambridge Technical was in Sport or Business. The lowest rates of progression to FE were, on the other hand, for students with Cambridge Technicals in Performing Arts and Art & Design. In 2016/17, the proportion of students progressing to FE was highest for those whose Level 3 Cambridge Technical was in Engineering (a new subject in the 2016 suite), followed by those with a qualification in IT. As for the earlier cohort, the proportion of students progressing to FE was lowest overall for those whose Level 3 Cambridge Technical was in Performing Arts or Art & Design.

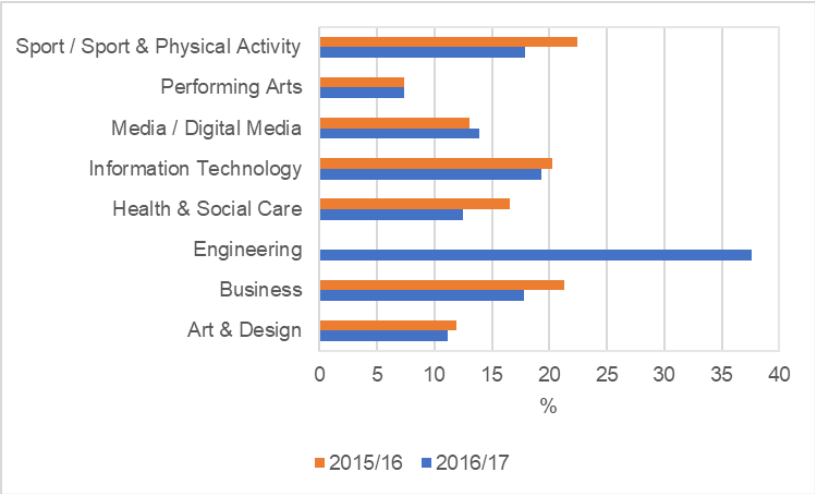


Figure 37: Progression to Further Education ~ by Cambridge Technical subject

Table 77 and Table 78 show the rates of progression to FE for students with Level 3 Cambridge Technicals in particular subjects in a bit more detail than Figure 37 did. In particular, these tables show the percentages of students dropping out by Cambridge Technical subject.

For students in the 2015/16 cohort, the percentages dropping out after the first year were highest for students whose Cambridge Technical was in IT, followed by those with a qualification in Business. However, the percentages of students dropping out after the second year were highest for students whose Cambridge Technical was in Sport. Despite progression being low for students with a Cambridge Technical in Performing Arts and Art & Design, the percentages dropping out were some of the lowest.

For students in the 2016/17 cohort, dropout rates after the first year were highest for students whose Cambridge Technical was in Performing Arts.

Table 77: Progression to Further Education, 2015/16 cohort ~ by Cambridge Technical subject

Subject of Level 3 Cambridge Technical	Number of students	In FE All years	In FE Enrolled after gap year(s)	In FE Dropped out after first year	In FE Dropped out after second year
Art & Design	225	3.1	4.0	2.2	2.6
Business	1990	5.7	6.6	2.6	6.3
Health & Social Care	1505	3.3	5.1	2.1	6.1
Information Technology	4410	5.6	5.4	3.1	6.3
Media / Digital Media	565	1.9	4.4	2.3	4.4
Performing Arts	25	0.0	3.7	0.0	3.7
Sport / Sport & Physical Activity	770	5.5	8.2	1.8	6.9

Table 78: Progression to Further Education, 2016/17 cohort ~ by Cambridge Technical subject

Subject of Level 3 Cambridge Technical	Number of students	In FE All years	In FE Enrolled after gap year(s)	In FE Dropped out after first year
Art & Design	295	7.1	3.4	0.7
Business	2305	11.0	4.4	2.4
Engineering	110	33.9	3.7	0.0
Health & Social Care	1830	7.8	3.3	1.5
Information Technology	4330	12.5	4.5	2.4
Media / Digital Media	905	8.3	4.0	1.7
Performing Arts	70	1.5	2.9	2.9
Sport / Sport & Physical Activity	950	10.5	5.9	1.5

Table 79 shows the progression to FE courses in the same (or related) subject as the Cambridge Technical qualification. Note that some students took level 3 Cambridge Technicals in more than one subject, and therefore the total number of students with a level 3 Cambridge Technical could be lower than the sum of the individual subject counts below.

The proportion of students progressing to a FE course in a related subject area varied between Cambridge Technicals subjects. For the 2015/16 cohort, 16% of Business students progressed to a related FE course compared to, for example, 2% of Media students. Similar patterns were observed for students who achieved a Cambridge Technical in 2016/17, except for students with the qualification in Engineering. Engineering, a new subject for students in this cohort, led to the highest rates of progression to a FE course in a related subject.

Table 80 shows the percentages of students progressing to a FE course at Level 4 or above (*e.g.*, higher apprenticeships or above, which are equivalent to a foundation degree or above). In particular, it shows that the proportion of students progressing to a FE course at that level also varied by the subject of the Cambridge Technical.

For the 2015/16 cohort, 3% of students with a Cambridge Technical in Business progressed to a course at Level 4 or above, compared to, for example, 0% of Performing Arts students or 1% of students with a qualification in Sport.

Similar patterns were observed for students who achieved a Cambridge Technical in 2016/17, with the exception of the students with the qualification in Engineering. Engineering, a new subject for students in this cohort, led to the highest rates of progression to a FE course at Level 4 or above.

3.3.3 Progression: regression analyses

As discussed in Section 2.2 and following on the analyses on progression to HE (Section 3.2.1), regression analyses were carried out to investigate the effect of having a Cambridge Technical qualification on progression to Further Education, taking into account the background characteristics of the students.

The outcome variable for the regression analyses was progression, defined dichotomously (1 if the student progressed; 0 if the student did not progress). In particular, the following two indicators of progression to HE were considered:

- In FE (at any point in the follow-up period)
- Dropped out from FE in Year 1 (restricted to students that progressed to FE)
- Dropped out from FE in Year 2 (restricted to students that progressed to FE) - 2016/17 cohort only.

Background characteristics (gender, prior attainment at KS5, school type, socio-economic deprivation, school type) were included in regression models, alongside a binary variable to indicate the uptake of Cambridge Technical at Level 3.

As for previous analyses, the graphs in this section (Figure 38 to Figure 40) show the effects of the student and school characteristics, as well as the uptake of Cambridge Technicals on progression to FE (see tables in Appendix E for the full results of the regression analyses).

Figure 38 shows that there is a statistically significant negative association between having a Level 3 Cambridge Technical and progressing to FE, once the background characteristics of students have been accounted for the cohort who achieved the qualification in 2015/16. However, the effect is positive for the 2016/17 cohort.

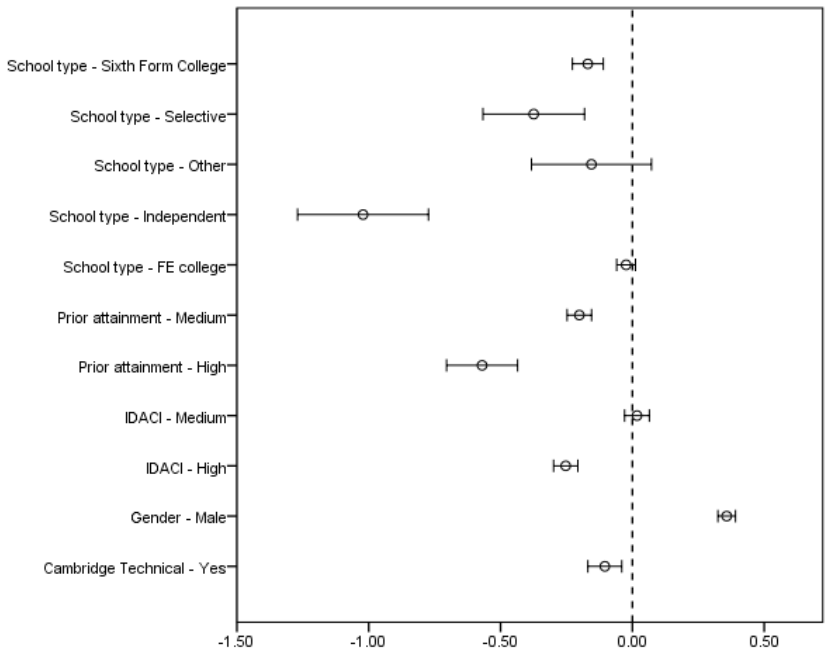
Figure 39 and Figure 40 show that there is no statistically significant relationship between having a Cambridge Technical and dropping out from FE after the first or second year for students with a Cambridge Technical achieved in the 2015/16 academic year. However, having a Cambridge Technical significantly decreases the probability of dropping out for students who achieved the qualification in the following academic year.

Table 79: Progression to Further Education ~ progression to a FE course in a related subject to the Cambridge Technical

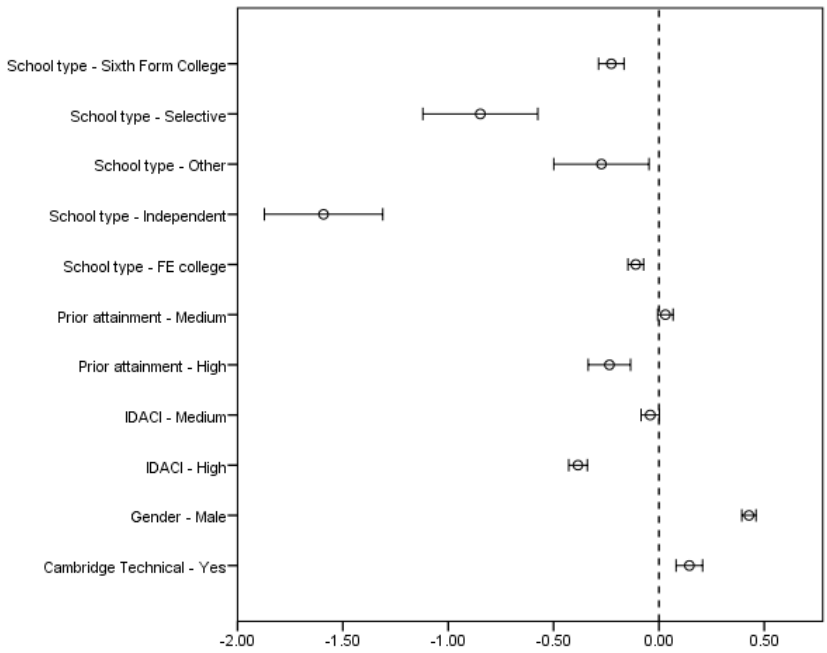
Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in FE	Progression to related subject in FE		
				Students progressing	% (out of students with the subject in FE)	% (out of students with the subject)
2015/16	Art & Design	225	25	5	18.5	2.2
	Business	1990	425	325	77.3	16.4
	Health & Social Care	1505	250	135	53.8	8.9
	Information Technology	4410	895	270	30.1	6.1
	Media / Digital Media	570	75	10	14.9	1.9
	Performing Arts	25	0	0	-	0.0
	Sport / Sport & Physical Activity	770	170	25	15.1	3.4
2016/17	Art & Design	295	35	0	6.1	0.7
	Business	2305	410	280	68.9	12.2
	Engineering	110	40	40	92.7	34.9
	Health & Social Care	1830	230	105	46.3	5.8
	Information Technology	4330	835	305	36.7	7.1
	Media / Digital Media	905	125	15	12.7	1.8
	Performing Arts	70	5	0	-	0.0
	Sport / Sport & Physical Activity	950	170	35	21.2	3.8

Table 80: Progression to Further Education ~ by level of the FE course

Cohort	Subject of Level 3 Cambridge Technical	Number of students	Number of students in FE	Progression to Level 4 or above		
				Students progressing	% (out of students with the subject in FE)	% (out of students with the subject)
2015/16	Art & Design	225	25	5	11.1	1.3
	Business	1990	425	60	14.2	3.0
	Health & Social Care	1505	250	20	8.4	1.4
	Information Technology	4410	895	115	12.6	2.6
	Media / Digital Media	570	75	10	12.2	1.6
	Performing Arts	25	0	0	-	0.0
	Sport / Sport & Physical Activity	770	170	10	4.7	1.0
2016/17	Art & Design	295	35	0	0.0	0.0
	Business	2305	410	65	16.1	2.9
	Engineering	110	40	10	26.8	10.1
	Health & Social Care	1830	230	15	5.7	0.7
	Information Technology	4330	835	120	14.2	2.7
	Media / Digital Media	905	125	10	8.7	1.2
	Performing Arts	70	5	0	-	0.0
	Sport / Sport & Physical Activity	950	170	15	9.4	1.7

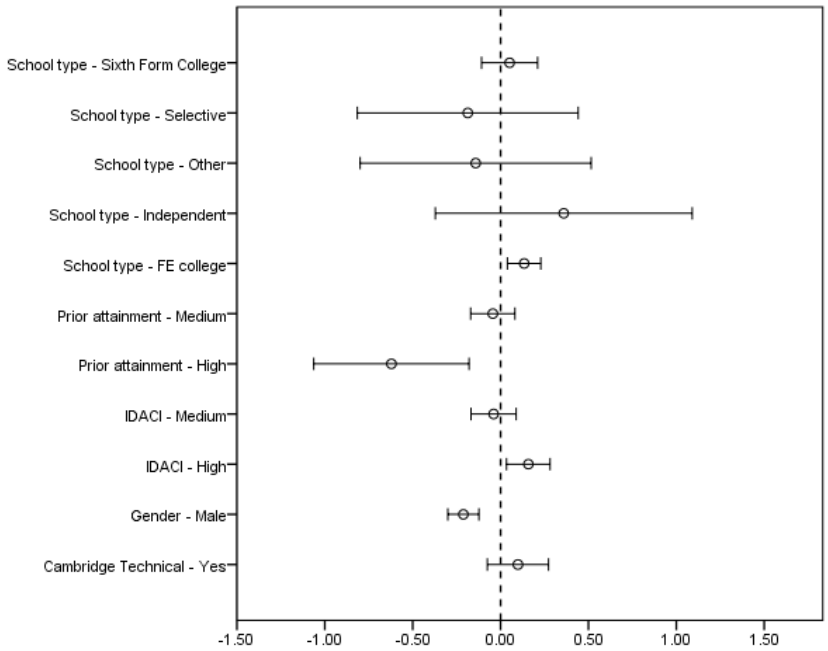


(a) 2015/16 cohort (N = 101788)

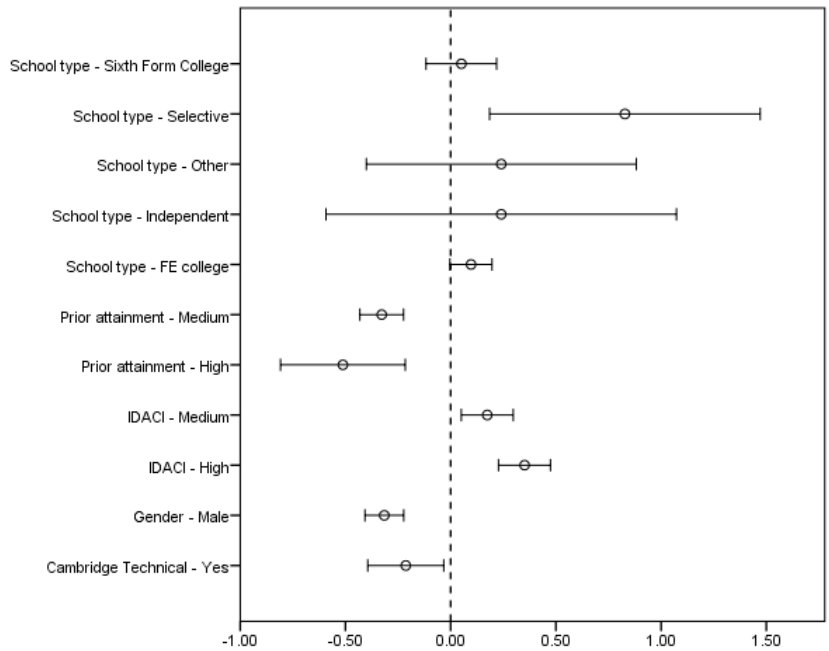


(b) 2016/17 cohort (N=114300)

Figure 38: Progression to Further Education

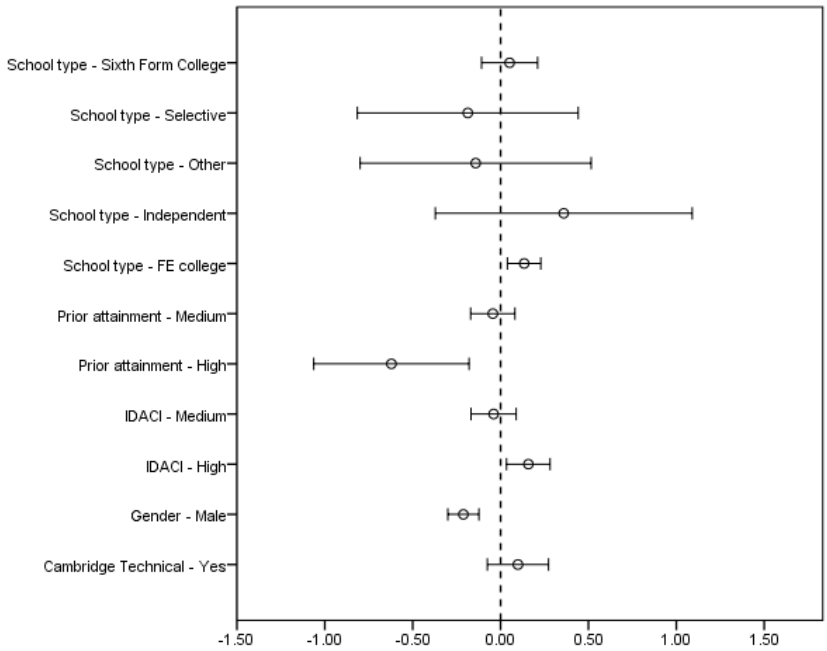


(a) 2015/16 cohort (N=11820)



(b) 2016/17 cohort (N=11950)

Figure 39: Dropped out from Further Education in Year 1



2015/16 cohort (N=11820)

Figure 40: Dropped out from Further Education in Year 2

4. Summary of results

This research provided evidence to better understand the value of Cambridge Technicals and their role in the post-16 qualifications landscape by investigating the types of students who take them and the progression to Further and Higher Education of students with different qualifications and backgrounds.

4.1 Characteristics of students taking Cambridge Technicals

In the academic year 2016/17 there were 24,465 Cambridge Technical awards (corresponding to 22,315 individual candidates). Since students who were in Key Stage 5 in that academic year were the first cohort who could have achieved Cambridge Technicals from the 2016 suite, the majority of the awards considered in this work were from the 2012 suite. However, the uptake of 2016 Cambridge Technicals has been increasing strongly in recent years (*e.g.*, Vidal Rodeiro, 2021).

Level 3 Cambridge Technical qualifications were more common than Level 2 (note that there were no Level 2 Cambridge Technicals awarded from the 2016 suite in 2016/17) and the most popular subjects were IT, Health & Social Care and Business, both at Level 2 and Level 3.

The majority of the Cambridge Technicals at Level 2 were Diplomas. At Level 3, Introductory Diplomas were the most common qualifications from the 2012 suite (equivalent to one A level), but when looking at the 2016 suite qualifications, Certificates (equivalent to one AS level) were more common probably because they are studied over one year (and 2016/17 was the first year of the awarding of the qualifications in this suite) whereas Introductory Diplomas are often studied over two years.

4.1.1 Background characteristics

Characteristics of candidates with Cambridge Technicals were compared to the characteristics of candidates with A level qualifications and characteristics of candidates in Key Stage 5 who achieved at least one qualification in the academic year 2016/17.

The main demographic patterns identified, which are similar to those identified in previous analyses of candidates with vocational qualifications and, in particular, candidates with Cambridge Technicals (*e.g.*, Williamson and Carroll, 2018a; Vidal Rodeiro and Vitello, 2020), are summarised below.

- For both suites and at both Level 2 and Level 3, there were more male than female candidates taking Cambridge Technicals. This contrasted with A levels (55% female) and the Key Stage 5 cohort (50% female).
- Cambridge Technicals candidates were typically younger than A level candidates. In particular, the majority of Level 2 Cambridge Technicals candidates were aged 16. A similar age distribution was found for Level 3 Cambridge Technicals from the 2016 suite, probably reflecting the greater number of Certificates awarded in the first year of teaching the qualifications in this suite. Level 3 candidates who obtained a Level 3 Cambridge Technical qualification from the 2012 suite were predominantly aged 17.

These patterns contrasted with patterns for A levels, for which 91% of candidates were aged 17 and for the Key Stage 5 cohort, which showed more even proportions of 16- and 17-year-olds.

- The prior attainment of Cambridge Technicals candidates, measured as the Key Stage 4 points, was generally lower than the attainment of A level candidates.

  Similar patterns of prior attainment have been found in other analyses in the context of vocational qualifications (*e.g*., Hupkau *et al*., 2017; De Coulon *et al*., 2017) and for Cambridge Technicals in particular (*e.g*., Williamson and Carroll, 2018a). However, Vidal Rodeiro and Vitello (2020) showed that Cambridge Technicals had lower percentage of candidates with low attainment than the other vocational qualifications (*e.g*., BTECs) and a higher percentage of candidates with medium attainment.

  When looking at the proportions of candidates achieving 5+ GCSEs at grades A*-C at GCSE (or 5+ GCSEs at grades A*-C including English and maths), similar patterns emerged: proportions of candidates with Cambridge Technicals at Level 3 achieving this measure were slightly higher than those for the Key Stage 5 cohort but lower than for the A level cohort.

- The ethnic distribution of candidates with Level 3 Cambridge Technicals (from either suite), A levels and the whole Key Stage 5 cohort was very similar. There were, however, lower proportions of White candidates at Level 3 than at Level 2.

- Candidates with Level 2 Cambridge Technicals were typically from the groups with highest deprivation. On the contrary, candidates with Level 3 qualifications were relatively evenly spread throughout the deprivation groups. A level candidates, and the whole Key Stage 5 cohort, showed greater proportions in the lower deprivation groups, with this more pronounced for A levels.

  As for the prior attainment results, these findings confirm previous research which has shown that candidates with vocational qualifications tend to be associated with greater deprivation levels than candidates with academic qualifications (*e.g*., Hupkau *et al*., 2017; Smith *et al*., 2015; Williamson and Carroll, 2018a; Vidal Rodeiro and Vitello, 2020).

- Level 2 Cambridge Technicals were mainly achieved in FE colleges and Level 3 Cambridge Technicals, particularly those from the 2016 suite, were primarily achieved in comprehensive schools, with very small numbers taken in selective and independent schools. These patterns were similar to those found by Williamson and Carroll (2018a) and Vidal Rodeiro and Vitello (2020). By contrast, a significant minority of A level candidates were from independent and selective schools, and relatively few were taken at FE colleges.

4.1.2 Combinations of Cambridge Technicals and qualifications taken alongside

Candidates at Key Stage 5 usually take more than one qualification. Cambridge Technical candidates could, therefore, have combined their Cambridge Technicals with other Cambridge Technicals (*e.g.*, qualifications of different levels, sizes or subjects) or with other types of qualifications such as AS/A levels of BTECs.

Combinations of Cambridge Technicals

- The majority of the Cambridge Technicals candidates took only one Cambridge Technical.
- Candidates taking multiple Cambridge Technicals tended to take them at the same level. In particular, almost two thirds of the candidates took qualifications at Level 3 only and one third took qualifications at Level 2 only. The proportion of candidates taking Cambridge Technicals at both Level 2 and Level 3 was very small.
- The most popular combination of two or more Cambridge Technicals from the 2012 suite was taken by only 2% of the candidates and corresponds to two Introductory Diplomas at Level 3. Similarly, the most popular combination of two or more Cambridge Technicals from the 2016 suite was taken by only 4% of the candidates and corresponds to two Certificates at Level 3.
- The majority of candidates who took more than one 2012 Cambridge Technical took two Technicals in different subjects: over 60% of candidates with multiple Cambridge Technicals took two Technicals, both in the same subject, and further 8% took three or more Technicals, with two in the same subject. The most common subjects were IT, Media, Business and Health & Social Care, reflecting the popularity of these subjects in Cambridge Technicals entries overall.

Qualifications taken alongside Cambridge Technicals

Cambridge Technicals candidates studied additional qualifications at different rates and varied by the subject of the Cambridge Technical. In particular:

- The qualifications most widely studied alongside Level 3 Cambridge Technicals were AS and A levels, followed by Level 3 BTECs. There were also relatively high proportions of candidates taking GCSE in English or maths alongside Level 3 Cambridge Technicals and other qualifications at Level 2 or below. Over 25% of the Level 3 Cambridge Technical candidates did not take any other Level 3 qualification.
- GCSE English and maths were also commonly taken alongside Cambridge Technicals at Level 2, as were other GCSE qualifications, BTECs at Levels 1 or 2, and other qualifications below or at Level 2.

4.1.3 Performance in Cambridge Technicals and in other qualifications

Performance in Cambridge Technicals varied by suite. Whilst amongst candidates with 2012 Cambridge Technicals, 56% averaged a Distinction* in their Level 3 Cambridge Technicals, for candidates with 2016 Cambridge Technicals, the proportion was much lower, just below 5%. Note that the cohort of students who achieved 2016 Cambridge Technicals was the first one to do so after the reforms to vocational qualifications. The introduction of external assessment in the 2016 suite could partly explain these differences in performance.

As A levels and Level 3 BTECs were taken quite frequently alongside Cambridge Technicals, the performance of Cambridge Technicals candidates on these qualifications was also investigated. The results of these analyses showed that:

- Candidates with higher grades on their Level 3 Cambridge Technicals tended to achieve higher grades on their A levels and on their Level 3 BTECs.

- The A level grades achieved by Cambridge Technicals candidates were lower than those achieved by A level candidates overall (this was not surprising if we take into account the prior attainment profile of the two groups). The A level grades achieved by Cambridge Technicals candidates also showed lower spread than A level grades overall (a very high proportion of A level grades achieved by Cambridge Technicals candidates were in the range B to D).
- 2012 Cambridge Technicals candidates had similar performance in their Level 3 BTECs and Level 3 Cambridge Technicals, in terms of UCAS points per qualification of A level size, though the average points achieved were slightly higher in Cambridge Technicals. The average UCAS points achieved per A level were substantially lower, with an average of 29, compared to 46 for Level 3 Cambridge Technicals and 45 for Level 3 BTECs.

  2016 Cambridge Technicals candidates, however, had similar performance in their A levels and Level 3 Cambridge Technicals, in terms of UCAS points per qualification of A level size (slightly higher performance at A level). The average UCAS points achieved per BTEC was slightly higher, with an average of 35, compared to 28 for Level 3 Cambridge Technicals.

Note: The findings presented in the above section (Section 4.1) relate to the first year in which the 2016 suite was certificated. As uptake of the 2016 suite increased considerably from 2017/18 onwards, it is not possible to extrapolate findings to the new suite in the following years. The patterns identified here should therefore be seen only as a description of the candidates included in these analyses.

4.2 Progression from Cambridge Technicals

The analyses summarised above provided a description of the candidates who were awarded Cambridge Technicals in the academic year 2016/17, looking at demographic characteristics, the qualifications they took alongside Cambridge Technicals, and performance in these qualifications. However, whilst this provides an insight into the candidates prior to and during their time studying Cambridge Technicals, it does not indicate how their qualifications aided their progression to Further or Higher Education. Consequently, further analysis using ILR and HESA data were carried out to understand the role of Cambridge Technicals in candidates' progression.

4.2.1 Progression to Higher Education

Analyses investigating progression to Higher Education focussed on the following two cohorts of students: students in Year 13 in 2015/16 and students in Year 13 in 2016/17.

Progression to HE was lower for students with a Cambridge Technical than for students without it. In particular, for the cohort of students who achieved the Cambridge Technical in 2015/16, just under 40% progressed to HE and continued enrolled in a HE course during the follow-up period. Just under 14% of the students in this cohort progressed to HE the year after. The percentages amongst students without Cambridge Technicals were higher (46% and 20%, respectively). Regarding dropping out after one or two years, rates were slightly higher amongst students with Cambridge Technicals, although relatively low (around 3%). Overall patterns of progression were fairly similar for the 2016/17 cohort.

The percentage of students with Cambridge Technicals from the 2012 suite enrolling in HE was higher than the percentage of students with qualifications from the 2016 suite. This could be due to 2016/17 being the first year 2016 suite qualifications were awarded. However, progression to HE after a gap year was highest amongst students with Cambridge Technicals from the 2016 suite. Dropout rates after the first year were, however, higher for students with 2012 Cambridge Technicals.

Progression by demographic characteristics

Progression analyses were also carried out broken down by students' background characteristics (*e.g.*, gender, prior attainment, type of school attended, level of deprivation). The main demographic patterns identified are summarised below.

- Female students with Cambridge Technical qualifications were more likely than male students to progress to HE. Female Cambridge Technical candidates were also more likely than male students to progress to HE after gap.
- Students with Cambridge Technical qualifications living in areas of low income-related deprivation were less likely to enrol in HE than those living in areas of high deprivation.
- As expected, whether they had a Cambridge Technical or not, students with high prior attainment relative to their Key Stage 5 peers were far more likely than those with low prior attainment to progress to HE. Furthermore, Cambridge Technical students with low attainment progressed to HE at similar rates as low attainment students without the qualification.
- For students following a vocational pathway at Key Stage 5, rates of progression to HE were higher among students with a Cambridge Technical than among students without a Cambridge Technical. For students on a mixed or mostly academic pathway, rates of progression to HE were similar for students with and without Level 3 Cambridge Technicals.
- Students who achieved Cambridge Technicals were less likely to enrol in HE if they attended a FE college than if they obtained their Cambridge Technicals in other types of centres.

Regression analyses were carried out to investigate the effect of having a Cambridge Technical qualification on progression to HE, taking into account the background characteristics of the students. The outcomes of these regression analyses showed that there was a positive association between having a Level 3 Cambridge Technical and progressing to HE, once the background characteristics of students have been accounted for. However, the effect was fairly small in comparison to that of other factors (*e.g*., prior attainment, level of deprivation) and not statistically significant.

Progression by qualifications at Key Stage 5

Between 50% and 60% of the students whose main qualification during Key Stage 5 was a Level 3 Cambridge Technical in 2015/16 or 2016/17 progressed to a HE course. This was a lower rate than for students whose main qualification was an Applied A level (over 60%) or an A level (over 80%), but a higher rate than from students whose main qualification was a Level 3 BTEC (below 50%).

When looking at the full programme of study (that is, all qualifications including those taken alongside the Cambridge Technicals), this research showed that students who combined Cambridge Technicals with AS/A levels only were the most likely of all Cambridge Technicals students to progress to HE.

Note that the above progression rates do not account for differences in the students undertaking each qualification, such as differences in levels of prior attainment, deprivation, or school type.

Progression by Cambridge Technical subject

Rates of progression to HE varied, not only by the subject of the Cambridge Technical but also by cohort, probably reflecting the increase in uptake of Cambridge Technicals and the introduction of the 2016 suite of qualifications.

In 2015/16, the proportion of students progressing to HE was highest for those whose Level 3 Cambridge Technical was in IT and Media (this supports findings relating to progression from the 2012 suite of Cambridge Technicals reported by Williamson and Carroll (2018b)). In 2016/17, the proportion of students progressing to HE was highest for those whose Level 3 Cambridge Technical was in Engineering (a new subject in the 2016 suite) and Health & Social Care. In both cohorts, the proportion of students progressing to HE was lowest overall for those whose Level 3 Cambridge Technical was in Art & Design.

Types of HE courses and HE institutions students with Cambridge Technicals progressed to

Analysis of HE destinations according to institution showed that progression to HE courses at Russell Group institutions (and similarly to institutions in the Sutton Trust Group) depended on the subject and suite of the Cambridge Technical, and ranged from 2% to 16% (just over 4% on average). For students with 2012 Cambridge Technicals, the highest progression rates were found for those with qualifications in Performing Arts (although numbers were very small), Health & Social Care and IT. For students with 2016 Cambridge Technicals, the highest progression rates were found for those with qualifications in Engineering and Business. As a comparison, Hupkau *et al*. (2017) showed that 15.9% of A level students progressed to HE institutions in the Russell Group and Smith *et al*. (2015) reported that only 1% of Level 3 BTEC students progressed to a Russell Group institution. However, the rates found for Cambridge Technicals students in the current study appear slightly better than those for previous cohorts of Cambridge Technicals students reported by Williamson and Carroll (2018b).

The great majority of Cambridge Technicals students who progressed to HE enrolled on an Honours degree or a course at a higher level and only a small proportion progressed to an apprenticeship in HE.

Regarding the subject of the HE course, students with Cambridge Technicals were more likely to progress to a course in a different subject, than to a course in the same subject as their Cambridge Technical. Furthermore, the proportions of students progressing to a HE course in a related subject area varied by the Cambridge Technicals subject.

4.2.2 Performance in Higher Education

Analyses looking at performance in Higher Education focussed on the cohort of students who achieved Cambridge Technicals in 2015/16. These students were followed up in HE for three years and their graduation outcomes investigated.

Overall, this research showed that students with Level 3 Cambridge Technicals were less likely to graduate within three years than students without them. However, the difference between both groups was small (just over 4 percentage points). The difference in performance was slightly higher if the focus was on the class of the degrees achieved. In particular, 27% of the students without a Cambridge Technical who graduate within three years achieved a first class degree, compared to 19% of students with Cambridge Technicals.

Performance by demographic characteristics

Performance in HE was also investigated by students' background characteristics. The main demographic patterns identified are summarised below.

- Female students with Cambridge Technical qualifications were more likely than male students to graduate within three years and to achieve first or upper second class degrees.
- Students with Cambridge Technical qualifications who lived in areas of high deprivation were as likely as those in areas of low deprivation to graduate within three years. However, they were less likely to achieve good degrees (e.g., at least an upper second class degree).

  The differences in the percentages graduating within three years and in the percentages achieving a first class degree between the groups of students with and without Cambridge Technicals (usually higher percentages amongst students without Cambridge Technicals) increased as the level of deprivation decreased.
- As expected, and following on from the progression analyses, students with high prior attainment relative to their Key Stage 5 peers were far more likely than those with low prior attainment to graduate within three years and to achieve a first class degree (whether they had a Cambridge Technical or not). However, Cambridge Technicals seemed to make a difference as high attaining students with the qualifications were more likely to graduate than students of similar attainment without the qualifications. This was also true for the groups of students with low attainment.
- Having a Cambridge Technical slightly increased the likelihood of graduating, with respect to not having a Cambridge Technical, for students from mostly academic, mixed and vocational backgrounds.
- Whether they had a Cambridge Technical or not , students who attended FE colleges were less likely to graduate from HE than students who attended comprehensive schools or sixth form colleges. However, students with Cambridge Technicals achieved in FE colleges were more likely to receive a good degree (at least an upper second class degree) than students in FE colleges without a Cambridge Technical.

Regression analyses were carried out to investigate the effect of having a Cambridge Technical qualification on performance in HE, taking into account the background characteristics of the students. The outcomes of these regression analyses showed that there was a positive and statistically significant association between having a Level 3 Cambridge Technical and graduating from HE. Having a Cambridge Technical also increased significantly the probability of achieving an upper second class degree or above and, to a lesser extent, a first class degree.

Performance by qualifications at Key Stage 5

When looking at performance in HE by the students' main qualification at Key Stage 5, this research showed that the highest graduation rates, and the highest proportions achieving a good degree (first

or upper second class), corresponded to students whose main qualification was an A level. Rates for students with a Cambridge Technical as their main qualification were slightly lower, but higher than rates for students with Level 3 BTECs or other Level 3 qualifications.

If we take into account the full programme of study (that is, qualifications taken alongside Cambridge Technicals), students with AS/A levels only alongside their Cambridge Technicals were the most likely to graduate or achieve a first class degree, although other combinations including AS/A levels had similar rates.

Performance by Cambridge Technical subject

Graduation rates differed by the subject of the Cambridge Technical. In particular, rates were highest for students with Cambridge Technicals in Media and lowest for students with Cambridge Technicals in Performing Arts and Business Studies. Students with Cambridge Technicals in Sport and Health & Social Care were the most likely to graduate with a good degree (at least an upper second class degree).

Types of HE courses and HE institutions students with Cambridge Technicals graduated from

Analysis of performance in different types of HE institutions showed that the percentages of Cambridge Technicals students who graduated within three years in a Russell Group (or in a Sutton Trust Group institution) were fairly low and varied by the subject of the Cambridge Technical. The students most likely to progress to a Russell Group institution were those Cambridge Technicals were in Performing Arts (although they represent a very small number of students), IT, and Sport.

Regarding the subject of the HE course, graduation rates in a course in the same subject as their Cambridge Technical varied by the subject of the Cambridge Technicals: for example, 16% of Media students graduated in a related HE course compared to, for example, 5% of Information Technology students or 8% of Business students.

4.2.3 Progression to Further Education

Analyses investigating progression to Further Education focussed on the following two cohorts of students: students in Year 13 in 2015/16 and students in Year 13 in 2016/17.

Although overall progression to FE was low and decreased slightly over time, it was higher for students with Cambridge Technicals than for students without them, confirming findings from previous research (Williamson and Carroll, 2018b), which showed that the proportion of students with a Cambridge Technical who progressed to FE was double the proportion seen among students without a Cambridge Technical.

Dropping out rates after one or two years in FE were fairly low and doubled over time. They were slightly higher amongst students with Cambridge Technicals than amongst students without them.

Progression to FE was higher from the 2016 suite of Cambridge Technicals than from the 2012 suite and dropout rates after the first year were higher for students with 2012 Cambridge Technicals than for students with qualifications from the 2016 suite.

Progression by demographic characteristics

Progression analyses were also carried out broken down by students' background characteristics. The main demographic patterns identified are summarised below.

- Contrary to the findings from progression to HE, male students with Cambridge Technicals were more likely to progress to FE than female students.
- Students with Cambridge Technicals living in areas of low and medium deprivation were more likely to progress to FE than those from areas of high deprivation. This contrasts with the progression amongst those students without Cambridge Technicals (*i.e.*, students from low deprived areas were less likely to progress to FE).
- Students with low prior attainment relative to their Key Stage 5 peers in the 2015/16 cohort were more likely than those with high prior attainment to progress to FE. For students who achieved their Cambridge Technicals in the 2016/17 academic year, the pattern was slightly different and progression rates to FE were very similar, independently of prior attainment. These findings contrast with the results from the analysis of the progression of students to HE, where the higher the prior attainment, the higher the likelihood of being in HE.
- Students who took a Cambridge Technical were more likely than those without it to progress to FE, independently of the pathway.
- Students with Cambridge Technicals achieved in comprehensive schools were more likely to progress to FE than students who achieved their Cambridge Technicals in other types of schools or colleges. Students who had attended sixth form colleges or FE colleges were closely behind. This pattern was not observed for students without Cambridge Technicals: for this group of students, those who were in FE colleges were the most likely to progress to FE.

Regression analyses were carried out to investigate the effect of having a Cambridge Technical qualification on progression to FE, taking into account the background characteristics of the students. The outcomes of these regression analyses showed that there was a statistically significant negative association between having a Level 3 Cambridge Technical and progressing to FE, once the background characteristics of students have been accounted for the cohort who achieved the qualification in 2015/16. However, the effect was positive for the 2016/17 cohort.

Regarding the probability of dropping out from FE, there was no statistically significant relationship between having a Cambridge Technical and dropping out from FE for students with a Cambridge Technical achieved in the 2015/16 academic year. However, having a Cambridge Technical significantly decreased the probability of dropping out for students who achieved the qualification in the academic year 2016/17.

Progression by qualifications at Key Stage 5

Progression to FE was highest for students with Applied AS levels as their main qualification during Key Stage 5, followed by students with Cambridge Technicals. Students whose main qualification was Cambridge Technical were, however, more likely to progress to FE than students whose main qualification was an Applied A level or a Level 3 BTEC. Progression was lowest, as expected, for students with A and AS levels.

When looking at the full programme of study (that is, qualifications taken alongside Cambridge Technicals), students who combined Cambridge Technicals with Applied AS/A levels and Level 3 BTECs were the most likely to progress to FE. Combinations with AS/A levels led to the lowest progression.

Progression by Cambridge Technical subject

Students with Cambridge Technicals were more likely to progress to a FE programme in a different subject, than to a FE programme in the same subject as their Cambridge Technical. Although we saw this pattern when investigating progression to HE, the percentages of students progressing within the same subject area were much lower in FE than in HE.

As mentioned in Section 4.2.1 in relation to progression to HE, the rates of progression to FE by the subject of the Cambridge Technical varied, not only by the subject of the Cambridge Technical but also by the cohort.

In 2015/16, the proportion of students progressing to FE was highest for those whose Level 3 Cambridge Technical was in Sport or Business. In 2016/17, the proportion of students progressing to FE was highest for those whose Level 3 Cambridge Technical was in Engineering (a new subject in the 2016 suite), followed by those with a Level 3 Cambridge Technical in IT.

Types of FE courses students with Cambridge Technicals progressed to

Regarding the subject of the HE course, graduation rates in a course in the same subject as their Cambridge Technical varied by the subject of the Cambridge Technical. For the 2015/16 cohort, 16% of Business students progressed to a related FE course compared to, for example, 2% of Media students. Similar patterns were observed for students who achieved a Cambridge Technical in 2016/17, except for students with the qualification in Engineering, who shown the highest rates of progression to a FE course in a related subject.

The proportion of students progressing to a FE course at Level 4 or above (that is, to a higher apprenticeship or above) also varied by the subject of the Cambridge Technical: for the 2015/16 cohort, 3% of Business students progressed to a course at this level compared to, for example, 1% of students with a qualification in Sport. Engineering, new subject for students in the 2016/17 cohort, led to the highest rates of progression to a FE course at Level 4 or above.

5. Conclusions

This research has helped us understand the role of Cambridge Technicals in secondary education in England, by showing the types of students who take the qualifications and providing evidence that they support progression to Further and Higher Education. This is important because of the uncertainty around the future of applied generals and, in particular, of the Cambridge Technicals.

Several specific conclusions and implications can be drawn when considering the research findings together.

- The number of candidates with Cambridge Technicals has been steadily increasing in recent years. Furthermore, Cambridge Technicals are part of academically oriented pathways (combined with AS/A levels), as well as part of other more vocational pathways (combined with qualifications such as BTECs and other vocational qualifications). Together, the two statements above show that Cambridge Technicals contribute to a large percentage of students' Key Stage 5 education.
- There were differences between students with and without Cambridge Technicals for most of the background characteristics analysed in this research. This shows the importance of not narrowing the choice of qualifications on offer post-16. All types of students should have high quality options and the breadth of choice that programmes of study combining academic (*e.g.*, A levels) with applied general qualifications (*e.g.*, Cambridge Technicals) can provide.
- There was little evidence that Level 3 Cambridge Technicals targeted low-attaining students. In fact, Cambridge Technicals tended to be more wide-reaching than AS/A levels with regard to candidate attainment, with the largest group of Cambridge Technicals candidates having medium rather than low levels of attainment.
- AS/A levels had decreasing percentages of candidates across low, medium and high deprivation groups, whereas the Cambridge Technicals had a more even balance of candidates in these groups (although, in general, candidates with Cambridge Technicals were associated with greater deprivation levels than candidates with academic qualifications).
- Over 50% of the students whose main qualification during Key Stage 5 was a Level 3 Cambridge Technical progressed to Higher Education. The progression rate was over 60% if AS/A levels were taken alongside the Cambridge Technicals. This shows that Cambridge Technicals are a valuable means of accessing Higher Education.
- Even though overall progression to Further Education was low, it was higher for students with Cambridge Technicals than for students without them, confirming that Cambridge Technicals help students progress onto higher level training such as apprenticeships.
- The overall rates of progression from Level 3 Cambridge Technicals to Higher Education courses and to apprenticeship programmes compared well with rates of progression from other applied general qualifications (*e.g.*, BTECs).
- When looking at performance in Higher Education by the students' main qualification at Key Stage 5, this research showed that the highest graduation rates, and the highest proportions achieving a good degree (first or upper second class), corresponded to

students whose main qualification was an A level. Rates for students with a Cambridge Technical as their main qualification were only slightly lower and higher than rates for students with Level 3 BTECs or other Level 3 qualifications. This suggests that Cambridge Technicals can lead to good outcomes (in terms of attainment) in Higher Education.

In conclusion, there is clear evidence that the Cambridge Technicals, and programmes of study combining Cambridge Technicals with other qualifications (*e.g.,* AS/A levels) help students to progress and do not close students' options after Key Stage 5. In particular, Cambridge Technicals can facilitate progression to Higher Education courses and apprenticeships in Further Education settings.

It is important that any restructuring to the post-16 education system ensures that students have clear and abundant information to make their choices, and that there is flexibility in students' trajectories throughout Key Stage 5.

This research has shown that Cambridge Technicals can be a valuable and high quality alternative to A levels and should, therefore, continue to exist within the government's vision of a two track system of post-16 education (academic *vs*. technical education) as it can contribute to a rigorous qualifications landscape which includes high quality qualifications and adequately equips students for progression into Further or Higher Education.

6. References

Boliver, V., Crawford, C., Powell, M., and Craige, W. (2017). *Admissions in Context: The use of contextual information by leading universities*. London: The Sutton Trust.

De Coulon, A., Hedges, S., Nafilyan, V., and Speckesser, S. (2017). *Young people in low level vocational education: characteristics, trajectories and labour market outcomes*. London: Centre for Vocational Education Research.

DfE (2010). *The Importance of Teaching. The Schools White Paper 2010*. London: Department for Education.

DfE (2015). *Vocational Qualifications for 16 to 19 Year Olds. 2017 and 2018 Performance Tables: Technical Guidance for Awarding Organisations*. London: Department for Education.

DfE (2017a). *Post-16 Technical Education Reforms. T Level Action Plan*. London: Department for Education.

DfE (2017b). *Technical and applied qualifications for 14 to 19 year olds. Key Stage 4 and 16 to 19 performance tables from 2020: technical guidance for awarding organisations*. London: Department for Education.

DfE (2017c). *16-18 Accountability Measures: Technical Guide. For measures in 2017.* UK: Department for Education.

DfE (2017d). *Provisional A level and other 16-18 results in England, 2016/17.* UK: Department for Education.

DfE (2019a). *Review of post-16 qualifications at level 2 and below in England: the current system and the case for change*. London: Department for Education

DfE (2019b). *Review of post-16 qualifications at level 2 and below in England. Government Consultation*. London: Department for Education.

DfE (2020). *Review of post-16 qualifications at level 2 and below in England: Second Stage. Government consultation*. London: Department for Education.

DfE (2021a). *Review of post-16 qualifications at Level 3 in England. Government Consultation Response*. London: Department for Education.

DfE (2021b). *Review of post-16 qualifications at Level 3 in England. Policy Statement*. London: Department for Education.

DfE/BIS (2016). *Post-16 Skills Plan: Presented to Parliament by the Minister of State for Skills by Command of Her Majesty*. London: Department for Education/ Department for Business, Innovation and Skills.

Gill, T. (2017). *Uptake of GCSE subjects in 2015, by alternative school type classifications*. Statistics Report Series No. 113. Cambridge, UK: Cambridge Assessment.

Hupkau, C., McNally, S., Ruiz-Valenzuela, J., and Ventura, G. (2016). Post-compulsory education in England: choices and implications. *National Institute Economic Review*, 240(1), R42-R57.

Ilie, S., Sutherland, A., and Vignoles, A. (2017). Revisiting free school meal eligibility as a proxy for pupil socio-economic deprivation. *British Educational Research Journal*, 43, 253-274.

Kelly, S. (2017). *Reforming BTECs: Applied General qualifications as a route to Higher Education*. HEPI Report 94, UK: Higher Education Policy Institute.

Smith, S., Joslin, H., and Jameson, J. (2015). *Progression of College Students in England to Higher Education*. BIS Research Paper Number 45. UK: Department for Business, Innovation and Skills.

Richards, B. (2016). *Passports to Progress: How do vocational qualifications help young people in building their careers? Part One*. UK: The Social Market Foundation.

UCAS (2017). UCAS Tariff tables: *New Tariff points for entry to higher education from 2017*. Cheltenham, UK: Universities and Colleges Admissions Service.

Universities UK. (2018). *Growth and Choice in University Admissions*. UK: Universities UK.

Vidal Rodeiro, C. L. (2018). *Progression from Level 3 Cambridge Technicals to Higher Education*. Cambridge Assessment Research Report. Cambridge, UK: Cambridge Assessment.

Vidal Rodeiro, C. L. (2019). *Progression from Level 3 Cambridge Technicals to Higher Education*. Cambridge Assessment Internal Research Report.

Vidal Rodeiro, C.L. (2021). *Progression from Level 3 Cambridge Technicals to Higher Education*. Cambridge Assessment Internal Research Report.

Vidal Rodeiro, C.L. and Vitello, S. (2020). *Vocational Qualifications at Key Stage 4 and Key Stage 5: who takes them and how they fit into students' programmes of study*. Cambridge Assessment Research Report. Cambridge, UK: Cambridge Assessment.

Vidal Rodeiro, C.L. and Vitello, S. (2021). Progression to post-16 education in England: the role of vocational qualifications. *Research Papers in Education* (ahead of print).

Vidal Rodeiro, C. L. and Williamson, J. (2019). Meaningful Destinations: Using National Data to Investigate How Different Education Pathways Support Young's People Progression in England. *Research Papers in Education*, 34 (6): 725-748.

Williamson, J. and Carroll, M. (2018a). *Cambridge Technicals: who takes them and what else do they do?* Cambridge Assessment Internal Research Report.

Williamson, J. and Carroll, M. (2018b). *Cambridge Technicals: progression*. Cambridge Assessment Internal Research Report.

Wolf, A. (2011). *Review of Vocational Education: The Wolf Report*. London: Department for Education.

Appendix A: Background characteristics of candidates with Cambridge Technicals

Table A1: Candidates' characteristics ~ Gender (female candidates)

Qualification	Suite	Level	% Females	N Females
Cambridge Technical	2012	L2	39.2	2808
		L3	45.5	6745
	2016	L3	41.6	998
A Level			55.2	147041
Key Stage 5			49.4	471608

Table A2: Candidates' characteristics ~ Age

Qualification	Suite	Level	Age	%	N
Cambridge Technical	2012	L2	16	74.0	5295
			17	20.2	1446
			18	5.9	419
		L3	16	17.2	2548
			17	72.9	10801
			18	9.9	1468
	2016	L3	16	77.4	1856
			17	20.5	491
			18	2.1	50
A Level			16	1.7	4617
			17	91.0	242311
			18	7.2	19254
Key Stage 5			16	43.8	418360
			17	45.9	438225
			18	10.3	98473

Table A3: Candidates' characteristics ~ Prior attainment: Key Stage 4 points[22]

Qualification	Suite	Level	Key Stage 4 points	%	N
Cambridge Technical	2012	L2	Lowest	78.4	5150
			Low	2.8	185
			Medium	15.9	1047
			High or Highest	2.9	191
		L3	Lowest	7.1	950
			Low	11.5	1534
			Medium	6.9	921
			High	54.9	7314
			Highest	19.5	2603
	2016	L3	Lowest	20.8	483
			Low	55.1	1281
			Medium	5.2	120
			High	11.8	275
			Highest	7.2	168
A Level			Lowest	0.2	391
			Low	0.5	1325
			Medium	1.6	3804
			High	24.1	58812
			Highest	73.7	179935
Key Stage 5			Lowest	20.5	172055
			Low	20.3	170100
			Medium	16.8	140461
			High	18.2	152366
			Highest	24.2	202536

Table A4: Candidates' characteristics ~ Prior attainment: candidates achieving 5+ GCSEs at grades A*-C

Qualification	Suite	Level	% achieving 5+ GCSEs A*-C	N achieving 5+ GCSEs A*-C
Cambridge Technical	2012	L2	4.4	287
		L3	75.9	10113
	2016	L3	83.2	1936
A Level			92.8	226735
Key Stage 5			67.9	568677

[22] Note that for Level 2 candidates, the group "High" includes high and highest. This was done to comply with statistical disclosure controls.

Table A5: Candidates' characteristics ~ Prior attainment: candidates achieving 5+ GCSEs at grades A*-C, including English and Maths

Qualification	Suite	Level	% achieving 5+ GCSEs A*-C	N achieving 5+ GCSEs A*-C
Cambridge Technical	2012	L2	1.2	80
		L3	63.5	8461
	2016	L3	71.6	1665
A Level			83.1	202925
Key Stage 5			58.6	490664

Table A6: Candidates' characteristics ~ Ethnicity[23]

Qualification	Suite	Level	Ethnicity	%	N
Cambridge Technical	2012	L2	Asian	23.1	248
			Black	11.9	128
			Mixed	3.6	39
			White	58.2	625
			Other	3.2	34
		L3	Asian	14.3	1244
			Black	5.1	448
			Mixed	3.3	286
			White	76.2	6641
			Other	1.2	101
	2016	L3	Asian	15.1	303
			Black	4.9	99
			Mixed	2.4	49
			White	76.2	1529
			Other	1.3	27
A Level			Asian	12.6	19750
			Black	5.2	8213
			Mixed	4.8	7597
			White	75.5	118462
			Other	1.8	2897
Key Stage 5			Asian	13.3	47800
			Black	6.1	21972
			Mixed	4.9	17464
			White	73.7	264853
			Other	2.0	7108

[23] Chinese candidates have been added to the "Asian" category to comply with statistical disclosure controls.

Table A7: Candidates' characteristics ~ Socio-economic deprivation: IDACI

Qualification	Suite	Level	IDACI	%	N
Cambridge Technical	2012	L2	Lowest	11.6	796
			Low	17.4	1193
			Medium	21.5	1468
			High	28.0	1916
			Highest	21.4	1467
		L3	Lowest	19.7	2889
			Low	23.3	3411
			Medium	20.2	2967
			High	19.7	2888
			Highest	17.1	2511
	2016	L3	Lowest	18.2	431
			Low	24.5	580
			Medium	20.0	475
			High	23.0	544
			Highest	14.3	340
A Level			Lowest	33.6	86947
			Low	22.8	59120
			Medium	16.2	41875
			High	14.2	36712
			Highest	13.2	34099
Key Stage 5			Lowest	22.8	209549
			Low	21.5	197668
			Medium	18.7	172273
			High	20.1	185369
			Highest	16.9	155446

Table A8: Candidates' characteristics ~ Socio-economic deprivation: FSM

Qualification	Suite	Level	% FSM	N FSM
Cambridge Technical	2012	L2	34.2	2342
		L3	19.9	2923
	2016	L3	19.6	464
A Level			12.3	31740
Key Stage 5			22.2	204159

Table A9: Candidates' characteristics ~ Type of school[24]

Qualification	Suite	Level	School Type	%	N
Cambridge Technical	2012	L2	Comprehensive	14.9	827
			Independent	0.2	12
			Selective	0.0	0
			6th form college	16.1	895
			FE college	67.6	3760
			Other	1.3	72
		L3	Comprehensive	60.5	7189
			Independent	1.2	141
			Selective	0.4	45
			6th form college	18.7	2220
			FE college	19.1	2270
			Other	0.1	17
	2016	L3	Comprehensive	87.6	1779
			Independent / Selective	0.5	12
			6th form college	7.9	160
			FE college	3.9	80
			Other	0.0	0
A Level			Comprehensive	52.8	122078
			Independent	15.8	36432
			Selective	9.9	22990
			6th form college	14.1	32611
			FE college	7.1	16424
			Other	0.3	616
Key Stage 5			Comprehensive	34.6	280660
			Independent	7.0	56725
			Selective	5.4	43382
			6th form college	10.4	83913
			FE college	41.6	337276
			Other	1.0	8391

[24] Candidates with Level 3 Cambridge Technicals, Suite 2016, in selective schools have been added to the independent category to comply with the statistical disclosure controls.

Appendix B: Performance in Cambridge Technicals

Table B1: A level grades for candidates with and without Cambridge Technicals

A level grade	Cambridge Technicals 2012 Suite		Cambridge Technicals 2016 Suite		A level candidates
	N	%	N	%	%
A*	51	1.0			8.3
A	272	5.1	26[25]	9.9	18
B	1045	19.6	35	13.3	26.8
C	1762	33.0	85	32.3	24.3
D	1398	26.2	80	30.4	14.6
E	624	11.7	26	9.9	5.9
U	191	3.6	11	4.2	2.1

[25] 26 candidates achieved “A or above”. The number of candidates with A* was below 10 and to comply with the statistical disclosure controls, the A* and A categories were combined.

Appendix C: Progression to Higher Education – regression analyses

Table C1: Progression to Higher Education (2015/16 cohort) ~ N = 101788

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		0.21	0.020	10.50	<.0001
Gender	Male	-0.16	0.013	-12.44	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	0.68	0.018	37.37	<.0001
	High	0.98	0.048	20.41	<.0001
	[Low]	.	.	.	.
School type	6th Form College	0.22	0.023	9.88	<.0001
	FE College	-0.68	0.014	-47.68	<.0001
	Independent	0.19	0.073	2.65	0.0082
	Other	-0.33	0.084	-3.92	<.0001
	Selective	0.10	0.068	1.52	0.1278
	[Comprehensive]	.	.	.	.
IDACI	Medium	-0.12	0.020	-6.31	<.0001
	High	0.15	0.019	7.79	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.02	0.026	0.92	0.3596
	[No]	.	.	.	.

Table C2: Progression to Higher Education (2016/17 cohort) ~ N = 114300

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.09	0.019	-4.79	<.0001
Gender	Male	-0.15	0.012	-11.99	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	0.63	0.014	46.40	<.0001
	High	1.03	0.035	29.43	<.0001
	[Low]	.	.	.	.
School type	6th Form College	0.24	0.021	10.99	<.0001
	FE College	-0.70	0.014	-51.03	<.0001
	Independent	0.33	0.063	5.23	<.0001
	Other	-0.44	0.076	-5.79	<.0001
	Selective	0.34	0.079	4.26	<.0001
	[Comprehensive]	.	.	.	.
IDACI	Medium	-0.09	0.017	-5.33	<.0001
	High	0.24	0.017	14.71	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.02	0.024	0.83	0.4050
	[No]	.	.	.	.

Table C3: Dropped out from Higher Education (2015/16 cohort) ~ N = 51173

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-2.26	0.045	-50.09	<.0001
Gender	Male	0.24	0.028	8.71	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	-0.47	0.039	-12.27	<.0001
	High	-1.01	0.119	-8.54	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.09	0.046	-2.05	0.0404
	FE College	0.22	0.030	7.39	<.0001
	Independent	0.13	0.145	0.88	0.3792
	Other	0.40	0.163	2.47	0.0136
	Selective	-0.71	0.189	-3.73	0.0002
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.11	0.045	2.53	0.0113
	High	0.25	0.041	6.13	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	-0.11	0.057	-1.90	0.0573
	[No]	.	.	.	.

Table C4: Dropped out from Higher Education (2016/17 cohort) ~ N = 51955

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-2.61	0.056	-46.84	<.0001
Gender	Male	0.18	0.037	4.90	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	-0.29	0.040	-7.32	<.0001
	High	-0.74	0.106	-6.94	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.29	0.060	-4.90	<.0001
	FE College	-0.12	0.041	-2.99	0.0028
	Independent	0.09	0.151	0.60	0.5457
	Other	0.19	0.206	0.92	0.3560
	Selective	-0.47	0.236	-1.99	0.0466
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.09	0.052	1.74	0.0825
	High	0.03	0.050	0.63	0.5261
	[Low]	.	.	.	.
Cambridge Technical	Yes	-0.08	0.069	-1.21	0.2276
	[No]	.	.	.	.

Appendix D: Performance in Higher Education – regression analyses

Table D1: Graduated from Higher Education, 2015/16 cohort (N = 51173)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.56	0.029	-19.18	<.0001
Gender	Male	-0.33	0.019	-17.10	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	0.37	0.023	16.23	<.0001
	High	0.52	0.051	10.16	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.06	0.030	-2.07	0.0382
	FE College	-0.15	0.022	-6.91	<.0001
	Independent	-0.41	0.100	-4.10	<.0001
	Other	0.21	0.114	1.81	0.0703
	Selective	-0.01	0.082	-0.09	0.9312
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.04	0.029	1.39	0.1636
	High	-0.15	0.027	-5.39	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.21	0.035	5.94	<.0001
	[No]	.	.	.	.

Table D2: Achieved an upper second class degree or above, 2015/16 cohort (N = 51173)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-1.14	0.032	-35.13	<.0001
Gender	Male	-0.36	0.022	-16.31	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	0.67	0.025	27.01	<.0001
	High	0.98	0.053	18.68	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.06	0.034	-1.70	0.090
	FE College	-0.15	0.025	-6.15	<.0001
	Independent	-0.50	0.116	-4.30	<.0001
	Other	0.24	0.122	1.96	0.0505
	Selective	0.12	0.086	1.38	0.1681
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.04	0.032	1.33	0.1831
	High	-0.23	0.030	-7.57	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.25	0.039	6.34	<.0001
	[No]	.	.	.	.

Table D3: Achieved a first class degree or above, 2015/16 cohort (N = 51173)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-3.00	0.058	-51.54	<.0001
Gender	Male	-0.20	0.039	-5.11	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	0.98	0.041	23.55	<.0001
	High	1.66	0.069	23.92	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.12	0.062	-1.95	0.0514
	FE College	-0.02	0.044	-0.53	0.5977
	Independent	-0.51	0.209	-2.45	0.0143
	Other	0.04	0.204	0.19	0.8503
	Selective	0.00	0.134	0.03	0.9794
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.17	0.054	3.15	0.0016
	High	-0.24	0.054	-4.42	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.13	0.068	1.95	0.0508
	[No]	.	.	.	.

Appendix E: Progression to Further Education – regression analyses

Table E1: Progression to Further Education, 2015/16 cohort (N = 101788)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-1.46	0.038	-38.42	<.0001
Gender	Male	0.36	0.017	21.17	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	-0.20	0.024	-8.48	<.0001
	High	-0.57	0.069	-8.29	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.17	0.030	-5.64	<.0001
	FE College	-0.02	0.018	-1.31	0.1896
	Independent	-1.02	0.127	-8.07	<.0001
	Other	-0.16	0.116	-1.34	0.1810
	Selective	-0.37	0.098	-3.81	0.0001
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.02	0.024	0.72	0.4694
	High	-0.25	0.024	-10.77	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	-0.10	0.033	-3.18	0.0015
	[No]	.	.	.	.

Table E2: Progression to Further Education, 2016/17 cohort (N = 114300)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-1.78	0.026	-68.78	<.0001
Gender	Male	0.43	0.017	24.57	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	0.03	0.019	1.62	0.1052
	High	-0.23	0.051	-4.58	<.0001
	[Low]	.	.	.	.
School type	6th Form College	-0.23	0.031	-7.33	<.0001
	FE College	-0.11	0.019	-5.82	<.0001
	Independent	-1.59	0.143	-11.10	<.0001
	Other	-0.27	0.115	-2.37	0.0178
	Selective	-0.85	0.139	-6.10	<.0001
	[Comprehensive]	.	.	.	.
IDACI	Medium	-0.04	0.022	-1.85	0.0650
	High	-0.38	0.023	-16.99	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.14	0.032	4.50	<.0001
	[No]	.	.	.	.

Table E3: Dropped out from Further Education in Year 1, 2015/16 cohort (N = 11820)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-1.35	0.101	-13.37	<.0001
Gender	Male	-0.21	0.045	-4.69	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	-0.04	0.064	-0.69	0.4918
	High	-0.62	0.226	-2.75	0.0059
	[Low]	.	.	.	.
School type	6th Form College	0.05	0.081	0.63	0.5263
	FE College	0.13	0.049	2.76	0.0058
	Independent	0.36	0.373	0.96	0.3350
	Other	-0.14	0.336	-0.42	0.6724
	Selective	-0.19	0.321	-0.58	0.5605
	[Comprehensive]	.	.	.	.
IDACI	Medium	-0.04	0.065	-0.61	0.5451
	High	0.16	0.063	2.50	0.0125
	[Low]	.	.	.	.
Cambridge Technical	Yes	0.10	0.089	1.12	0.2649
	[No]	.	.	.	.

Table E4: Dropped out from Further Education in Year 1, 2016/17 cohort (N = 11950)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-1.37	0.070	-19.68	<.0001
Gender	Male	-0.32	0.047	-6.71	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	-0.33	0.053	-6.20	<.0001
	High	-0.51	0.151	-3.38	0.0007
	[Low]	.	.	.	.
School type	6th Form College	0.05	0.086	0.60	0.5517
	FE College	0.10	0.051	1.89	0.0585
	Independent	0.24	0.425	0.57	0.5714
	Other	0.24	0.327	0.74	0.4619
	Selective	0.83	0.328	2.52	0.0116
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.17	0.063	2.76	0.0057
	High	0.35	0.063	5.57	<.0001
	[Low]	.	.	.	.
Cambridge Technical	Yes	-0.21	0.092	-2.32	0.0205
	[No]	.	.	.	.

Table E5: Dropped out from Further Education in Year 2, 2015/16 cohort (N = 11820)

Variables		Estimate	Standard Error	t Value	Pr > |t|
Intercept		-0.06	0.082	-0.74	0.4612
Gender	Male	-0.41	0.038	-10.69	<.0001
	[Female]	.	.	.	.
Prior attainment	Medium	-0.08	0.054	-1.45	0.1458
	High	0.00	0.154	-0.02	0.9869
	[Low]	.	.	.	.
School type	6th Form College	0.10	0.068	1.51	0.1302
	FE College	-0.03	0.041	-0.64	0.5222
	Independent	0.71	0.333	2.13	0.0329
	Other	0.31	0.257	1.19	0.2322
	Selective	0.04	0.247	0.16	0.8752
	[Comprehensive]	.	.	.	.
IDACI	Medium	0.01	0.054	0.14	0.8908
	High	0.11	0.053	2.02	0.0434
	[Low]	.	.	.	.
Cambridge Technical	Yes	-0.07	0.071	-1.03	0.3019
	[No]	.	.	.	.