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**Returns to Maths and English Learning (at level 2 and below) in Further Education**

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# Department for Business Innovation & Skills

RESEARCH

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The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Business, Innovation and Skills.

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# Executive Summary

## Background

Previous work identifies good labour market returns for FE learners who gain qualifications at Full Level 2 and above - summarised in *Figure 1 below.* (Bibby, Buscha, Cerqua, Thomson and Urwin (2014) - from here referred to as BBCTU). For instance, a learner who achieves a full Level 2 (FL2)[1] qualification will earn 11% more than a similar person who has the same learning aim, but who did not achieve[2]. Figure 1 also shows that FL2 achievers are 2 percentage points (ppt) more likely to be in employment and 2 ppt less likely to be observed on benefits, between three and five years after learning.

*Fig. 1: Summary of three to five year averages for aggregated qualification categories*

|  | 3-5 year average | | |
|---|---|---|---|
| Learning Level | Earnings Returns | Employment probability premiums | Benefit Probability gaps |
| Below Level 2 (including English and/or Maths) | **2%** | 0 ppts | 0 ppt |
| Thin Level 2 (including English and/or Maths) | **1%** | **1 ppt** | **-1 ppt** |
| Full Level 2 (FL2) | **11%** | **2 ppt** | **-2 ppt** |
| Thin Level 3 | **3%** | **1 ppt** | **-1 ppt** |
| Full Level 3 (FL3) | **9%** | **4 ppt** | **-2 ppt** |
| Level 4+ | **8%** | **1 ppt** | **-1 ppt** |

All figures in bold are statistically significant

Estimates of the returns to learning at 'Below Level 2' and 'Thin Level 2' - which include English and Maths qualifications - were positive but not so strong – though it should be noted that many of these qualifications are of a very short duration. This report presents the findings from a project that investigates labour market returns to these English and Maths qualifications, in two different situations:

- Complementary Learning i.e. when combined with higher level qualifications[3],
- Highest Learning Aim - when they are studied as a person's highest FE qualification (i.e. not taken with a higher qualification)[4].

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[1] A Full Level 2 (FL2) qualifications is equivalent to 5 GCSE's A*-C; Thin level 2 is equivalent to 1- 4 GCSEs; Full Level (FL3) is equivalent to 2 A-levels; Thin level 3 is equivalent to one A level or AS level; Level 4 is at foundation degree level (although usually shorter). Below L2 (often called Foundation Level) includes English/Maths at Entry Level and L1 plus many other qualifications.

[2] BBCTU test the robustness of this econometric approach and the findings suggest estimates are very reliable. For more details please refer to Section 2 of this report; and to Chapter 6 of BBCTU and to Bibby et. al. (2015) "The impact of skills and training interventions on the unemployed – phase 1 report"

[3] Many individuals take Maths and/or English qualifications at L1 and L2 as forms of 'complementary learning'. For instance, there will be many individuals taking a highest qualification aim at Full Level 3 as a route into HE, and alongside this they may be attempting to rectify poor performance at secondary level in GCSE English/Maths.

# Maths and/or English as Complementary Learning

L1/L2 English and Maths qualifications when studied alongside higher level qualifications, produce significant earnings benefits for achievers (*Figure 2*)[5]

*Figure 2: Three to five year earnings and employment returns for L1/L2 English and/or Maths achievers, within populations of FL2, L3, FL3 and L4+ achievers*

| Level | Earnings | Employment |
|---|---|---|
| *L1/L2 English and/or Maths* achievement (amongst **Full Level 2** achievers) | **4.2%** | **-0.1 ppt** |
| *L1/L2 English and/or Maths* achievement (amongst **Thin Level 3** achievers) | **3.1%** | 0.0 ppt |
| *L1/L2 English and/or Maths* achievement (amongst **Full Level 3** achievers) | **1.2%** | 0.0 ppt |
| *L1/L2 English and/or Maths* achievement (amongst **Level 4+** achievers) | **5.1%** | 0.1 ppt |

These Figures do not include ESOL learning; All figures in bold are statistically significant

Amongst the populations of Thin L3 and FL3 achievers, the estimated earnings returns (of 3.1% and 1.2%) in Figure 2 likely understate the true value added, because of the problems we have capturing progression to HE and part-time working. This may also be the reason why we do not observe an employment premium; although, achievement of the highest learning aim may be more important in determining whether an individual secures employment, and the additional *L1/L2 Maths and/or English* achievement allows the individual to secure a higher earnings return, when in employment. Returns to English and/or Maths qualifications when taken with FL2 or FL3 qualifications are higher for apprenticeship learners than for classroom-based learners (Figure 3)

*Figure 3: Three to five year returns for L1/L2 English and/or Maths achievers, within populations of FL2 and FL3 achievers comparing classroom and apprenticeship learning.*

| | 3-5 year average returns | | | | | |
|---|---|---|---|---|---|---|
| | Earnings Returns | | Emp probability premiums | | Benefit Probability gaps | |
| Learning Level | Classroom-based learning | Apprenticeship Learning | Classroom-based learning | Apprenticeship Learning | Classroom-based learning | Apprenticeship Learning |
| Eng/Maths achievers within **FL2** Achievers | **2.2%** | **5.9%** | 0.0 ppts | **-1.3 ppts** | **-1.0 ppt** | **-1.0 ppts** |
| Eng/Maths achievers within **FL3** Achievers | **0.7%** | **3.0%** | 0.2 ppts | 0.1 ppts | **-0.4 ppt** | **-0.5 ppts** |

These Figures do not include ESOL learning; All figures in bold are statistically significant (see Appendix 5.4)

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[4] We separate out the returns to Maths and/or English qualifications as highest learning aims, within the categories of 'Below Level 2' and 'L2' in Figure 1; uncovering the heterogeneity of returns that underpin the 2% and 1% earnings returns for 'Below Level 2' and 'L2' in Figure 1.

[5] Taking the example of Full Level 3, we select all those who, between 2002 and 2012, Achieve their highest learning aim of a Full Level 3. Amongst these Full Level 3 Achievers, we identify all learners with an overlapping *L1/L2 English and/or Maths* aim. The estimate of value added compares the outcomes for those who *Achieve* their *L1/L2 English and/or Maths* aims, with those who *Do not Achieve L1/L2 English and/or Maths*; amongst this population of FL3 achievers.

Labour market returns in the first year after learning are generally significant for most sector subjects, as can be seen from Figure 4. Even when we cannot present 3 to 5 year averages, we do identify statistical significance of impacts in the first years after learning. This analysis by sector pushes the data to its limits and for many sectors the numbers in our regression equations fall too low to produce robust estimates beyond the first year.

*Figure 4: Estimated earnings premium and probability of being on Benefits, for L2 English and/or Maths Achievers, by Sector Subject [for the population of Full Level 2 Achievers]*

| L2 English and/or Maths Achievers combined with Full L2 in… | First Tax Year after learning (earnings) | First tax year after learning (benefits) | 3-5 year average earnings premium | 3-5 year active benefit ppt difference |
|---|---|---|---|---|
| Adult social care | **5.6%** | **-2.3 ppt** | N/A | N/A |
| Engineering and manufacturing | **6.1%** | **-1.4 ppt** | N/A | N/A |
| Information & Communication Technology | **7.2%** | **-1.8 ppt[#]** | N/A | N/A |
| Retailing and Wholesaling | **5.2%** | **-1.8 ppt** | N/A | N/A |
| Hospitality and Catering | **6.7%** | **-1.5 ppt** | **5.3%** | **-1.1 ppt** |
| Hair and beauty | **7.9%** | **-2.0 ppt[#]** | 5.2% | -0.9 ppt |
| Admin/ secretarial | **5.8%** | **-1.7 ppt** | 4.2% | **-1.2 ppt** |
| Customer service | **5.5%** | **-1.4 ppt** | **6.8%** | -0.7 ppt |

These Figures do not include ESOL learning; All figures in bold are statistically significant
[#] 3 months after learning

Current policy is to make English and Maths learning compulsory for apprenticeships. We might expect English/Maths to be more helpful in more technical subjects, but we also flag why this may not be the case in our Conclusion. Unfortunately, the analysis of earnings and employment returns only produces 3-5 year average return estimates for the less technical subjects, presented in Figure 3. For these less technical subjects there are good returns to Maths and/or English achievement at L2, with earnings returns ranging between 4.2% for those achieving a FL2 in the area of *Admin/Secretarial*, to 6.8% for those in *Customer Service*.

## Maths and English as a Highest Learning Aim

Figure 5 presents estimated returns for learners who have a highest learning aim of Entry-level/L1/L2 Maths and/or English. The results underline the widespread and persistent nature of statistically significant impacts for Maths and/or English learning at Entry, Level 1 and Level 2 when held as a highest learning aim; particularly for younger learners.

*Figure 5: Three to five year earnings and employment premiums for those achieving Entry Level/L1/L2 English and/or Maths as a highest learning aim*

| | Earnings | | Employment | |
|---|---|---|---|---|
| Highest learning aim | 19 to 24 | Aged 25+ | 19 to 24 | Aged 25+ |
| **Entry Level/L1/L2 English and/or Maths** | **7.1%** | **4.6%** | **1.7 ppt** | **1.9 ppt** |
| Entry Level Eng and/or Maths | **5.0%** | **3.1%** | **1.0 ppt** | **1.5 ppt** |
| L1 Eng and/or Maths | N/A | **7.8%** | **1.7 ppt** | **1.5 ppt** |
| L2 Eng and/or Maths | **8.5%** | **3.8%** | **3.1 ppt** | **2.3 ppt** |

These Figures do not include ESOL learning. All figures in bold are statistically significant.

Figure 6 presents estimated earnings returns, employment premiums and differences in benefit outcomes, for disaggregations of the categories presented previously in Figure 4. Figure 6 underlines the fact that when we dig down into these categories of *Below Level 2* and *L2*, we identify good returns for those taking Maths and/or English at Entry level, L1 and L2 as a highest learning aim; together with good earnings returns to ESOL learning.

*Figure 6: Three to five year earnings and employment premiums for those achieving Entry Level/L1/L2 English and/or Maths as a highest learning aim [disaggregated categories]*

| | Earnings | Employment | Benefits |
|---|---|---|---|
| **All Below L2 of which** | **1.9%** | **0.3 ppt** | **-0.3** |
| Entry Level Eng | **5.0%** | **1.7 ppt** | **-0.5** |
| Entry level Maths | **3.4%** | 0.0 ppt | **-0.5** |
| L1 English | **6.6%** | **1.7 ppt** | -0.6 |
| L1 Maths | **6.0%** | **1.3 ppt** | N/A |
| L1 Eng & Maths | **12.3%**# | **1.6 ppt** | N/A |
| ESOL | **6.1%** | **0.2 ppt** | -0.1 |
| Other L1 | **0.7%** | **0.2 ppt** | -0.3 |
| **All Thin L2** | **1.3%** | **0.9 ppt** | **-0.6** |
| L2 English | **7.4%** | **2.0 ppt** | **-1.3** |
| L2 Maths | **3.8%** | **2.6 ppt** | **-0.9** |
| L2 Eng & Maths | **4.9%** | **0.9 ppt** | **-1.1** |
| Other L2 | **0.8%** | **0.8 ppt** | **-0.5** |

# this finding should be considered with some caution as it is based on small numbers
The figures for English/Maths do not include ESOL learning, as it is analysed separately. All figures in bold are statistically significant

Alongside the statistically significant earnings and employment returns for Maths and English learning at Entry Level, L1 and L2; the *Other Level 1* and *Other Level 2* categories secure positive, but relatively low, returns. These 'Other' categories account for the vast majority of *Below L2* and *Thin L2* learning, often referred to as "foundation learning" or "employability learning". Within these remaining categories, there is likely to be further substantial heterogeneity of returns.

## L1/L2 Maths and/or English as routes to further FE learning

We tracked several cohorts to gauge the extent to which L1/L2 Maths and/or English learners progress to further learning within FE. Figure 7 looks at the progression of one such cohort (from 2007) who have a learning aim of ***L1 English and/or Maths***[6] and finds that achievers (of all ages) are more likely to be observed in subsequent (i) L1/L2 and (ii) FL2 or higher FE learning across all the years considered, when compared to non-achievers. However, considerable proportions of both achievers and non-achievers are engaged in further learning.

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[6] Which is their highest learning aim up to the date from which we track them.

*Figure 7: Proportion of **L1 English and/or Maths** Achievers and Non-achievers progressing into continued FE learning*

| Cohort Year | | Total % into any L1/L2 learning between 2007 and 2011 (19 to 24) | Total % into any FL2+ learning, 2007 to 2011 (19 to 24) | Total % into any L1/L2 learning between 2007 and 2011 (25+) | Total % into any FL2+ learning, 2007 to 2011 (25+) |
|---|---|---|---|---|---|
| 2007 | Achiever | 26.09 | 15.46 | 29.60 | 13.62 |
| | Non-achiever | 21.72 | 12.28 | 21.10 | 9.91 |

The categories of *L1 English and/or Maths* Achievers and Non-achievers, do not include ESOL learning, but the destination state of *Any L1/L2 FE* does include ESOL[7]. Please note these are 'raw' figures and no attempt has been made to control for differences between achievers and non-achievers

Figure 8 considers the progression of a 2007 cohort of **L2 English and/or Maths** Achievers and Non-achievers, observed in subsequent FE learning at (i) L1/L2 or (ii) FL2 or higher. Here we observe an unusual result, as 19-24 Achievers are less likely to progress than non-achievers, but 25+ achievers are more likely to progress. This is likely driven by the high proportion of 19 to 24 year old achievers who progress to Higher Education and these findings should be considered alongside those of Smith et al. (2015)[8]. Again, considerable proportions of achievers and non-achievers go on to further learning.

*Figure 8: Proportion of **L2 English and/or Maths** Achievers and Non-achievers progressing into continued FE learning*

| Cohort Year | | Total % into any L1/L2 learning between 2007 and 2011 (19 to 24) | Total % into any FL2+ learning, 2007 to 2011 (19 to 24) | Total % into any L1/L2 learning between 2007 and 2011 (25+) | Total % into any FL2+ learning, 2007 to 2011 (25+) |
|---|---|---|---|---|---|
| 2007 | Achiever | 16.53 | 21.45 | 21.52 | 18.46 |
| | Non-achiever | 18.20 | 21.53 | 18.85 | 15.38 |

The categories of *L1 English and/or Maths* Achievers and Non-achievers, do not include ESOL learning, but the destination state of *Any L1/L2 FE* does include ESOL. Please note these are 'raw' figures and no attempt has been made to control for differences between achievers and non-achievers

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[7] Though we would expect a negligible number of learners to move to ESOL from non-ESOL English.
[8] https://www.gov.uk/government/publications/progression-of-further-education-students-to-higher-education
https://www.gov.uk/government/publications/progression-of-apprentices-to-higher-education-second-cohort

## Conclusion

L1/L2 English and Maths qualifications **when studied alongside higher level qualifications**, produce significant earnings benefits for achievers. Even though analysis by sector pushes the data to its limits, there is still evidence of significant earnings returns, and a significantly lower probability of being on benefits, across many of the sectors analysed.

Statistically significant labour market returns are also widespread and persistent for Maths and/or English learning at Entry, Level 1 and L2 when **held as a highest learning aim**; particularly for younger learners.

ESOL learning also produces good earnings returns; whilst learning at *Other Level 1* and *Other Level 2* secures positive, but relatively low, returns.

Readers are encouraged to consider the detail of the tables within the report, as in many areas where we cannot present 3 to 5 year averages, we do identify statistical significance of impacts in the first years after learning.[9] Similarly, first year impacts apply across a number of cohorts of learners, as we observe a first year of earnings, employment and benefits information for all cohorts.

There a number of issues that this study raises that need to be considered going forward (not least the need for data that allows us to observe moves to Higher Education and/or other forms of non-FE learning/training). Any future study would ideally introduce more data from HESA identifying (i) the specific destination of FE learners who move on to HE and (ii) the drop-out rate of these learners. In this report we are concentrating on earnings, employment and active benefit outcomes, but for many FE learners, HE is an important and valuable outcome.

However, even with these data limitations, we are able to present compelling evidence that Entry Level, Level 1 and Level 2 Maths and/or English learning in FE provides significant value added for those who achieve their learning aims.

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[9] The "gold standard" criteria for impact (i.e. that statistical significance must be observed over many years and also that in each year it must be relatively stable), is very rigorous and more than many studies are able to achieve.

# 1. Introduction

This report presents the results of an analysis of labour market returns for individuals achieving qualifications at 'Below Level 2' and 'Level 2' in English Further Education[10]; extending the analysis of Bibby, Buscha, Cerqua, Thomson and Urwin, (2014)[11] [from here referred to as BBCTU]. Using the 2002-2012 ILR-WPLS administrative dataset[12] we estimate separately the (i) earnings, (ii) employment probability and (iii) probability of being on active benefits, for those who achieve their learning aim whilst studying at an English Further Education Institution (FEI), relative to those who have the same learning aim, but do not achieve; with a particular focus on this estimate of value added for those achieving Entry-level, Level 1 (L1) and Level 2 (L2) Maths and/or English qualifications[13].

We report estimated returns for the first, third, fourth and fifth tax year after learning. Returns in the first year are an important benchmark for comparison across studies, and we choose the 3 to 5 year average as our measure of value added, as it balances an implicit trade-off - we require estimated premiums that (i) persist sufficiently far into the future, but (ii) are not over-reliant on a small number of cohorts that completed learning many years ago[14]. For each learner we have 7 academic years (2004/2005 to 2010/2011) when they can possibly exit learning (as an achiever or non-achiever) and over these academic years, a learner can have multiple ILR learning spells. Across all of the learning spells for each individual, we select the highest learning aim. We then adopt two broad approaches to the estimation of labour market returns.

**First**, Section 3 presents estimates of the labour market returns to L1/L2 Maths and/or English qualifications, when these are <u>not</u> held as an individual's highest learning aim. BBCTU presented estimates using a [L1/L2 Maths and/or English] achiever V non-achiever comparison, but only for a population of learners with a highest learning achievement of Full Level 2 (FL2) and Full Level 3 (FL3). More specifically, Maths and/or English qualifications taken at L1 and L2 are often forms of 'complementary learning'. For instance, there will be many individuals taking a highest qualification aim at Full Level 3 as a route into HE, and alongside this they may be attempting to rectify poor performance at secondary level in GCSE English and/or Maths[15]. As a result, we investigate achiever V

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[10] A Full Level 2 (FL2) qualifications is equivalent to 5 GCSE's A*-C; Thin level 2 is equivalent to 1- 4 GCSEs; Full Level 3 (FL3) is equivalent to 2 A-levels; Thin level 3 is equivalent to one A-level or AS level; Level 4 is at foundation degree level (although usually shorter). Below L2 (often called Foundation Level) includes English/Maths at Entry Level and Level 1 plus many other qualifications.

[11] Bibby, D., Buscha, F., Cerqua, A., Thomson, D. and Urwin, P. (2014), "Estimation of the labour market returns to qualifications gained in English Further Education", Department for Business, Innovation and Skills, Research Paper No. 195.

[12] For more details see Bibby et. al. (2014) and the Data and Method Section of this Report.

[13] Throughout the report we adopt the terminology of 'English' and 'Maths', rather than 'Numeracy' and 'Literacy'.

[14] We only observe labour market returns five years on from the end of learning for cohorts that finished their learning a number of years ago, during the 2006/2007 academic year or before.

[15] See Smith et al (2015), for an indication of the numbers of FE learners progressing to HE.
https://www.gov.uk/government/publications/progression-of-further-education-students-to-higher-education
https://www.gov.uk/government/publications/progression-of-apprentices-to-higher-education-second-cohort

non-achiever comparisons for individuals undertaking L1/L2 Maths and/or English, who have achieved higher learning aims.

Continuing the example of Full Level 3, we first select all those who, between 2002 and 2012, *achieve* their highest learning aim of a Full Level 3 Qualification. Within this group of Full Level 3 Achievers*,* we then identify all learners who also have a L1/L2 English and/or Maths aim (not held as their highest learning aim). We then create an estimate of value added by comparing the outcomes for those who *Achieve* their L1/L2 English and/or Maths aims, with those who *Do not Achieve* L1/L2 English and/or Maths aim; amongst this population of FL3 achievers. Section 3.1 extends the analysis of BBCTU to cover additional populations of highest aim achievers; creating estimates using a [L1/L2 Maths and/or English] achiever V non-achiever comparison, for the populations of learners with a highest achievement of Level 3 and also Level 4+[16]. Section 3.2 has the same approach to analysis, but disaggregates the results by sector subject area of the highest learning aim achieved, where numbers permit[17].

**Second**, Section 4 extends the analysis in Bibby et. al. (2014) for those who achieve 'Below Level 2' or 'L2' qualifications, as their highest learning aim. We may reasonably expect many of those who take a qualification at, or below, Level 2 as their highest learning aim, to have particularly limited labour-market prospects. As a result, it is often hard to identify accurate estimated returns (especially in survey-based studies) - it is very difficult to find a robust control or comparison group that provides us with an accurate estimate of the outcomes that these [particularly disadvantaged] individuals would have secured, in the absence of learning. The ILR-WPLS data allow us to identify a group, who provide a more robust estimate of these 'counterfactual' outcomes; because non-achievers select into the same qualification[18]. The findings from BBCTU suggest that, even with this more appropriate approach to estimation, we still observe relatively low returns for those whose highest learning aim is 'L2' or 'Below Level 2'. However Sections 4.1 and 4.2 show that, when we separate out the returns to Maths and/or English qualifications at this level, we uncover much more favourable estimates of value added (Section 5.3 of the Appendix sets out the results of an analysis using the same approach, but with estimates presented separately for (i) those aged 19 to 24 and (ii) those aged 25+).

**Finally**, Section 4.3 gives some idea of the value that L1/L2 Maths and/or English qualifications have as a route to higher qualifications within FE. Taking a cohort approach, we select all individuals with a L1/L2 Maths and/or English spell aim that finishes during year X (focusing on those who have no prior FE learning aim, either at the same or lower level, and who have no accompanying aim that is at a level higher than L2). We do this for each year X and then create figures on the number/proportion of achievers that we see in various forms of FE learning in X+1, X+2, X+3 etc. years from the end of learning.

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[16] Also presenting the results for more disaggregated categories of Maths and English qualifications.

[17] The derived Industry Sector classification we have used has the SSA variable in the ILR at its route, but also uses the title of the highest learning aim and the SSC footprint where SSA is missing or uninformative.

[18] It is worth emphasizing that the majority of non-achievers are 'drop-outs', as opposed to 'failing' a qualification. See Chapter 6 of BBCTU for more detail on the strengths and weaknesses of the achiever V non-achiever (drop-out) approach, and the findings from tests of its robustness using difference-in-differences and Coarsened Exact Matching (CEM) approaches.

# 2. Data and Method

This report extends and deepens the analysis set out in Bibby et. al. (2014), and as such, it is based on the same underlying dataset and approach to method. Section 2.1 sets out a brief reminder of this underlying approach to data creation (pointing readers to BBCTU, and an accompanying Report, for more detail); and Section 2.2 describes the econometric method we use to uncover more detailed estimates of value added from Maths/English learning at Entry Level, Level 1 and Level 2 in English FE.

## 2.1    Creation of the ILR-WPLS dataset

We create the ILR-WPLS dataset linking FE learner information, benefit and PAYE employment histories for tens of millions of individuals. A pre-requisite for the construction of such a dataset is the creation of an over-arching Person-key to link records in the data sources (the Individualised learner Record (ILR) together with the Work and Pensions Longitudinal Study (WPLS)) reliably to the same individual. This Person-key identifies the same individual in the various data sources and is now used by BIS for in-house analysis. The creation of the ILR-WPLS dataset requires complex processes of imputation and merging. Details of the imputation processes and procedures to arbitrate between competing matching possibilities are described at length in Buscha and Urwin (2013) and Thomson et. al. (2010).

## 2.2    Econometric Analysis

As suggested in the introduction, the starting point for our analysis of this data is the use of non-achievers as a control group that provides an accurate representation of counterfactual outcomes for those achieving a certain qualification[19]. We estimate separately the (i) earnings, (ii) employment and (iii) benefit premiums secured by those who achieve a particular learning aim whilst studying at an English Further Education Institution (FEI), relative to those who have the same learning aim, but do not achieve.

In comparing the returns of those who select into a qualification and achieve, with the returns of those who select into the same qualification and do not achieve, we have the potential to overcome some of the problems of selection experienced elsewhere in the literature. Many studies that utilise data from the Labour Force Survey identify negligible returns to some level 1 and level 2 vocational qualifications. However, this may be partly driven by the possibility that control groups in these studies contain many individuals who are not a realistic comparison group for those who select into level 1 and 2 vocational qualifications, particularly when this is their highest learning aim.

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[19] The estimate of what an individual would have earned in the absence of a qualification or training, is called the 'counterfactual', because it is counter to the factual state of the world (we can't observe individuals taking the qualification, and not taking the qualification). To create credible estimates of counterfactual outcomes, we choose a comparison group that does not have the qualification, but provides a credible estimate of what the individuals with the qualification would have earned, if they had not taken the qualification.

If individuals who would gain a lower wage (independent of their level of learning) are more likely to select into certain vocational qualifications, then estimated returns may be falsely deflated if we compare them to a control group who do not select into this qualification (and do not manage to control for the implied differences within a multivariate framework). This study may arguably provide a better comparison group because it overcomes some of the biases arising from these selection effects. However, there are weaknesses in comparing those who achieve, with those who fail to achieve or drop out, if we do not effectively control for ability and other unobservable factors.

BBCTU test the validity of this approach to the estimation of Value Added, and their work has been subjected to a rigorous process of peer-review by four academic experts. The findings suggest that regression-based techniques, which compare achievers and non-achievers using ILR-WPLS data, produce robust estimates of value added. The more advanced techniques used to test this assertion, are Coarsened Exact Matching (CEM) and difference-in-differences methods (see BBCTU, Chapter 6 for more details). The results suggest that estimates obtained from the following standard regression approach (estimated using Ordinary Least Squares, OLS), provide robust estimates of value added:

$$y_i = \alpha + Qual'_i\beta + \mathbf{x}'_i\gamma_x + \varepsilon_i$$

where the dependant variable, $y_i$, takes one of the following forms:

- Log of deflated daily earnings (top and bottom 1% removed) in the whole financial tax year 1, 3, 4 and 5 years after the end of a learning spell.
- The probability of being employed (binary) exactly 1, 3, 4 and 5 years after the end of a learning spell[20].
- The probability of being on job-seeking ['Active'] benefits (binary) exactly 1, 3, 4 and 5 years after the end of a learning spell.

The qualification variables, $Qual_i$, are inserted as dummies where a value of 1 represents those who achieved their spell aim, whilst a value of 0 represents those who had the same spell aim, but failed to achieve any qualification within that spell. The coefficient $\beta$ then represents an estimate of the return (or premium) to that qualification level. The nature of our setup (achievers vs. non-achievers) requires each qualification level to be estimated in its own regression model, for each year after the end of learning.

As suggested in the introduction, we adopt three variations on this approach to estimation, which allow us to uncover the value added of English and Maths qualifications.

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[20] Some regressions have binary variables on the left-hand side. These models are also estimated using OLS resulting in a linear probability model (LPM). Such models have the disadvantage that out-of-bound predictions can occur (probabilities greater than 1 or less than 0) and also suffer from heteroskedasticity. However, the sheer size of these data make logit/probit modelling with marginal effects highly computationally intensive; particularly as our identification strategy requires each qualification level to be estimated in its own regression equation. LPM models generally performed well and we report robust standard errors.

**Section 4:** BBCTU mostly take a 'highest aim' approach to evaluation of the returns to learning in FE. For each learner we have 8 academic years (2004/2005 to 2011/2012) when they can possibly exit learning (as an achiever or non-achiever) and over these academic years, a learner can have multiple ILR learning spells. Across all of the learning spells for each individual we select the highest learning aim. The estimate of value added is obtained by comparing the returns of those who have a particular highest learning aim and achieve; with the returns of those who have the same highest learning aim, but do not achieve.

Considering the categories of learner with highest learning aims of either *'L2'* or *'Below Level 2'*, individuals in these groups are unique, as they have very limited labour market prospects – we observe them attempting a highest level of learning in FE that is below what is expected from a school leaver. The suggestion in BBCTU is that for L2 we observe an average 1% earnings return and 2% for Below Level 2 (for individuals who have these as their highest learning aims). But there is pronounced heterogeneity of returns within these broad categories, and in this report when we break the groups down to identify returns to (i) Entry Level Maths, (ii) Entry Level English, (iii) L1 Maths, (iv) L1 English/Literacy, (v) L2 Maths, (vi) L2 English/Literacy (held as the highest learning aim) we uncover much higher returns; with a group of 'other L1' and 'other L2' responsible for the lower returns seen at the more aggregated level[21].

**Section 3:** We want to get a better idea of the returns to L1/L2 Maths/English, but many individuals take these qualifications alongside higher aims. For instance, individuals engaged in Full Level 3 also trying to rectify poor performance in Maths/English GCSEs, and a range of other combinations. Taking a highest aim approach misses these returns. Section 3 presents the results of an analysis that captures separate returns for (i) Entry Level Maths, (ii) Entry Level English, (iii) L1 Maths, (iv) L1 English/Literacy, (v) L2 Maths, (vi) L2 English/Literacy; within wider populations of (a) *all those achieving FL2 as a highest learning aim*: (b) *those achieving L3 as a highest learning aim*: (c) *those achieving FL3 as a highest learning aim*: and (d) *those achieving L4+ as a highest learning aim.* More specifically, we select (for instance) the population of all FL2 achievers and, within this population, identify achievers and non-achievers who have L1/L2 Maths/English learning aims that overlap the achieved FL2 spell.

Finally in Section 4.3, we capture the value of L1/L2 Maths and English qualifications as a route to continued FE learning, using a cohort analysis, with descriptive statistics (rather than as part of an econometric analysis). For instance, of the cohort who **achieve** a L1 Maths/English aim in 2007/2008, we consider the proportion who are observed in FE learning at FL2 or above over the following 5 years; and compare this to the proportion of L1 Maths/English **non-achievers** from the same cohort, who are observed in FE learning at FL2+ over the next five years[22].

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[21] Though this is not the end of the story for these qualifications, as a proposed extension to this analysis, differentiating returns by FE provider, has the potential to uncover further heterogeneity in these 'other L1' and 'other L2' categories – not least because these include ICT courses.

[22] With some attempt to ensure that this is not overly impacted by issues of duration dependence (arising from the fact that we are recording the *end*, rather than the *start* of learning, for achievers and non-achievers).

In the econometric analysis we control for sex; age; interaction sex-age; ethnicity; disability; region; type of funding (none, LCS, ESF, both); mode of attending (FT/PT); offender; spell duration; number of previous FE learning spells; prior education level; year dummies; Index of Multiple Deprivation (IMD); Indicators derived from Sector Subject Area (SSA); the number of days an individual was on active benefits in the year before learning; whether an individual has an inactive benefit spell in the year before learning; and how many days an individual has spent in sustained (6 months) employment just before learning.

# 3. Maths and/or English as Complementary Learning

BBCTU create estimates using a [L1/L2 Maths and/or English] achiever V non-achiever comparison, for populations of learners with highest learning achievement of FL2 or FL3. Tables 1 and 2 (in this section) present extensions to this analysis, with estimates also presented for populations of L3 and L4+ achievers. Tables 3 to 8 then break these findings down into more detailed categories of Maths and/or English learners, for the populations of FL2 and FL3 achievers. Section 3.2 disaggregates the findings for L1/L2 Maths and/or English learners amongst our populations of FL2 and FL3 achievers, by the sector subject area of the FL2 or FL3 aim being studied (where numbers allow).

## 3.1 L1/L2 Maths and/or English returns for FL2, FL3 and other Achiever Populations

Table 1 confirms the more favourable estimated earnings returns for an amalgamated group who achieve **L1/L2 Maths and/or English**, when taken as a complementary form of learning; uncovered by BBCTU[23]. For instance, the first row of Table 1 estimates the value added of *L1/L2 Maths and/or English* qualifications; with the population of individuals included in the regression equations restricted to those who have achieved a highest aim of Full Level 2 [which overlaps the English/Maths learning]. The 3 to 5 year average earnings return of 4.2% is therefore the earnings premium secured by those who achieve a *L1/L2 Maths and/or English* qualification, relative to those who do not achieve their *L1/L2 Maths and/or English* qualification (with this estimate relevant for a population of FL2 achievers).

**Table 1: Returns to daily earnings for L1/L2 English and/or Maths achievers[24] [within populations of (i) FL2 (ii) L3 (iii) FL3 and (iv) L4+ achievers]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| --- | --- | --- | --- | --- | --- |
| **FL2 Achievers** | 0.060*** | 0.035*** | 0.048*** | 0.042*** | **0.042** |
| s.e. | 0.005 | 0.006 | 0.007 | 0.008 | |
| N | 180267 | 78721 | 55138 | 37285 | |
| | | | | | |
| **L3 Achievers** | -0.003 | 0.026** | 0.033** | 0.035** | **0.031** |
| s.e. | 0.010 | 0.011 | 0.011 | 0.012 | |

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[23] A Full Level 2 (FL2) qualifications is equivalent to 5 GCSE's A*-C; Thin level 2 is equivalent to 1- 4 GCSEs; Full Level 3 (FL3) is equivalent to 2 A-levels; Thin level 3 is equivalent to one A-level or AS level; Level 4 is at foundation degree level (although usually shorter). Below L2 (often called Foundation Level) includes English/Maths at Entry Level and Level 1 plus many other qualifications.

[24] Tables 1 and 2 do not include ESOL English qualifications in the category of *L1/L2 English and/or Maths*, for which returns are estimated. The estimates for FL2 and FL3 populations are the same as those in BBCTU, as they also exclude ESOL learning.

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| N | 41799 | 30499 | 25289 | 19967 | |
| | | | | | |
| **FL3 Achievers** | -0.002 | 0.001 | 0.018*** | 0.017*** | *0.012* |
| s.e. | 0.003 | 0.004 | 0.004 | 0.005 | |
| N | 385245 | 226940 | 168144 | 113293 | |
| | | | | | |
| **L4+ Achievers** | 0.005 | 0.042* | 0.045* | 0.065* | **0.051** |
| s.e. | 0.016 | 0.019 | 0.022 | 0.029 | |
| N | 16404 | 8714 | 5774 | 3239 | |

*** Significant at the 0.1% level; ** 1% and * 5%

The 3 to 5 year averages are constructed from regression estimates of returns up to five years from the end of learning. For instance, the figure of 0.060 in the top left-hand corner of Table 1 is a coefficient obtained from a regression equation for individuals whose highest qualification achievement, across all their learning spells, is Full Level 2 and who have an accompanying/overlapping *L1/L2 Maths and/or English* aim. Amongst this 180,267 individuals, we estimate the return to achievement of *L1/L2 Maths and/or English*, relative to those who fail to achieve. The coefficient of 0.060 is therefore an estimate of the additional earnings that achievers receive in the first tax year after the learning spell ends, compared to the earnings of those who fail to achieve the aim, controlling for a variety of additional factors in our regression equation[25]. Those achieving a *L1/L2 Maths and/or English aim* earn, on average, 6% more than those who do not achieve this stated aim in the first year after the learning spell ends (with this estimate relevant for a population of FL2 achievers).

The figure of 6% is therefore our estimate of the difference between (i) the post-qualification earnings of individuals who obtain *L1/L2 Maths and/or English*, compared to (ii) the earnings of the same individuals if they had not taken this qualification (otherwise known as the 'counterfactual'[26]), amongst a population of FL2 achievers. Moving along this first row of Table 1, the results of three more regression equations, suggest that this earnings premium stays relatively stable between the third and fifth year after the end of learning (between 3.5% and 4.8%); following a slight dip from 6% to 3.5% from the first to third years after learning. As with all the tables in this report, the final column of Table 1 presents the earnings return averaged over the period three to five years on from learning.

It is important to note that the return in the first year after learning will, necessarily, include all cohorts of learners (because we observe a first year of earnings for even those whose learning spell finishes in 2010-2011). However, by the fifth year after learning our estimate

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[25] We control for sex; age; interaction sex-age; ethnicity; disability; region; type of funding (none, LCS, ESF, both); mode of attending (FT/PT); offender; spell duration; number of previous FE learning spells; prior education level; year dummies; Index of Multiple Deprivation (IMD); Indicators derived from Sector Subject Area (SSA); the number of days an individual was on active benefits in the year before learning; whether an individual has an inactive benefit spell in the year before learning; and how many days an individual has spent in sustained (6 months) employment just before learning.

[26] Called the 'Counterfactual', because it is 'counter' to the 'factual' state of the world. We never observe the counterfactual, but use various econometric estimation techniques to get as close an estimate as possible.

is based on learners who complete prior to the 2007/2008 academic year (as these are the only learners for whom we observe five or more years of earnings). This is an issue to which we return, as we face limitations later in the report when numbers drop too low for analysis to be possible beyond the first year.

All the results in the first row of Table 1 are statistically significant at the 0.1% level (i.e. 99.9% level of confidence) and we are therefore confident of a strong correlation between achievement of a qualification aim and higher earnings (with the standard error or 's.e.' in the Tables providing an indication of the expected variability around this estimate, and used to create confidence intervals).

NB/ In all tables, the 3 to 5 year average is,

- Highlighted in **Bold** if we consider it to be a robust estimate, with both (i) statistically significant impacts across the three to five year period that are relatively stable[27] and (ii) a sufficient number of learners to provide a sizeable control group of non-achievers (exactly what constitutes a 'sufficient' number of learners varies for each set of analysis and we return to this later in the report, when it becomes more of an issue)
- Highlighted in ***Bold Italics*** if we consider the finding to be relatively robust, with (i) statistical significance across the majority of estimated impacts between three and five years and (ii) a control group that is on the margins of our considerations of size.
- Not highlighted in bold or italics, when there are concerns over the robustness of the findings, but between three and five years we have some evidence of at least one significant impact, with sufficient numbers. Where this is the case, we highlight in bold those earnings, employment or benefit returns from the individual regressions that are statistically significant, in the years after the end of learning.
- Not Available (N/A) when we have results that are not robust enough to produce a three to five year average. Where this is the case, we again highlight in bold those earnings, employment or benefit returns (usually in the first tax year after learning), that are statistically significant.
- When there is no suggestion of statistical significance, but numbers are sufficient, the 3 to 5 year average is set to zero.

Amongst the population of FL3 achievers (in the third row of Table 1), there is a recognition (flagged by BBCTU), that the estimated return (of 1.2%) likely understates the true value added, because of the problems we have capturing progression to HE and part-time working[28]. Similarly, our new estimate in the second row of Table 1 suggests that

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[27] One can have a set of return estimates between three and five years that are statistically significant, but vary from negative to positive: these are not findings we would consider particularly robust (though in the case of L3 and FL3 populations we do seem to have a clear explanation of why this may occur).

[28] In BBCTU we were able to identify progression to HE for a small subset of learners. However, when estimating across the entire population, our results are impacted by unobserved moves to HE or some other form of (non-FE) learning. If we do not identify those who go on to HE learning from FE learning at Full Level 3 (and to a lesser extent from FL2 to other forms of non-FE learning or training), we have a significant number in the treatment (achievers) who will be (i) less likely to be employed following

amongst the population whose highest achievement is Level 3, those achieving a *L1/L2 Maths and/or English* qualification secure a 3.1%, 3 to 5 year, average earnings return. These estimated returns for populations of L3 and FL3 achievers seem to be artificially depressed in the first two to three years after learning, and then recover thereafter – a pattern that is consistent with the issue of HE students working part-time. This is an issue to which we return, when digging further down into these findings. For the population of Level 4+ achievers, the return to L1/L2 Maths and English is estimated to average 5.1% between 3 and 5 years after learning.

Table 2 suggests that there is little, if any systematic percentage point employment probability premium for L1/L2 Maths and English achievers over non-achievers, amongst our populations with higher learning aims achieved. There are many reasons why we might observe this lack of employment premium, alongside a more systematic earnings premium. One possible explanation, that we return to, is the HE/PT issue flagged in the discussions around Table 1 above. In addition, it is also possible that achievement of the highest learning aim may be more important in determining whether an individual secures employment; and the additional L1/L2 Maths and/or English achievement allows the individual to secure a higher earnings return, when in employment. Whilst there are some patches of significance here and there in Table 2, they are conflicting, and the size of any implied impact is small.

**Table 2: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of (i) FL2 (ii) L3 (iii) FL3 and (iv) L4+ achievers]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|---|
| **FL2 Achievers** | 0.006*** | 0.005** | -0.011*** | -0.010*** | -0.009** | **-0.010** |
| se | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | |
| N | 433352 | 358563 | 176789 | 124100 | 84735 | |
| | | | | | | |
| **L3 Achievers** | **0.007*** | -0.002 | -0.004 | 0.001 | 0.006 | 0.000 |
| se | 0.003 | 0.004 | 0.004 | 0.004 | 0.004 | |
| N | 89840 | 88724 | 67319 | 55165 | 42642 | |
| | | | | | | |
| **FL3 Achievers** | **0.006*** | 0.002 | -0.001 | 0.002 | 0.003 | 0.000 |
| se | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | |
| N | 795028 | 750123 | 452853 | 338260 | 239203 | |
| | | | | | | |
| **L4+ Achievers** | 0.009 | 0.009 | 0.010 | 0.008 | **0.020*** | 0.013 |
| se | 0.007 | 0.006 | 0.007 | 0.007 | 0.009 | |

achievement and (ii) those who are employed will more likely be working in (relatively poorly paid) PT jobs (whilst they are HE students or engaged in other forms of training).

27 contd This has the potential to understate (i) employment returns and (ii) earnings returns, relative to a control who may be more likely to exit to FT jobs. In BBCTU we observe negative and significant earnings returns (for FL3 and L3) in the initial years following the end of learning, with returns tending to pick up 3 to 4 years from the end of learning (when the treatment will have finished HE or other forms of non-FE training), and this supports this explanation. The employment returns did not seem to be so negatively impacted, possibly because the control (of FL3 non-achievers) where similarly less likely to secure employment.

| | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Achievement | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| N | 28726 | 27875 | 16332 | 11619 | 7581 | |

*** Significant at the 0.1% level; ** 1% and * 5%

Tables 3 through to 8 present a more detailed breakdown of the estimated returns for subgroups of learners within this wider 'L1/L2 Maths and/or English' category of learning aim – focusing on the populations of FL2 and FL3 achievers. For instance, in Table 3, amongst the population of FL2 achievers, we identify a 4.6% average [3 to 5 year] earnings return for those achieving a L2 English qualification and for those taking both English and Maths at L2, the figure is 7.3%. For other subcategories in Table 3 the suggestion is that returns are of a similar magnitude, but as we move on to the second and third year after learning, we lose statistical significance, as a result of the drop in numbers.

### Table 3: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL2 achievers][29] [30]

| | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| --- | --- | --- | --- | --- | --- |
| Achievement | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | **0.054*** | 0.015 | 0.033 | 0.072 | N/A |
| se | 0.017 | 0.028 | 0.049 | 0.188 | |
| N | 9645 | 3153 | 1291 | 190 | |
| | | | | | |
| **Maths L1** | **0.071**** | 0.058 | 0.118 | 0.083 | N/A |
| se | 0.022 | 0.039 | 0.072 | 0.176 | |
| N | 6812 | 1864 | 851 | 178 | |
| | | | | | |
| **English & Maths L1**[31] | **0.061*** | **0.044**** | 0.016 | 0.018 | 0.026 |
| se | 0.008 | 0.016 | 0.023 | 0.035 | |
| N | 52097 | 12602 | 6375 | 2501 | |
| | | | | | |
| **English L2** | 0.064*** | 0.043*** | 0.050*** | 0.045*** | **0.046** |
| se | 0.007 | 0.009 | 0.010 | 0.011 | |
| N | 56471 | 31902 | 24930 | 19338 | |
| | | | | | |
| **Maths L2** | **0.056*** | 0.030 | 0.036 | 0.032 | N/A |
| se | 0.014 | 0.018 | 0.022 | 0.026 | |
| N | 14621 | 6409 | 4345 | 2831 | |

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[29] Tables 3 to 8 do not include ESOL qualifications in the categories of L1/L2 English for which returns are estimated.

[30] Our category of **English L1** in Tables 3 to 8 contains all learners who have a English L1 aim overlapping a FL2 spell (but no overlapping Maths aim); whilst the **English & Maths L1** category includes all those who have English L1 and Maths L1 aims overlapping a FL2 spell (the same applies to the **English & Maths L2** category). As a result, each category of learner is mutually exclusive and no learner can appear in more than one category.

[31] For categories such as **L1 English**, achievement and non-achievement is straightforward. However, for the category of **L1 Maths and English** we can obviously have a combination of achieve/non-achieve groups. The majority of non-achievers taking both, fail both, and majority of achievers taking both, pass both. Non-achievers are therefore those with both Maths and English aim, who fail to achieve either English or Maths, or both. Variations on this approach do not alter our findings.

| | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| Achievement | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English & Maths L2** | 0.063*** | 0.067*** | 0.079*** | 0.073*** | **0.073** |
| se | 0.008 | 0.010 | 0.011 | 0.013 | |
| N | 40621 | 22791 | 17346 | 12247 | |

For the population of FL2 achievers, Table 4 suggests a mostly insignificant employment effect from achievement of various L1 English and/or Maths combinations. However, for L2 English and/or Maths combinations, we observe achievers with significantly lower levels of employment three to five years on from the end of learning. In contrast, when we consider employment returns to these qualifications for the population of FL3 achievers in Table 6, the main message is one of insignificant employment effects.

**Table 4: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL2 achievers]**

| | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
|---|---|---|---|---|---|---|
| Achievement | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | 0.0010 | -0.001 | **-0.0179*** | 0.0050 | -0.0203 | 0.0111 |
| se | 0.0054 | 0.0059 | 0.0090 | 0.0126 | 0.0237 | |
| N | 21907 | 19141 | 7780 | 3880 | 1317 | |
| **Maths L1** | 0.0084 | 0.0025 | -0.0057 | -0.0272 | -0.0232 | N/A |
| se | 0.0071 | 0.0078 | 0.0134 | 0.0188 | 0.0384 | |
| N | 15434 | 13086 | 4277 | 2140 | 747 | |
| **English & Maths L1** | 0.0018 | **0.0060*** | 0.0091 | 0.0097 | -0.0072 | 0.000 |
| se | 0.0023 | 0.0029 | 0.0052 | 0.0075 | 0.0110 | |
| N | 141212 | 92610 | 26123 | 14071 | 6544 | |
| **English L2** | 0.0072** | 0.0033 | -0.0103** | -0.0110** | -0.0080* | **-0.0098** |
| se | 0.0026 | 0.0027 | 0.0033 | 0.0036 | 0.0040 | |
| N | 125606 | 114782 | 70032 | 53536 | 40211 | |
| **Maths L2** | 0.0073 | 0.0046 | **-0.0163*** | **-0.0275*** | -0.0088 | -0.0175 |
| se | 0.0045 | 0.0048 | 0.0066 | 0.0078 | 0.0096 | |
| N | 37330 | 34266 | 17014 | 11414 | 7519 | |
| **English & Maths L2** | 0.0067* | 0.0003 | -0.0203*** | -0.0205*** | -0.0132** | **-0.0180** |
| se | 0.0031 | 0.0032 | 0.0038 | 0.0042 | 0.0048 | |
| N | 91863 | 84678 | 51563 | 39059 | 28397 | |

*** Significant at the 0.1% level; ** 1% and * 5%

We have already flagged the possibility that Maths and English qualifications secure less of an employment impact, as achievement of the higher learning aim (FL2 or FL3 in Tables 4 and 6 respectively) may be the main factor determining whether an individual gets a job. However, in Table 4 we have negative and significant employment impacts and these are more likely driven by the large numbers who move from FE to HE (see footnote 15 of this

report). In much of our analysis to date this has mainly been flagged as an issue when we consider returns to FL3 and L3, as they are the main point of transition to HE (see Smith et al (2015))[32]. However, as Buscha and Urwin (2013: Section 3.5) emphasise in their study of unobserved HE impacts for a subset of learners, this also has potential to impact those: "who have an 'FE highest-aim' of …Full Level 2, but who have achieved a higher level of learning elsewhere (for instance as part of their Secondary education) which then allows them to move to Higher Education".

In Table 4, our negative and significant employment effects (amongst a population of FL2 achievers) occur three to five years on from achievement, which is consistent with this suggestion that many more L2 English and/or Maths achievers continue some form of activity outside of FE; which eventually leads to lower employment levels 3 to 5 years on, when they move to HE[33]. In Table 6, it is likely that individuals achieving their L2 English and/or Maths qualifications amongst the population FL3 achievers, are more likely to make the move to (unobserved) HE learning and this reduces the proportion of achievers we observe in employment; to the point where we have insignificant employment impacts.

**Table 5: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL3 achievers]**

| | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| Achievement | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **English L1** | 0.035 | -0.062 | -0.114 | N/A | N/A |
| se | 0.032 | 0.058 | 0.135 | | |
| N | 2986 | 797 | 242 | 30 | |
| **Maths L1** | -0.004 | -0.078 | -0.178 | N/A | N/A |
| se | 0.037 | 0.066 | 0.136 | | |
| N | 2438 | 736 | 295 | 39 | |
| **English & Maths L1** | **0.083**\*\* | 0.052 | -0.204 | N/A | N/A |
| se | 0.032 | 0.075 | 0.217 | | |
| N | 2733 | 550 | 152 | 18 | |
| **English L2** | -0.007 | 0.004 | 0.006 | 0.011 | 0.000 |
| se | 0.006 | 0.007 | 0.008 | 0.009 | |
| N | 99044 | 60251 | 44230 | 30374 | |
| **Maths L2** | -0.023\*\* | -0.009 | **0.027**\*\* | **0.026**\*\* | *0.015* |
| se | 0.008 | 0.008 | 0.009 | 0.009 | |
| N | 67838 | 45742 | 36497 | 27035 | |
| **English & Maths L2** | 0.020\*\*\* | 0.011\* | 0.030\*\*\* | 0.029\*\*\* | **0.023** |

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[32] https://www.gov.uk/government/publications/progression-of-further-education-students-to-higher-education
https://www.gov.uk/government/publications/progression-of-apprentices-to-higher-education-second-cohort
[33] The population of FL2 achievers cannot, by definition, be engaged in higher level FE learning before we observe their earnings returns, as FL2 is the highest FE learning aim we observe for them between 2002 and 2012. The implication is that those achieving FL2 and their L2 Maths/English aim, engage in subsequent learning at L3/FL3 outside of FE, and this gains them access to HE approximately three years on from their FE achievement.

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| se | 0.004 | 0.005 | 0.005 | 0.006 | |
| N | 210206 | 118864 | 86728 | 55797 | |

*** Significant at the 0.1% level; ** 1% and * 5%

In Table 5 we do not observe enough individuals studying L1 English and/or Maths aims within our population of FL3 achievers, to make estimation of returns possible. However, for the category of *English & Maths L2* (and to a lesser extent *Maths L2*) we capture some of the positive earnings impact (2.3% in the case of *English & Maths L2* achievement), but this is likely an underestimate. Individuals who achieve FL3, but do not achieve complementary *English & Maths L2* are probably less likely to progress to HE and would therefore seem more likely to search for, and subsequently secure, employment that pays relatively well. In contrast, those achieving their FL3 and the accompanying *English & Maths L2* are probably more likely to progress to HE and we will only observe earnings for those working PT – falsely depressing our estimated earnings returns before the fourth year after learning.

**Table 6: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL3 achievers]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
|---|---|---|---|---|---|---|
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | 0.0180 | 0.0112 | 0.0008 | 0.0334 | -0.0061 | N/A |
| se | 0.0107 | 0.0110 | 0.0176 | 0.0259 | 0.0662 | |
| N | 6645 | 6359 | 2411 | 1134 | 299 | |
| | | | | | | |
| **Maths L1** | 0.0046 | 0.0115 | 0.0164 | 0.0343 | 0.0688 | N/A |
| se | 0.0118 | 0.0120 | 0.0202 | 0.0288 | 0.0538 | |
| N | 5722 | 5444 | 1995 | 1058 | 393 | |
| | | | | | | |
| **English & Maths L1** | -0.0037 | 0.0001 | -0.0099 | 0.0304 | N/A | N/A |
| se | 0.0107 | 0.0111 | 0.0198 | 0.0357 | | |
| N | 6166 | 5693 | 1808 | 626 | 155 | |
| | | | | | | |
| **English L2** | 0.0020 | -0.0025 | -0.0027 | 0.0018 | **0.0060*** | 0.0017 |
| se | 0.0023 | 0.0022 | 0.0025 | 0.0027 | 0.0030 | |
| N | 217438 | 213817 | 130705 | 97216 | 68423 | |
| | | | | | | |
| **Maths L2** | **0.0110*** | 0.0025 | 0.0007 | 0.0021 | 0.0025 | 0.000 |
| se | 0.0029 | 0.0028 | 0.0030 | 0.0031 | 0.0033 | |
| N | 142534 | 138299 | 89642 | 70550 | 53103 | |
| | | | | | | |
| **English & Maths L2** | **0.0079*** | **0.0031*** | -0.0014 | -0.0003 | -0.0017 | 0.000 |
| se | 0.0016 | 0.0015 | 0.0017 | 0.0019 | 0.0021 | |
| N | 416523 | 380511 | 226292 | 167676 | 116830 | |

*** Significant at the 0.1% level; ** 1% and * 5%

In contrast to the lack of systematic, statistically significant findings w.r.t. employment probability premiums [or findings of negative impacts driven by our lack of a universal HE

flag], Tables 7 and 8 suggest that, for both the population of FL2 and FL3 achievers; achievement of L2 Maths and English aims results in significantly lower probabilities that individuals will be observed on 'Active[34]' unemployment benefits in the years after learning. Unfortunately, when considering Maths and/or English learning at L1 amongst our populations of FL2 and FL3 achievers, we have insufficient numbers to identify impacts that persist in the third, fourth and fifth years after learning.

In contrast, for our categories of learner engaged in (i) L2 English, (ii) L2 Maths and (iii) English & Maths L2, there are statistically significant and persistent impacts. Amongst the population of FL2 learners (Table 7), we estimate a 3 to 5 year benefit impact of -1.2 ppt for *L2 English*; a figure of -1.1 ppt for *L2 Maths*; and -0.8 ppt for *English & Maths L2*. Considering these findings alongside the raw figures in Table 33 of the Appendix, these translate into [approximate] figures of -16%, -14.5% and -10.5% respectively (as the absolute proportions of non-achievers on benefits is below ten per cent in most cases[35]). Amongst the population of FL3 learners (Table 8), 3 to 5 year benefit impacts are -0.3 ppt for *L2 English*; -0.4 ppt for *L2 Maths*; and -0.6 ppt for *English & Maths L2*. These translate into [approximate] figures of -4%, -5.5% and -8% respectively

**Table 7:Estimated probability of LI/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL2 achievers]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | **-0.009*** | -0.008 | -0.001 | -0.002 | -0.029 | N/A |
| se | 0.004 | 0.005 | 0.006 | 0.009 | 0.017 | |
| N | 18720 | 17459 | 7011 | 3448 | 1141 | |
| | | | | | | |
| **Maths L1** | -0.008 | -0.005 | -0.004 | -0.023 | -0.051 | N/A |
| se | 0.007 | 0.007 | 0.010 | 0.015 | 0.030 | |
| N | 13527 | 12085 | 3906 | 1945 | 677 | |
| | | | | | | |
| **English & Maths L1** | **-0.021*** | **-0.016*** | -0.007 | 0.006 | 0.001 | 0.000 |
| se | 0.002 | 0.002 | 0.004 | 0.005 | 0.007 | |
| N | 116692 | 85837 | 23957 | 12703 | 5909 | |
| | | | | | | |
| **English L2** | -0.020*** | -0.016*** | -0.012*** | -0.011*** | -0.013*** | **-0.012** |
| se | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | |
| N | 98923 | 91831 | 57553 | 44037 | 34867 | |
| | | | | | | |
| **Maths L2** | **-0.016*** | **-0.019*** | **-0.016**** | -0.008 | -0.010 | -0.011 |
| se | 0.004 | 0.004 | 0.005 | 0.005 | 0.006 | |
| N | 27725 | 25886 | 13164 | 8741 | 6163 | |
| | | | | | | |
| **English &Maths L2** | -0.018*** | -0.014*** | -0.010*** | -0.009** | -0.005 | *-0.008* |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | |
| N | 71890 | 67156 | 41198 | 31397 | 23992 | |

[34] Job Seekers Allowance (JSA), Job Training Allowance (JTA) and Employment and Support Allowance (ESA).
[35] Taking a 7.5% Active Benefit rate for non-achievers.

**Table 8: Estimated probability of L1/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL3 achievers]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | -0.013 | -0.005 | 0.004 | 0.004 | N/A | N/A |
| se | 0.008 | 0.007 | 0.011 | 0.014 | | |
| N | 6208 | 5941 | 2227 | 1032 | 261 | |
| **Maths L1** | -0.011 | -0.004 | **-0.045*** | -0.005 | N/A | N/A |
| se | 0.009 | 0.008 | 0.013 | 0.017 | | |
| N | 5376 | 5119 | 1863 | 977 | 362 | |
| **English & Maths L1** | -0.009 | -0.018* | -0.011 | 0.025 | N/A | N/A |
| se | 0.007 | 0.008 | 0.013 | 0.025 | | |
| N | 5745 | 5329 | 1674 | 570 | 134 | |
| **English L2** | **-0.011*** | **-0.010*** | **-0.004*** | -0.002 | -0.003 | -0.003 |
| se | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | |
| N | 183790 | 180691 | 115690 | 87421 | 62140 | |
| **Maths L2** | -0.016*** | -0.013*** | -0.005** | -0.005** | -0.003 | *-0.004* |
| se | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 122146 | 118605 | 79941 | 63766 | 48403 | |
| **English & Maths L2** | -0.014*** | -0.011*** | -0.006*** | -0.005*** | -0.006*** | **-0.006** |
| se | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | |
| N | 372790 | 343661 | 207227 | 154167 | 107939 | |

In Tables 3 to 8 we have adopted a particular approach to disaggregation of English and Maths returns, but it is also possible to differentiate our findings according to whether individuals are engaged in L1/L2 Numeracy and/or Literacy 'Key Skill' or 'Certificate' qualifications. Section 5.1 of the Appendix to this report presents the findings from analysis of returns, using this alternative disaggregation.

## 3.2 Disaggregation of Maths and English returns by Sector

Here we consider how the returns presented in Section 3.1 vary according to the sector subject area of either the Full Level 2 or Full Level 3 qualification achieved by learners. This issue is important to investigate as there is some disagreement over whether Maths/English is necessary as a compliment in some subject areas. However, this is pushing the data to its limits and for many sectors the numbers in our regression equations fall too low to produce robust estimates. For instance, in Table 9 we select the population of individuals who, between 2002 and 2012, achieve a FL2 qualification as their highest learning aim; and split this population according to the sector subject area of the FL2 qualification achieved. Amongst this population of achievers across different sectors, we have approximately 300,000 individuals who also have a *L2 English and/or Maths* aim. In

each of these FL2 sector subject areas, we are able to compare the earnings of those who achieve their *L2 English and/or Maths* aim, with those who do not achieve[36].

**Table 9: Estimated earnings premium for L2 English and/or Maths Achievers[37], by Sector Subject [for the population of Full Level 2 Achievers]**

| Sector Subject of FL2 | Year 1 | Year 3 | Year 4 | Year 5 | 3-5 year average |
|---|---|---|---|---|---|
| **Adult social care** | **0.0559\*\*** | 0.0023 | -0.0125 | N/A | |
| Standard Error | 0.0174 | 0.0291 | 0.0386 | | N/A |
| Number of learners | 10121 | 3252 | 1869 | 928 | |
| **Engineering and manufacturing** | **0.0606\*\*** | 0.0181 | 0.0429 | N/A | |
| Standard Error | 0.0206 | 0.0279 | 0.0347 | | N/A |
| Number of learners | 5721 | 2669 | 1814 | 1133 | |
| **ICT** | **0.0721\*\*** | -0.0219 | 0.0277 | N/A | |
| Standard Error | 0.0251 | 0.0309 | 0.0409 | | N/A |
| Number of learners | 6843 | 2648 | 1888 | 1420 | |
| **Retailing and Wholesaling** | **0.0517\*\*** | **-0.0772\*** | N/A | N/A | |
| Standard Error | 0.0164 | 0.0359 | | | N/A |
| Number of learners | 7761 | 1669 | 1018 | 528 | |
| **Hospitality and Catering** | 0.0667\*\*\* | 0.0551\*\* | 0.0479\*\* | 0.0559\*\* | |
| Standard Error | 0.0146 | 0.0185 | 0.0189 | 0.0198 | **0.0530** |
| Number of learners | 15030 | 7550 | 6484 | 5601 | |
| **Hair and beauty** | **0.0789\*\*\*** | 0.045 | 0.0243 | **0.0873\*** | |
| Standard Error | 0.021 | 0.0266 | 0.032 | 0.0412 | 0.0522 |
| Number of learners | 6232 | 3439 | 2364 | 1501 | |
| **Admin/ secretarial** | **0.0578\*\*\*** | **0.0485\*** | 0.0336 | 0.0442 | |
| Standard Error | 0.0153 | 0.0198 | 0.0221 | 0.0247 | 0.0421 |
| Number of learners | 12568 | 7034 | 5657 | 4344 | |
| **Customer service** | 0.0545\*\*\* | 0.0734\*\* | 0.0852\*\* | 0.0464 | |
| Standard Error | 0.0153 | 0.0248 | 0.0316 | 0.0365 | *0.0683* |
| Number of learners | 14486 | 4299 | 2585 | 1777 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

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[36] In contrast to majority of analysis in BBCTU, these control groups can less easily be argued to include 'drop-outs', as they must contain those who achieve the higher FL2 aim. This does not change the implications of our findings but it is worthy of note, as it does differentiate the nature of our control group, compared to the control we use in Section 4; and we return to this in our Conclusion.

[37] In Tables 9 to 12, our category of *English and/or Maths* learners does not include ESOL qualifications.

We have only attempted to estimate returns when we have 20,000 or more L2 Maths and/or English learners within a particular population of FL2 or FL3 sector subject area achievers (see Appendix Tables 31 and 32 for the number of learners in each sector subject area). This would seem rather a high benchmark to set if we were carrying out an analysis based on survey data, but we need to consider that:

- Our control group of non-achievers typically makes up only 20% of the total number of learners with a particular learning aim.
- It may still seem excessive to insist on a control group of approximately 4,000 individuals (20% of 20,000), but in each case we likely lose at least one quarter of this, due to missing values and even more when we are estimating earnings returns (as we only observe a proportion of the total learners with earnings in the years following learning).
- However, even in the case where we are estimating percentage point employment probability returns or benefit outcomes (which do not suffer from the same selection effects, as the estimation of earnings returns) we will still see numbers drop off dramatically after the first year after learning, because we only observe one or two years of earnings for the most recent cohorts of learners.

As an example of these points, in Table 9 the suggestion is that, amongst the population of FL2 achievers in Adult Social Care, those achieving a *L2 Maths and/or English* qualification secure an additional 5.6% earnings premium[38] in the first tax year after learning. This estimate is based on a sample of 10,121 learners for whom we observe earnings in the tax years after learning, highlighting clear selection effects, as we have chosen this group because they originally contain over 20,000 learners in total[39]. This estimate obtained from data on the first tax year after learning will, necessarily, include all cohorts of learners (because we observe a first year of earnings for even those whose learning spell finishes in 2010-2011). However, by the fifth year after learning our estimate is based on learners who complete prior to the 2007/2008 academic year (as these are the only individuals for whom we observe five or more years of earnings). As a result, whilst the first year contains around 10,000 learners (and approximately 2,000 non-achievers in our control group), by the second year this has dropped to just over 3,000, and the resultant drop in our control group to around 600 likely explains our subsequent lack of statistical significance.

A similar story is apparent for *Engineering & Manufacturing*, *ICT* and *Retailing & Wholesaling*. Clearly we must be careful in interpretation of findings in these sectors, but it is worth flagging that the [statistically significant] estimated earnings return in the first year is 5.6% for *Adult Social Care*; 6% for *Engineering & Manufacturing*; 7.2% for *ICT* and 5.2%

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[38] With this 5.6% estimate of value added based on a comparison of the returns for this group, compared to those in the same population of FL2 Adult Social Care achievers, who do not achieve *L2 Maths and/or English*.

[39] We provide an indication of the extent and nature of the selection into employment (and therefore earnings) by providing estimates of the impact of achievement on employment probability premiums. However, we do not implement a selection model (as might be suggested by the work of Heckman, 1979) because any gains in accuracy are likely to be small; compared to the significant increase in computational intensity. This conclusion is based on findings from our work, which extends BBCTU.

for *Retailing & Wholesaling*. It is only when we get to *Hospitality & Catering* that we have large enough numbers across all cohorts of learners, for a persistent, statistically significant, earnings return to have a chance of being uncovered. For those achieving a FL2 qualification in this sector, we estimate that *L2 Maths and/or English* achievers secure an additional [3 to 5 year average] earnings premium of 5.3%.

Unfortunately, the number of learners in *Hair & Beauty* does not seem quite enough to uncover a robust set of statistically significant findings beyond the first year, though we have reported the (5.2%) three to five year average in the final column as we do observe some significance of the earnings premium (at the 5% level) five years on from the end of learning. Just to remind readers, results such as these, where we are much less confident of the persistence of any return, are reported, but only those that are statistically significant are reported in bold (and we require persistent, statistically significant, estimates across the three to five year period for the 3-5 year average to be highlighted in bold). Hence our reporting of a 4.2% 3-5 year average return for those achieving *L2 Maths and/or English* amongst FL2 achievers in the area *Administration & Secretarial*. In contrast, we present in bold italics the figure of 6.8% for *Customer Service*, as it persists for four years from the end of learning and only becomes insignificant in the fifth tax year when numbers drop below 2,000.

This problem with numbers is particularly acute when we consider the returns to *L1 Maths and/or English* amongst the population of FL2 achievers across different sector subject areas. Even for those sectors where we observe more than 20,000 learners, very few of our findings are significant beyond the first year, because numbers drop off dramatically (as we observe fewer learners in earlier cohorts). Whilst we do not present these findings (they are available on request), it is worth noting that amongst those achieving a FL2 *Customer Service* qualification, *L1 Maths and/or English* achievers secure an estimated 5.7% and 10.4% earnings return over non-achievers, in the first and second tax years after learning, respectively. Similarly, when we consider FL2 achievers in the areas of (i) *Adult Social Care* and (ii) *Retailing & Wholesaling*, those achieving a *L1 English and/or Maths* qualification are observed securing statistically significant (i) 4.3% and (ii) 4.2% earnings premiums in the first tax year after learning. Unfortunately, we then do not have large enough samples to uncover returns in subsequent years (and it is worth noting that these results are only significant at the 5% level).

This problem with numbers is even more acute when we attempt to capture the returns to *L2 Maths and/or English* achievement amongst our population of FL3 achievers – there are only two sectors where we obtain significance and this is only in the first year after learning. However, the earnings returns discussed here and in the previous section, for L1 and L2 Maths and/or English achievers, amongst both the population of FL2 and FL3 achievers, seem encouraging. Whilst the data place limitations on our findings, we have results that add to our understanding of the earnings impacts of these qualifications when taken as complementary forms of learning, alongside higher learning aims.

However, when we estimate the impact of these qualifications on employment outcomes, we encounter the same problems as in the previous section – we seem to be either (i) more severely hobbled by existing data limitations in identifying progression to HE or (ii) we simply uncover less of a role for L1/L2 Maths and/or English, when taken as a complementary form of learning, in securing employment.

Under (i) we have already detailed limitations of the existing data in BBCTU when it comes to identifying movements of individuals into Higher Education, and this could be confounding our estimates of employment returns. Those amongst the population who achieve FL3, but fail L2 Maths and/or English may be less likely to move on to HE (if they need to achieve the Maths/English as a condition of entry), but (if this is correct) it does not seem to be happening on a large enough scale to impact earnings estimates. Our lack of significance for employment impacts may be driven by L1/L2 Maths and/or English achievers amongst FL2 achievers, being more likely to continue with their studies outside of FE (thus depressing employment outcomes for the achievers). These phenomena could be happening amongst bother the FL2 and FL3 populations, but in both cases this will not necessarily show up as depressed earnings returns[40].

The fact that we see negative and significant employment premiums in some instances suggests that the above data limitations are impacting. However, even in the absence of these data issues, we might not see particularly significant employment returns, because it is perhaps the achievement of a FL2 or FL3 qualification that dominates in determining whether an individual secures employment. FL2 achievers may have a similar chance of securing a job (whether or not they achieve a complementary L2 Maths and/or English aim), but having secured employment, we observe those achieving a L2 Maths and/or English qualification securing a higher earnings return.

In coming months it should be possible to get a better handle on this (depending on the passage of legislation to facilitate further data matching) but for now, we finish this section with three tables that set out the impact on benefit rates, of L2 Maths and/or English achievement for populations of FL2 and FL3 achievers. As we can see, Tables 10, 11 and 12 suggest that achievement of these Maths and English qualifications as supplementary forms of learning, is significant in reducing the probability that an individual will be on benefits in the tax years after learning across a number of sectors (although once again, we are limited by numbers beyond the first year after learning).

We present findings in Table 10 for *L1 English and/or Maths*, because although there are insufficient numbers to estimate more than one 3 to 5 year average, we are able to identify significant impacts in the first years after learning in many instances.

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[40] BBCTU didn't capture such negative employment impacts, but unobserved moves to HE and PT working seemed to result in some negative earnings impacts (at L3 and FL3). This seems consistent, as in BBCTU we were comparing FL3 achievers with non-achievers and the latter likely had less favourable employment outcomes; mitigating against any problems of lower employ rates amongst achievers moving to HE. In contrast, this Section has a control group made up of all FL3 and FL2 achievers, who do not achieve Maths and/or English – it seems reasonable to suggest that FL2/FL3 achievers who do not secure the English and/or Maths needed for them to progress to education, have relatively high rates of employment (when compared to those who have FL2/FL3, alongside English and/or Maths achievement which allows them to better progress to the next stage of learning – which we are often unable to observe).

**Table 10: Estimated probability of L1 English and/or Maths Achievers being on Active Benefits, compared to non-achievers, by Sector Subject [for the population of Full Level 2 Achievers]**

| Sector Subject of FL2 | Month 3 | Year 1 | Year 3 | Year 4 | Year 5 | Average impact |
|---|---|---|---|---|---|---|
| **Adult social care** | -0.0091** | -0.0150** | -0.0152* | -0.0200* | N/A | -0.0176 |
| Standard Error | 0.0037 | 0.0046 | 0.0071 | 0.0096 | | |
| Number of learners | 16568 | 13322 | 4325 | 2226 | 791 | |
| **Retailing and Wholesaling** | **-0.0083**\*\* | **-0.0126**\*\* | 0.0160 | N/A | N/A | |
| Standard Error | 0.0027 | 0.0044 | 0.0104 | | | N/A |
| Number of learners | 20908 | 12468 | 2129 | 1247 | 611 | |
| **Hospitality and Catering** | **-0.0275**\*\*\* | **-0.0162**\* | -0.0024 | N/A | N/A | |
| Standard Error | 0.0065 | 0.0071 | 0.0116 | | | N/A |
| Number of learners | 16008 | 12586 | 2361 | 1210 | 450 | |
| **Customer service** | **-0.0155**\*\* | **-0.0121**\* | -0.0076 | -0.006 | N/A | |
| Standard Error | 0.0048 | 0.0054 | 0.008 | 0.0102 | | N/A |
| Number of learners | 22326 | 17419 | 4768 | 2230 | 866 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

In Table 11, amongst the population of FL2 learners, we estimate 3 to 5 year benefit impacts for *L2 English and/or Maths achievers* of -1.2 ppt (or -17%) for *Hospitality and Catering*; -0.9 ppt (or -9%) for *Hair and Beauty*; -1.2 ppt (or -12%) for *Admin/secretarial* and -0.7 ppt (or -10%) for *Customer Service*.

**Table 11: Estimated probability of L2 English and/or Maths Achievers being on Active Benefits, compared to non-achievers, by Sector Subject [for the population of Full Level 2 Achievers]**

| Sector Subject of FL2 | Month 3 | Year 1 | Year 3 | Year 4 | Year 5 | 3-5 year average |
|---|---|---|---|---|---|---|
| **Adult social care** | **-0.0191**\*\*\* | **-0.0234**\*\*\* | -0.0072 | -0.0057 | -0.0137 | N/A |
| Standard Error | 0.0040 | 0.0046 | 0.0058 | 0.0069 | 0.0091 | |
| Number of learners | 19046 | 15771 | 6403 | 3865 | 2258 | |
| **Engineering and manufacturing** | **-0.0243**\*\*\* | **-0.0142**\* | -0.0028 | 0.0026 | 0.0054 | N/A |
| Standard Error | 0.0063 | 0.0071 | 0.0086 | 0.0101 | 0.0118 | |
| Number of learners | 12085 | 9090 | 4361 | 3053 | 2077 | |
| **ICT** | **-0.0179**\* | -0.0140 | -0.0078 | -0.0196 | -0.0058 | N/A |
| Standard Error | 0.0080 | 0.0081 | 0.0102 | 0.0117 | 0.0143 | |
| Number of learners | 14921 | 13036 | 5150 | 3595 | 2594 | |
| **Retailing and Wholesaling** | **-0.0135**\*\*\* | **-0.0175**\*\*\* | 0.0002 | -0.0004 | N/A | N/A |
| Standard Error | 0.0027 | 0.0043 | 0.0096 | 0.011 | | |
| Number of learners | 21697 | 13237 | 2752 | 1653 | 918 | |

| Sector Subject of FL2 | Month 3 | Year 1 | Year 3 | Year 4 | Year 5 | 3-5 year average |
|---|---|---|---|---|---|---|
| **Hospitality and Catering** | -0.0242*** | -0.0153*** | -0.0118** | -0.0086 | -0.0163** | *-0.0122* |
| Standard Error | 0.0037 | 0.0039 | 0.0044 | 0.0049 | 0.0051 | |
| Number of learners | 26971 | 23547 | 12737 | 10717 | 9296 | |
| **Hair and beauty** | **-0.0202**\*\* | -0.0093 | -0.0055 | **-0.0159**\*\* | -0.0053 | -0.0089 |
| Standard Error | 0.0062 | 0.0057 | 0.0051 | 0.0057 | 0.0064 | |
| Number of learners | 13184 | 12433 | 7636 | 5624 | 3924 | |
| **Admin/ secretarial** | -0.0207*** | -0.0165** | -0.0130* | -0.0092 | -0.0149* | *-0.0124* |
| Standard Error | 0.0053 | 0.0052 | 0.0054 | 0.0057 | 0.0062 | |
| Number of learners | 21538 | 19036 | 11401 | 8857 | 6961 | |
| **Customer service** | **-0.0188**\*\*\* | **-0.0141**\*\* | **-0.0127**\* | -0.0070 | -0.0023 | -0.0073 |
| Standard Error | 0.0040 | 0.0044 | 0.0059 | 0.0072 | 0.0079 | |
| Number of learners | 26115 | 21088 | 7628 | 4470 | 2884 | |

*** Significant at the 0.1% level; ** 1% and * 5%

In Table 12, amongst the population of FL3 learners, we are only able to estimate one 3 to 5 year benefit impact for *L2 English and/or Maths achievers* of -0.7 ppt (or -11.5%) for *Leisure, Travel and Tourism*. However, as with Table 10, we have included the findings because once again there are statistically significant findings for the first years after learning, but subsequent numbers are not sufficient to uncover persistence of these returns into later years.


**Table 12: Estimated probability of L2 English and/or Maths Achievers being on Active Benefits, compared to non-achievers, by Sector Subject [for the population of Full Level 3 Achievers]**

| Sector Subject of FL3 | Month 3 | Year 1 | Year 3 | Year 4 | Year 5 | 3-5 year average |
|---|---|---|---|---|---|---|
| **Child development & wellbeing** | **-0.0085**\* | -0.0044 | -0.0016 | 0.0032 | 0.0024 | 0.000 |
| Standard Error | 0.0038 | 0.0028 | 0.0024 | 0.0025 | 0.0029 | |
| Number of learners | 24345 | 23623 | 15749 | 12182 | 8822 | |
| **Adult social care** | -0.0056 | **-0.0074**\* | -0.0049 | 0.0012 | -0.0034 | N/A |
| Standard Error | 0.0038 | 0.0033 | 0.0041 | 0.0045 | 0.0053 | |
| Number of learners | 19062 | 18602 | 10368 | 6991 | 5192 | |
| **ICT** | **-0.0131**\* | **-0.0178**\*\*\* | -0.0023 | 0.0008 | -0.0021 | 0.000 |
| Standard Error | 0.0053 | 0.0050 | 0.0049 | 0.0053 | 0.0058 | |
| Number of learners | 18189 | 17849 | 12545 | 10376 | 8266 | |
| **Hair and beauty** | **-0.0185**\*\*\* | **-0.0177**\*\*\* | -0.0001 | 0.0025 | 0.0004 | N/A |
| Standard Error | 0.0046 | 0.0040 | 0.0034 | 0.0034 | 0.0034 | |
| Number of learners | 20785 | 20359 | 13065 | 9926 | 7129 | |

| Sector Subject of FL3 | Month 3 | Year 1 | Year 3 | Year 4 | Year 5 | 3-5 year average |
|---|---|---|---|---|---|---|
| **Leisure, Travel and Tourism** | **-0.0177\*\*\*** | **-0.0199\*\*\*** | -0.0035 | **-0.0091\*** | -0.0076 | -0.0067 |
| Standard Error | 0.0040 | 0.0036 | 0.0033 | 0.0039 | 0.0044 | |
| Number of learners | 22434 | 22125 | 14209 | 10749 | 7876 | |
| | | | | | | |
| **Performing Arts** | **-0.0171\*\*\*** | **-0.0139\*\*\*** | -0.0038 | -0.0086 | -0.0075 | N/A |
| Standard Error | 0.0042 | 0.0039 | 0.0041 | 0.0046 | 0.0053 | |
| Number of learners | 21229 | 21023 | 14023 | 10844 | 7660 | |
| | | | | | | |
| **Crafts, Creative Arts and Design** | **-0.0088\*** | **-0.0184\*\*\*** | -0.0067 | -0.0042 | -0.0051 | 0.000 |
| Standard Error | 0.0035 | 0.0033 | 0.0036 | 0.0043 | 0.0050 | |
| Number of learners | 28205 | 27923 | 17890 | 12995 | 9297 | |
| | | | | | | |
| **Creative Media** | **-0.0094\*** | -0.0033 | -0.0075 | -0.0062 | -0.0056 | N/A |
| Standard Error | 0.0046 | 0.0043 | 0.0045 | 0.0054 | 0.0056 | |
| Number of learners | 16540 | 16442 | 12058 | 9743 | 7155 | |
| | | | | | | |
| **Business studies** | **-0.0200\*\*\*** | -0.0031 | -0.0063 | -0.0036 | 0.0023 | N/A |
| Standard Error | 0.0048 | 0.0039 | 0.0047 | 0.0058 | 0.006 | |
| Number of learners | 16529 | 16371 | 10646 | 8341 | 6233 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

The fact that we see some systematic and persistent, statistically significant benefit impacts for FL2 and less for FL3 does not allow us to identify which of our explanations for a lack of employment impact are correct – this will only come with advances in the data. However, it does serve to re-enforce the suggestion that these L1/L2 Maths and/or English qualifications provide real value added when taken alongside higher learning aims, across a number of sectors.

Also, it is worth noting that the statistical significance of impacts in the first year after learning (and in many cases the second year) provides a stronger case than is perhaps reflected in discussions around the tables. We are tying ourselves to a very rigorous criteria for what constitutes evidence of 'impact' – in terms of our criteria for statistical significance, the suggestion that this must be observed over many years and also that in each year it must be relatively stable, is setting the 'bar' high. This is more than most studies can achieve. Similarly, we are sometimes dismissive of statistically significant impacts identified in the first or second years after learning; but first year impacts apply across a number of cohorts of learners, as we observe a first year of earnings, employment and benefits information for all cohorts.

# 4. Maths and English as a Highest Learning Aim

Tables 3 to 12 provided insight into the potential returns to L1/L2 Maths and/or English achievement amongst populations of individuals who are taking these qualifications alongside higher learning aims. We now consider populations of learners who have a highest learning aim of either (i) Below Level 2 or (ii) L2, and identify the returns to more specific sub-groups within these wider highest learning aims; focusing particularly on Entry-level/L1/L2 Maths and/or English. Table 13 details the split of Maths and English categories used in Tables 14 through to 19 (Section 4.1) and 20 through to 22 (Section 4.2).

In Tables 3 to 12 we have not separately identified the returns to ESOL qualifications (these were not included in the findings from previous tables). Tables 14 through to 19 present estimated returns for an amalgamated category of *Entry Level/L1/L2 English and/or Maths* which similarly does not contain ESOL qualifications (and therefore neither do the Entry Level, L1 or L2 subdivisions in these same tables). However, Tables 20 through to 22 estimate separately the returns for ESOL qualifications, which are therefore not included in the Entry Level/L1/L2 Maths and/or English categories of learning for which results are also presented. Section 5.3 of the Appendix sets out the results of an analysis using the same approach, but with estimates presented separately for (i) those aged 19 to 24 and (ii) those aged 25+.

**Table 13: Sub-categories of highest learning aim, within 'Below Level 2' and 'L2'**

|  | Achievers | Non-Achievers |
|---|---|---|
| **Below Level 2**[1] | 3,515,661 | 1,509,366 |
| English L1 | 103,974 | 52,957 |
| Maths L1 | 91,511 | 36,931 |
| English & Maths 1 | 55,576 | 43,415 |
| Entry Level English | 240,373 | 117,003 |
| Entry Level Maths | 149,259 | 73,314 |
| Other Level 1 | 2,329,534 | 957,473 |
| ESOL | 568,949 | 268,460 |
| **Level 2**[2] | 1,424,325 | 594,310 |
| English L2 | 171,629 | 57,788 |
| Maths L2 | 161,156 | 55,170 |
| English & Maths 2 | 82,022 | 39,087 |
| Other Level L2 | 1,469,929 | 609,019 |

[1] **Below Level 2** includes i) "Other Level 1"; ii) "English 1"; iii) "Maths 1"; iv) "English and Maths 1"; v) "Entry Level English"; vi) "Entry Level Maths"; vii) part of "ESOL".
[2] **Level 2** includes i) Other Level 2; ii) "English 2"; iii) "Maths 2"; iv) "English and Maths 2"; v) part of "ESOL".

More specifically we construct categories in the following way:

- **English L1:** all individuals who have a highest learning aim between 2004 and 2012, identified as *English L1* (with no accompanying Maths aim).
- **Maths L1:** all individuals with a highest learning aim between 2004 and 2012, identified as *Maths L1* (with no accompanying English aim).
- **English & Maths L1**[41]: all individuals with a highest learning aim between 2004 and 2012, identified as both *Maths L1* and *English L1*.

- **English L2:** all individuals who have a highest learning aim between 2004 and 2012, identified as *English L2* (with no accompanying Maths aim).
- **Maths L2:** all individuals with a highest learning aim between 2004 and 2012, identified as *Maths L2* (with no accompanying English aim).
- **English & Maths L2**: all individuals with a highest learning aim between 2004 and 2012, identified as both *Maths L2* and *English L2*.

- **Entry Level English**: all individuals with a highest learning aim between 2004 and 2012, which has English/Literacy in the aim title, but which is not recognized as L1 (or higher). Some, but not all, of these courses have 'entry level' in the title.
- **Entry Level Maths**: all individuals with a highest learning aim between 2004 and 2012, which has Maths/Numeracy in the aim title, but which is not recognized as L1 (or higher). Some, but not all, of these courses have 'entry level' in the title.

- **ESOL**: all individuals with a highest learning aim between 2004 and 2012, identified as either ESOL L1, L2 or Entry Level (with Entry Level making up over 80% of all ESOL spells).

- **Other Level 1** all individuals with a highest learning aim between 2004 and 2012, identified as L1, but not tackling issues of Maths/Numeracy or English/Literacy.
- **Other Level 2** individuals with a highest learning aim between 2004 and 2012, identified as L2, but not tackling issues of Maths/Numeracy or English/Literacy (a small percentage attend L2 courses which may have some relation to Maths or English aims, but the number is small).

## 4.1 Findings for Amalgamated Groups of Entry Level/L1/L2 English and/or Maths learning

In Section 4.2 we will disaggregate the categories of Maths and/or English learning to the point where we start to lose statistical significance in some areas, because of lower numbers. The following Tables 14 to 19 adopt more aggregated categorisations and underline the widespread and persistent nature of the statistically significant impacts for Maths and/or English learning at Entry, Level 1 and L2 when held as a highest learning aim.

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[41] We are looking at highest, 'latest' aim (within the wider highest aim categories of *L2* and *Below Level 2*). In this case, if an individual has a L1 English aim in 2004 and a L1 Maths aim in 2008, then they will feature as *L1 Maths* (not *L1 Maths and English*). Somebody would have to be doing L1 Maths and L2 English within the same academic year to be counted in the *L1 Maths and English* category, and this would have to be their highest/latest learning aim.

**Table 14: Daily earnings premium for English and/or Maths achievers[42], relative to non-achievers: within the *Below Level 2* and *L2* highest aim populations**

| | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| Achievement | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Entry Level/L1/L2 English and/or Maths** | 0.0498*** | 0.0534*** | 0.0539*** | 0.0537*** | **0.0537** |
| se | 0.0034 | 0.0040 | 0.0046 | 0.0052 | |
| N | 345432 | 226740 | 174704 | 134108 | |
| | | | | | |
| EL Eng and/or Maths | 0.0658*** | 0.0529*** | 0.0415*** | 0.0411*** | **0.0452** |
| se | 0.0062 | 0.0064 | 0.0068 | 0.0073 | |
| N | 107244 | 92296 | 80239 | 71756 | |
| | | | | | |
| L1 Eng and/or Maths | 0.0457*** | 0.0769*** | 0.0754*** | 0.0740** | **0.0754** |
| se | 0.0071 | 0.0111 | 0.0151 | 0.0276 | |
| N | 68536 | 26958 | 13808 | 3930 | |
| | | | | | |
| L2 Eng and/or Maths | 0.0196*** | 0.0293*** | 0.0527*** | 0.0600*** | **0.0473** |
| se | 0.0049 | 0.0059 | 0.0068 | 0.0079 | |
| N | 169652 | 107486 | 80657 | 58422 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 15: Employment Probability premiums for English and/or Maths achievers, relative to non-achievers: within *Below Level 2* and *L2* highest aim populations**

| | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
|---|---|---|---|---|---|---|
| Achievement | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Entry Level/L1/L2 English and/or Maths** | 0.0051*** | 0.0120*** | 0.0143*** | 0.0125*** | 0.0151*** | **0.0140** |
| se | 0.0005 | 0.0007 | 0.0009 | 0.0010 | 0.0012 | |
| N | 1369907 | 1245367 | 858668 | 673821 | 508628 | |
| | | | | | | |
| EL Eng and/or Maths | 0.0072*** | 0.0100*** | 0.0098*** | 0.0096*** | 0.0139*** | **0.0111** |
| se | 0.0008 | 0.0010 | 0.0013 | 0.0014 | 0.0015 | |
| N | 529261 | 499046 | 423061 | 366474 | 310205 | |
| | | | | | | |
| L1 Eng and/or Maths | -0.0011 | 0.0091*** | 0.0139*** | 0.0153*** | 0.0163*** | **0.0152** |
| se | 0.0010 | 0.0013 | 0.0020 | 0.0026 | 0.0038 | |
| N | 329635 | 284502 | 134872 | 81586 | 36222 | |
| | | | | | | |
| L2 Eng and/or Maths | 0.0060*** | 0.0129*** | 0.0163*** | 0.0145*** | 0.0179*** | **0.0162** |
| se | 0.0009 | 0.0012 | 0.0016 | 0.0019 | 0.0023 | |
| N | 511011 | 461819 | 300735 | 225761 | 162201 | |

*** Significant at the 0.1% level; ** 1% and * 5%

Tables 14, 16 and 17 provide robust evidence that, when taken as a highest learning aim, achievement of:

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[42] Tables 14 through to 19 present estimated returns for an amalgamated category of Entry Level/L1/L2 English and/or Maths that does not contain ESOL qualifications (and therefore neither do the Entry Level, L1 or L2 subdivisions in the same tables).

(i) *Entry Level English and/or Maths*, provides a three to five year average earnings return of 4.5%, that is slightly higher (5%) for those aged 19 to 24 and slightly lower (3.1%) for those aged 25+.

(ii) *Level 1 English and/or Maths*, provides a three to five year average earnings return of 7.5%, that is slightly higher (7.8%) for those aged 25+ and unclear for those aged 19 to 24, because of low numbers beyond the third year after learning.

(iii) *Level 2 English and/or Maths,* provides a three to five year earnings return of 4.7%, that is higher (8.5%) for those aged 19 to 24 and lower (3.8%) for those aged 25+.

**Table 16: Daily earnings premium for English and/or Maths achievers (aged 19-24), relative to non-achievers: within *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| --- | --- | --- | --- | --- | --- |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Entry Level/L1/L2 English and/or Maths** | 0.0496*** | 0.0760*** | 0.0586*** | 0.0796*** | **0.0714** |
| se | 0.0091 | 0.0111 | 0.0126 | 0.0143 | |
| N | 45791 | 29463 | 22629 | 17287 | |
| | | | | | |
| EL Eng and/or Maths | 0.0726*** | 0.0692*** | 0.0348 | 0.0449* | *0.0496* |
| se | 0.0170 | 0.0183 | 0.0198 | 0.0208 | |
| N | 13774 | 11195 | 9464 | 8392 | |
| | | | | | |
| L1 Eng and/or Maths | **0.0462**** | **0.0799**** | 0.0291 | 0.0352 | 0.0481 |
| se | 0.0182 | 0.0295 | 0.0401 | 0.0682 | |
| N | 10587 | 4238 | 2272 | 678 | |
| | | | | | |
| L2 Eng and/or Maths | 0.0220 | 0.0614*** | 0.0828*** | 0.1120*** | **0.0854** |
| se | 0.0137 | 0.0163 | 0.0184 | 0.0212 | |
| N | 21430 | 14030 | 10893 | 8217 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 17: Daily earnings premium for English and/or Maths achievers (aged 25+), relative to non-achievers: within the *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| --- | --- | --- | --- | --- | --- |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Entry Level/L1/L2 English and/or Maths** | 0.0400*** | 0.0479*** | 0.0480*** | 0.0424*** | **0.0461** |
| se | 0.0038 | 0.0046 | 0.0053 | 0.0062 | |
| N | 265194 | 170997 | 129873 | 98994 | |
| | | | | | |
| EL Eng and/or Maths | 0.0350*** | 0.0381*** | 0.0284*** | 0.0260** | **0.0309** |
| se | 0.0074 | 0.0076 | 0.0081 | 0.0085 | |
| N | 71599 | 64657 | 57120 | 52673 | |
| | | | | | |
| L1 Eng and/or Maths | 0.0462*** | 0.0748*** | 0.0834*** | 0.0742* | **0.0775** |
| se | 0.0078 | 0.0120 | 0.0163 | 0.0308 | |
| N | 57723 | 22625 | 11499 | 3248 | |
| | | | | | |
| L2 Eng and/or Maths | 0.0178** | 0.0276*** | 0.0430*** | 0.0444*** | **0.0383** |
| se | 0.0056 | 0.0068 | 0.0080 | 0.0094 | |
| N | 135872 | 83715 | 61254 | 43073 | |

*** Significant at the 0.1% level; ** 1% and * 5%

Tables 15, 18 and 19 provide robust evidence that, when taken as a highest learning aim, achievement of:

(i) *Entry Level English and/or Maths*, provides a three to five year average employment probability premium of 1.1 percentage points (ppt), that is slightly lower (1 ppt) for those aged 19 to 24 and slightly higher (1.5 ppt) for those aged 25+. If we take into account the absolute proportions in employment, these percentage point (ppt) differences translate into approximate percentage differences of 3.5%; 3.6% and 4.4% respectively.

(ii) *Level 1 English and/or Maths*, provides a three to five year average employment probability premium of 1.52 percentage points, that is slightly higher (1.67 ppt) for those aged 19 to 24 and slightly lower (1.49 ppt) for those aged 25+. If we take into account the absolute proportions in employment, these percentage point differences translate into approximate percentage differences of 5.4%; 6.7% and 4.8% respectively.

(iii) *Level 2 English and/or Maths,* provides a three to five year average employment probability premium of 1.62 ppt, that is higher (3.05 ppt) for those aged 19 to 24 and lower (2.31 ppt) for those aged 25+. If we take into account the absolute proportions in employment, these percentage point differences translate into approximate percentage differences of 4%; 8.5% and 5% respectively[43].

**Table 18: Employment Probability premiums for English and/or Maths achievers (aged 19-24), relative to non-achievers: within the *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Entry Level/L1/L2 English and/or Maths** | 0.0104*** | 0.0177*** | 0.0199*** | 0.0156*** | 0.0159*** | **0.0171** |
| se | 0.0014 | 0.0017 | 0.0022 | 0.0025 | 0.0030 | |
| N | 214054 | 192635 | 133270 | 104601 | 78535 | |
| | | | | | | |
| EL Eng and/or Maths | 0.0089*** | 0.0123*** | 0.0111*** | 0.0079* | 0.0110** | **0.0100** |
| se | 0.0024 | 0.0029 | 0.0033 | 0.0036 | 0.0040 | |
| N | 71836 | 68209 | 60200 | 52519 | 45086 | |
| | | | | | | |
| L1 Eng and/or Maths | 0.0060** | 0.0165*** | 0.0210*** | 0.0177** | 0.0113 | **0.0167** |
| se | 0.0023 | 0.0030 | 0.0045 | 0.0058 | 0.0087 | |
| N | 63178 | 54438 | 27404 | 17165 | 7686 | |
| | | | | | | |
| L2 Eng and/or Maths | 0.0145*** | 0.0223*** | 0.0320*** | 0.0289*** | 0.0307*** | **0.0305** |
| se | 0.0024 | 0.0030 | 0.0039 | 0.0046 | 0.0055 | |
| N | 79040 | 69988 | 45666 | 34917 | 25763 | |

*** Significant at the 0.1% level; ** 1% and * 5%

[43] Table 15 refers to the whole population; Table 17 to the 19-24 years olds and Table 19 to those aged 25+. There are many thousands of individuals who were younger than 19 when they started attending such qualifications (11% of the total population) and they have nil or negative results. This is why the returns to the total population are lower than the 19-24 and the 25+ age groups.

**Table 19: Employment Probability premiums for English and/or Maths achievers (aged 25+), relative to non-achievers: within the *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | 3-5 year average |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | |
| **Entry Level/L1/L2 English and/or Maths** | 0.0037*** | 0.0128*** | 0.0185*** | 0.0188*** | 0.0204*** | **0.0192** |
| se | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0013 | |
| N | 935798 | 843123 | 580909 | 455543 | 351378 | |
| | | | | | | |
| EL Eng and/or Maths | 0.0049*** | 0.0085*** | 0.0134*** | 0.0142*** | 0.0167*** | **0.0148** |
| se | 0.0010 | 0.0013 | 0.0015 | 0.0016 | 0.0017 | |
| N | 299170 | 281051 | 261228 | 234576 | 211251 | |
| | | | | | | |
| L1 Eng and/or Maths | -0.0028** | 0.0074*** | 0.0118*** | 0.0146*** | 0.0183*** | **0.0149** |
| se | 0.0011 | 0.0014 | 0.0022 | 0.0029 | 0.0043 | |
| N | 264953 | 228634 | 106785 | 63994 | 28390 | |
| | | | | | | |
| L2 Eng and/or Maths | 0.0058*** | 0.0155*** | 0.0223*** | 0.0228*** | 0.0241*** | **0.0231** |
| se | 0.0011 | 0.0013 | 0.0018 | 0.0022 | 0.0026 | |
| N | 371675 | 333438 | 212896 | 156973 | 111737 | |

*** Significant at the 0.1% level; ** 1% and * 5%

## 4.2 Disaggregated Entry Level/L1/L2 Maths and/or English returns

The following Tables 20 to 22 present the estimated earnings returns, employment premiums and differences in benefit outcomes, for disaggregations of the categories presented previously in Tables 14 to 19. As suggested previously, Tables 14 to 19 did not include ESOL learning, but in the following tables we separately estimate the returns for achievers in this form of learning. In Section 5.1 of the Appendix we adopt the same approach to estimation, but with some differentiation made between English and Maths learning as 'Key Skills' or 'Certificates'.

The first row of Table 20 presents the estimated return to achievement of qualifications *Below level 2*, for the population of learners for whom this is a highest learning aim. From the second to eighth row, Table 20 presents the estimated returns for subcategories of this *Below Level 2* group, as detailed in Table 13. From this, it is clear that the category *Other Level 1* dominates *Below Level 2*, accounting for just under a million of the 1.27m learners in this category. At just under 1%, the earnings return to *Other Level 1* is clearly an important factor dragging down the estimated return across all *Below Level 2* achievement, which is only 1.9% - though it should be remembered that these are mainly short courses.

However, across almost all the other subcategories of learner who are attempting some form of English and/or Maths qualification (approximately 300,000 learners), estimated returns are much higher (and in many cases statistically significant). Those achieving *English L1* secure a [3 to 5 year average] return of 6.6% over non-achievers, which is persistent and statistically significant across all five years. The return to *Maths L1* averages 6%, but we have much less evidence of statistical significance across all five

years. Those taking *L1 English & Maths* seem to secure a significant and substantial 12.3% 3 to 5 year average return, but this estimate should be considered with care as there is some concern over the variability in estimates over the five years after the end of learning, driven by low numbers from the third year onwards. In contrast, achievers of *Entry Level Maths* and *Entry Level English* exhibit returns of 3.4% and 5% respectively, that exhibit persistence and a level of statistical significance over the five years from the end of learning.

When considering the disaggregation of our *Level 2* category (in the second half of Table 20), we see a very similar picture. Considering all those with *L2* as their highest learning aim, we observe a [3 to 5 year] average earnings return of only 1.3%, with this low figure a result of the less-than-one-per cent return secured by 0.83 million *Other Level 2* achievers (who are taking short courses) make up over 80% of individuals in the L2 category. In contrast, *English L2* achievers secure a 7.4% return that is persistent and statistically significant; *Maths L2* secure a 3.8% return (even though we seem to suffer from the possible unobserved impact of progression to HE and associated PT working); and those achieving overlapping spells of *Maths & English L2*, achieve a 4.9% earnings return.

**Table 20: Daily earnings premiums for achievers V non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations[44]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | 3-5 year average |
|---|---|---|---|---|---|
| | 1st Year | 3rd Year | 4th Year | 5th Year | |
| **Below Level 2**[1] | 0.021*** | 0.020*** | 0.016*** | 0.020*** | **0.019** |
| se | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 1267057 | 1082101 | 971705 | 867255 | |
| | | | | | |
| English L1 | 0.063*** | 0.047** | 0.076*** | 0.075* | **0.066** |
| se | 0.010 | 0.015 | 0.020 | 0.038 | |
| N | 31288 | 13983 | 7580 | 2220 | |
| | | | | | |
| Maths L1 | 0.019 | 0.054* | 0.083** | 0.043 | *0.060* |
| se | 0.013 | 0.022 | 0.030 | 0.051 | |
| N | 21941 | 8128 | 4060 | 1165 | |
| | | | | | |
| English & Maths L1 | 0.062*** | 0.169*** | 0.074* | 0.127 | *0.123* |
| se | 0.015 | 0.026 | 0.037 | 0.079 | |
| N | 15307 | 4847 | 2168 | 545 | |
| | | | | | |
| Entry Level English | 0.065*** | 0.060*** | 0.043*** | 0.047*** | **0.050** |
| se | 0.008 | 0.008 | 0.009 | 0.009 | |
| N | 69160 | 60114 | 52960 | 48101 | |
| | | | | | |
| Entry Level Maths | 0.065*** | 0.040*** | 0.037** | 0.025* | **0.034** |
| se | 0.011 | 0.011 | 0.012 | 0.013 | |
| N | 38085 | 32182 | 27279 | 23655 | |
| | | | | | |
| Other Level 1 | 0.002 | 0.006** | 0.006** | 0.010*** | **0.007** |
| se | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 970310 | 891108 | 823149 | 752721 | |
| | | | | | |
| ESOL | 0.047*** | 0.052*** | 0.054*** | 0.078*** | **0.061** |

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[44] Tables 20 through to 22 estimate separately the returns for ESOL qualifications, which are not included in the Entry Level/L1/L2 Maths and/or English categories of learning for which results are also presented.

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| se | 0.005 | 0.007 | 0.008 | 0.009 | |
| N | 134414 | 80528 | 61671 | 44407 | |
| | | | | | |
| **Level L2**[2] | 0.004* | 0.007** | 0.013*** | 0.020*** | **0.013** |
| se | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 1014232 | 834832 | 728768 | 624172 | |
| | | | | | |
| English L2 | 0.050*** | 0.052*** | 0.076*** | 0.094*** | **0.074** |
| se | 0.008 | 0.010 | 0.012 | 0.015 | |
| N | 64562 | 39580 | 28940 | 20074 | |
| | | | | | |
| Maths L2 | -0.014 | 0.009 | 0.044*** | 0.061*** | *0.038* |
| se | 0.008 | 0.009 | 0.011 | 0.012 | |
| N | 69398 | 45801 | 35353 | 26632 | |
| | | | | | |
| English & Maths L2 | 0.033*** | 0.049*** | 0.061*** | 0.038* | **0.049** |
| se | 0.010 | 0.012 | 0.014 | 0.016 | |
| N | 35692 | 22105 | 16364 | 11716 | |
| | | | | | |
| Other Level 2 | 0.002 | 0.003 | 0.007*** | 0.014*** | *0.008* |
| se | 0.002 | 0.002 | 0.002 | 0.003 | |
| N | 831133 | 718557 | 640949 | 560191 | |

*** Significant at the 0.1% level; ** 1% and * 5%
[1] **Below Level 2** includes i) "Other Level 1"; ii) "English L1"; iii) "Maths L1"; iv) "English and Maths L1"; v) "Entry Level English"; vi) "Entry Level Maths"; vii) part of "ESOL".
[2] **Level 2** includes i) Other Level 2; ii) "English L2"; iii) "Maths L2"; iv) "English and Maths L2"; v) part of "ESOL".

This analysis identifies the heterogeneity of returns underpinning the less favourable average return estimated for those with a highest learning aim of 'Below Level 2' and 'L2' in BBCTU. Table 21 tells a similar story with respect to employment probability premiums. The negligible employment premium secured by *Below Level 2* achievers (0.3 of a percentage point) is driven by the 0.2 of a percentage point premium secured by *Other Level 1* achievers, whilst for Entry Level English, Level 1 English and those taking both L1 Maths and English, the estimated percentage point employment probability premium is closer to 2 percentage points (or approximately 5.5 to 6%). For Entry Level Maths, the estimates of an employment impact are less apparent, and for L1 Maths there is a suggestion that returns are in the region of 1 percentage point (or approximately 3.6%)

In the second part of Table 21 we can see a similar story, with the employment premium secured by achievers whose highest learning aim is L2 (0.9 of a percentage point) mainly driven by the 0.8 of a percentage point premium secured by *Other Level 2* achievers. In contrast, English Level 2 achievers secure a 2 percentage point [3 to 5 year average] premium; and for Maths Level 2 this is approximately 3 percentage points (translating into approximate 4.9% and 7.3% premiums, respectively). The almost negligible percentage point employment probability premium for ESOL suggests that this qualification is less valuable as a route to employment; though Table 20 suggested a 6.1% earnings return.

**Table 21: Employment probability premiums for achievers V non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1<sup>st</sup> Year | 3<sup>rd</sup> Year | 4<sup>th</sup> Year | 5<sup>th</sup> Year | 3-5 year average |
| **Below Level 2**[1] | 0.001* | 0.003*** | 0.003*** | 0.003*** | 0.002*** | **0.003** |
| se | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | |
| N | 4552576 | 4267432 | 3557423 | 3206386 | 2830580 | |
| | | | | | | |
| English L1 | 0.003 | 0.011*** | 0.014*** | 0.018*** | 0.019*** | **0.017** |
| se | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | |
| N | 136505 | 121395 | 66571 | 43667 | 20247 | |
| | | | | | | |
| Maths L1 | -0.007 | 0.005** | 0.013** | 0.010* | 0.017* | **0.013** |
| se | 0.002 | 0.002 | 0.004 | 0.005 | 0.008 | |
| N | 109533 | 90625 | 38234 | 21831 | 9504 | |
| | | | | | | |
| English & Maths L1 | -0.001 | 0.010*** | 0.015*** | 0.018** | 0.014 | ***0.016*** |
| se | 0.002 | 0.003 | 0.004 | 0.006 | 0.009 | |
| N | 83597 | 72482 | 30067 | 16088 | 6471 | |
| | | | | | | |
| Entry Level English | 0.009*** | 0.013*** | 0.015*** | 0.016*** | 0.019*** | **0.017** |
| se | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | |
| N | 333828 | 318959 | 280633 | 247793 | 214943 | |
| | | | | | | |
| Entry Level Maths | **0.003**** | **0.004*** | -0.002 | -0.004 | 0.003 | 0.000 |
| se | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | |
| N | 195486 | 180139 | 142480 | 118719 | 95294 | |
| | | | | | | |
| Other Level 1 | 0.001*** | 0.003*** | 0.003** | 0.002* | 0.002* | **0.002** |
| se | 0.000 | 0.000 | 0.001 | 0.001 | 0.001 | |
| N | 3011248 | 2835513 | 2488439 | 2317470 | 2116016 | |
| | | | | | | |
| ESOL | 0.000 | 0.000 | 0.001 | 0.002* | 0.002* | ***0.002*** |
| se | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | |
| N | 739288 | 703361 | 555786 | 480856 | 403334 | |
| | | | | | | |
| **Level 2**[2] | 0.006*** | 0.009*** | 0.010*** | 0.009*** | 0.009*** | **0.009** |
| se | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | |
| N | 2551545 | 2447313 | 2062837 | 1827613 | 1585151 | |
| | | | | | | |
| English L2 | 0.008*** | 0.016*** | 0.019*** | 0.019*** | 0.021*** | **0.020** |
| se | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 | |
| N | 208179 | 188043 | 123065 | 92601 | 64676 | |
| | | | | | | |
| Maths L2 | 0.009*** | 0.017*** | 0.025*** | 0.024*** | 0.028*** | **0.026** |
| se | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 | |
| N | 194594 | 176466 | 115746 | 87942 | 65761 | |
| | | | | | | |
| English & Maths L2 | 0.002 | 0.009** | 0.010*** | 0.007 | 0.010* | ***0.009*** |
| se | 0.002 | 0.003 | 0.003 | 0.004 | 0.005 | |
| N | 108238 | 97310 | 61924 | 45218 | 31764 | |
| | | | | | | |
| Other Level 2 | 0.006*** | 0.008*** | 0.008*** | 0.008*** | 0.007*** | **0.008** |
| se | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | |
| N | 1983678 | 1930504 | 1717367 | 1561852 | 1387753 | |

*** Significant at the 0.1% level; ** 1% and * 5%

Table 22 details the percentage point difference in the probability of observing achievers on active benefits, relative to the probability for non-achievers, in the tax years after learning. The analysis confirms the less favourable average return estimated for those with a highest learning aim of 'Below Level 2' and 'L2' in BBCTU; where achievers are, on average, only 0.3 and 0.6 of a percentage point less likely to be on benefits between 3 and 5 years after the end of learning. In the *Below Level 2* category, there is little evidence that estimates differ substantially from this 0.3 of a percentage point estimate, with *Entry Level English* and *Entry Level Maths* achievers securing a slightly higher premium, of 0.5 of a percentage point each. However, when we consider this as a percentage difference, it suggests that achievers are, on average, approximately 3.6% less likely to be observed on benefits in the three to five years after learning.

In the second half of Table 22, we have more evidence that estimates differ substantially from this 0.6 of a percentage point estimate (for *L2*), with *English Level 2*, *Maths Level 2* and *English & Maths L2* achievers securing slightly higher percentage point premiums, of - 1.3, -0.9 and -1.1 respectively. When we translate these into percentage differences, they suggests that achievers in these three areas are, on average, approximately 3.2%, 2.2% and 2.7% less likely to be observed on benefits in the three to five years after learning, respectively.

**Table 22: Estimated probability of Achievers being on *Active Benefits*, compared to non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|---|
| **Below Level 2**[1] | 0.009*** | 0.000 | -0.003*** | -0.002*** | -0.003*** | **-0.003** |
| se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| N | 2812179 | 2752281 | 2348343 | 2129937 | 1910728 | |
| | | | | | | |
| English L1 | **0.017***** | -0.002 | -0.003 | **-0.008*** | -0.008 | -0.006 |
| se | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | |
| N | 82295 | 78010 | 41161 | 26626 | 12207 | |
| | | | | | | |
| Maths L1 | **0.055***** | **0.013***** | -0.001 | 0.005 | 0.003 | N/A |
| se | 0.003 | 0.003 | 0.005 | 0.006 | 0.009 | |
| N | 65466 | 61325 | 24616 | 13622 | 5581 | |
| | | | | | | |
| English & Maths L1 | **0.016***** | -0.005 | 0.000 | -0.008 | -0.003 | N/A |
| se | 0.004 | 0.004 | 0.005 | 0.007 | 0.010 | |
| N | 56045 | 52724 | 19208 | 9746 | 3660 | |
| | | | | | | |
| Entry Level English | 0.010*** | 0.004* | -0.006*** | -0.004*** | -0.005*** | **-0.005** |
| se | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | |
| N | 194131 | 190391 | 171243 | 151253 | 135771 | |
| | | | | | | |
| Entry Level Maths | 0.017*** | 0.004 | -0.007* | -0.003 | -0.006* | ***-0.005*** |
| se | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | |
| N | 99033 | 95888 | 83470 | 69025 | 59441 | |
| | | | | | | |
| Other Level 1 | 0.003*** | -0.002*** | -0.004*** | -0.003*** | -0.003*** | **-0.003** |
| se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| N | 1985589 | 1954828 | 1771372 | 1659921 | 1534056 | |
| | | | | | | |
| ESOL | **0.008***** | 0.002* | -0.001 | **-0.002*** | -0.001 | -0.001 |
| se | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | |

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| N | 360731 | 349484 | 261271 | 220916 | 178250 | |
| **Level 2**[2] | 0.005*** | -0.003*** | -0.005*** | -0.006*** | -0.006*** | **-0.006** |
| se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| N | 1818030 | 1790282 | 1524264 | 1352928 | 1180996 | |
| English L2 | 0.012*** | -0.005** | -0.013*** | -0.013*** | -0.014*** | **-0.013** |
| se | 0.002 | 0.002 | 0.002 | 0.003 | 0.003 | |
| N | 134901 | 128946 | 85438 | 63769 | 45367 | |
| Maths L2 | 0.015*** | -0.002 | -0.007*** | -0.010*** | -0.010*** | **-0.009** |
| se | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 129742 | 124463 | 83216 | 63127 | 47925 | |
| English & Num. L2 | 0.007* | -0.006* | -0.012*** | -0.012*** | -0.008* | **-0.011** |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | |
| N | 72840 | 69074 | 44018 | 32070 | 23411 | |
| Other Level 2 | 0.003*** | -0.003*** | -0.005*** | -0.005*** | -0.005*** | **-0.005** |
| se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | |
| N | 1449451 | 1437444 | 1287608 | 1172799 | 1046059 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

## 4.3 L1/L2 Maths and/or English as routes to further FE learning

The following Tables 23 to 26 present the results of our cohort analysis, providing insight into the value of FE learning as a route to continued learning in FE. As discussed elsewhere, one should consider these results alongside the work of Smith et al (2015)[45] who map moves from FE to HE learning. As with the work of Smith et. al. (2015), this is a descriptive analysis and when comparing the proportions of achievers and non-achievers engaged in FE learning, following achievement or non-achievement, there is no attempt to control for systematic differences between the two groups (in contrast to the previous sections of this report, where regression analysis attempts to do just that).

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[45] https://www.gov.uk/government/publications/progression-of-further-education-students-to-higher-education
https://www.gov.uk/government/publications/progression-of-apprentices-to-higher-education-second-cohort

**Table 23: Proportion of L1 English and/or Maths Achievers and Non-achievers[46] (aged 19 to 24) progressing into continued FE learning**

| Cohort Year | | Population | % into any L1/L2 FE learn 2007 | % into any L1/L2 FE learn 2008 | % into any L1/L2 FE learn 2009 | % into any L1/L2 FE learn 2010 | % into any L1/L2 FE learn 2011 | Total Number into any L1/L2 | Total % into any L1/L2 |
|---|---|---|---|---|---|---|---|---|---|
| 2006 | Achievers | 3041 | 23.4 | 10.2 | 7.2 | 5.9 | 2.9 | 1022 | 33.6 |
| | Non-Achievers | 1602 | 14.0 | 11.9 | 9.8 | 8.0 | 5.2 | 452 | 28.2 |
| 2007 | Achievers | 11142 | | 17.0 | 10.8 | 8.0 | 4.7 | 2907 | 26.1 |
| | Non-Achievers | 4894 | | 11.9 | 9.0 | 7.8 | 4.9 | 1063 | 21.7 |
| 2008 | Achievers | 13263 | | | 16.4 | 10.0 | 5.9 | 3010 | 22.7 |
| | Non-Achievers | 4934 | | | 13.0 | 9.3 | 5.9 | 951 | 19.3 |
| 2009 | Achievers | 15112 | | | | 16.1 | 8.2 | 2858 | 18.9 |
| | Non-Achievers | 6631 | | | | 11.2 | 7.3 | 965 | 14.6 |
| 2010 | Achievers | 15449 | | | | | 16.1 | 2488 | 16.1 |
| | Non-Achievers | 7959 | | | | | 10.0 | 798 | 10.0 |

| Cohort Year | | Population | % into any FL2+ FE learn 2007 | % into any FL2+ FE learn 2008 | % into any FL2+ FE learn 2009 | % into any FL2+ FE learn 2010 | % into any FL2+ FE learn 2011 | Total Number into any FL2+ FE learn | Total % into any FL2+ FE learn |
|---|---|---|---|---|---|---|---|---|---|
| 2006 | Achievers | 3041 | 5.8 | 7.5 | 8.2 | 7.6 | 4.6 | 506 | 16.6 |
| | Non-Achievers | 1602 | 4.1 | 6.4 | 6.7 | 6.9 | 4.8 | 221 | 13.8 |
| 2007 | Achievers | 11142 | | 7.5 | 8.7 | 8.0 | 5.5 | 1723 | 15.5 |
| | Non-Achievers | 4894 | | 5.5 | 6.2 | 6.5 | 4.6 | 601 | 12.3 |
| 2008 | Achievers | 13263 | | | 9.4 | 10.0 | 6.5 | 2018 | 15.2 |
| | Non-Achievers | 4934 | | | 5.0 | 6.1 | 4.2 | 440 | 8.9 |
| 2009 | Achievers | 15112 | | | | 11.3 | 8.5 | 2032 | 13.4 |
| | Non-Achievers | 6631 | | | | 6.1 | 5.4 | 531 | 8.0 |
| 2010 | Achievers | 15449 | | | | | 6.9 | 1071 | 6.9 |
| | Non-Achievers | 7959 | | | | | 4.7 | 370 | 4.6 |

The first row of Table 23 follows the cohort of learners (aged 19 to 24) who, in the 2006 academic year, have a learning aim of *L1 English and/or Maths*, which is their highest learning aim up to that date. In 2006 the suggestion is that there were 3,041 learners who achieved *L1 English and/or Maths*, which was their highest FE learning aim to that date; and 1,602 who did not. In 2007, we observe 23.4% of these Achievers in some form of *Level 1 and/or Level 2 FE learning*, compared to 14.0% of the 1,602 non-achievers. In 2008 the figures are 10.2% and 11.9% respectively; and the final columns tell us that out of the original 3,041 achievers, we observe 1,022 in some form of FE learning between 2008 and 2011 (translating into 33.6% of the original cohort of achievers) and 452 non-achievers (28.2%).

The remainder of the first half of Table 23 shows the results of the same analysis for cohorts of (19 to 24 year old) *L1 English and/or Maths* Achievers and Non-achievers between 2007 and 2010. Considering only the final column, the suggestion is that in each cohort, achievers are more likely to be observed in subsequent L1/L2 FE learning across all the years considered. The second half of Table 23 carries out a similar analysis of *L1 English and/or Maths* Achievers and Non-achievers, but this time tracking the proportions observed in subsequent learning at Full Level 2 or above (FL2+). Here we see a similar picture, with achievers being much more likely to be observed in subsequent FL2+ learning than non-achievers, across all of our cohorts.

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[46] Tables 23 to 26 do not included ESOL qualifications in the relevant English and/or Maths categories of learner. ESOL learning is included as an outcome "any L1/L2 FE learning". However, we should have very few ESOL learners in this outcome category, as we are considering the subset of individuals who previously studied the version of Maths and/or English for native speakers.

**Table 24: Proportion of L1 English and/or Maths Achievers and Non-achievers (aged 25+) progressing into continued FE learning**

| Cohort Year | | Population | % into any L1/L2 FE learn 2007 | % into any L1/L2 FE learn 2008 | % into any L1/L2 FE learn 2009 | % into any L1/L2 FE learn 2010 | % into any L1/L2 FE learn 2011 | Total Number into any L1/L2 | Total % into any L1/L2 |
|---|---|---|---|---|---|---|---|---|---|
| 2006 | Achievers | 9606 | 32.9 | 13.5 | 9.2 | 6.3 | 3.6 | 3997 | 41.6 |
| 2006 | Non-Achievers | 4353 | 15.8 | 11.5 | 9.0 | 7.1 | 4.4 | 1184 | 27.2 |
| 2007 | Achievers | 42447 | | 21.4 | 12.7 | 8.8 | 5.5 | 12566 | 29.6 |
| 2007 | Non-Achievers | 15589 | | 12.7 | 9.9 | 7.2 | 4.5 | 3289 | 21.1 |
| 2008 | Achievers | 51085 | | | 21.4 | 11.9 | 6.9 | 13829 | 27.1 |
| 2008 | Non-Achievers | 17074 | | | 12.5 | 8.8 | 5.6 | 3109 | 18.2 |
| 2009 | Achievers | 62899 | | | | 18.4 | 9.2 | 13290 | 21.1 |
| 2009 | Non-Achievers | 22148 | | | | 10.6 | 6.5 | 2923 | 13.2 |
| 2010 | Achievers | 66819 | | | | | 17.3 | 11586 | 17.3 |
| 2010 | Non-Achievers | 25679 | | | | | 8.9 | 2289 | 8.9 |

| Cohort Year | | Population | % into any FL2+ FE learn 2007 | % into any FL2+ FE learn 2008 | % into any FL2+ FE learn 2009 | % into any FL2+ FE learn 2010 | % into any FL2+ FE learn 2011 | Total Number into any FL2+ FE learn | Total % into any FL2+ FE learn |
|---|---|---|---|---|---|---|---|---|---|
| 2006 | Achievers | 9606 | 4.6 | 7.1 | 7.4 | 6.1 | 3.7 | 1438 | 15.0 |
| 2006 | Non-Achievers | 4353 | 3.0 | 5.4 | 5.6 | 5.6 | 3.6 | 505 | 11.6 |
| 2007 | Achievers | 42447 | | 6.3 | 7.8 | 6.9 | 4.3 | 5780 | 13.6 |
| 2007 | Non-Achievers | 15589 | | 4.6 | 5.5 | 4.8 | 3.1 | 1545 | 9.9 |
| 2008 | Achievers | 51085 | | | 7.6 | 7.7 | 5.1 | 6324 | 12.4 |
| 2008 | Non-Achievers | 17074 | | | 4.9 | 5.2 | 3.3 | 1408 | 8.2 |
| 2009 | Achievers | 62899 | | | | 7.9 | 5.6 | 6093 | 9.7 |
| 2009 | Non-Achievers | 22148 | | | | 4.8 | 3.6 | 1301 | 5.9 |
| 2010 | Achievers | 66819 | | | | | 5.3 | 3507 | 5.2 |
| 2010 | Non-Achievers | 25679 | | | | | 3.2 | 823 | 3.2 |

Table 24 carries out the same analysis as Table 23, but this time for cohorts of learners aged 25+ who have a learning aim of *L1 English and/or Maths*, which is their highest learning aim up to the date from which we track them. Again, considering only the final column, the suggestion is that in each cohort, achievers are more likely to be observed in subsequent (i) L1/L2 and (ii) FL2+ FE learning across all the years considered, when compared to non-achievers. This is very similar to the pattern seen amongst 19 to 24 year olds, but the differentials are (almost everywhere) more pronounced. For instance, in Table 23 those aged 19-24 who achieve *L1 English and/or Maths* in 2006 are 5.4 percentage points more likely to be observed in subsequent L1/L2 FE learning between 2008 and 2011 – for the equivalent cohort aged 25+ in Table 24, the percentage point difference is 14.4.

Table 25 describes the proportions of *L2 English and/or Maths* Achievers and Non-achievers (aged 19 to 24) who are observed in subsequent FE learning at (i) L1/L2 or (ii) FL2+ in the years after learning. Here we have a change in the pattern of findings, compared to those for achievers and non-achievers at *L1 English and/or Maths*. For all but the most recent cohorts, achievers are less likely to be observed in continued FE learning than non-achievers. Without information on subsequent Secondary School Sixth Form, and/or HE, learning, it is hard to determine whether this is due to a high proportion of (i) non-achievers re-taking qualifications in subsequent years and/or (ii) achievers being more likely to continue their learning elsewhere in the education system.

**Table 25: Proportion of L2 English and/or Maths Achievers and Non-achievers (aged 19 to 24) progressing into continued FE learning**

| Cohort Year | | Population | % into any L1/L2 FE learn 2004 | % into any L1/L2 FE learn 2005 | % into any L1/L2 FE learn 2006 | % into any L1/L2 FE learn 2007 | % into any L1/L2 FE learn 2008 | % into any L1/L2 FE learn 2009 | % into any L1/L2 FE learn 2010 | % into any L1/L2 FE learn 2011 | Total Number into any L1/L2 | Total % into any L1/L2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | Achieve | 3302 | 8.6 | 8.8 | 6.7 | 5.0 | 4.1 | 3.7 | 2.7 | 1.3 | 761 | 23.0 |
| | Non-Achieve | 3802 | 8.9 | 8.4 | 7.1 | 6.0 | 5.4 | 5.1 | 4.3 | 2.6 | 1018 | 26.8 |
| 2004 | Achieve | 4881 | | 10.0 | 8.1 | 6.0 | 4.9 | 4.5 | 3.7 | 2.1 | 1130 | 23.2 |
| | Non-Achieve | 3236 | | 9.9 | 7.9 | 7.2 | 5.9 | 5.5 | 3.9 | 2.4 | 782 | 24.2 |
| 2005 | Achieve | 7653 | | | 9.9 | 6.5 | 5.4 | 4.7 | 3.9 | 2.3 | 1534 | 20.0 |
| | Non-Achieve | 3273 | | | 9.0 | 7.7 | 6.4 | 6.6 | 5.2 | 3.0 | 765 | 23.4 |
| 2006 | Achieve | 10406 | | | | 9.7 | 6.4 | 5.0 | 3.9 | 2.3 | 1875 | 18.0 |
| | Non-Achieve | 3955 | | | | 9.0 | 8.4 | 7.0 | 5.7 | 3.6 | 824 | 20.8 |
| 2007 | Achieve | 12796 | | | | | 10.4 | 6.6 | 4.3 | 2.5 | 2115 | 16.5 |
| | Non-Achieve | 5248 | | | | | 9.3 | 8.0 | 6.1 | 3.4 | 955 | 18.2 |
| 2008 | Achieve | 13756 | | | | | | 10.7 | 5.8 | 3.1 | 2033 | 14.8 |
| | Non-Achieve | 4960 | | | | | | 10.1 | 7.1 | 4.0 | 755 | 15.2 |
| 2009 | Achieve | 16334 | | | | | | | 8.6 | 3.9 | 1673 | 10.2 |
| | Non-Achieve | 5370 | | | | | | | 8.4 | 5.1 | 579 | 10.8 |
| 2010 | Achieve | 17067 | | | | | | | | 8.5 | 1456 | 8.5 |
| | Non-Achieve | 5192 | | | | | | | | 7.2 | 374 | 7.2 |

| Cohort Year | | Population | % into any FL2+ FE learn 2004 | % into any FL2+ FE learn 2005 | % into any FL2+ FE learn 2006 | % into any FL2+ FE learn 2007 | % into any FL2+ FE learn 2008 | % into any FL2+ FE learn 2009 | % into any FL2+ FE learn 2010 | % into any FL2+ FE learn 2011 | Total Number into any FL2+ FE learn | Total % into any FL2+ FE learn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | Achieve | 3302 | 10.0 | 12.8 | 11.5 | 10.2 | 10.5 | 9.7 | 7.4 | 5.1 | 994 | 30.1 |
| | Non-Achieve | 3802 | 12.4 | 13.3 | 12.2 | 11.1 | 11.8 | 11.5 | 10.3 | 6.7 | 1332 | 35.0 |
| 2004 | Achieve | 4881 | | 8.8 | 11.7 | 11.3 | 10.6 | 10.4 | 8.9 | 6.1 | 1327 | 27.2 |
| | Non-Achieve | 3236 | | 10.7 | 11.8 | 12.2 | 12.3 | 12.2 | 10.9 | 7.1 | 1034 | 32.0 |
| 2005 | Achieve | 7653 | | | 9.2 | 11.2 | 11.0 | 11.3 | 9.9 | 6.7 | 1988 | 26.0 |
| | Non-Achieve | 3273 | | | 9.8 | 12.7 | 13.4 | 13.5 | 11.7 | 7.9 | 993 | 30.3 |
| 2006 | Achieve | 10406 | | | | 9.9 | 11.9 | 11.6 | 10.2 | 6.8 | 2461 | 23.6 |
| | Non-Achieve | 3955 | | | | 9.2 | 11.7 | 12.6 | 11.7 | 7.8 | 996 | 25.2 |
| 2007 | Achieve | 12796 | | | | | 10.9 | 12.6 | 11.5 | 7.3 | 2745 | 21.5 |
| | Non-Achieve | 5248 | | | | | 9.5 | 12.7 | 12.4 | 8.0 | 1130 | 21.5 |
| 2008 | Achieve | 13756 | | | | | | 13.5 | 14.9 | 9.9 | 2941 | 21.4 |
| | Non-Achieve | 4960 | | | | | | 11.4 | 13.2 | 8.9 | 933 | 18.8 |
| 2009 | Achieve | 16334 | | | | | | | 16.9 | 13.0 | 3211 | 19.7 |
| | Non-Achieve | 5370 | | | | | | | 11.6 | 9.3 | 769 | 14.3 |
| 2010 | Achieve | 17067 | | | | | | | | 12.5 | 2127 | 12.5 |
| | Non-Achieve | 5192 | | | | | | | | 8.4 | 438 | 8.4 |

Considering the findings from Table 26, the opposite seems to be true for *L2 English and/or Maths* Achievers and Non-achievers aged 25+. Apart from the very earliest cohorts, achievers are more likely to be observed in continued FE learning than non-achievers. Once again it is not clear exactly why this is happening. We may perhaps expect that those aged 25+ achieving *L2 English and/or Maths* are less likely to move on to learning elsewhere in the education system than those aged 19 to 24, and this might explain the difference. However, it is also possible that non-achievers aged 25+ are less likely to be observed re-taking in subsequent years.

# Table 26: Proportion of L2 English and/or Maths Achievers and Non-achievers (aged 25+) progressing into continued FE learning

| Cohort Year | | Population | % into any L1/L2 FE learn 2004 | % into any L1/L2 FE learn 2005 | % into any L1/L2 FE learn 2006 | % into any L1/L2 FE learn 2007 | % into any L1/L2 FE learn 2008 | % into any L1/L2 FE learn 2009 | % into any L1/L2 FE learn 2010 | % into any L1/L2 FE learn 2011 | Total Number into any L1/L2 | Total % into any L1/L2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | Achieve | 8076 | 16.3 | 13.5 | 9.2 | 7.0 | 5.7 | 4.6 | 3.4 | 2.1 | 2613 | 32.4 |
| | Non-Achieve | 5280 | 14.1 | 13.8 | 10.0 | 7.9 | 7.2 | 6.5 | 5.0 | 3.3 | 1787 | 33.8 |
| 2004 | Achieve | 20379 | | 17.1 | 10.9 | 7.9 | 6.5 | 5.4 | 3.8 | 2.3 | 6133 | 30.1 |
| | Non-Achieve | 6287 | | 13.3 | 11.1 | 8.4 | 7.4 | 6.3 | 5.1 | 3.0 | 1827 | 29.1 |
| 2005 | Achieve | 39821 | | | 15.1 | 9.2 | 6.9 | 5.3 | 3.7 | 2.2 | 10203 | 25.6 |
| | Non-Achieve | 7672 | | | 11.7 | 9.2 | 7.3 | 6.2 | 4.9 | 3.0 | 1887 | 24.6 |
| 2006 | Achieve | 49241 | | | | 14.3 | 8.8 | 6.3 | 4.3 | 2.5 | 11339 | 23.0 |
| | Non-Achieve | 9681 | | | | 11.8 | 9.1 | 7.3 | 5.4 | 3.4 | 2139 | 22.1 |
| 2007 | Achieve | 55456 | | | | | 15.0 | 8.5 | 5.2 | 2.9 | 11936 | 21.5 |
| | Non-Achieve | 13611 | | | | | 11.1 | 8.4 | 5.6 | 3.2 | 2566 | 18.9 |
| 2008 | Achieve | 58941 | | | | | | 14.3 | 6.6 | 3.5 | 10835 | 18.4 |
| | Non-Achieve | 12986 | | | | | | 10.6 | 7.3 | 3.9 | 2018 | 15.5 |
| 2009 | Achieve | 69657 | | | | | | | 10.4 | 4.4 | 8539 | 12.3 |
| | Non-Achieve | 13581 | | | | | | | 7.8 | 4.5 | 1353 | 10.0 |
| 2010 | Achieve | 68041 | | | | | | | | 9.3 | 6357 | 9.3 |
| | Non-Achieve | 12332 | | | | | | | | 6.5 | 805 | 6.5 |

| Cohort Year | | Population | % into any FL2+ FE learn 2004 | % into any FL2+ FE learn 2005 | % into any FL2+ FE learn 2006 | % into any FL2+ FE learn 2007 | % into any FL2+ FE learn 2008 | % into any FL2+ FE learn 2009 | % into any FL2+ FE learn 2010 | % into any FL2+ FE learn 2011 | Total Number into any FL2+ FE learn | Total % into any FL2+ FE learn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | Achieve | 8076 | 7.5 | 8.6 | 7.6 | 7.2 | 7.4 | 7.1 | 6.2 | 4.1 | 1873 | 23.2 |
| | Non-Achieve | 5280 | 6.6 | 8.2 | 7.5 | 7.9 | 8.3 | 8.9 | 7.8 | 4.6 | 1314 | 24.9 |
| 2004 | Achieve | 20379 | | 7.2 | 8.2 | 7.9 | 8.0 | 7.8 | 6.8 | 4.8 | 4577 | 22.5 |
| | Non-Achieve | 6287 | | 5.7 | 7.0 | 7.2 | 8.1 | 8.6 | 7.3 | 4.9 | 1377 | 21.9 |
| 2005 | Achieve | 39821 | | | 6.6 | 8.0 | 8.4 | 8.2 | 7.3 | 4.8 | 8169 | 20.5 |
| | Non-Achieve | 7672 | | | 5.1 | 7.2 | 8.2 | 8.7 | 7.4 | 5.1 | 1476 | 19.2 |
| 2006 | Achieve | 49241 | | | | 7.7 | 9.5 | 9.6 | 8.2 | 5.3 | 9851 | 20.0 |
| | Non-Achieve | 9681 | | | | 5.7 | 8.1 | 9.0 | 8.0 | 4.8 | 1675 | 17.3 |
| 2007 | Achieve | 55456 | | | | | 8.9 | 10.3 | 9.3 | 5.8 | 10235 | 18.5 |
| | Non-Achieve | 13611 | | | | | 7.2 | 8.7 | 8.1 | 4.9 | 2094 | 15.4 |
| 2008 | Achieve | 58941 | | | | | | 10.8 | 11.1 | 6.9 | 10171 | 17.3 |
| | Non-Achieve | 12986 | | | | | | 7.6 | 8.4 | 5.6 | 1697 | 13.1 |
| 2009 | Achieve | 69657 | | | | | | | 11.9 | 8.3 | 10048 | 14.4 |
| | Non-Achieve | 13581 | | | | | | | 7.7 | 5.9 | 1302 | 9.6 |
| 2010 | Achieve | 68041 | | | | | | | | 9.6 | 6501 | 9.6 |
| | Non-Achieve | 12332 | | | | | | | | 5.5 | 673 | 5.5 |

# 5. Conclusion

In this report we have presented results from an analysis of labour market returns for individuals achieving qualifications at 'Below Level 2' and 'Level 2' in English Further Education. Using the 2002-2012 ILR-WPLS administrative dataset we estimate separately the (i) earnings, (ii) employment probability and (iii) probability of being on active benefits, for those who achieve their learning aim whilst studying at an English Further Education Institution (FEI), relative to those who have the same learning aim, but do not achieve; with a focus on this estimate of value added for those achieving Entry-level; Level 1 and/or Level 2 Maths and/or English qualifications.

## Maths and/or English as Complementary Learning

First, we have considered the value of learning at Level 2 and below, which takes place alongside higher learning aims. Many individuals take Maths and/or English qualifications at L1 and L2 as forms of 'complementary learning'. We investigate *L1/L2 Maths and/or English* achiever V non-achiever comparisons, for populations of individuals achieving higher learning aims.

- We find that achievement of *L1/L2 English and/or Maths* learning produces statistically significant earnings returns of 4.2% amongst a population of FL2 achievers and 5.1% amongst a population of Level 4+ achievers. Amongst populations of L3 and FL3 achievers the estimated returns (of 3.1% and 1.2% respectively) likely understate the true value added, because of the problems we have capturing progression to HE and part-time working.
- Similarly, our findings of mostly insignificant, or even negative, employment returns may result from limitations of the data in identifying moves to Higher Education and/or part-time working. Although, it is also possible that achievement of the higher learning aim may be more important in determining whether an individual secures employment; and the additional *L1/L2 Maths and/or English* achievement allows the individual to secure a higher earnings return, when in employment
- Our analysis by Sector pushes the data to its limits and in many areas we do not have sufficient numbers to identify significant impacts. However, we do identify statistically significant 3 to 5 year average earnings returns for *Level 2 English and/or Maths Achievers,* who achieve FL2 qualifications in the areas of *Hospitality and Catering* (5.3%); *Hair and beauty* (5.2%); *Admin and secretarial* (4.2%); and *Customer Service* (6.8%).

## Maths and English as a Highest Learning Aim

Our analysis of returns for individuals who have a highest learning aim of either (i) Below Level 2 or (ii) L2, identifies statistically significant 3 to 5 year average earnings and employment returns for those achieving *Entry-level/L1/L2 Maths and/or English*.

- Achievers of *Entry Level English and/or Maths* as a highest FE learning aim, secure earnings returns that vary from 5% [for 19 to 24 year olds], to 3.1% [for those aged 25+]. Employment probability returns are 1 ppt and 1.5 ppt respectively for these two age groups.

- Achievers of *Level 1 English* secure a 6.6% earnings return*,* whilst the figure for *Level 1 Maths* achievers is 6% [and for those aged 25+ achieving *L1 English and/or Maths* it is 7.8%]. Employment returns for achievers of *L1 English and/or Maths* are 1.7 ppt for those aged 19 to 24, and 1.5 ppt for those aged 25+.
- Those achieving *L2 English and/or Maths* as a highest FE learning aim, secure earnings returns that vary from 8.5% [for 19 to 24 year olds] to 3.8% [for those aged 25+]; whilst employment returns are 3.1 ppt and 2.3 ppt respectively.

Alongside the statistically significant earnings and employment returns for Maths and English learning at Entry Level, L1 and L2; the *Other Level 1* and *Other Level 2* categories secure less positive returns. These 'Other' categories account for the vast majority of *Below L2* and *Thin L2* learning, often referred to as "foundation learning" or "employability learning". Though within these remaining categories, there is likely to be further substantial heterogeneity of returns.

## L1/L2 Maths and/or English as routes to further FE learning

We give some idea of the value that L1/L2 Maths and/or English qualifications have as a route to higher qualifications within FE, identifying cohorts of learners and then tracking the subsequent proportions in (i) L1/L2 and (ii) FL2+ FE learning.

- For our cohorts of learners who have a learning aim of *L1 English and/or Maths* [which is their highest learning aim up to the date from which we track them], we find that achievers (of all ages) are more likely to be observed in subsequent (i) L1/L2 and (ii) FL2+ FE learning across all the years considered, when compared to non-achievers.
- Considering the proportions of *L2 English and/or Maths* Achievers and Non-achievers who are observed in subsequent FE learning at (i) L1/L2 or (ii) FL2+ in the years after learning, we have a change in the pattern of findings for 19 to 24 year olds. For all but the most recent cohorts, achievers aged 19 to 24 are less likely to be observed in continued FE learning than non-achievers.
- The opposite seems to be true for *L2 English and/or Maths* Achievers and Non-achievers aged 25+. Apart from the very earliest cohorts, achievers are more likely to be observed in continued FE learning than non-achievers.

## Recommendations

Readers are encouraged to consider the tables within the report, as in many areas where we cannot present 3 to 5 year averages, we do identify statistical significance of impacts in the first years after learning. We are tying ourselves to a very rigorous criteria for what constitutes evidence of 'impact'. The suggestion that statistical significance must be observed over many years and also that in each year it must be relatively stable, is more than most studies can achieve. Similarly, first year impacts apply across a number of cohorts of learners, as we observe a first year of earnings, employment and benefits information for all cohorts.

However, even without this more detailed review of the evidence in this report, we have robust evidence that Entry Level/Level 1/Level 2 Maths and/or English achievement in FE provides significant value added, in terms of earnings returns and reductions in the probability that individuals will be observed on active benefits, in the years after learning.

In addition, when considering the returns for individuals who hold these Entry Level/Level 1/Level 2 Maths and/or English qualifications as a highest learning aim, we identify significant employment probability premiums.

There a number of issues that this study raises that need to be considered going forward:

- Across much of our study, unobservable moves to Higher Education and/or other forms of non-FE learning/training are likely placing limits on our analysis. Without information on Secondary School Sixth Form attendances, and/or HE, learning, it is hard to determine whether some of our findings are correct or a result of these limitations. In coming months it should be possible to clarify some of these issues.
- When we consider the estimation of labour market returns to L1/L2 Maths and/or English achievement, within wider populations of higher level achievers (for instance FL2 and FL3) it is possible that,
    - We may identify stronger returns to these forms of complementary learning in areas where the achievement of FL2/FL3 provides less of a return. One can imagine that achievement of a FL3 in some sectors provides such a strong boost to employment and earnings prospects, that any accompanying L1/L2 Maths and/or English achievement becomes less significant. The opposite may also apply and this may be something that offsets the argument that we may see stronger Maths and/or English returns in areas where FL2/FL3 are more 'technical' in nature. Unfortunately we do not have the numbers to provide 3 to 5 year averages in more technical sector subject areas to answer this question.
    - There is some minor change in the nature of our approach, because non-achievers in this context are less easily labelled as 'drop-outs'. However, comparing those who achieve with those who do not achieve, in a context where FL2 or FL3 has been achieved, draws on the same argument (that Maths and/or English non-achievement is essentially random, driven by variations in quality of teaching across institutions).

Any future study would ideally introduce more data from HESA identifying (i) the specific destination of FE learners who move on to HE and (ii) the drop-out rate of these learners. In this report we are concentrating on earnings, employment and active benefit outcomes, but for many FE learners, HE is an important and valuable outcome. However, even with the data limitations, we are able to present compelling evidence that Entry Level, Level 1 and Level 2 Maths and/or English learning in FE provides significant value added for those who achieve their learning aims.

# 5. Appendix

## 5.1 L1/L2 Numeracy and/or Literacy Certificates and Key Skills

The following tables present returns for Literacy and Numeracy qualifications, when differentiated according to whether they are 'Key Skills' or 'Certificates'. They are essentially 'alternative' categorisations of the Maths and English results presented in Tables 3 to 8, Section 3.1; i.e. when taken alongside higher learning aims.

**Table 27: Returns to daily earnings for L1/L2 Literacy and/or Numeracy[47] achievers [for a population of FL2 achievers]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Only Literacy Key Skills** | 0.029*** | 0.027** | 0.040*** | 0.039*** | **0.035** |
| se | 0.007 | 0.008 | 0.009 | 0.010 | |
| N | 50977 | 33750 | 27828 | 22284 | |
| **Only Numeracy Key Skills** | 0.018 | 0.016 | 0.016 | 0.018 | 0.000 |
| se | 0.010 | 0.014 | 0.016 | 0.019 | |
| N | 22779 | 12024 | 8926 | 6289 | |
| **Lit. and Num. Key Skills[48]** | 0.060*** | 0.047*** | 0.066*** | 0.066*** | **0.060** |
| se | 0.008 | 0.011 | 0.013 | 0.015 | |
| N | 77255 | 28273 | 18990 | 11541 | |
| **Only Literacy Certificate** | **0.035*** | 0.021 | 0.039 | 0.001 | N/A |
| se | 0.010 | 0.016 | 0.025 | 0.037 | |
| N | 24389 | 8853 | 4175 | 1611 | |
| **Only Numeracy Cert.** | **0.030* | 0.024 | 0.027 | 0.004 | N/A |
| se | 0.013 | 0.022 | 0.033 | 0.048 | |
| N | 15577 | 4629 | 2189 | 875 | |
| **Lit. and Num. Cert.** | 0.023 | 0.068* | 0.094* | 0.090 | 0.084 |
| se | 0.017 | 0.032 | 0.047 | 0.070 | |
| N | 16869 | 3924 | 1537 | 524 | |

*** Significant at the 0.1% level; ** 1% and * 5%

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[47] Tables 27 through to 34 do not include ESOL learning in the categories of English and/or Maths learning.
[48] Our category of **Only Literacy Key Skills** in Tables 27 to 30 contains all those learners who have a English Key Skills aim overlapping a FL2 spell (but no overlapping Maths aim); whilst the **Lit. and Num. Key Skills** category includes all those who have English L1 <u>and</u> Maths L1 Key Skill aims overlapping a FL2 spell (the same applies to the **Lit. and Num. Cert.** category). As a result, each category of learner is mutually exclusive and no learner can appear in more than one category.

Whilst we must be careful in interpretation, across Tables 27 to 30 we only observe 3 to 5 year average earnings returns for individuals taking 'Only Literacy Key Skills' amongst the FL2 achiever population (3.5%) and to a lesser extent the FL3 achiever population (1.5%). Some of the lack of statistical significance in other populations could be due to lower numbers, especially in later years. In contrast, we observe statistically significant, systematic and substantial earnings returns to those achieving *Literacy and Numeracy Key Skills* across the board – with the one exception at L4+ being solely due to low numbers.

Amongst the population of FL2 achievers, those achieving a Literacy/Numeracy Key skill qualification secure a 6 per cent 3 to 5 year average return; amongst the population of L3 achievers the figure is 8.4% and at FL3 3.7%. The extension of BBCTU's original analysis tends to confirm the original findings, that there is evidence of an earnings return to those achieving Literacy and Numeracy Key Skills at L1/L2 amongst populations of learners achieving higher learning aims; but little else is statistically significant, other than some evidence of impact for those taking *Only the Numeracy Certificate* amongst the population of FL3 achievers.

**Table 28: Returns to daily earnings for subgroups of L1/L2 Literacy and/or Numeracy achievers [for population of L3 achievers]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Only Literacy Key Skills** | 0.007 | 0.021 | 0.010 | 0.002 | 0.000 |
| se | 0.015 | 0.016 | 0.017 | 0.019 | |
| N | 13699 | 10200 | 8352 | 6440 | |
| **Only Numeracy Key Skills** | 0.028 | 0.042 | 0.037 | **0.085\*\*** | 0.055 |
| se | 0.021 | 0.024 | 0.025 | 0.027 | |
| N | 6646 | 5323 | 4720 | 3932 | |
| **Lit. and Num. Key Skills** | 0.046* | 0.086*** | 0.065** | 0.101*** | **0.084** |
| se | 0.023 | 0.023 | 0.024 | 0.027 | |
| N | 6472 | 4835 | 4023 | 3267 | |
| **Only Literacy Certificate** | -0.027 | 0.041 | 0.028 | 0.075 | 0.000 |
| se | 0.026 | 0.033 | 0.037 | 0.043 | |
| N | 5803 | 3622 | 2561 | 1733 | |
| **Only Numeracy Cert.** | -0.042 | **0.069\*** | -0.009 | 0.034 | 0.031 |
| se | 0.027 | 0.033 | 0.036 | 0.044 | |
| N | 4767 | 2979 | 2266 | 1568 | |
| **Lit. and Num. Cert.** | 0.009 | 0.051 | 0.060 | 0.149* | 0.087 |
| se | 0.049 | 0.063 | 0.069 | 0.071 | |
| N | 3641 | 1986 | 1348 | 883 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 29: Returns to daily earnings for subgroups of L1/L2 Literacy and/or Numeracy achievers [for population of FL3 achievers]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **Only Literacy Key Skills** | -0.010* | 0.012* | 0.020** | 0.014* | **0.015** |
| se | 0.005 | 0.005 | 0.006 | 0.007 | |
| N | 130984 | 85566 | 65618 | 46924 | |
| **Only Numeracy Key Skills** | -0.006 | 0.009 | **0.026*** | 0.011 | 0.015 |
| se | 0.006 | 0.007 | 0.007 | 0.008 | |
| N | 78032 | 54314 | 44061 | 33324 | |
| **Lit. and Num. Key Skills** | 0.037*** | 0.033*** | 0.044*** | 0.033*** | **0.037** |
| se | 0.005 | 0.006 | 0.007 | 0.008 | |
| N | 157318 | 85878 | 61821 | 39127 | |
| **Only Literacy Certificate** | -0.011 | -0.007 | 0.015 | 0.022 | N/A |
| se | 0.012 | 0.018 | 0.023 | 0.029 | |
| N | 20607 | 8956 | 5455 | 3014 | |
| **Only Numeracy Cert.** | -0.049*** | 0.007 | 0.055** | 0.073** | *0.045* |
| se | 0.013 | 0.017 | 0.021 | 0.027 | |
| N | 20411 | 9204 | 5882 | 3174 | |
| **Lit. and Num. Cert.** | **-0.051*** | -0.004 | -0.005 | 0.035 | N/A |
| se | 0.022 | 0.033 | 0.043 | 0.057 | |
| N | 13163 | 4374 | 2431 | 1215 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 30: Returns to daily earnings for subgroups of L1/L2 Literacy and/or Numeracy achievers [for population of L4+ achievers]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **Only Literacy Key Skills** | 0.002 | 0.018 | 0.006 | 0.063 | N/A |
| se | 0.024 | 0.031 | 0.039 | 0.053 | |
| N | 4040 | 2236 | 1423 | 802 | |
| **Only Numeracy Key Skills** | 0.036 | 0.067 | 0.024 | -0.036 | N/A |
| se | 0.035 | 0.041 | 0.046 | 0.073 | |
| N | 1962 | 1304 | 947 | 552 | |
| **Lit. and Num. Key Skills** | 0.010 | 0.061 | 0.073 | -0.024 | N/A |
| se | 0.033 | 0.040 | 0.047 | 0.068 | |
| N | 2452 | 1417 | 950 | 524 | |

| | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| Achievement | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Only Literacy Certificate** | -0.005 | 0.023 | -0.047 | 0.050 | N/A |
| se | 0.039 | 0.051 | 0.067 | 0.089 | |
| N | 2736 | 1431 | 935 | 525 | |
| | | | | | |
| **Only Numeracy Cert.** | 0.005 | -0.023 | 0.040 | -0.043 | N/A |
| se | 0.035 | 0.047 | 0.059 | 0.086 | |
| N | 2904 | 1356 | 844 | 437 | |
| | | | | | |
| **Lit. and Num. Cert.** | -0.062 | -0.016 | 0.098 | 0.176 | N/A |
| se | 0.065 | 0.081 | 0.137 | 0.301 | |
| N | 2665 | 1151 | 723 | 342 | |

*** Significant at the 0.1% level; ** 1% and * 5%

## 5.2 L1/L2 English and/or Maths learners in Populations of FL2 or FL3 achievers

**Table 31: Numbers with learning aims in L1/L2 English and/or Maths[49] amongst the population of FL2 achievers, by sector subject category**

| | English and Maths L1 | English and Maths L2 | English L1 | Maths L1 | English L2 | Maths L2 | Total |
|---|---|---|---|---|---|---|---|
| Health care + Nursing and medicine | 2,031 | 1,442 | 576 | 291 | 2,698 | 1,038 | 8,076 |
| Public services, law, justice | 2,077 | 2,081 | 421 | 267 | 3,305 | 1,201 | 9,352 |
| Child development and wellbeing + Adult social care | 22,433 | 8,317 | 4,836 | 2,404 | 15,227 | 4,173 | 57,390 |
| Science and mathematics (non-SFL) | 89 | 2,727 | 30 | 44 | 614 | 1,037 | 4,541 |
| Agriculture, Horticulture and Animal Care | 3,028 | 1,536 | 690 | 450 | 2,367 | 835 | 8,906 |
| Engineering and manufacturing | 11,697 | 10,747 | 1,366 | 963 | 4,284 | 5,153 | 34,210 |
| Transportation | 6,415 | 5,975 | 1,842 | 1,044 | 3,613 | 2,803 | 21,692 |
| Construction | 9,809 | 17,821 | 1,412 | 2,004 | 6,119 | 7,661 | 44,826 |
| Information & Communication Technology | 5,611 | 16,931 | 2,034 | 1,969 | 12,389 | 8,309 | 47,243 |
| Retailing and Wholesaling | 27,563 | 2,019 | 1,548 | 921 | 1,689 | 699 | 34,439 |
| Warehousing and Distribution | 8,301 | 2,469 | 636 | 480 | 1,557 | 811 | 14,254 |
| Hospitality and Catering + Hair and beauty | 27,664 | 9,462 | 5,365 | 2,904 | 29,000 | 5,280 | 79,675 |
| Leisure, Travel and Tourism | 5,799 | 3,310 | 586 | 469 | 5,834 | 1,742 | 17,740 |
| Performing Arts | 237 | 789 | 237 | 64 | 2,544 | 444 | 4,315 |
| Crafts, Creative Arts and Design | 276 | 977 | 264 | 62 | 2,273 | 657 | 4,509 |
| Creative Media | 95 | 1,082 | 139 | 27 | 2,223 | 563 | 4,129 |
| Supporting Teaching & Learning in Schools | 533 | 2,803 | 471 | 637 | 2,883 | 1,764 | 9,091 |
| Foundations for Learning and Life | 877 | 1,410 | 274 | 236 | 1,285 | 528 | 4,610 |
| Preparation for Work | 48 | 172 | 89 | 37 | 238 | 124 | 708 |
| Accounting and Finance | 130 | 1,253 | 103 | 79 | 1,270 | 354 | 3,189 |
| Admin/ secretarial | 2,220 | 5,079 | 658 | 868 | 24,922 | 1,527 | 35,274 |
| Business studies + Management, recruitment, personnel | 5,897 | 4,976 | 1,353 | 813 | 14,672 | 2,392 | 30,103 |
| Customer service | 29,709 | 3,658 | 3,097 | 1,587 | 6,179 | 1,589 | 45,819 |
| Fashion & Textiles | 55 | 14 | 85 | 32 | 29 | 5 | 220 |

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[49] L1/L2 English and Maths categories include all those who have English *and* Maths aim overlapping a FL2/FL3 spell. As a result, each category of learner is mutually exclusive and no learner can appear in more than one category. ESOL are not included in Tables 31 and 32.

**Table 32: Numbers with learning aims in L1/L2 English and/or Maths amongst the population of FL3 achievers, by sector subject category**

| | English and Maths L1 | English and Maths L2 | English L1 | Maths L1 | English L2 | Maths L2 | Total |
|---|---|---|---|---|---|---|---|
| Health care + Nursing and medicine | 586 | 15,462 | 559 | 740 | 7,813 | 9,679 | 34,839 |
| Public services, law, justice | 67 | 9,201 | 118 | 91 | 11,095 | 5,912 | 26,484 |
| Child development and wellbeing + Adult social care | 2,520 | 76,810 | 2,555 | 1,770 | 28,204 | 23,714 | 135,573 |
| Science and mathematics (non-SFL) | 107 | 9,465 | 112 | 112 | 10,965 | 7,741 | 28,502 |
| Agriculture, Horticulture and Animal Care | 120 | 13,591 | 181 | 161 | 7,676 | 4,164 | 25,893 |
| Engineering and manufacturing | 306 | 44,795 | 106 | 105 | 6,780 | 5,401 | 57,493 |
| Transportation | 280 | 21,350 | 159 | 181 | 1,945 | 1,596 | 25,511 |
| Construction | 510 | 32,119 | 195 | 246 | 4,954 | 4,358 | 42,382 |
| Information & Communication Technology | 290 | 42,060 | 327 | 324 | 17,227 | 10,198 | 70,426 |
| Retailing and Wholesaling | 44 | 5,275 | 21 | 20 | 307 | 471 | 6,138 |
| Warehousing and Distribution | 27 | 1,801 | 26 | 12 | 158 | 203 | 2,227 |
| Hospitality and Catering + Hair and beauty | 1,282 | 41,754 | 1,818 | 1,157 | 29,751 | 11,680 | 87,442 |
| Leisure, Travel and Tourism | 125 | 25,201 | 215 | 128 | 17,380 | 10,343 | 53,392 |
| Performing Arts | 178 | 12,016 | 397 | 189 | 23,507 | 6,296 | 42,583 |
| Crafts, Creative Arts and Design | 225 | 14,738 | 604 | 225 | 31,652 | 9,322 | 56,766 |
| Creative Media | 73 | 10,701 | 170 | 121 | 14,413 | 8,581 | 34,059 |
| Supporting Teaching & Learning in Schools | 164 | 5,121 | 177 | 373 | 1,908 | 2,390 | 10,133 |
| Foundations for Learning and Life | 123 | 1,577 | 28 | 115 | 1,973 | 2,969 | 6,785 |
| Preparation for Work | 23 | 2,410 | 49 | 166 | 1,427 | 2,097 | 6,172 |
| Accounting and Finance | 103 | 4,565 | 115 | 83 | 1,971 | 1,284 | 8,121 |
| Admin/ secretatial | 103 | 15,871 | 125 | 134 | 2,523 | 6,123 | 24,879 |
| Business studies + Management, recruitment, personnel | 253 | 34,225 | 310 | 303 | 15,509 | 10,952 | 61,552 |
| Customer service | 145 | 17,169 | 71 | 72 | 780 | 2,711 | 20,948 |
| Fashion & Textiles | 4 | 1,305 | 18 | 6 | 1,666 | 435 | 3,434 |

## Table 33: Raw employment and benefit proportions for Entry-level/L1/L2 achievers and non-achievers within populations of FL2 and FL3 achievers

| Numeracy and Literacy held together with a FL2/FL3 qualification by Sector | Proportion with at least 1 day in employment in the 12 months after the end of a learning spell | Proportion on active benefits on the date 12 months after the end of a learning spell |
|---|---|---|
| Numeracy/Literacy Level 1 - Adult Social Care FL2 Achievers population *(Achievers)* | 84% | 4% |
| Numeracy/Literacy Level 1 - Adult Social Care FL2 Achievers population *(Non-Achievers)* | 81% | 5% |
| Numeracy/Literacy Level 1 - Retailing and Wholesaling FL2 Achievers population *(Achievers)* | 87% | 4% |
| Numeracy/Literacy Level 1 - Retailing and Wholesaling FL2 Achievers population *(Non-Achievers)* | 86% | 4% |
| Numeracy/Literacy Level 1 - Hospitality and Catering FL2 Achievers population *(Achievers)* | 81% | 4% |
| Numeracy/Literacy Level 1 - Hospitality and Catering FL2 Achievers population *(Non-Achievers)* | 75% | 8% |
| Numeracy/Literacy Level 1 - Customer service FL2 Achievers population *(Achievers)* | 84% | 4% |
| Numeracy/Literacy Level 1 - Customer service FL2 Achievers population *(Non-Achievers)* | 80% | 7% |
| Numeracy/Literacy Level 2 - Adult Social Care FL2 Achievers population *(Achievers)* | 77% | 4% |
| Numeracy/Literacy Level 2 - Adult Social Care FL2 Achievers population *(Non-Achievers)* | 71% | 7% |
| Numeracy/Literacy Level 2 - Engineering and manufacturing FL2 Achievers population *(Achievers)* | 68% | 7% |
| Numeracy/Literacy Level 2 - Engineering and manufacturing FL2 Achievers population *(Non-Achievers)* | 65% | 11% |
| Numeracy/Literacy Level 2 - ICT Achievers FL2 population *(Achievers)* | 54% | 12% |
| Numeracy/Literacy Level 2 - ICT Achievers FL2 population *(Non-Achievers)* | 49% | 17% |
| Numeracy/Literacy Level 2 - Retailing and Wholesaling FL2 Achievers population *(Achievers)* | 86% | 4% |
| Numeracy/Literacy Level 2 - Retailing and Wholesaling FL2 Achievers population *(Non-Achievers)* | 85% | 5% |
| Numeracy/Literacy Level 2 - Hospitality and Catering FL2 Achievers population *(Achievers)* | 77% | 5% |
| Numeracy/Literacy Level 2 - Hospitality and Catering FL2 Achievers population *(Non-Achievers)* | 73% | 7% |
| Numeracy/Literacy Level 2 - Hair and Beauty FL2 Achievers population *(Achievers)* | 58% | 8% |
| Numeracy/Literacy Level 2 - Hair and Beauty FL2 Achievers population *(Non-Achievers)* | 54% | 10% |
| Numeracy/Literacy Level 2 - Admin/secretarial FL2 Achievers population *(Achievers)* | 75% | 7% |
| Numeracy/Literacy Level 2 - Admin/secretarial FL2 Achievers population *(Non-Achievers)* | 67% | 10% |
| Numeracy/Literacy Level 2 - Customer service FL2 Achievers population *(Achievers)* | 83% | 4% |
| Numeracy/Literacy Level 2 - Customer service FL2 Achievers population *(Non-Achievers)* | 79% | 7% |
| Numeracy/Literacy Level 2 - Child development & wellbeing FL3 Achievers population *(Achievers)* | 75% | 3% |
| Numeracy/Literacy Level 2 - Child development & wellbeing FL3 Achievers population *(Non-Achievers)* | 76% | 4% |
| Numeracy/Literacy Level 2 - Adult Social Care FL3 Achievers population *(Achievers)* | 71% | 3% |
| Numeracy/Literacy Level 2 - Adult Social Care FL3 Achievers population *(Non-Achievers)* | 74% | 4% |
| Numeracy/Literacy Level 2 - ICT FL3 Achievers population *(Achievers)* | 56% | 8% |
| Numeracy/Literacy Level 2 - ICT FL3 Achievers population *(Non-Achievers)* | 59% | 9% |
| Numeracy/Literacy Level 2 - Hair and Beauty FL3 Achievers population *(Achievers)* | 71% | 5% |
| Numeracy/Literacy Level 2 - Hair and Beauty FL3 Achievers population *(Non-Achievers)* | 70% | 7% |
| Numeracy/Literacy Level 2 - Leisure, Travel and Tourism FL3 Achievers population *(Achievers)* | 70% | 4% |
| Numeracy/Literacy Level 2 - Leisure, Travel and Tourism FL3 Achievers population *(Non-Achievers)* | 71% | 6% |
| Numeracy/Literacy Level 2 - Performing Arts FL3 Achievers population *(Achievers)* | 63% | 7% |
| Numeracy/Literacy Level 2 - Performing Arts FL3 Achievers population *(Non-Achievers)* | 65% | 8% |
| Numeracy/Literacy Level 2 - Crafts, Creative Arts and Design FL3 Achievers population *(Achievers)* | 59% | 5% |
| Numeracy/Literacy Level 2 - Crafts, Creative Arts and Design FL3 Achievers population *(Non-Achievers)* | 60% | 7% |
| Numeracy/Literacy Level 2 - Creative Media FL3 Achievers population *(Achievers)* | 60% | 7% |
| Numeracy/Literacy Level 2 - Creative Media FL3 Achievers population *(Non-Achievers)* | 63% | 6% |
| Numeracy/Literacy Level 2 - Business studies FL3 Achievers population *(Achievers)* | 60% | 5% |
| Numeracy/Literacy Level 2 - Business studies FL3 Achievers population *(Non-Achievers)* | 62% | 5% |

## 5.3 Entry Level/L1/L2 Maths and/or English returns, within Below Level 2 and L2 highest aim populations, by age

**Table 34: Raw employment and benefit proportions for Entry-level/L1/L2 achievers and non-achievers with highest learning aims in English and/or Maths**

| Numeracy and Literacy held as highest learning aims (i.e. within *Below Level 2* and *L2* categories) | Proportion with at least 1 day in employment in the 12 months after the end of a learning spell | Proportion on active benefits on the date 12 months after the end of a learning spell |
|---|---|---|
| Entry Level Numeracy/Literacy 19-24 *(Achievers)* | 29% | 15% |
| Entry Level Numeracy/Literacy 19-24 *(Non-Achievers)* | 28% | 19% |
| Entry Level Numeracy/Literacy 25+ *(Achievers)* | 35% | 6% |
| Entry Level Numeracy/Literacy 25+ *(Non-Achievers)* | 34% | 9% |
| Numeracy/Literacy Level 1 19-24 *(Achievers)* | 31% | 19% |
| Numeracy/Literacy Level 1 19-24 *(Non-Achievers)* | 25% | 24% |
| Numeracy/Literacy Level 1 25+ *(Achievers)* | 37% | 15% |
| Numeracy/Literacy Level 1 25+ *(Non-Achievers)* | 31% | 19% |
| Numeracy/Literacy Level 2 19-24 *(Achievers)* | 44% | 12% |
| Numeracy/Literacy Level 2 19-24 *(Non-Achievers)* | 36% | 15% |
| Numeracy/Literacy Level 2 25+ *(Achievers)* | 54% | 7% |
| Numeracy/Literacy Level 2 25+ *(Non-Achievers)* | 46% | 10% |

**Table 35: Daily earnings premiums for achievers V non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations[50] (aged 19-24)**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **Below Level 2** | 0.0419*** | 0.0534*** | 0.0465*** | 0.0557*** | **0.0519** |
| se | 0.0054 | 0.0059 | 0.0061 | 0.0065 | |
| N | 137421 | 108143 | 95021 | 82940 | |
| | | | | | |
| English L1 | 0.038 | 0.0608 | -0.0271 | 0.1239 | N/A |
| se | 0.0288 | 0.0437 | 0.0571 | 0.1116 | |
| N | 4379 | 1972 | 1071 | 337 | |
| | | | | | |
| Maths L1 | 0.0619 | 0.0441 | 0.0994 | N/A | N/A |
| se | 0.0347 | 0.0551 | 0.0815 | N/A | |
| N | 3367 | 1339 | 730 | 219 | |
| | | | | | |
| English & Maths L1 | 0.0565 | **0.1857**** | 0.0855 | N/A | N/A |
| se | 0.0345 | 0.0662 | 0.089 | N/A | |
| N | 2841 | 927 | 471 | 122 | |
| | | | | | |
| Entry Level English | **0.0716**** | **0.0692**** | 0.0159 | 0.0317 | 0.0389 |
| se | 0.0217 | 0.0234 | 0.0257 | 0.0265 | |
| N | 8358 | 6798 | 5800 | 5220 | |
| | | | | | |
| Entry Level Maths | 0.0685* | 0.0640* | 0.0637* | 0.0553 | *0.0610* |
| se | 0.0278 | 0.0297 | 0.0319 | 0.0338 | |
| N | 5416 | 4397 | 3664 | 3172 | |
| | | | | | |
| Other Level 1 | 0.0349*** | 0.0453*** | 0.0461*** | 0.0520*** | **0.0478** |
| se | 0.0071 | 0.0072 | 0.0071 | 0.0075 | |
| N | 87049 | 77480 | 71762 | 65723 | |
| | | | | | |
| ESOL | 0.0459*** | 0.0464** | 0.0462** | 0.0608** | **0.0511** |
| se | 0.0113 | 0.0142 | 0.016 | 0.0187 | |
| N | 28904 | 17125 | 13016 | 9275 | |
| | | | | | |
| **Level L2** | 0.0258*** | 0.0428*** | 0.0492*** | 0.0638*** | **0.0519** |
| se | 0.0059 | 0.006 | 0.0062 | 0.0064 | |
| N | 113783 | 95153 | 84738 | 73774 | |
| | | | | | |
| English L2 | 0.0576* | 0.1225*** | 0.1184*** | 0.1412*** | **0.1274** |
| Se | 0.0233 | 0.0294 | 0.0348 | 0.0404 | |
| N | 8150 | 4948 | 3689 | 2627 | |
| | | | | | |
| Maths L2 | -0.043 | 0.0241 | 0.0907** | 0.1371*** | *0.0840* |
| Se | 0.022 | 0.0249 | 0.0279 | 0.032 | |
| N | 9274 | 6617 | 5292 | 4179 | |
| | | | | | |
| English & Maths L2 | 0.0564 | 0.0318 | 0.0381 | 0.0480 | N/A |
| se | 0.0296 | 0.0363 | 0.0393 | 0.0445 | |
| N | 4006 | 2465 | 1912 | 1411 | |
| | | | | | |
| Other Level L2 | 0.0301*** | 0.0396*** | 0.0433*** | 0.0563*** | **0.0464** |
| se | 0.0066 | 0.0065 | 0.0066 | 0.0068 | |
| N | 89460 | 79228 | 72352 | 64429 | |

*** Significant at the 0.1% level; ** 1% and * 5%

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[50] Tables 35 through to 40 estimate separately returns for ESOL qualifications, which are not included in the Entry Level/L1/L2 Maths and/or English categories of learning for which results are also presented.

**Table 36: Estimated employment probability premium for achievers V non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations (aged 19-24)**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
|---|---|---|---|---|---|---|
| | 3<sup>rd</sup> Month | 1<sup>st</sup> Year | 3<sup>rd</sup> Year | 4<sup>th</sup> Year | 5<sup>th</sup> Year | 3-5 year average |
| **Below Level 2** | 0.0002 | 0.0026* | 0.0029* | 0.0032* | 0.0025 | *0.0029* |
| se | 0.0009 | 0.001 | 0.0012 | 0.0013 | 0.0014 | |
| N | 606925 | 560326 | 456830 | 404271 | 348930 | |
| English 1 | 0.0053 | 0.0133** | 0.0179** | 0.0173* | 0.0110 | *0.0154* |
| se | 0.0037 | 0.0047 | 0.0065 | 0.0082 | 0.0123 | |
| N | 24332 | 21686 | 12760 | 8495 | 3962 | |
| Maths 1 | 0.0016 | 0.0127* | 0.0322*** | 0.0265* | 0.0304 | *0.0297* |
| se | 0.0039 | 0.0055 | 0.0087 | 0.0118 | 0.018 | |
| N | 20348 | 16694 | 7659 | 4644 | 2009 | |
| English & Maths 1 | 0.0081 | **0.0185***** | 0.0110 | 0.0051 | -0.0108 | N/A |
| se | 0.0044 | 0.0059 | 0.0090 | 0.0117 | 0.0178 | |
| N | 18498 | 16058 | 6985 | 4026 | 1715 | |
| Entry Level English | 0.0087** | 0.0109** | 0.0116** | 0.0121** | 0.0166*** | **0.0134** |
| se | 0.0031 | 0.0037 | 0.0042 | 0.0045 | 0.0049 | |
| N | 46150 | 44144 | 39465 | 34887 | 30295 | |
| Entry Level Maths | **0.0089*** | **0.0151**** | 0.0103 | 0.0003 | 0.0003 | 0.000 |
| se | 0.0041 | 0.005 | 0.0056 | 0.0062 | 0.0069 | |
| N | 25687 | 24066 | 20736 | 17633 | 14792 | |
| Other Level 1 | 0.001 | 0.0048** | 0.0067*** | 0.0078*** | 0.0073*** | **0.0073** |
| se | 0.0012 | 0.0015 | 0.0017 | 0.0018 | 0.0019 | |
| N | 325859 | 296862 | 252506 | 231792 | 209033 | |
| ESOL | **-0.0036*** | **-0.0079***** | **-0.0076**** | -0.0047 | -0.0039 | -0.0054 |
| se | 0.0018 | 0.002 | 0.0024 | 0.0026 | 0.0028 | |
| N | 160932 | 155306 | 128965 | 113902 | 97061 | |
| **Level 2** | 0.0116*** | 0.0145*** | 0.0172*** | 0.0156*** | 0.0160*** | **0.0163** |
| se | 0.0013 | 0.0014 | 0.0016 | 0.0018 | 0.0019 | |
| N | 336756 | 316557 | 263714 | 234948 | 205839 | |
| English 2 | 0.0143*** | 0.0237*** | 0.0325*** | 0.0316*** | 0.0303*** | **0.0315** |
| se | 0.0039 | 0.0047 | 0.0062 | 0.0074 | 0.0091 | |
| N | 32707 | 29176 | 19131 | 14563 | 10381 | |
| Maths 2 | 0.014*** | 0.0206*** | 0.0342*** | 0.0301*** | 0.0365*** | **0.0336** |
| se | 0.0039 | 0.0047 | 0.0064 | 0.0076 | 0.0089 | |
| N | 30821 | 27383 | 18149 | 14148 | 10839 | |
| English & Maths 2 | 0.0161** | 0.0258*** | 0.0333*** | 0.0291** | 0.0322** | **0.0315** |
| se | 0.0054 | 0.0067 | 0.0089 | 0.0105 | 0.0125 | |
| N | 15512 | 13429 | 8386 | 6206 | 4543 | |
| Other Level 2 | 0.0119*** | 0.0137*** | 0.0154*** | 0.0140*** | 0.0139*** | **0.0144** |
| se | 0.0015 | 0.0017 | 0.0018 | 0.002 | 0.002 | |
| N | 242836 | 232080 | 205803 | 188924 | 170140 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 37: Estimated probability of Achievers being on Active Benefits, compared to non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations (aged 19-24)**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
|---|---|---|---|---|---|---|
| | 3<sup>rd</sup> Month | 1<sup>st</sup> Year | 3<sup>rd</sup> Year | 4<sup>th</sup> Year | 5<sup>th</sup> Year | 3-5 year average |
| **Below Level 2** | **0.0077***** | **-0.0033**** | -0.0019 | -0.0005 | 0.0001 | 0.000 |
| se | 0.0013 | 0.0012 | 0.0011 | 0.0011 | 0.0012 | |
| N | 316346 | 306706 | 247464 | 220012 | 191138 | |
| | | | | | | |
| English 1 | 0.007 | -0.0112 | -0.0038 | -0.0029 | 0.0227 | N/A |
| se | 0.0073 | 0.0071 | 0.0089 | 0.0108 | 0.0139 | |
| N | 12105 | 11469 | 6379 | 4215 | 1938 | |
| | | | | | | |
| Maths 1 | **0.0287**** | -0.0017 | -0.0106 | -0.0019 | 0.0219 | N/A |
| se | 0.0092 | 0.0093 | 0.014 | 0.0184 | 0.0259 | |
| N | 10229 | 9444 | 4050 | 2409 | 987 | |
| | | | | | | |
| English & Maths 1 | 0.004 | -0.0084 | 0.0037 | -0.0058 | -0.0204 | N/A |
| se | 0.0085 | 0.0085 | 0.0124 | 0.0164 | 0.0241 | |
| N | 11159 | 10413 | 3892 | 2164 | 852 | |
| | | | | | | |
| Entry Level English | **0.0104*** | 0.0005 | -0.0075 | -0.0020 | -0.0026 | 0.000 |
| se | 0.0051 | 0.005 | 0.0048 | 0.0049 | 0.0051 | |
| N | 24669 | 24240 | 21184 | 18486 | 16108 | |
| | | | | | | |
| Entry Level Maths | 0.0046 | -0.0076 | -0.0014 | -0.0079 | 0.0013 | 0.000 |
| se | 0.0074 | 0.0072 | 0.007 | 0.0074 | 0.0078 | |
| N | 14207 | 13764 | 11678 | 9752 | 8248 | |
| | | | | | | |
| Other Level 1 | 0.003 | **-0.006***** | **-0.0038*** | -0.0023 | -0.0020 | -0.0014 |
| se | 0.0017 | 0.0016 | 0.0015 | 0.0015 | 0.0015 | |
| N | 181231 | 175729 | 150785 | 139945 | 127784 | |
| | | | | | | |
| ESOL | -0.0001 | -0.0002 | -0.0010 | -0.0015 | -0.0013 | 0.000 |
| se | 0.0016 | 0.0014 | 0.0012 | 0.0013 | 0.0014 | |
| N | 69313 | 68117 | 54959 | 47969 | 39554 | |
| | | | | | | |
| **Level 2** | 0.0031* | -0.0034** | -0.0061*** | -0.0042** | -0.0072*** | **-0.0058** |
| se | 0.0014 | 0.0013 | 0.0012 | 0.0013 | 0.0013 | |
| N | 209055 | 204836 | 172474 | 155422 | 137098 | |
| | | | | | | |
| English 2 | 0.0118 | -0.0037 | -0.0159* | -0.0144* | -0.0090 | *-0.0131* |
| se | 0.0062 | 0.006 | 0.0066 | 0.0073 | 0.0086 | |
| N | 18253 | 17445 | 11678 | 8934 | 6482 | |
| | | | | | | |
| Maths 2 | 0.0119 | 0.0017 | -0.0118 | -0.0059 | -0.0140 | N/A |
| se | 0.0061 | 0.0059 | 0.0063 | 0.0064 | 0.0069 | |
| N | 18074 | 17337 | 11922 | 9516 | 7471 | |
| | | | | | | |
| English & Maths 2 | 0.0082 | -0.0119 | -0.0003 | 0.0022 | 0.0079 | N/A |
| se | 0.0081 | 0.0079 | 0.0087 | 0.0098 | 0.0111 | |
| N | 9378 | 8792 | 5440 | 4147 | 3118 | |
| | | | | | | |
| Other Level 2 | 0 | -0.004** | -0.0058*** | -0.0040** | -0.0073*** | **-0.0057** |
| se | 0.0015 | 0.0014 | 0.0013 | 0.0013 | 0.0014 | |
| N | 156784 | 154793 | 137972 | 127898 | 115695 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 38: Daily earnings premium for achievers V non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations (aged 25+)**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| --- | --- | --- | --- | --- | --- |
| **Below Level 2** | 0.0168*** | 0.0170*** | 0.0122*** | 0.0138*** | **0.0143** |
| se | 0.002 | 0.0021 | 0.0022 | 0.0024 | |
| N | 1065486 | 921760 | 830895 | 744723 | |
| | | | | | |
| English 1 | 0.0671*** | 0.0439** | 0.0902*** | 0.0581 | **0.0641** |
| se | 0.0112 | 0.0161 | 0.0219 | 0.0412 | |
| N | 26876 | 11998 | 6504 | 1882 | |
| | | | | | |
| Maths 1 | 0.0094 | 0.0554* | 0.0726* | 0.0691 | *0.0657* |
| se | 0.0142 | 0.0239 | 0.0322 | 0.0584 | |
| N | 18542 | 6772 | 3325 | 946 | |
| | | | | | |
| English & Maths 1 | 0.0636*** | 0.1742*** | 0.0958* | 0.1039 | *0.1246* |
| se | 0.017 | 0.0287 | 0.0416 | 0.0936 | |
| N | 12305 | 3855 | 1670 | 420 | |
| | | | | | |
| Entry Level English | 0.0428*** | 0.0511*** | 0.0319*** | 0.0329** | **0.0386** |
| se | 0.0089 | 0.0091 | 0.0096 | 0.0101 | |
| N | 50663 | 45846 | 40999 | 38105 | |
| | | | | | |
| Entry Level Maths | 0.0150 | 0.0110 | 0.0159 | 0.0002 | 0.000 |
| se | 0.0138 | 0.0140 | 0.0154 | 0.0163 | |
| N | 20937 | 18811 | 16121 | 14568 | |
| | | | | | |
| Other Level 1 | 0.0030 | 0.0056* | 0.0027 | 0.0051* | *0.0045* |
| se | 0.0023 | 0.0024 | 0.0025 | 0.0026 | |
| N | 843386 | 779613 | 720729 | 659321 | |
| | | | | | |
| ESOL | 0.0478*** | 0.0537*** | 0.0569*** | 0.0809*** | **0.0638** |
| se | 0.006 | 0.0076 | 0.0087 | 0.0103 | |
| N | 103191 | 61632 | 47101 | 33807 | |
| | | | | | |
| **Level 2** | 0.0047* | 0.0046* | 0.0077** | 0.0108*** | **0.0077** |
| se | 0.0022 | 0.0023 | 0.0025 | 0.0026 | |
| N | 861215 | 706168 | 613942 | 523627 | |
| | | | | | |
| English 2 | 0.041*** | 0.0406*** | 0.0669*** | 0.0780*** | **0.0618** |
| se | 0.0093 | 0.0116 | 0.0142 | 0.0169 | |
| N | 52284 | 31487 | 22588 | 15311 | |
| | | | | | |
| Maths 2 | -0.0113 | 0.0080 | 0.0229 | **0.0357*** | 0.0222 |
| se | 0.0088 | 0.0105 | 0.0121 | 0.0146 | |
| N | 55760 | 35639 | 26868 | 19691 | |
| | | | | | |
| English & Maths 2 | 0.0225 | 0.0418** | 0.0452** | 0.0164 | *0.0345* |
| se | 0.0119 | 0.0142 | 0.0166 | 0.019 | |
| N | 27828 | 16589 | 11798 | 8071 | |
| | | | | | |
| Other Level 2 | 0.0033 | 0.0012 | 0.0037 | **0.0071*** | 0.0040 |
| se | 0.0023 | 0.0024 | 0.0026 | 0.0027 | |
| N | 714930 | 615686 | 547134 | 476228 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 39: Estimated employment probability premium for achievers V non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations (aged 25+)**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3$^{rd}$ Month | 1$^{st}$ Year | 3$^{rd}$ Year | 4$^{th}$ Year | 5$^{th}$ Year | 3-5 year average |
| **Below Level 2** | -0.0003 | 0.0021*** | 0.0032*** | 0.0035*** | 0.0033*** | **0.0033** |
| se | 0.0003 | 0.0004 | 0.0005 | 0.0005 | 0.0005 | |
| N | 3431429 | 3247014 | 2800073 | 2556614 | 2298804 | |
| | | | | | | |
| English 1 | 0.0023 | 0.0107*** | 0.0137*** | 0.0183*** | 0.0215*** | **0.0178** |
| se | 0.0016 | 0.0020 | 0.0031 | 0.0039 | 0.0056 | |
| N | 111952 | 99498 | 53687 | 35093 | 16255 | |
| | | | | | | |
| Maths 1 | **-0.0088*** | 0.0028 | 0.0078 | 0.0066 | 0.0157 | 0.000 |
| se | 0.0019 | 0.0026 | 0.0044 | 0.006 | 0.0085 | |
| N | 88974 | 73738 | 30477 | 17130 | 7474 | |
| | | | | | | |
| English & Maths 1 | -0.0041 | 0.0074* | 0.0136** | 0.0200** | 0.0240* | **0.0192** |
| se | 0.0022 | 0.0030 | 0.0048 | 0.0067 | 0.0107 | |
| N | 64027 | 55398 | 22621 | 11771 | 4661 | |
| | | | | | | |
| Entry Level English | 0.0059*** | 0.0102*** | 0.0151*** | 0.0166*** | 0.0178*** | **0.0165** |
| se | 0.0012 | 0.0015 | 0.0017 | 0.0019 | 0.0020 | |
| N | 217112 | 205293 | 190746 | 173676 | 157930 | |
| | | | | | | |
| Entry Level Maths | 0.0031 | 0.0052* | 0.0099*** | 0.0081** | 0.0127*** | **0.0102** |
| se | 0.0021 | 0.0025 | 0.0029 | 0.0032 | 0.0035 | |
| N | 82110 | 75809 | 70533 | 60937 | 53352 | |
| | | | | | | |
| Other Level 1 | 0.0001 | 0.0014** | 0.0017*** | 0.0019** | 0.0018** | **0.0018** |
| se | 0.0004 | 0.0005 | 0.0005 | 0.0006 | 0.0006 | |
| N | 2359908 | 2257541 | 2059857 | 1939345 | 1794595 | |
| | | | | | | |
| ESOL | 0.0013 | 0.0027** | 0.0053*** | 0.0056*** | 0.0048** | **0.052** |
| se | 0.0009 | 0.001 | 0.0012 | 0.0014 | 0.0015 | |
| N | 547704 | 518664 | 403332 | 346368 | 288717 | |
| | | | | | | |
| **Level 2** | 0.0052*** | 0.0094*** | 0.0105*** | 0.0102*** | 0.0096*** | **0.0101** |
| se | 0.0005 | 0.0005 | 0.0006 | 0.0007 | 0.0007 | |
| N | 2028777 | 1954809 | 1666261 | 1480692 | 1291499 | |
| | | | | | | |
| English 2 | 0.0078*** | 0.0170*** | 0.0227*** | 0.0245*** | 0.0258*** | **0.0243** |
| se | 0.0017 | 0.0021 | 0.0029 | 0.0034 | 0.0042 | |
| N | 153501 | 137476 | 88708 | 66047 | 46007 | |
| | | | | | | |
| Maths 2 | 0.0070*** | 0.0172*** | 0.0268*** | 0.0272*** | 0.0273*** | **0.0271** |
| se | 0.0017 | 0.0021 | 0.0029 | 0.0034 | 0.0041 | |
| N | 143239 | 129382 | 83194 | 62050 | 45994 | |
| | | | | | | |
| English & Maths 2 | 0.0017 | 0.0131*** | 0.0202*** | 0.0209*** | 0.0227*** | **0.0213** |
| se | 0.0025 | 0.0030 | 0.004 | 0.0049 | 0.0059 | |
| N | 74935 | 66580 | 40994 | 28876 | 19736 | |
| | | | | | | |
| Other Level 2 | 0.0045*** | 0.0076*** | 0.0081*** | 0.0081*** | 0.0078*** | **0.0080** |
| se | 0.0005 | 0.0006 | 0.0006 | 0.0007 | 0.0007 | |
| N | 1616796 | 1582495 | 1422236 | 1296050 | 1155613 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 40: Estimated probability of Achievers being on Active Benefits, compared to non-achievers, for sub-divisions of the *Below Level 2* and *L2* highest aim populations (aged 25+)**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3<sup>rd</sup> Month | 1<sup>st</sup> Year | 3<sup>rd</sup> Year | 4<sup>th</sup> Year | 5<sup>th</sup> Year | 3-5 year average |
| **Below Level 2** | 0.0090*** | 0.0017*** | -0.0008** | -0.0008** | -0.0017** | **-0.0011** |
| se | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | |
| N | 2321567 | 2276962 | 1965487 | 1797952 | 1620013 | |
| | | | | | | |
| English 1 | 0.0191*** | -0.0003 | -0.0029 | -0.0081* | -0.0133** | ***-0.0081*** |
| se | 0.0026 | 0.0025 | 0.0031 | 0.0037 | 0.0050 | |
| N | 70004 | 66363 | 34685 | 22351 | 10246 | |
| | | | | | | |
| Maths 1 | 0.0597 | **0.0154*** | **0.0016** | 0.0069 | -0.0010 | 0.0025 |
| se | 0.0037 | 0.0036 | 0.0050 | 0.0065 | 0.0098 | |
| N | 55065 | 51727 | 20495 | 11170 | 4578 | |
| | | | | | | |
| English & Maths 1 | **0.0209*** | -0.0038 | -0.0010 | -0.0066 | 0.0037 | N/A |
| se | 0.0040 | 0.0040 | 0.0054 | 0.0072 | 0.0112 | |
| N | 43894 | 41363 | 14895 | 7314 | 2722 | |
| | | | | | | |
| Entry Level English | **0.0083*** | 0.0026 | -0.0005 | -0.0007 | -0.0016 | 0.000 |
| se | 0.0015 | 0.0014 | 0.0013 | 0.0013 | 0.0013 | |
| N | 140424 | 137332 | 127165 | 114914 | 104448 | |
| | | | | | | |
| Entry Level Maths | **0.0171*** | **0.0083** | 0.0001 | **0.0061* | -0.0017 | 0.0015 |
| se | 0.0030 | 0.0029 | 0.0027 | 0.0027 | 0.0028 | |
| N | 52222 | 50574 | 47148 | 39698 | 34442 | |
| | | | | | | |
| Other Level 1 | 0.0034*** | -0.0004 | -0.0016*** | -0.0016*** | -0.0023*** | **-0.0018** |
| se | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | |
| N | 1700460 | 1679282 | 1539229 | 1451012 | 1343409 | |
| | | | | | | |
| ESOL | **0.0104*** | **0.0023* | -0.001 | -0.0017 | -0.0012 | 0.000 |
| se | 0.0010 | 0.0009 | 0.0009 | 0.0009 | 0.0009 | |
| N | 283562 | 273749 | 200003 | 167366 | 133726 | |
| | | | | | | |
| **Level 2** | 0.0059*** | -0.001 | -0.0028*** | -0.0038*** | -0.0039*** | **-0.0035** |
| se | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | |
| N | 1527358 | 1504823 | 1282486 | 1137980 | 990285 | |
| | | | | | | |
| English 2 | 0.0120*** | -0.0041 | -0.0065** | -0.0054* | -0.0065* | **-0.0061** |
| se | 0.0023 | 0.0022 | 0.0023 | 0.0026 | 0.0030 | |
| N | 107600 | 102527 | 66501 | 49065 | 33985 | |
| | | | | | | |
| Maths 2 | **0.0164*** | -0.0003 | -0.0015 | **-0.0061*** | -0.0024 | -0.0033 |
| se | 0.0022 | 0.0021 | 0.0021 | 0.0023 | 0.0024 | |
| N | 102985 | 98546 | 64263 | 47692 | 35208 | |
| | | | | | | |
| English & Maths 2 | 0.0044 | -0.0028 | -0.0053 | **-0.0091** | -0.0035 | -0.0060 |
| se | 0.0030 | 0.0028 | 0.0031 | 0.0034 | 0.0037 | |
| N | 55450 | 52359 | 32160 | 22604 | 15613 | |
| | | | | | | |
| Other Level 2 | 0.0038*** | -0.0012** | -0.0030*** | -0.0038*** | -0.0038*** | **-0.0035** |
| se | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | |
| N | 1237273 | 1227976 | 1101442 | 1002754 | 891924 | |

*** Significant at the 0.1% level; ** 1% and * 5%

## 5.4 Returns to L1/L2 English and/or Maths learners within disaggregated populations of Full Level 2 and Full Level 3 Achievers

Tables 1 through to 6 and Tables 10 through to 15 present a detailed breakdown of the estimated returns for subgroups of learners within the 'L1/L2 Maths and/or English' category of learning aim – focusing on the populations of FL2 and FL3 achievers. In particular, we split FL2 and FL3 achievers according to whether the highest learning aim is (i) classroom-based (Tables 1 through to 6 ) or (ii) apprenticeship (Tables 10 through to 15). For instance, in Table 1, amongst the population of FL2 achievers with a Classroom Based Learning aim, we identify a 2.7% average [3 to 5 year] earnings return for those achieving a L2 English qualification, a 1.5% average [3 to 5 year] earnings return for those achieving a L2 Maths qualification and for those taking both Literacy and Maths at L2, the figure is 4.8%. For Level 1 subcategories in Table 1 the suggestion is that returns are of a similar magnitude in the first year, but the significant drop in numbers as we move on to the third year after learning prevents any further analysis.

**Table 41: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL2 achievers – Classroom-based learning][51] [52]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **English L1** | 0.060 | -0.048 | -0.057 | N/A | N/A |
| se | 0.041 | 0.057 | 0.128 | | |
| N | 2229 | 899 | 276 | 30 | |
| | | | | | |
| **Maths L1** | 0.058 | 0.032 | -0.085 | N/A | N/A |
| se | 0.056 | 0.102 | 0.295 | | |
| N | 1375 | 394 | 113 | 16 | |
| | | | | | |
| **English & Maths L1**[53] | 0.037 | 0.042 | -0.049 | N/A | N/A |
| se | 0.041 | 0.069 | 0.124 | | |
| N | 2041 | 721 | 257 | 33 | |
| | | | | | |
| **English L2** | **0.060*** | 0.027 | **0.043*** | 0.011 | *0.027* |
| se | 0.014 | 0.016 | 0.019 | 0.024 | |
| N | 14558 | 9016 | 6368 | 4113 | |
| | | | | | |
| **Maths L2** | **0.057**** | 0.011 | 0.005 | 0.029 | 0.015 |

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[51] Tables 1 to 12 do not include ESOL qualifications in the categories of L1/L2 Literacy for which returns are estimated.

[52] Our category of **English L1** in Tables 1 to 12 contains all learners who have a Literacy L1 aim overlapping a FL2 spell (but no overlapping Numeracy aim); whilst the **English & Maths L1** category includes all those who have English L1 <u>and</u> Maths L1 aims overlapping a FL2 spell (the same applies to the **English & Maths L2** category). As a result, each category of learner is mutually exclusive and no learner can appear in more than one category.

[53] For categories such as **L1 English**, achievement and non-achievement is straightforward. However, for the category of **L1 English & Maths** we can obviously have a combination of achieve/non-achieve groups. The majority of non-achievers taking both, fail both, and majority of achievers taking both, pass both. Non-achievers are therefore those with both Maths and English aim, who fail to achieve either English or Maths, or both. Variations on this approach do not alter our findings.

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| --- | --- | --- | --- | --- | --- |
| se | 0.022 | 0.026 | 0.032 | 0.039 | |
| N | 6138 | 3070 | 2061 | 1235 | |
| | | | | | |
| **English & Maths L2** | **0.058***** | **0.050**** | **0.057**** | 0.038 | *0.048* |
| se | 0.015 | 0.017 | 0.019 | 0.023 | |
| N | 12507 | 7777 | 5662 | 3730 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 42: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL2 achievers – Classroom-based learning]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| --- | --- | --- | --- | --- | --- | --- |
| **English L1** | 0.017 | 0.012 | -0.004 | 0.006 | -0.035 | -0.011 |
| se | 0.010 | 0.011 | 0.018 | 0.024 | 0.047 | |
| N | 8400 | 6772 | 2846 | 1580 | 508 | |
| | | | | | | |
| **Maths L1** | 0.012 | 0.007 | -0.008 | -0.043 | 0.043 | -0.003 |
| se | 0.013 | 0.015 | 0.028 | 0.040 | 0.099 | |
| N | 5112 | 4358 | 1405 | 665 | 194 | |
| | | | | | | |
| **English & Maths L1** | **0.023*** | 0.018 | 0.020 | **0.049*** | 0.048 | *0.039* |
| se | 0.009 | 0.011 | 0.018 | 0.024 | 0.042 | |
| N | 9562 | 7132 | 2635 | 1486 | 509 | |
| | | | | | | |
| **English L2** | 0.007 | 0.008 | 0.003 | -0.001 | 0.001 | 0.001 |
| se | 0.004 | 0.005 | 0.006 | 0.006 | 0.008 | |
| N | 44465 | 41403 | 25748 | 20349 | 12861 | |
| | | | | | | |
| **Maths L2** | 0.004 | 0.008 | -0.012 | -0.018 | 0.006 | -0.008 |
| se | 0.006 | 0.007 | 0.010 | 0.011 | 0.014 | |
| N | 20485 | 18506 | 9195 | 6740 | 4122 | |
| | | | | | | |
| **English & Maths L2** | 0.001 | 0.004 | **-0.016**** | **-0.016*** | -0.005 | *-0.012* |
| se | 0.005 | 0.005 | 0.006 | 0.007 | 0.008 | |
| N | 36848 | 33252 | 20198 | 16210 | 10888 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 43**: **Estimated probability of LI/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL2 achievers – Classroom-based learning]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | -0.010 | -0.003 | 0.010 | -0.005 | -0.013 | -0.003 |
| se | 0.010 | 0.009 | 0.012 | 0.016 | 0.030 | |
| N | 6427 | 5949 | 2481 | 1351 | 426 | |
| **Maths L1** | 0.019 | -0.003 | -0.013 | -0.028 | -0.082 | -0.041 |
| se | 0.014 | 0.014 | 0.023 | 0.032 | 0.090 | |
| N | 4266 | 3878 | 1237 | 589 | 163 | |
| **English & Maths L1** | **-0.030***** | -0.019 | 0.005 | 0.011 | -0.014 | 0.001 |
| se | 0.009 | 0.010 | 0.014 | 0.019 | 0.031 | |
| N | 7675 | 6247 | 2275 | 1249 | 414 | |
| **English L2** | **-0.016***** | **-0.011**** | **-0.009*** | **-0.012*** | -0.009 | *-0.010* |
| se | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | |
| N | 30715 | 29051 | 18786 | 14428 | 10297 | |
| **Maths L2** | -0.010 | **-0.017*** | **-0.015*** | -0.012 | -0.014 | *-0.014* |
| se | 0.007 | 0.007 | 0.007 | 0.008 | 0.009 | |
| N | 13876 | 12892 | 6673 | 4714 | 3229 | |
| **English & Maths L2** | **-0.017***** | **-0.019***** | **-0.011*** | **-0.015**** | -0.007 | *-0.011* |
| se | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | |
| N | 26323 | 24356 | 15157 | 11980 | 8754 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 44: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL3 achievers – Classroom-based learning]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | $1^{st}$ Year | $3^{rd}$ Year | $4^{th}$ Year | $5^{th}$ Year | 3-5 year average |
|---|---|---|---|---|---|
| **English L1** | 0.053 | -0.015 | N/A | N/A | N/A |
| se | 0.055 | 0.099 | | | |
| N | 1116 | 394 | 76 | 6 | |
| **Maths L1** | -0.009 | -0.047 | N/A | N/A | N/A |
| se | 0.061 | 0.112 | | | |
| N | 857 | 304 | 100 | 9 | |
| **English & Maths L1** | 0.080 | 0.019 | N/A | N/A | N/A |
| se | 0.078 | 0.201 | | | |
| N | 593 | 151 | 21 | 4 | |
| **English L2** | -0.022 | -0.005 | -0.003 | 0.001 | -0.002 |
| se | 0.007 | 0.008 | 0.009 | 0.011 | |
| N | 70421 | 40912 | 27776 | 17218 | |
| **Maths L2** | **-0.040***** | -0.021 | **0.029*** | **0.049***** | *0.019* |
| se | 0.011 | 0.012 | 0.013 | 0.015 | |
| N | 28558 | 18147 | 13127 | 8889 | |
| **English & Maths L2** | **-0.030***** | -0.004 | **0.020*** | **0.020*** | *0.012* |
| se | 0.006 | 0.007 | 0.008 | 0.009 | |
| N | 71899 | 46318 | 33813 | 22005 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

**Table 45: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL3 achievers – Classroom-based learning]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1$^{st}$ Year | 3$^{rd}$ Year | 4$^{th}$ Year | 5$^{th}$ Year | 3-5 year average |
| **English L1** | 0.016 | 0.018 | 0.021 | 0.077 | 0.037 | 0.045 |
| se | 0.016 | 0.017 | 0.028 | 0.042 | 0.134 | |
| N | 3453 | 3299 | 1254 | 599 | 127 | |
| **Maths L1** | -0.004 | 0.017 | **0.070*** | 0.039 | -0.027 | *0.027* |
| se | 0.019 | 0.019 | 0.034 | 0.048 | 0.105 | |
| N | 2585 | 2463 | 801 | 441 | 147 | |
| **English & Maths L1** | 0.009 | 0.008 | -0.004 | 0.047 | N/A | N/A |
| se | 0.020 | 0.021 | 0.040 | 0.069 | | |
| N | 2138 | 1980 | 600 | 248 | 45 | |
| **English L2** | **0.007*** | 0.003 | 0.000 | 0.003 | 0.007 | 0.003 |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | |
| N | 158417 | 156508 | 92043 | 66038 | 43504 | |
| **Maths L2** | **0.012**** | 0.000 | -0.001 | -0.002 | -0.005 | -0.003 |
| se | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | |
| N | 63591 | 62408 | 38000 | 28656 | 19868 | |
| **English & Maths L2** | **0.010***** | **0.004*** | -0.001 | 0.001 | 0.002 | 0.001 |
| se | 0.003 | 0.002 | 0.003 | 0.003 | 0.003 | |
| N | 156794 | 152720 | 96959 | 73829 | 51787 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 46**: **Estimated probability of LI/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL3 achievers – Classroom-based learning]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
|---|---|---|---|---|---|---|
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | -0.014 | 0.002 | -0.008 | 0.010 | 0.083 | 0.028 |
| se | 0.013 | 0.012 | 0.017 | 0.023 | 0.065 | |
| N | 3185 | 3045 | 1152 | 540 | 107 | |
| **Maths L1** | -0.013 | -0.001 | **-0.067\*\*** | -0.028 | -0.087 | *-0.061* |
| se | 0.015 | 0.014 | 0.023 | 0.029 | 0.079 | |
| N | 2392 | 2284 | 748 | 406 | 138 | |
| **English & Maths L1** | -0.013 | **-0.039\*** | -0.008 | N/A | N/A | N/A |
| se | 0.016 | 0.016 | 0.027 | | | |
| N | 1960 | 1817 | 533 | 214 | 33 | |
| **English L2** | **-0.015\*\*\*** | **-0.013\*\*\*** | **-0.005\*** | -0.003 | **-0.004\*** | *-0.004* |
| se | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 132295 | 130691 | 81179 | 59320 | 39459 | |
| **Maths L2** | **-0.018\*\*\*** | **-0.015\*\*\*** | **-0.004\*** | -0.002 | -0.002 | *-0.003* |
| se | 0.003 | 0.002 | 0.002 | 0.003 | 0.003 | |
| N | 52812 | 51841 | 33472 | 25688 | 17979 | |
| **English & Maths L2** | **-0.018\*\*\*** | **-0.014\*\*\*** | **-0.007\*\*\*** | **-0.005\*** | **-0.005\*** | **-0.006** |
| se | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | |
| N | 133775 | 130304 | 86209 | 66676 | 47231 | |

*** Significant at the 0.1% level; ** 1% and * 5%

The first row of Table 7 presents the estimated returns to L1 and/or L2 Maths/English qualifications gained from the comparison of achiever and non-achievers for a population of FL2 achievers with a Classroom Based Learning aim, while the second row carries out the same analysis for a population of FL3 achievers with a Classroom Based Learning aim. More specifically:

-   The first row of Table 7 estimates the value added of L1 and/or L2 Maths/English qualifications, with the population of individuals included in the regression equations restricted to those who have achieved a highest aim of Full Level 2 with a Classroom Based Learning aim. The 3 to 5 year average earnings return of 2.2% is therefore the earnings premium that those achieving a L1 and/or L2 Maths/English qualification secure, relative to those who do not achieve their L1/L2 Maths or English qualification (with this estimate relevant for the population of FL2 achievers with a Classroom Based Learning aim).

-   The second row of Table 7 estimates the value added of L1 and/or L2 Maths/English qualifications, with the population of individuals included in the regression equations restricted to those who have achieved a highest aim of Full Level 3 with a Classroom Based Learning aim. The 3 to 5 years average earnings return of 0.7% is therefore the earnings premium that those achieving a L1 and/or L2 Maths/English qualification secure, relative to those who do not achieve their L1/L2 Maths or English qualification (with this estimate relevant for the population of FL3 achievers with a Classroom Based Learning aim).

Tables 8 and 9 repeat the same analysis but for employment probability premiums and the probability of being on active benefits, respectively.

**Table 47: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL2 or FL3 achievers – Classroom-based learning]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | 3-5 year average |
|---|---|---|---|---|---|
|  | 1<sup>st</sup> Year | 3<sup>rd</sup> Year | 4<sup>th</sup> Year | 5<sup>th</sup> Year | |
| **FL2 Achievers** | **0.053***** | 0.018 | **0.027*** | 0.021 | *0.022* |
| se | 0.009 | 0.011 | 0.013 | 0.015 | |
| N | 38848 | 21877 | 14737 | 9125 | |
|  | | | | | |
| **FL3 Achievers** | **-0.027***** | -0.009 | **0.013*** | **0.018**** | *0.007* |
| se | 0.005 | 0.005 | 0.006 | 0.007 | |
| N | 173444 | 106226 | 74913 | 48138 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 48: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL2 or FL3 achievers – Classroom-based learning]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| --- | --- | --- | --- | --- | --- | --- |
| **FL2 Achievers** | **0.009**** | **0.010***** | -0.001 | -0.001 | 0.002 | 0.000 |
| se | 0.003 | 0.003 | 0.004 | 0.004 | 0.005 | |
| N | 124872 | 111423 | 62027 | 47030 | 29082 | |
| | | | | | | |
| **FL3 Achievers** | **0.011***** | **0.005*** | 0.001 | 0.003 | 0.003 | 0.002 |
| se | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | |
| N | 386978 | 379378 | 229657 | 169811 | 115478 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 49: Estimated probability of L1/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL3 achievers – Classroom-based learning]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| --- | --- | --- | --- | --- | --- | --- |
| **English L1** | **-0.013***** | **-0.015***** | **-0.009**** | **-0.010***** | **-0.012***** | **-0.010** |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | |
| N | 89282 | 82373 | 46609 | 34311 | 23283 | |
| | | | | | | |
| **English & Maths L2** | **-0.017***** | **-0.015***** | **-0.005***** | **-0.002*** | **-0.004***** | **-0.004** |
| se | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | |
| N | 326419 | 319982 | 203293 | 152844 | 104947 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 50: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL2 achievers – Apprenticeships]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **English L1** | 0.087 | 0.109 | **0.394*** | N/A | N/A |
| se | 0.124 | 0.125 | 0.172 | | |
| N | 438 | 275 | 145 | 87 | |
| **Maths L1** | 0.099 | 0.077 | 0.217 | 0.139 | 0.144 |
| se | 0.079 | 0.090 | 0.158 | 0.199 | |
| N | 879 | 611 | 367 | 144 | |
| **English & Maths L1** | **0.051*** | **0.041*** | 0.021 | 0.024 | *0.029* |
| se | 0.014 | 0.018 | 0.025 | 0.036 | |
| N | 16610 | 10287 | 5818 | 2467 | |
| **English L2** | **0.067*** | **0.068*** | **0.063*** | **0.058*** | **0.063** |
| se | 0.012 | 0.013 | 0.013 | 0.013 | |
| N | 21435 | 18338 | 15944 | 13558 | |
| **Maths L2** | 0.014 | 0.058 | **0.136**** | 0.083 | 0.092 |
| se | 0.033 | 0.036 | 0.043 | 0.044 | |
| N | 2247 | 1678 | 1223 | 853 | |
| **English & Maths L2** | **0.074*** | **0.076*** | **0.084*** | **0.097*** | **0.086** |
| se | 0.014 | 0.015 | 0.016 | 0.019 | |
| N | 14029 | 11429 | 9062 | 6394 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

**Table 51: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL2 achievers – Apprenticeships]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | 3-5 year average |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1$^{st}$ Year | 3$^{rd}$ Year | 4$^{th}$ Year | 5$^{th}$ Year | |
| **English L1** | -0.021 | -0.003 | -0.030 | -0.054 | 0.019 | -0.022 |
| se | 0.033 | 0.035 | 0.042 | 0.055 | 0.094 | |
| N | 1107 | 758 | 516 | 320 | 139 | |
| **Maths L1** | 0.038 | 0.026 | 0.016 | 0.021 | -0.042 | -0.002 |
| se | 0.025 | 0.030 | 0.034 | 0.044 | 0.062 | |
| N | 2384 | 1516 | 1032 | 714 | 362 | |
| **English & Maths L1** | -0.004 | 0.006 | 0.004 | -0.001 | -0.017 | -0.005 |
| se | 0.003 | 0.004 | 0.006 | 0.008 | 0.012 | |
| N | 67864 | 33898 | 17612 | 11729 | 5891 | |
| **English L2** | 0.009 | 0.001 | -0.007 | -0.007 | -0.007 | -0.007 |
| se | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | |
| N | 41279 | 35637 | 31364 | 27470 | 23466 | |
| **Maths L2** | -0.006 | -0.023 | **-0.038\*\*** | **-0.054\*\*\*** | **-0.044\*\*** | **-0.045** |
| se | 0.015 | 0.014 | 0.013 | 0.014 | 0.015 | |
| N | 4159 | 3722 | 3058 | 2371 | 1660 | |
| **English & Maths L2** | 0.010 | -0.004 | **-0.021\*\*\*** | **-0.025\*\*\*** | **-0.024\*\*\*** | **-0.023** |
| se | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | |
| N | 24818 | 22998 | 20209 | 16756 | 12473 | |

\*\*\* Significant at the 0.1% level; \*\* 1% and \* 5%

**Table 52**: **Estimated probability of LI/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL2 achievers – Apprenticeships]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | 0.015 | -0.034 | 0.022 | -0.007 | **-0.122*** | *-0.036* |
| se | 0.022 | 0.032 | 0.026 | 0.028 | 0.058 | |
| N | 936 | 703 | 485 | 295 | 131 | |
| **Maths L1** | -0.037 | -0.026 | -0.045 | **-0.090*** | -0.073 | *-0.069* |
| se | 0.020 | 0.022 | 0.026 | 0.040 | 0.042 | |
| N | 1987 | 1392 | 947 | 650 | 336 | |
| **English & Maths L1** | **-0.017*** | **-0.010*** | -0.003 | **0.010*** | 0.002 | 0.003 |
| se | 0.002 | 0.003 | 0.005 | 0.005 | 0.007 | |
| N | 55948 | 31056 | 16344 | 10721 | 5368 | |
| **English L2** | **-0.022*** | **-0.017*** | **-0.017*** | **-0.010*** | **-0.017*** | **-0.015** |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | |
| N | 35997 | 31899 | 28444 | 24786 | 21387 | |
| **Maths L2** | -0.009 | 0.000 | -0.014 | -0.001 | -0.003 | -0.006 |
| se | 0.010 | 0.009 | 0.010 | 0.010 | 0.010 | |
| N | 3678 | 3354 | 2812 | 2152 | 1561 | |
| **English & Maths L2** | **-0.019*** | **-0.010**** | **-0.010**** | **-0.010**** | -0.007 | *-0.009* |
| se | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | |
| N | 21922 | 20538 | 18061 | 14780 | 11372 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 53: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL3 achievers – Apprenticeships]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **English L1** | N/A | N/A | N/A | N/A | N/A |
| se | | | | | |
| N | 25 | 13 | 9 | 4 | |
| **Maths L1** | N/A | N/A | N/A | N/A | N/A |
| se | | | | | |
| N | 36 | 20 | 14 | 7 | |
| **English & Maths L1** | -0.065 | 0.077 | N/A | N/A | N/A |
| se | 0.096 | 0.187 | | | |
| N | 261 | 162 | 81 | 39 | |
| **English L2** | **0.087***** | 0.048 | 0.055 | **0.082*** | *0.062* |
| se | 0.026 | 0.027 | 0.034 | 0.041 | |
| N | 4862 | 3581 | 2626 | 1775 | |
| **Maths L2** | 0.033 | **0.069***** | **0.045*** | 0.010 | *0.041* |
| se | 0.018 | 0.019 | 0.021 | 0.024 | |
| N | 9544 | 7594 | 5596 | 3558 | |
| **English & Maths L2** | **0.048***** | **0.030***** | **0.032***** | **0.028**** | **0.030** |
| se | 0.006 | 0.007 | 0.008 | 0.010 | |
| N | 79230 | 55795 | 38437 | 21628 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 54: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL3 achievers – Apprenticeships]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | N/A | N/A | N/A | N/A | N/A | N/A |
| se | | | | | | |
| N | 52 | 45 | 26 | 16 | 9 | |
| | | | | | | |
| **Maths L1** | N/A | N/A | N/A | N/A | N/A | N/A |
| se | | | | | | |
| N | 63 | 55 | 30 | 18 | 13 | |
| | | | | | | |
| **English & Maths L1** | -0.030 | -0.016 | -0.015 | 0.046 | N/A | N/A |
| se | 0.040 | 0.042 | 0.052 | 0.070 | | |
| N | 455 | 396 | 286 | 165 | 74 | |
| | | | | | | |
| **English L2** | 0.006 | -0.004 | 0.002 | 0.002 | -0.013 | -0.003 |
| se | 0.012 | 0.011 | 0.011 | 0.012 | 0.013 | |
| N | 7943 | 7265 | 5638 | 4271 | 2982 | |
| | | | | | | |
| **Maths L2** | **0.016*** | 0.013 | 0.013 | 0.009 | 0.008 | 0.010 |
| se | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | |
| N | 15823 | 14297 | 11775 | 9024 | 6159 | |
| | | | | | | |
| **English & Maths L2** | **0.008**** | 0.003 | 0.000 | -0.003 | **-0.007*** | *-0.003* |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | |
| N | 140171 | 120489 | 92348 | 67286 | 42588 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 55**: **Estimated probability of L1/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL3 achievers – Apprenticeships]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|---|
| **English L1** | N/A | N/A | N/A | N/A | N/A | N/A |
| se | | | | | | |
| N | 49 | 43 | 25 | 15 | 9 | |
| **Maths L1** | N/A | N/A | N/A | N/A | N/A | N/A |
| se | | | | | | |
| N | 58 | 51 | 28 | 17 | 13 | |
| **English & Maths L1** | 0.034 | -0.014 | -0.023 | -0.010 | N/A | N/A |
| se | 0.019 | 0.021 | 0.022 | 0.051 | | |
| N | 428 | 377 | 274 | 156 | 68 | |
| **English L2** | -0.010 | **-0.012*** | -0.011 | -0.010 | -0.005 | -0.009 |
| se | 0.006 | 0.006 | 0.006 | 0.007 | 0.008 | |
| N | 7512 | 6921 | 5390 | 4060 | 2856 | |
| **Maths L2** | **-0.010*** | -0.004 | **-0.010*** | **-0.009*** | -0.007 | *-0.009* |
| se | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | |
| N | 14762 | 13435 | 11093 | 8438 | 5763 | |
| **English & Maths L2** | **-0.007***** | **-0.008***** | **-0.004***** | -0.002 | **-0.005*** | *-0.004* |
| se | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | |
| N | 130683 | 114174 | 87513 | 63240 | 40126 | |

*** Significant at the 0.1% level; ** 1% and * 5%

The first row of Table 16 presents the estimated returns to L1 and/or L2 Maths/English qualifications gained from the comparison of achiever and non-achievers for a population of FL2 achievers with an Apprenticeship aim, while the second row carries out the same analysis for a population of FL3 achievers with an Apprenticeship aim. More specifically:

- The first row of Table 16 estimates the value added of L1 and/or L2 Maths/English qualifications, with the population of individuals included in the regression equations restricted to those who have achieved a highest aim of Full Level 2 with an Apprenticeship aim. The 3 to 5 year average earnings return of 5.9% is therefore the earnings premium that those achieving a L1 and/or L2 Maths/English qualification secure, relative to those who do not achieve their L1/L2 Maths or English qualification (with this estimate relevant for the population of FL2 achievers with an Apprenticeship aim).

- The second row of Table 16 estimates the value added of L1 and/or L2 Maths/English qualifications, with the population of individuals included in the regression equations restricted to those who have achieved a highest aim of Full Level 3 with an Apprenticeship aim. The 3 to 5 years average earnings return of 3.0% is therefore the earnings premium that those achieving a L1 and/or L2 Maths/English qualification secure, relative to those who do not achieve their L1/L2 Maths or English qualification (with this estimate relevant for the population of FL3 achievers with an Apprenticeship aim).

Tables 17 and 18 repeat the same analysis but for employment probability premiums and the probability of being on active benefits, respectively.

**Table 56: Returns to daily earnings for L1/L2 English and/or Maths achievers [for a population of FL2 or FL3 achievers – Apprenticeships]**

| Achievement | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
| | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
|---|---|---|---|---|---|
| **FL2 Achievers** | **0.060***** | **0.053***** | **0.065***** | **0.058***** | **0.059** |
| se | 0.008 | 0.009 | 0.010 | 0.011 | |
| N | 55638 | 42618 | 32559 | 23466 | |
| | | | | | |
| **FL3 Achievers** | **0.041***** | **0.032***** | **0.029***** | **0.029**** | **0.030** |
| se | 0.006 | 0.007 | 0.008 | 0.010 | |
| N | 93958 | 67165 | 46763 | 26987 | |

*** Significant at the 0.1% level; ** 1% and * 5%

**Table 57: Estimated employment probability premiums for L1/L2 English and/or Maths achievers [for populations of FL2 or FL3 achievers – Apprenticeships]**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
|---|---|---|---|---|---|---|
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **FL2 Achievers** | -0.003 | -0.002 | **-0.010*** | **-0.013*** | **-0.017*** | **-0.013** |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.004 | |
| N | 141611 | 98529 | 73791 | 59360 | 43991 | |
| | | | | | | |
| **FL3 Achievers** | **0.011*** | **0.007*** | 0.004 | 0.001 | -0.001 | 0.001 |
| se | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | |
| N | 164507 | 142547 | 110103 | 80780 | 51825 | |

*** Significant at the 0.1% level; ** 1% and * 5%


**Table 58: Estimated probability of L1/L2 English and/or Maths achievers being on active benefits, compared to non-achievers [for a population of FL3 achievers – Apprenticeships]**

| Achievement | Percentage Point Probability of Achievers V Non-achievers being on Active Benefits | | | | | |
|---|---|---|---|---|---|---|
| | 3 months | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **English L1** | **-0.018*** | **-0.011*** | **-0.011*** | **-0.008*** | **-0.012*** | **-0.010** |
| se | 0.002 | 0.002 | 0.002 | 0.002 | 0.003 | |
| N | 120468 | 88942 | 67093 | 53384 | 40155 | |
| | | | | | | |
| **English & Maths L2** | **-0.005*** | **-0.007*** | **-0.005*** | **-0.005*** | **-0.004*** | **-0.005** |
| se | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | |
| N | 153492 | 135001 | 104323 | 75926 | 48835 | |

*** Significant at the 0.1% level; ** 1% and * 5%

## 5.5 Returns to IT qualifications, within the wider foundation [highest] learning aim categories of 'thin' L2 and 'Below L2'

We looked at earnings returns and employment returns for IT qualifications within the large groups of the "other" level 1" and "other" level 2 qualifications. These "other" qualifications are "thin L2" and "below L2" qualifications which are not Maths, English or ESOL.The results are shown in tables 59 and 60.

**Table 59: Daily earnings premium for IT achievers, relative to non-achievers: within the *Below Level 2* and *L2* highest aim populations**

| | Percentage Log Daily Earnings Premium in Tax Year after Spell End | | | | |
|---|---|---|---|---|---|
| Achievement | 1st Year | 3rd Year | 4th Year | 5th Year | 3-5 year average |
| **IT Below L2** | 0.0020 | 0.0140*** | 0.0097* | 0.0149** | **0.0129** |
| se | 0.0041 | 0.0042 | 0.0043 | 0.0045 | |
| N | 203550 | 189862 | 174623 | 155310 | |
| **IT Below L2 (19-24)** | 0.0640*** | 0.0697*** | 0.0562*** | 0.0970*** | **0.0743** |
| se | 0.0165 | 0.0163 | 0.0163 | 0.0172 | |
| N | 11366 | 10741 | 10132 | 9268 | |
| **IT Below L2 (25+)** | -0.0031 | 0.0103* | 0.0062 | 0.0083 | 0.0083 |
| se | 0.0042 | 0.0043 | 0.0045 | 0.0047 | |
| N | 188534 | 175866 | 161478 | 143329 | |
| **IT L2** | 0.0041 | 0.0166*** | 0.0237*** | 0.0283*** | **0.0229** |
| se | 0.0043 | 0.0044 | 0.0045 | 0.0048 | |
| N | 165238 | 158630 | 145897 | 130136 | |
| **IT L2 (19-24)** | 0.0110 | 0.0551*** | 0.0645*** | 0.0729*** | **0.0642** |
| se | 0.0149 | 0.0138 | 0.137 | 0.0143 | |
| N | 14478 | 14236 | 13314 | 12067 | |
| **IT L2 (25+)** | 0.0036 | 0.0108* | 0.0184*** | 0.0227*** | **0.0173** |
| se | 0.0045 | 0.0046 | 0.0048 | 0.0051 | |
| N | 147555 | 141205 | 129572 | 115322 | |

*** Significant at the 0.1% level; ** 1% and * 5%
Note: The numbers of the 19-24 years old and of the 25+ years old do not add up to the overall numbers because of the presence of individuals who were aged 16,17,18 at the time in which they started attending the IT courses.

**Table 60: Employment Probability premiums for IT achievers, relative to non-achievers: within *Below Level 2* and *L2* highest aim populations**

| Achievement | Percentage Point Employment probability Premium in Time Period after Spell End | | | | | |
| | 3 months | 1$^{st}$ Year | 3$^{rd}$ Year | 4$^{th}$ Year | 5$^{th}$ Year | 3-5 year average |
|---|---|---|---|---|---|---|
| **IT Below L2** | 0.0008 | 0.0027** | 0.0018 | 0.0021* | 0.0010 | 0.0016 |
| se | 0.0008 | 0.0009 | 0.0010 | 0.0010 | 0.0011 | |
| N | 599889 | 577863 | 524146 | 489466 | 441035 | |
| **IT Below L2 (19-24)** | 0.0064* | 0.0075* | 0.0078 | 0.0075 | 0.0058 | 0.0070 |
| se | 0.0033 | 0.0038 | 0.0043 | 0.0045 | 0.0048 | |
| N | 39862 | 38032 | 34121 | 31775 | 28422 | |
| **IT Below L2 (25+)** | -0.0002 | 0.0018* | 0.0010 | 0.0013 | 0.0004 | 0.0009 |
| se | 0.0008 | 0.0009 | 0.0011 | 0.0011 | 0.0012 | |
| N | 534720 | 516567 | 472883 | 442989 | 401109 | |
| **IT L2** | 0.0016 | 0.0080*** | 0.0100*** | 0.0094*** | 0.0088*** | **0.0094** |
| se | 0.0011 | 0.0012 | 0.0013 | 0.0014 | 0.0014 | |
| N | 359149 | 357834 | 347137 | 325179 | 295024 | |
| **IT L2 (19-24)** | 0.0093* | 0.0142** | 0.0157*** | 0.0169*** | 0.0171*** | **0.0166** |
| se | 0.0041 | 0.0044 | 0.0046 | 0.0047 | 0.0049 | |
| N | 35048 | 34828 | 33688 | 31819 | 29189 | |
| **IT L2 (25+)** | 0.0006 | 0.0079*** | 0.0105*** | 0.0100*** | 0.0086*** | **0.0097** |
| se | 0.0011 | 0.0012 | 0.0013 | 0.0014 | 0.0015 | |
| N | 312726 | 311758 | 302925 | 283668 | 257631 | |

*** Significant at the 0.1% level; ** 1% and * 5%

Note: The numbers of the 19-24 years old and of the 25+ years old do not add up to the overall numbers because of the presence of individuals who were aged 16,17,18 at the time in which they started attending the IT courses.

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