

# **Post-16 pathways to employment for lower attaining pupils: are they working?**

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The research team is drawn from the University of Westminster and FFT Education Datalab



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# Executive Summary

This report provides a summary of research conducted as part of a Nuffield Foundation funded study that uses linked National Pupil Database (NPD) and Longitudinal Education Outcomes (LEO) administrative data, to carry out three quantitative investigations. These analyse the experiences of different groups of learners between 2011 and 2019, to shed new light on the educational experiences of lower attaining young people, with a particular focus on their post-16 pathways. We draw together findings from these studies to consider the labour market outcomes secured by lower attainers; identifying a pressing need to improve outcomes for these learners, who are predominantly from disadvantaged backgrounds and often have some form of Special Educational Need (SEN) identified early in their school career.

**Post-16 pathways of the 2011 KS4 Cohort:** This investigation considers 260,000 young people who in 2011 achieved Grade 3 ('D') or below in Maths and/or English GCSE in the year they turn 16 (Key Stage 4) - referred to as the *Maths and/or English group* for brevity. This casts a wide net, selecting young people who did not achieve one or other of these key GCSE thresholds. Some in this group will have good GCSE grades in other subjects and only have narrowly missed a Maths or English threshold; others will have missed both thresholds by two or three grades, and this will reflect their wider GCSE achievement. Whatever the specific context, all experience a reduction in post-16 options, as some pathways to Higher Education will no longer be immediately open to them.

We focus particular attention on young people within this wider group whose KS4 achievement in 2011 suggests a more substantial educational challenge, concentrating on 47,000 pupils who achieved grades of E, F or G in Maths and English GCSE at KS4<sup>1</sup> - referred to as the *E, F or G group*. Selection of such a specific group is necessarily arbitrary and we report findings from a variety of different groupings, ensuring our focus is on all young people who may be considered as lower attaining and who, we argue, require a new policy approach.

Consideration of the 2011 KS4 cohort allows estimation of the labour market value of post-16 education pathways taken by lower attainers up to the age of 24 (2019). However, to capture labour market outcomes we necessarily consider historical cohorts who experienced a different post-16 policy context. Therefore, two further investigations consider whether policy measures introduced since 2011 have changed education and labour market outcomes for lower attaining students.

**Comparing the 2011 and 2016 KS4 cohorts:** Here we compare the educational experiences of lower attainers in the 2011 cohort, during three years of post-16 learning, with those of the 2016 KS4 cohort, during their post-16 years in education (2017 to 2019). We describe changes in the types of qualification and levels of achievement taken by lower attainers and consider what this implies for employment outcomes between the two periods. In this analysis specific consideration is given to qualification impacts arising from the 2014

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<sup>1</sup> Grades D, E, F and G under the previous grading structure correspond to grades 3, 2 and 1 under the new structure.

requirement that students aged 16 to 18 who do not hold GCSE Grades 9-4 (previously A\*-C) in Mathematics and/or English continue to study these subjects.

**Reforms following the Wolf Review:** The final part of our study analyses impacts arising from reforms that followed the Wolf Review (2011). This does not specifically select pupils who do not meet Maths/English GCSE thresholds but focuses more broadly on young people who are the subject of our study, as the reforms disproportionately affected disadvantaged, lower-attaining pupils. This also provides additional insight into the educational experiences of lower attaining young people from KS4 onwards. The analysis updates the findings of Burgess and Thomson (2019), allowing us to gain further evidence of how reforms changed labour market, as well as educational, outcomes of lower attaining young people up to the period of the pandemic.

## Post-16 pathways of the 2011 KS4 Cohort

**Social background is strongly predictive of attainment at KS4 and therefore post-16 pathway options:** Of the approximately 330,000 pupils in the 2011 KS4 cohort who met both Maths and English thresholds, the proportion eligible for Free School Meals at any time during their school career (*'ever FSM'*<sup>2</sup>) was only 20%; this increases to 45% amongst the 260,000 pupils in the *'Maths and/or English'* group; and 56% amongst the 47,000 young people in the *'E, F or G group'*. Young people from disadvantaged backgrounds are five times more likely to have ever been identified as having Special Educational Needs and Disability (*'ever SEND'*) at any point in their school career. *Ever SEND* is also strongly predictive of whether they are in our three categories of KS4 achievement. For instance, the proportion of young people who are *ever SEND* was 89% amongst the *E, F or G group* in 2011. This combination of factors determines post-16 pathway options. For instance, only 13% of the *E, F or G group* were registered at a state funded school in Oct 2011 and this falls to 6% within a year.

**Many lower attainers have 'fractured' post-16 learning pathways and high levels of drop-out, particularly those who are ever FSM:** Our analysis underlines the challenge that post-16 education providers face, as lower attainment during many years of schooling is hard to turn around after the age of 16. This is highlighted above in consideration of *ever SEND* and in indicators of Key Stage 2 (KS2) scores and KS3 assessments. These capture pupil performance in National Curriculum tests and teacher assessments in the final year of primary school, and in the year pupils turn 14, respectively. When considering the 2011 KS4 *Maths and/or English* group the gap in attainment, compared to cohort averages, remained relatively constant from KS2 to KS4. However, pupils in our *E, F or G* group experience an apparent worsening of their relative situation at KS4.

Many young people who achieve below thresholds at KS4 fall behind early in their school career and at age 16 are not well prepared for transition to a very different educational setting. Across the *never FSM* and *ever FSM* groups of young people who are lower attaining, we observe fractured post-16 learning pathways; but this is particularly apparent for young people who are *ever FSM*. For instance, focusing on young people in the *E, F or G*

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<sup>2</sup> See Glossary in the Annex for details, including qualification and outcome measures.

*group* initial post-16 registrations (in October 2011) show a greater propensity for *NEET*<sup>3</sup> *Active* (mainly unemployment) status amongst the *ever FSM* group, but the difference (8% compared to 5% amongst *never FSM*) is relatively small. However, by January 2015 attrition from post-16 pathways result in 17% of the *never FSM* group in the *NEET Active* category and 30% *NEET active* amongst the *ever FSM* group. In contrast, employment rates are 43% for young people who are *never FSM*; compared to 31% for the *ever FSM* group. It is particularly concerning that young people from less advantaged social backgrounds had a *NEET Active* rate almost identical to their employment rate.

### **Post-16 pathways taken by many lower-attaining pupils promote NQF Level 3**

**achievement by age 19:** Our findings suggest that the General Further Education (GFE) pathway had a positive and [statistically] significant impact on the probability that a young person in the 2011 KS4 cohort would achieve NQF Level 3 by the age of 19; when compared to similar pupils on all other pathways (including state school enrolment and non-education pathways). The OLS regression results suggest that when we compare the [conditional] outcomes of all learners in GFE, relative to those in other pathways who have similar characteristics, the probability of achieving NQF Level 3 by age 19 is 2 percentage points higher. The results are similar whether the regression analysis covers our wider *Maths and/or English* group or focuses specifically on the *E, F or G* group.

However, the implications of these findings differ for groups at different ends of our profile of lower attainers, because of the alternative institutional post-16 pathways available. For young people who are towards the upper end of our profile of lower attainers, post-16 education alternatives to GFE tend to be available – School Sixth Form and to a lesser extent Sixth Form College and work-based learning providers. Here a suggestion that GFE provides a two percentage point higher probability of achieving NQF Level 3 by age 19 is particularly encouraging, as this is in comparison to other post-16 education options. In contrast, when the analysis is carried out for young people in the *E, F or G* group the finding that a GFE pathway provides a 2.3 percentage point higher probability of achieving NQF Level 3 by age 19 is less encouraging, as this is mainly in comparison to non-education post-16 pathways.

### **Post-16 pathways taken by the lowest attaining pupils in the 2011 KS4 cohort do not**

**improve employment outcomes:** Our findings suggest that on average, across the wider *Maths and/or English* group of lower attainers, those who take GFE as a post-16 pathway secure similar employment and earnings outcomes to comparable young people taking other pathways. This is a relatively positive finding, as previous evidence uncovers significant employment and earnings returns to Level 1 and Level 2 technical qualifications taken by many of these young people in the post-16 environment. Considered in this context, the findings here suggest that the level of these returns does not differ significantly for comparable young people, whether they are taken in GFE or alternatives.

However, when we focus analysis on the *E, F or G* group of lower attainers the probability of being in employment at age 24 for those taking GFE as a post-16 pathway, is significant and negative. This suggests that young people towards the bottom end of our distribution of lower attainers are less likely to be observed in employment, when compared to young people on alternative pathways. For these young people in the 2011 KS4 cohort, the

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<sup>3</sup> Not in Education, Employment or Training. 'Active' indicates 'available to the labour market'.

majority of 'alternative post-16 pathways' do not include education (only one year into their post-16 pathways most young people who are not in GFE are not in learning) and this raises concern over the labour market value of their post-16 learning. We advise caution in consideration of our negative and significant IV parameter, but these results suggest that (at best) there is no significant employment return from post-16 learning for many of the lowest achieving young people. A further (mediation) analysis suggests that young people in this group who start on a post-16 pathway of registering for qualifications *Below level 2* are particularly at risk of securing poor labour market outcomes.

## **Comparing the 2011 and 2016 KS4 cohorts**

Our work does uncover some positive findings – for instance, when comparing post-16 experiences of the 2011 and 2016 KS4 cohorts we observe an increase in the proportion of lower attaining young people who achieve both Maths and English qualifications such as *Functional Skills* by age 19. However, the proportions achieving *Full Level 2* qualifications by age 19 fell substantially between these two periods, driven in part by fewer pupils achieving Level 2 by age 16, as a result of changes that followed the Wolf Review. This is particularly worrying given that lower attainers with a programme aim of *Full Level 2* were associated with statistically significant positive employment probabilities. Any improvements from the achievement of more *Functional Skills* qualifications by age 19 are offset by falls in achievement of *Level 2* qualifications, which from existing studies are associated with positive and significant employment returns.

## **Reforms following the Wolf Review**

In a study of policy changes that followed the Wolf Review (2011) we provide further evidence that education and employment outcomes for lower attainers have not improved and may have worsened in the period before the pandemic. We find that the cohort affected by the Wolf reforms were less likely than their predecessor cohorts to have achieved Level 2 of the national qualifications framework by age 21. However, there was little indication of any impact on attainment at Level 3 or above. In terms of labour market outcomes, the group of pupils most likely to have been affected by the Wolf reforms had slightly poorer employment outcomes at both age 19 and 21 relative to similar pupils.

Considering findings from our two studies into the effects of educational reforms on lower attaining young people, the suggestion is that reforms following the Wolf Review had little initial impact on post-16 study choices and on the acquisition of higher-level skills, but there is a fall in achievement at Level 2 amongst lower attaining learners. There is some indication that this was accompanied by a worsening of employment outcomes for lower attainers, but the evidence here is more mixed due to data limitations. What we can say with a high degree of confidence, is that (at best) the education and labour market outcomes of lower attainers did not improve following these reforms. Therefore, whilst much has changed in education policy in the period since the 2011 KS4 cohort entered post-16 learning, this has not improved outcomes of lower attainers.

## Conclusions

As Lupton et al. (2021; page 109) suggest, “disadvantaged young people are over-represented [amongst lower attainers] and some young people with multiple needs are doing very badly in the education system”. Many of these young people do not have a good education experience and when they reach age 16 their options for post-16 learning are constrained. General Further Education (GFE) faces an enormous challenge to help the lowest attaining successfully transition from ‘doing very badly in the education system’, to achieving educational outcomes that can enhance their employment prospects. Between 2011 and 2016, the proportion of young people in the *E, F or G group* registering at GFE increased from 65% to 79% (reflecting the impacts of RPA<sup>4</sup>), and we find no significant employment return from post-16 learning for many of these young people in the 2011 KS4 cohort, especially those who register for qualifications *Below level 2*. Whilst much of our investigation focuses on evaluation of post-16 interventions, analysis of the lowest attaining identifies problems from KS3 onwards.

Studying more recent KS4 cohorts and the post-16 experiences of low attainers immediately before the pandemic (2017-2019), suggests this situation has not changed. In a study of policy changes that followed the Wolf Review (2011) we provide further evidence that education and employment outcomes for low attainers have not improved and may have worsened, during this period. This adds to concerns (Farquharson et al., 2021; Farquharson, McNally and Tahir, 2022; Andrews, 2023) that the attainment gap amongst disadvantaged young people was widening, even before the pandemic and that policy is failing these young people from KS3 onwards.

Policies that do not seem to have improved post-16 outcomes for low attainers include, the 2012 Apprenticeship Reform; Raising of the participation age (RPA) from age 16 to 17 in the 2012/13 academic year, and to 18 from the 2013/14 academic year; the removal of NVQs (as part of Ofqual’s new Regulated Qualifications Framework (RQF) introduced in October 2015); replacement of apprenticeships based on frameworks with those based on standards from 2015 onwards; reforms that followed the Wolf Review (2011); and *the 2014 requirement* that students aged 16 to 18 who do not hold GCSE Grades 9-4 (A\*-C) in Mathematics and/or English continue to study these subjects. Our findings suggest the situation of lower attaining learners has not improved, even though social mobility and disadvantaged young people have often been the stated focus of these policies.

This is perhaps not surprising when one considers patterns of funding for education and training in recent years. Lower attaining young people enter post-16 learning having been behind in their studies for most of their school career and the extent of this gap in learning seems to worsen at KS4 for the lowest attaining. The decline in school spending per pupil seen in England over the last decade has fallen particularly on the most disadvantaged, with deprived schools suffering the largest cuts (Farquharson, Sibieta, Tahir and Waltmann, 2021). This will have impacted the level of support lower attaining young people - who are more likely to be socially disadvantaged - receive prior to entering post-16 pathways; at which point they will enter FE colleges and sixth forms that have experienced ‘the largest falls in per-pupil funding of any sector of the education system’ (ibid).

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<sup>4</sup> Though it is important to note that numbers in this specific group fell from 43,000 to 24,000 over the period.



There is a clear need for policy that ensures high-quality Technical Education pathways to rival HE and these need to be appropriately funded. However, this policy focus is necessarily on pupils who are close to GCSE threshold grades at KS4, as it is achievement of these thresholds that would allow them to take pathways to HE. The government's plans on [Post-16 qualifications at level 2 and below from spring 2023](#) and the current [Advanced British Standard consultation](#) may have some potential to support lower attaining young people further below GCSE thresholds at KS4, to progress to higher levels of post-16 study. However, to develop appropriate policy for the 50,000 to 80,000 pupils in each cohort who require post-16 study that recognises their challenge in achieving *Level 2*, greater understanding and empathy is required. Policy solutions needed for the lowest attaining are different to those who are closer to GCSE thresholds and failure to recognise this can result in unintended consequences.

As the Social Mobility Commission (2020) has suggested, there is little clear evidence regarding the appropriate pedagogical approach for disadvantaged and lower attaining young people and this is particularly apparent in the post-16 environment. We hope our report can spark debate in this election year on what needs to change, to ensure that appropriate evidence-based policies are introduced to improve outcomes for lower attaining young people.

# Introduction

This report provides a summary of research conducted as part of the Nuffield Foundation funded study, *Analysis of post-16 education pathways that entrench social segregation*<sup>5</sup>. The study uses linked National Pupil Database (NPD) and Longitudinal Education Outcomes (LEO) administrative data, to carry out three quantitative investigations. These analyse the experiences of different groups of learners between 2011 and 2019, to shed new light on the educational experiences of ‘lower attaining’<sup>6</sup> young people, with a particular focus on their post-16 pathways. We draw together findings from these studies to identify the labour market outcomes secured by lower attainers and consider the implications for post-16 learning. Our findings identify a pressing need to improve outcomes for these learners, who are predominantly from disadvantaged backgrounds and often have some form of Special Educational Need (SEN) identified earlier in their school career.

This work tackles a continuing gap in evidence and policy debate focused on support for lower attainers, with a lack of evidence on what works for these young people (Social Mobility Commission, 2020; Lupton et al., 2021); hampering progress on improving post-16 opportunities and outcomes (Hupkau et al., 2017). Recent studies have considered those who ‘just miss out’ on GCSE thresholds (Anderson, 2022; Jerrim, 2022; Machin, McNally and Ruiz-Valenzuela, 2020) and policy on technical education has focused on developing a high-quality Technical Education (TE) alternative to the Higher Education (HE) pathway. But what of the young people who, at the age of 16, achieve well below GCSE thresholds, particularly in Maths and English, and cannot access HE or technical pathways at Level 3 and above? The post-Brexit and post-Covid recruitment challenges faced by employers in sectors such as hospitality, retail and social care present an opportunity to re-think education policy for the most disadvantaged; and ensure they are not missed from future skills plans<sup>7</sup>.

Our first investigation begins by considering the population of young people who achieved Grade 3 (‘D’) or below in Maths and/or English GCSE in the year they turn 16 (Key Stage 4)<sup>8</sup>. This casts a wide net, selecting young people who did not achieve one or other of these key GCSE thresholds. Some in this group will have good GCSE grades and only have narrowly missed a Maths or English threshold; others will have missed both thresholds by two or three grades, and this will reflect their wider GCSE achievement. Whatever the specific context, all will experience a reduction in post-16 options, as some pathways to HE will no longer be immediately open to them. We consider 260,000 young people (46%) from the 2011 Key Stage 4 (KS4) cohort who meet these criteria, allowing us to consider their post-16 education and labour market pathways up to the age of 24 (2019).

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<sup>5</sup> <https://www.nuffieldfoundation.org/project/post-16-labour-market-lower-attaining-ks4> (Grant reference FR-00000366)

<sup>6</sup> Our work builds on Lupton et al. (2021) who consider ‘lower attainers’ as young people whose ‘GCSE results place them at the lower end of their cohort’s profile of achievement’.

<sup>7</sup> See for instance <https://www.nfer.ac.uk/key-topics-expertise/education-to-employment/the-skills-imperative-2035/>

<sup>8</sup> We report letter grades used before 2017, together with subsequent numerical grades, using the methodology outlined in Burgess and Thomson, (2020). We focus on grade 4 (formerly C) in English and Maths. This is because, although grade 5 is the new standard for school performance tables, grade 4 remains the effective passport to A Levels and equivalent Level 3 courses and apprenticeships. Since 2014, grade 4 has also determined whether young people need to continue to study English and Maths and potentially re-sit GCSE exams as a condition of the funding of their post-16 study.

Within this group of 260,000 pupils we provide some idea of the variation in post-16 pathways that reflect variation in achievement at KS4. However, our focus is on young people within this wider group whose KS4 achievement suggests a more substantial educational challenge and we concentrate particularly on the approximate 47,000 pupils who achieved grades of E, F or G in Maths and English GCSE at KS4<sup>9</sup>. Selection of such a specific group is necessarily arbitrary and we report findings from a variety of different groupings<sup>10</sup>. This helps ensure our focus on all young people who may be considered as lower attaining and who, we argue, require a new policy approach.

Consideration of the 2011 cohort allows estimation of the labour market value of post-16 education pathways taken by lower attainers up to the age of 24 (2019)<sup>11</sup>. However, to capture labour market outcomes we are necessarily considering historical cohorts who experienced a different post-16 policy context. Therefore, two further investigations consider whether policy measures introduced since 2011 have changed post-16 education and labour market outcomes for lower attaining students.

Our second investigation compares the educational experiences of lower attainers in the 2011 cohort, during three years of post-16 learning, with those of the 2016 KS4 cohort, during their post-16 years in education from 2017 to 2019. We describe changes in the types of qualification and levels of achievement taken by lower attainers and consider what this implies for employment outcomes between the two periods. In this analysis specific consideration is given to the qualification impacts arising from the 2014 requirement that students aged 16 to 18 who do not hold GCSE Grades 9-4 (previously A\*-C) in Mathematics and/or English continue to study these subjects.

However, the period between 2011 and 2016 contains a variety of policy interventions that may have impacted lower attaining students. Therefore, we also consider how qualification levels have changed for these young people, beyond Maths and English. Policies that may have impacted the post-16 learning outcomes of these young people include the 2012 Apprenticeship Reform; Raising of the participation age (RPA) from age 16 to 17 in the 2012/13 academic year, and to 18 from the 2013/14 academic year; the removal of NVQs (as part of Ofqual's new Regulated Qualifications Framework (RQF) introduced in October 2015); and replacement of apprenticeships based on frameworks with those based on standards from 2015 onwards (BMG Research et al, 2017).

This second investigation shows how the types and levels of qualifications changed between the two periods, and from this we can consider likely implications for labour market outcomes. However, we cannot compare labour market outcomes in this part of our study (due to the period of Covid disruption) and we therefore draw on findings from a third investigation that provides additional evidence to inform our policy discussion, analysing

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<sup>9</sup> Grades D, E, F and G under the previous grading structure correspond to grades 3, 2 and 1 under the new structure.

<sup>10</sup> For instance, the group of young people who achieved a D in both Maths and English; and the group who do not reach thresholds in Maths or English, but achieved a D in at least one.

<sup>11</sup> We present Alluvial Diagrams to map post-16 pathways and use an Instrumental Variables approach to estimate outcomes, identifying the probability of achieving NQF Level 3 qualifications and subsequent employment and earnings outcomes.

impacts from reforms that followed the Wolf Review (2011). This does not specifically select pupils who do not meet Maths/English GCSE thresholds but focuses more broadly on young people who are the subject of our study, as the reforms disproportionately affected disadvantaged, lower-attaining pupils. This study also provides additional insight into the educational experiences of lower attaining young people from KS4 onwards. The analysis updates the findings of Burgess and Thomson (2019), allowing us to gain further evidence of how reforms changed labour market, as well as educational, outcomes of lower attaining young people up to the period of the pandemic.

The *Conclusion and Next Steps* section draws together findings and considers implications for policy. This document is for a policy audience. Details of the statistical approaches, results and further technical detail on the data used will be available in accompanying Working Papers and Briefings when this report is launched in March 2024.

# Post-16 pathways of young people achieving below threshold grades in Maths and/or English GCSE at KS4

## Profile of Lower Attaining Pupils

To ensure observation of sufficient post-16 years in education and the labour market, we analyse the pathways of young people in the 2011 KS4 cohort<sup>12</sup>. Table 1 presents key characteristics of lower attaining pupils who form the focus of our analysis, and allows comparison with the full cohort<sup>13</sup>, making clear the link between lower attainment and disadvantage.

Considering the full 2011 KS4 cohort of approximately 590,000 young people, 31% had been eligible for free school meals at some point in their school career (from here referred to as 'ever FSM'<sup>14</sup>); this proportion increases to 45% amongst the approximate 260,000 pupils who achieved Grade D (3) or below in Maths and/or English GCSE in this year (sometimes referred to as the '*Maths and/or English*' group for brevity); and 56% amongst 47,000 young people who are further down the cohort's profile of achievement, achieving E, F or G grades in Maths and English (sometimes referred to as the *E, F or G group*) – these groups include young people who did not achieve a grade or weren't entered for GCSEs (an issue to which we return when considering young people in Special Schools).

Studies (see for instance, Chowdry et. al., 2013; Buscha and Sturgis, 2015; Bibby et. al., 2015a; Crawford et. al., 2021) suggest socio-economic background is strongly predictive of educational achievement and at KS4 this translates into social background being strongly predictive of post-16 pathway options. For instance, Machin, McNally and Ruiz-Valenzuela, (2020)<sup>15</sup> identify less favourable outcomes associated with the post-16 pathways taken by young people who 'narrowly miss' GCSE thresholds, who will be towards the top of our distribution of 260,000 lower attainers. Higher FSM eligibility amongst those who miss thresholds suggests these less beneficial post-16 pathways are more likely to be experienced by young people from less socially advantaged backgrounds<sup>16</sup>. However, we

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<sup>12</sup> Many studies attempt to observe young people in the labour market around the ages of 28 to 30, to allow sufficient time for returns to education to accrue. However, whilst this may be the case for studies of degree returns (see for instance, Belfield et al., 2018: 2021), lower attainers complete education at a much younger age. In our study of lower attainers in the 2011 cohort, the majority have left education by age 19.

<sup>13</sup> Our population of reference is all young people in state-funded education who attended year 11 in England during the academic year 2010-2011. This includes young people in Alternative Provision schools, in Special Schools and outside the school system at the end of Key Stage 4; but does not include independent schools, largely because we do not observe their post-16 study pathways in the data (though note our population will include a small number where the state pays to have them educated in the independent sector).

<sup>14</sup> FSM indicators are a proxy for social background. We utilise measures of FSM eligibility over a young person's entire school career to mitigate some concerns over changes in the coverage of this indicator over time. Similarly, our indicator of Special Educational Needs and Disability (SEND) considers a pupil's entire school career.

<sup>15</sup> Machin et al. report that '*narrowly missing a grade C increases the probability of dropping out of education at age 18 by about 4 percentage points*' and becoming NEET by approx. 2 ppts.

<sup>16</sup> The figures in Table 1 perhaps underplay this selection by social background – if we only consider the approximate 330,000 (590,000 minus 260,000) who do meet both thresholds, the proportion who are *ever*

have an even greater concentration of 'ever FSM' amongst the 47,000 young people further down this cohort's profile of achievement. If our analysis finds that this group's post-16 pathways are even further constrained, this is an additional way in which achievement at KS4 works to make social background strongly predictive of post-16 pathway options.

**Table 1: Characteristics of the (i) full 2011 KS4 cohort (ii) pupils achieving below Maths and/or English Thresholds; and (iii) achieving E, F or G grades in Maths and English GCSE**

	Full 2011 KS4 School Cohort		Achieving below Maths and/or English Thresholds (D or below)		Achieving E, F or G in Maths and English	
	Mean/%	N	Mean/%	N	Mean/%	N
KS2 standardised score	-0.03 <sup>17</sup>	556,965	-0.80	236,650	-1.43	44,120
KS3 standardised score	0.01	560,970	-0.80	236,560	-1.31	45,175
GCSE average stand. score	0.00	589,635	-0.63	257,700	-1.52	47,400
'White' ethnicity	75%	589,635	69%	257,700	79%	47,400
Ever SEND	42%	589,635	69%	257,700	89%	47,400
Ever FSM	31%	589,635	45%	257,700	56%	47,400
Female	49%	587,000	44%	255,225	36%	47,385
Achieved Level 2 <sup>18</sup> by age 19	84%	589,635	65%	257,700	52%	47,400
Achieved Level 3 <sup>19</sup> by age 19	56%	589,635	24%	257,700	7%	47,400
Earnings per day (age 24)	£49.3	433,935	£44.3	164,700	£41.8	28,030
>1 day employed (age 24)	80%	589,635	70%	257,700	66%	47,400

Source: *Linked NPD and LEO data, 2011 KS4 School Cohort.*

Table 1 suggests that young people further down the cohort's profile of achievement are more likely to be male pupils (64% in the *E, F or G group*); and we observe a slight over-representation of young people whose ethnicity is 'white' (79%). This reflects concern over a variety of groups who continue to be over-represented amongst lower-attaining pupils<sup>20</sup>.

In the following analysis we consider the potential for achievement of Level 3 learning by age 19 and Table 1 suggests only 7% of the group who achieved *E, F or G grades* at KS4 achieved this outcome<sup>21</sup>. In addition, by the age of 24 two-thirds of these young people are

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*FSM* is only 20%. Later in the report we consider the implications of improvements in proportions achieving thresholds in recent years – as we shall see, this has still left a social divide with [for instance] 41% of young people in the 2019 KS4 cohort who are ever FSM achieving A\* to C in their Maths and English GCSE; compared to 68% of young people who had not been eligible for FSMs at any point in their school career ('never FSM').

<sup>17</sup> The slight deviation from zero here and below is due to the use of differing denominators to calculate these standardised scores.

<sup>18</sup> 5 full course GCSEs at grades A\*-C (9-4) or equivalent.

<sup>19</sup> 2 A-levels at grades A\*-E or equivalent.

<sup>20</sup> <https://www.gov.uk/government/news/smc-responds-to-report-on-white-working-class-pupils-being-let-down>

<sup>21</sup> As suggested further on in the report, even when we consider achievement of this outcome by age 24, there is little improvement. Also, readers should note that this figure of 7% is a proportion of all young people who achieve *E, F or G* at KS4 in 2011 – later in the report we present other figures on Level 3 achievement, for

in employment compared to 80% in the full cohort; and median earnings per day across the full cohort for those who do secure employment are already (at such an early stage in their career) 18% higher than the figure for those obtaining *E, F or G* grades.

Consideration of social background, as captured by FSM eligibility, is a particular focus of our study as it allows us to shed new light on the extent to which *post-16 education pathways entrench social segregation*. However, as one might expect, Table 1 shows that ‘*ever SEND*’<sup>22</sup> is also strongly predictive of whether a young person is observed in our three categories of KS4 achievement (increasing from 42% to 89% as we move further down the profile of achievement) and therefore post-16 pathways. Given that young people from disadvantaged backgrounds (as captured by FSM status) are five times more likely to have an indicator of SEND in the National Pupil Database ([Thomson, 2021](#)), to what extent is our suggested correlation between social background and post-16 options driven by the correlation between indicators of SEND in the National Pupil Database and KS4 performance?

### **Indicators of SEND in the National Pupil Database**

SEND indicators in the NPD have limitations and consideration of detailed categories<sup>23</sup> highlights constraints this places on their use for analysis. For instance, if we consider young people with an indicator of SEND who achieved a grade D in Maths GCSE, 33% are classified as having a *Moderate Learning Difficulty*; 34% a *Behavioural, Emotional and Social Learning Difficulty*; 14% a *Specific Learning Disability* (such as Dyslexia); and 9% of young people with SEND are recorded as having *Speech, Language and Communication Needs*. As we consider young people further down the profile of attainment, these proportions change very little – even considering young people who gain a G grade, we still observe 37% of those with a SEND indicator being recorded as having a *Moderate Learning Difficulty* (a 4 percentage-point rise); and 36% have a *Behavioural, Emotional and Social Learning Difficulty* (a 2 percentage-point rise). The proportion of young people with *Speech, Language and Communication Needs* changes by 1 percentage point and the only substantial change we observe is in the proportion of young people with a *Specific Learning Disability*, which falls to 11% amongst young people with an F grade in Mathematics and 8% amongst those who secure a G.

Whatever the exact point in our distribution of lower attainers we consider, around 90% of young people with a SEND indicator fall under one of these four broad categories of need. This is not to suggest these needs should not be taken seriously, but for the analysis here it implies that (i) the distribution of specific need underpinning *ever SEND* does not vary greatly as we move down the profile of achievement – for instance, there is no clear indication that young people with SEND in the ‘*E, F or G group*’ are higher need than those

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instance when considering only those young people [amongst this KS4 group] who have a learning aim registered in a post-16 institution, we see 17.8% of these young people achieve FL3. In each case where we present figures, footnotes are used to explain any differences.

<sup>22</sup> This indicator covers School Action, School Action Plus, School Support, Statement and EHC plan.

<sup>23</sup> These figures have to be created using reported figures for each of the 2006 to 2016 KS4 cohorts and are not ‘*ever SEND*’ indicators, but rather averages pooled across this period – there are a number of reasons driving this, for instance in the case of ‘*ever SEND*’ indicators it is possible for a young person to be included in different specific categories (for instance, *Moderate Learning Difficulty* and *Behavioural, Emotional and Social Learning Difficulty*) at different points during their school career (see Thomson, 2021) for more detail.

in the wider group of lower attainers. To be clear, concerns over the data mean there may be some difference in need, but it is not captured in the indicator of SEND we are able to use in the NPD<sup>24</sup>. In addition, (ii) the high correlation between *ever FSM* and *ever SEND* reflects the well-documented attainment gap by social background<sup>25</sup>, with less socially advantaged young people more likely to fall behind early in their school careers. In most schools this will be raised as a flag of SEND, explaining the large overlap between these two indicators (FSM status is highly predictive of whether we observe pupils with an indicator of SEND).

This is not to suggest that our indicator of *ever SEND* is not important and we control for this in all analyses. For instance, at various stages we detail the challenge facing Further Education, which provides many of the post-16 pathways for young people with SEND; and when considering policy options, the fact that 89% of young people in our lowest achieving group have *ever SEND* indicators, implies more could be done earlier. Furthermore, whilst we have concerns, our indicator of SEND contains detailed information on approximately 10% of young people with other specific categories of need, many of whom will be in alternative forms of provision – for instance, *Severe Learning Difficulties, Multisensory Impairment, Hearing Impairment, Visual Impairment, Physical Difficulty and Autism Spectrum Disorder*<sup>26</sup>.

Discussion of Table 1 underlines the challenge that post-16 education providers, in particular Further Education institutions, face – persistent lower attainment during many years of schooling is hard to turn around after the age of 16. As suggested in the discussion of SEND, many young people we consider in the post-16 environment fall behind early in their school careers. For instance, our indicator of Key Stage 2 (KS2) standardised scores captures a young person's performance in National Curriculum tests and teacher assessments in the final year of primary school; and KS3 assessments were carried out in the year pupils turned 14<sup>27</sup>. Standardising these scores allows some insight into how the relative situation of lower attainers changes between KS2 and KS4. When considering the *Maths and/or English* group the gap [-0.80] remains constant; whilst the situation of young people in our *E, F or G* group shows some possible closing of the gap between KS2 [-1.43] and KS3 [-

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<sup>24</sup> A small caveat is that when we consider achievement of grades from D to G in English GCSE there is a 17 ppt increase in those with *Behavioural, Emotional and Social Learning Difficulty* and this is offset by a fall in proportions of those with *Moderate and Specific Learning Difficulties*. However, this change in proportions is most pronounced when moving from consideration of young people with an F to those with a G grade. When considering our various indicators of Maths and/or English achievement this pattern is not apparent as the numbers obtaining G grades are relatively small, and so do not impact estimation.

<sup>25</sup> Socio-economically disadvantaged and low attaining pupils in primary school are already many months behind their more privileged peers on average: <https://educationendowmentfoundation.org.uk/news/socio-economic-attainment-gap-remains-stubbornly-wide-after-pandemic-with-reading-skills-particularly-affected>

<sup>26</sup> Our wider group of 260,000 lower attainers includes young people in Special Schools, but they make up less than 5% of this group and as a result their specific experiences will not influence our overall quantitative findings. We do not exclude them from this study, but in order to capture the specific experiences of young people in Special Schools, one requires a focused analysis – for instance, very few young people in Special Education attempt GCSEs with the majority taking qualifications such as ASDAN; there is no SEND equivalent of a national curriculum (see Rochford, 2016) and post-16 pathways may be very different to those taken by young people in this study.

<sup>27</sup> Key Stage 3 tests were discontinued in 2009 but teacher assessment data were collected until 2013.



1.31]. However, there is an apparent worsening of their relative situation at KS4 (as reflected in their -1.52 deviation from the average GCSE points score).

We cannot place too much weight on these initial figures of how ‘gaps’ change over a young person’s school career (not least because Key Stages test different ranges of skills and abilities), but we can see that most of those who achieved below threshold at KS4 fall behind early in their school career, and we return to this in our consideration of policy. Having described groups that form the focus of analysis in this first investigation, we now use Alluvial Diagrams to describe the post-16 pathways taken by young people who did not achieve thresholds at KS4 in 2011; and then consider findings from analyses that estimate the education and labour market outcomes from these post-16 pathways.

## Post-16 institutional pathways

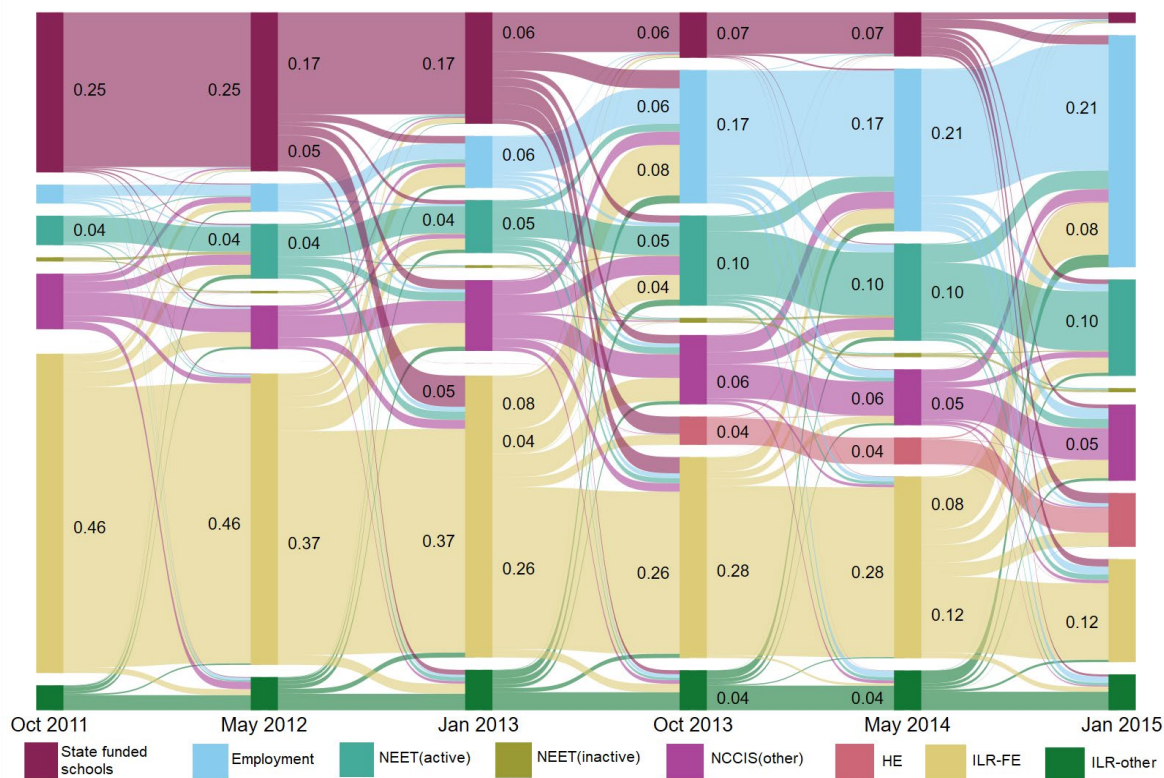
Diagram 1 describes the proportions of young people observed in different education and labour market activity states, from October of the academic year they turned 17 (October 2011) through to January of the academic year they turned 20 years of age (January 2015). In each post-16 academic year we take 3 snapshots of a young person’s activity status (October, January and May) – for instance, in the first academic year following this cohort’s summer 2011 GCSE exams, ‘snapshots’ of their education and employment status are captured in Oct 2011; January 2012 and May 2012. These three points cover the academic year in which these young people turn 17<sup>28</sup>. Diagram 1 uses this information to map the pathways taken over this period by all 260,000 young people who did not achieve threshold grades in Maths and/or English GCSE in the 2011 KS4 cohort – as already suggested this group contains a variety of KS4 achievement and this is reflected in the post-16 pathways taken.

The Alluvial Diagrams describe post-16 pathways through (i) *State Funded School* (incl. School Sixth Form); (ii) *ILR-FE* is General Further Education (GFE) as recorded in the Individualised Learner Record or ‘ILR’; (iii) *ILR Other* (including Sixth Form College and Work Based Learning ‘WBL’ providers); (iv) *Employment* (v) *NEET Active* (young people who are not in employment, education or training, but searching for work) and (v) *NCCIS Other*, which includes mostly young people who could not be contacted.

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<sup>28</sup> We do not utilise all these dates to create Alluvial Diagrams, as they become hard to interpret with too many census points. Also, at various stages in the following analysis we note sensitivity checks on our findings from the use of alternative census dates – for instance, in the econometric analysis the results presented use the first census date [Oct 2011] to capture initial pathways; and further analysis has been carried out to check results utilising a measure that draws on more than one initial census date (findings remain unchanged).

**Diagram 1: Percentages in post-16 activity categories, for pupils in the KS4 2011 cohort who did not achieve thresholds in Maths and/or English.**



Source: Linked NPD and LEO data, 2011 KS4 School Cohort.

For instance, in October 2011 26% of these young people are observed as being enrolled in state-funded schools (predominantly School Sixth Forms). However, from May 2012 this proportion drops to 17%, as 5% flow into General Further Education (*ILR-FE*) – a state that accounts for 52% of the initial post-16 destinations of these learners in Oct 2011<sup>29</sup>. Even in this period prior to Raising of the Participation Age (RPA) we have few young people moving straight into employment (3%), but we do have significant numbers who are *NEET active* (5%) or in the *NCCIS Other* group (9%)<sup>30</sup>. By January 2015 employment accounts for 38% of activity states; *NEET Active* 16%; *NCCIS Other* 12%; 9% are in Higher Education and 17% in Further Education.

Diagram 1 provides an overview of pathways for our most varied group of lower attainers and flags a number of worrying outcomes from the pathways taken – for instance, when turning 20 years of age 28% are in either *NEET Active* or the *NCCIS Other* groups. There is some indication from this diagram that flows from General FE (GFE) into these two categories are higher than those from the State Funded Schools sector, but there are also

<sup>29</sup> We cannot include percentages for all flows in Alluvial Diagrams as they become unreadable. Similarly, we do not separately comment on the very small category of *ILR: Other*, which includes Work-Based Learning (WBL) providers, until we come to the final section on policy implications.

<sup>30</sup> Information from the National Client Caseload Information System (NCCIS) helps provide activity states for young people who are often missing from the administrative data. The hierarchy of assignment to categories adopted for this study has *NCCIS NEET Inactive* featuring further down this categorisation process, partly explaining the very small numbers in this category.

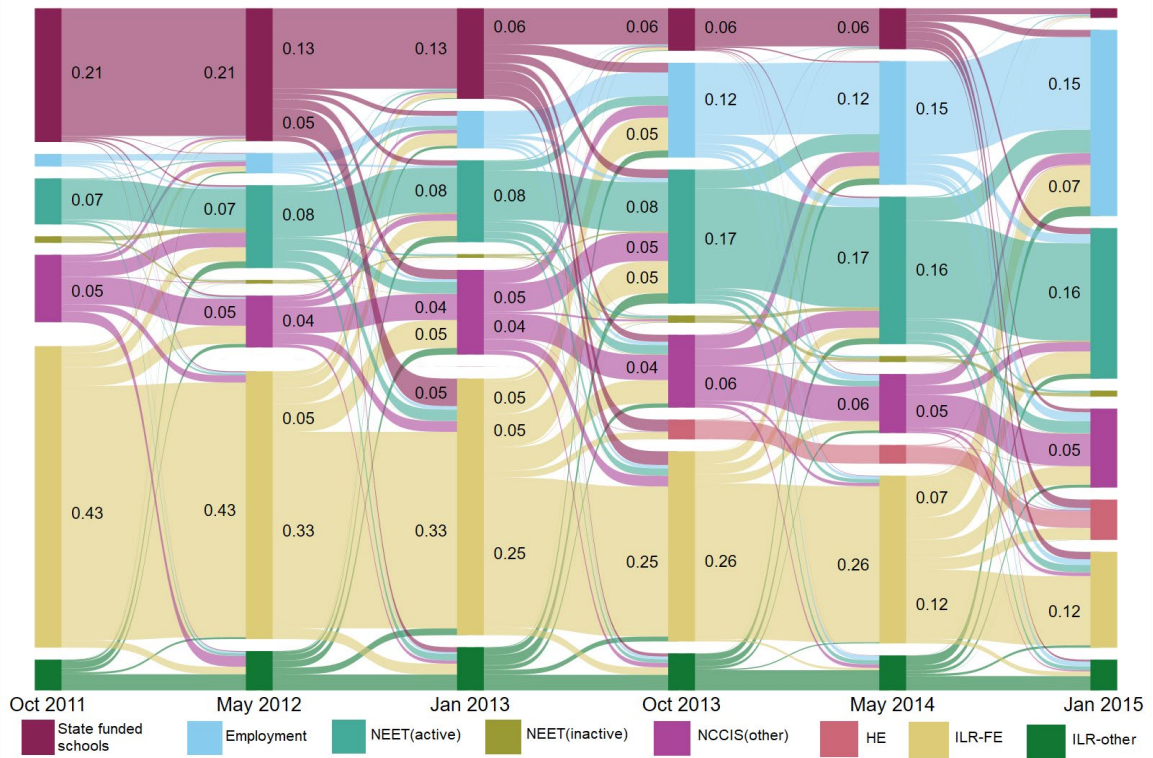
high proportions of young people flowing from School to GFE post-16. In the following Diagrams we unpick this further.

### **Pathways by Social Background: Maths and/or English group**

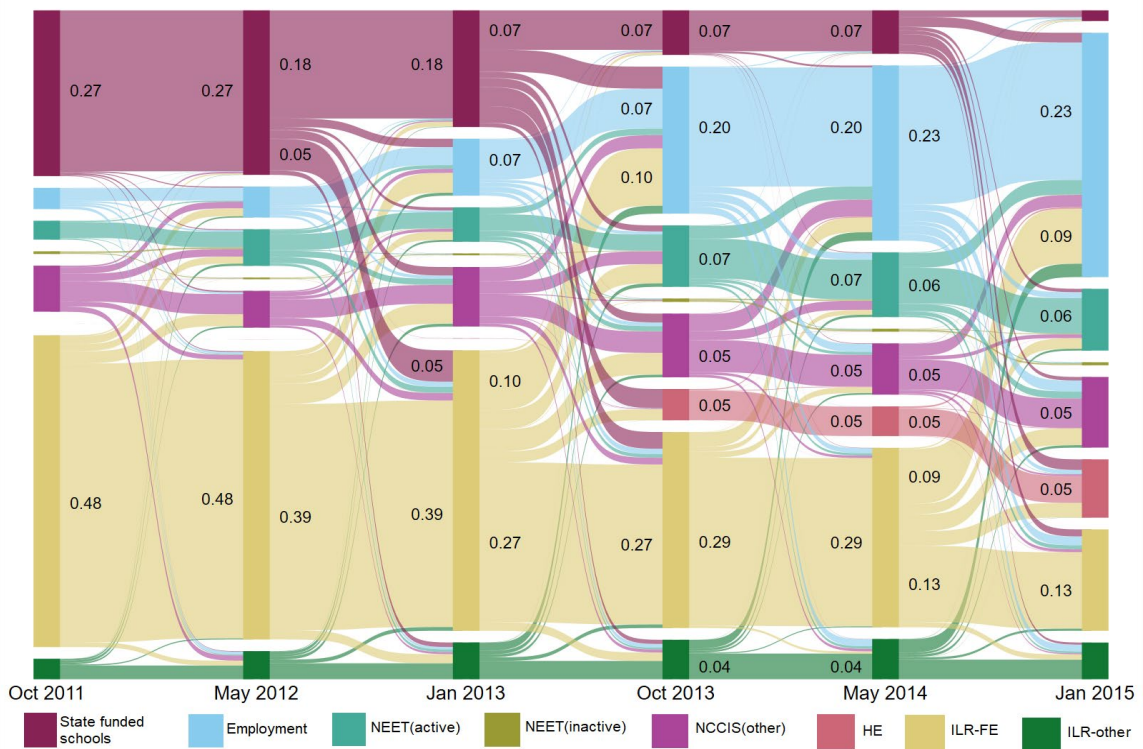
We now separately consider young people who were included in Diagram 1 who are *ever FSM* (Diagram 2) and those who are *never FSM* (Diagram 3). Existing studies show that young people from less advantaged social backgrounds are more likely to be observed in Further Education, compared to other post-16 destinations (Bibby et al., 2015a). From our discussion to this point there are two closely-related potential drivers – lower attaining young people are more likely to have post-16 options in Further Education, rather than in others (such as Sixth Forms) that focus more attention on the path to HE; and less socially advantaged young people [*ever FSM*] are more likely to be in these lower attaining groups at KS4.

Comparing Diagrams 2 and 3 we gain some insight into the question of whether, in addition to socio-economic background being predictive of achievement at KS4 (and therefore post-16 pathway options), there is an additional impact of social background (when we consider young people in a similar category of achievement at age 16). In Diagram 2 we observe 50% of young people who are *ever FSM* having an initial (Oct 2011) registration in General Further Education (*FE-ILR*) and 22% in State Funded Schools; compared to figures of 53% and 28% respectively amongst young people who are *never FSM* in the same *Maths and/or English* KS4 group. This does suggest a greater propensity amongst these lower attaining pupils to begin a post-16 pathway in State Funded Schools if they are '*never FSM*', but the most striking difference is in the proportion of young people who are *NEET Active*. This starts at a higher level amongst the *ever FSM* group and by Jan 2015 accounts for 26%; compared to only 11% amongst the *never FSM* group.

**Diagram 2: Percentages in activity categories, for pupils in the KS4 2011 cohort who did not achieve thresholds in Maths and/or English: who are 'ever FSM'**



**Diagram 3: Percentages in activity categories, for pupils in the KS4 2011 cohort who did not achieve thresholds in Maths and/or English: who are 'Never FSM'**



Source: *Linked NPD and LEO data, 2011 KS4 School Cohort.*

In Diagrams 2 and 3 it is the greater initial propensity post-16 to be in both State Funded School and GFE amongst the more socially advantaged, rather than a particular propensity to be in GFE amongst the less socially advantaged, that is apparent. The *Maths and/or English* group still contains a variety of KS4 achievement and from additional analysis of young people who are towards the upper end of our profile of lower attainers, we find a slightly higher propensity to select into initial state school pathways by the more socially advantaged, but no difference in the proportions initially going to GFE<sup>31</sup>. Generally, we find that considering young people towards the upper end of our profile of lower attainers, differences by social background are less pronounced, both in terms of these initial post-16 registrations and outcomes captured at the end of our Sankey Diagrams. For instance, the proportions of young people in Higher Education by Jan 2015 is the same for *ever FSM* and *never FSM*<sup>32</sup>; and the higher levels of *NEET active* in Diagram 2 are not driven by differences in outcomes by social background at the upper end of our distribution of lower attainers.

### Pathways by Social Background: E, F or G group

Focusing only on young people who achieved *E, F or G in Maths and English* at KS4 in Diagrams 4 and 5 towards the lower end of our distribution of lower attainers, we see what drives these differences in *NEET Active*. In both Diagrams initial registrations clearly show some greater propensity for *NEET Active* amongst the *ever FSM* group, but the difference (8% compared to 5% amongst *never FSM*) is relatively small. We observe 13% initially registering in State Funded Schools irrespective of social background, and a higher proportion (61%) of the *never FSM* group registered at GFE compared to the *ever FSM* group (56%). **When considering young people further down the cohorts' profile of lower attainers, we observe the more socially advantaged selecting into GFE in higher numbers;** and access policies of Schools seem to determine post-16 enrolment levels into state school pathways (irrespective of social background).

We return to these findings, not least to consider implications for our econometric specification, but it is the pathways at later stages in Diagrams 4 and 5 where we observe stark differences by social background. Thus, amongst the *ever FSM* group (Diagram 4), at each census point where we capture flows from GFE, the flows into *NEET active* and *NCCIS Other* are larger than those seen amongst those from more advantaged social backgrounds (Diagram 5). The differences are not particularly stark up to Jan 2013 but after this point the flows from GFE into employment are much greater at each time point for the *never FSM* group; and the flows into *NEET Active* are much higher for the *ever FSM* group. There are significant flows from GFE to *NCCIS Other* in both Diagrams 4 and 5, but for young people in the *never FSM* group we are more likely to observe subsequent flows from this *NCCIS other* category into employment (whilst in the *ever FSM* group young people are more likely to flow from *NCCIS Other* into the state of *NEET Active*).

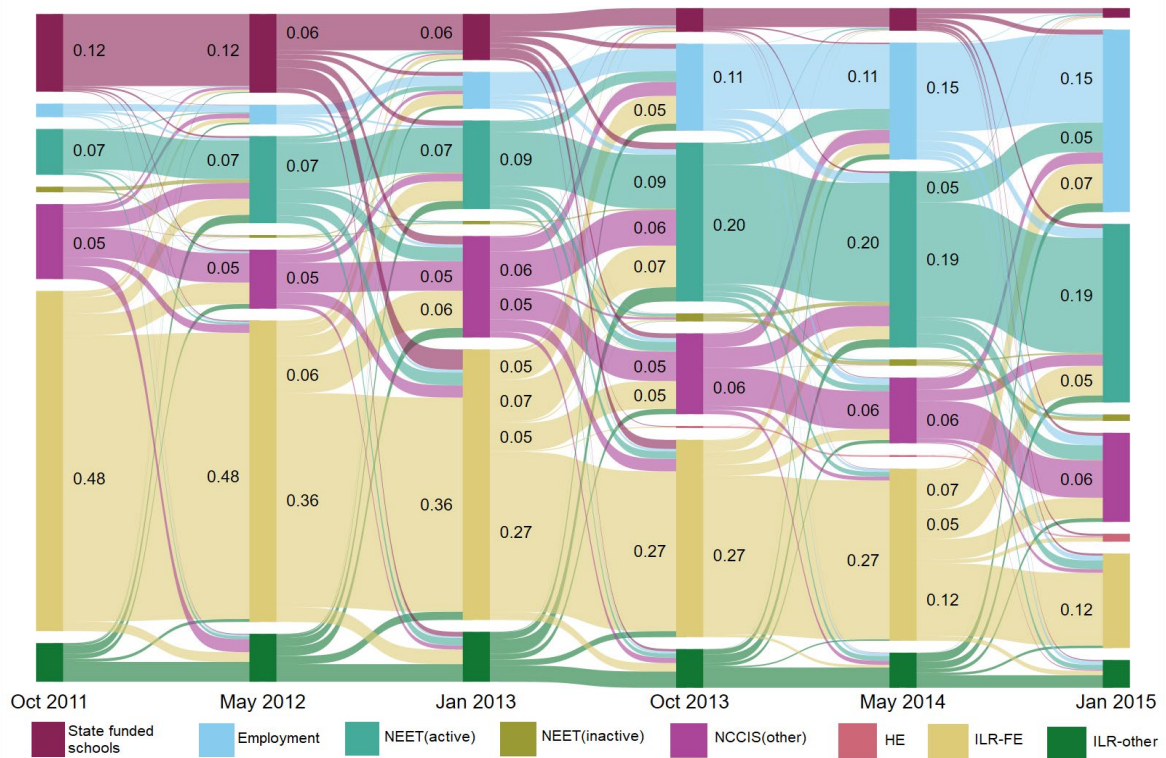
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<sup>31</sup> For instance, considering young people who are in our wider 'Maths and/or English' group only because they achieve a D in Maths or English (i.e. they secure a threshold grade in one of these subjects) those from more advantaged backgrounds are 2 percentage points more likely to have an initial post-16 pathway in a state funded school. This slight difference in initial pathways by social background is repeated when we consider other groups of young people towards the upper end of our profile of lower achievers (e.g. the same 2 ppt gap exists when considering those who obtain D in both Maths and English), but in both cases the proportions with an initial GFE registration does not vary by social background.

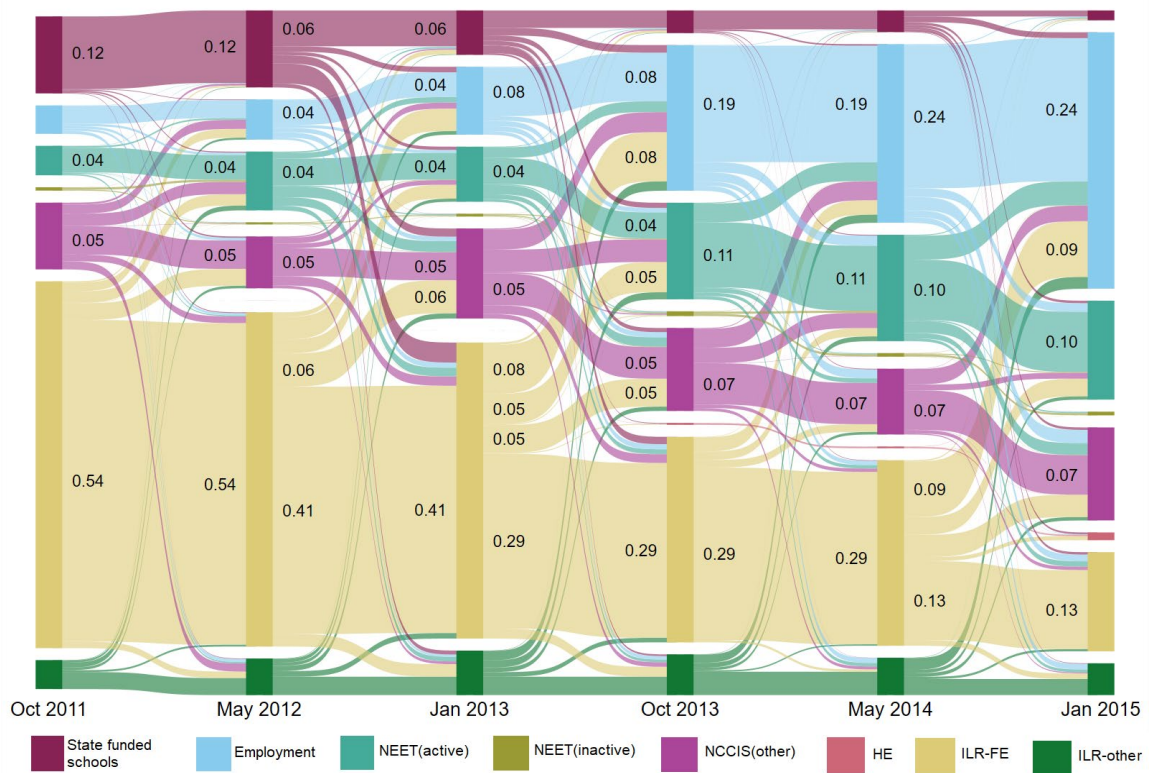
<sup>32</sup> Amongst those who obtain a D in both Maths and English, 18% of both the *ever FSM* and *never FSM* groups are in HE at this point.

By January 2015 attrition from these pathways result in 17% of the *never FSM* group in the *NEET Active* category and 30% *NEET active* amongst the *ever FSM* group. In contrast, employment rates are 43% for young people who are *never FSM*; compared to 31% for the *ever FSM* group. It is particularly concerning that young people from less advantaged social backgrounds have a *NEET Active* rate that is almost identical to their employment rate. Other than these differences, in each remaining category of activity by January 2015 outcomes are similar - both have 16% remaining in GFE; both have at most 1% in HE and 15% in *NCCIS Other*.

**Diagram 4: Percentages in activity categories, for pupils in the KS4 2011 cohort who achieved grades E, F or G in Maths and English GCSE: who are 'ever FSM'**



**Diagram 5: Percentages in activity categories, for pupils in the KS4 2011 cohort who achieved grades E, F or G in Maths and English GCSE: who are 'Never FSM'**



Source: Linked NPD and LEO data, 2011 KS4 School Cohort.

## Implications and post-16 qualification pathways

The next sections of this report consider findings from econometric analyses that evaluate the outcomes secured by young people along the pathways presented in these Alluvial Diagrams. We first consider the ‘institutional pathways’ presented here, focusing particularly on the value of Further Education pathways taken by lower attaining young people. Existing evidence presents a mixed picture, with some studies raising questions over the value of GFE (Hendrik Matthewes and Ventura, 2022), but concerns remain that any such analysis does not fully recognise GFE’s role in supporting individuals with higher needs. As Bibby et al. (2015a) underline, when we consider entire cohorts of learners GFE is more likely to be a post-16 pathway for lower attainers, who are predominantly from less advantaged social backgrounds and more likely to have additional learning needs. Any comparison between the outcomes of these young people in GFE and the wider cohort, risks under-estimating the value of GFE.

However, these Alluvial Diagrams uncover a more nuanced picture when we focus solely on young people further along our distribution of lower attainers (in the *E, F or G group*). Here we observe young people from more advantaged social backgrounds selecting into GFE, compared to a lesser propensity to be observed in a NEET status. We have already noted some of the limitations of our SEND indicators, but the correlation between FSM and SEND status suggests that when we consider some of the lowest attainers in our following analysis, any concerns that we may underestimate returns to GFE are much reduced – in fact, as the following discussion suggests, we may have the opposite concern.

Following our econometric analysis of the education and labour market outcomes from these institutional pathways, we consider how labour market outcomes vary according to the specific post-16 qualification pathways taken by lower attaining young people. As we shall see, there are some differences by socio-economic background, with young people who are *ever FSM* more likely to be observed in post-16 qualification categories that are associated with less favourable labour market outcomes. However, when focusing down on the *E, F or G group* these differences by social background are very small and do not seem to explain the relatively poor outcomes for less advantaged young people in Diagram 4.

In existing work (Allen, Parameshwaran and Thomson, 2016) there is a suggestion that young people from less socially advantaged backgrounds may have problems accessing support to make informed educational decisions. However, **analysis of young people who are very low attaining at KS4 does not suggest large differences in initial post-16 pathway decisions by social background. Rather it is the ‘attrition’ they experience along these pathways that drives very different outcomes.** Pushing the NPD and ILR data to its current limits<sup>33</sup>, we can gain some additional insight into what is happening to these young people as they move along post-16 pathways.

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<sup>33</sup> When considering post-16 qualification data we have details of each learning aim taken by individuals within the schools and FE sectors. These data suffer from problems of missingness/inconsistency and it is also common for mistakes to be made in referencing particular qualifications. This is a particular problem with qualifications that take more than one year to complete - if the qualification reference changes from one year to the next, then the two records will not be linked and therefore treated as two aims rather than one. Also, young people we consider tend to have multiple specific aims at any one time and these are more likely to change from one ‘snapshot’ date to the next (October, January, May). As an example, we wish to ask whether



Thus, utilising data on broad programme aims, young people who are *ever FSM* have slightly shorter average learning spell durations - we observe them for an average of 3.88 census points (just over one academic year), something that reflects their greater propensity to 'drop out' of GFE, when compared to those who are *never FSM* (4.2). However, during their time in post-16 learning they are more likely to change main programme activity – young people who are *ever FSM* have an average of 4.04 main programme aims during that time, compared to 3.46 amongst *never FSM*. This combination of data suggests this difference is not about changes to aims that reflect progression - the *ever FSM* group spend less time in both school and GFE post-16, but have more distinct 'spells' (periods of enrolment). **Across the *never FSM* and *ever FSM* group of young people who are lower attaining, we observe 'fractured' post-16 learning pathways; but this is particularly apparent for young people who are *ever FSM*.** We return to consider these patterns of learning and what they imply for support and resource for lower attainers in GFE, especially those from less advantaged social backgrounds.

## Outcomes from post-16 pathways

The previous Alluvial Diagrams set out the initial registrations of young people as they start on post-16 pathways and describe how these develop in the first three years of post-16 activity. In this section we consider the outcomes from these institutional pathways and then the impact from specific qualification pathways underpinning these. As with the previous discussion, we consider findings from analysis of a range of groups along the distribution of lower attainers but focus mainly on findings from analysis of (a) the population of young people who achieved Grade 3 ('D') or below in Maths and/or English GCSE in the year turn 16 (KS4) and (b) the approximate 47,000 pupils who achieved grades of E, F or G in Maths and English GCSE at KS4 in 2011.

Whilst our focus on young people who are lower attaining at KS4 goes some way to mitigate concerns over any 'unfair' comparison of outcomes between GFE and other post-16 pathways, group (a) still covers a wide range of achievement at KS4. If we have a situation where GFE is more likely on average to provide support to young people who have higher educational needs (amongst this lower attaining group), when compared to other post-16 pathways (and we do not properly account for this in our analysis) we risk under-estimating the value of GFE<sup>34</sup>. However, as the discussion around Diagrams 2 and 3 suggests, whilst we do observe some propensity for pupils from more socially advantaged backgrounds to 'choose' a post-16 school pathway, differences in those choosing GFE are relatively small. Furthermore, if we consider the average GCSE points score of young people at KS4 in group (a) who register for a GFE pathway (29.5) with those who choose an alternative (30.5), differences are not particularly pronounced.

Even these small differences would be concerning if we were to take a simplistic approach to comparison of the value of post-16 pathways, by simply comparing outcomes without any consideration of [i.e. 'controlling for'] differences in pupil characteristics. Therefore, the

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there are differences between young people from different social backgrounds in the extent to which they change qualification aims and have more 'disrupted' pathways - to provide useful insight this can only be done if we consider overall programme of study [aims] rather than the specific qualification aims that contribute to these overall 'programmes'.

<sup>34</sup> For more details see <https://www.westminster.ac.uk/research/impact/proving-further-education-is-key-to-social-mobility>

following results present findings from two types of regression analysis. The first OLS<sup>35</sup> regression analysis compares outcomes, having controlled for the differences we observe between young people in GFE and alternative pathways; and the second (IV<sup>36</sup>) goes further, accommodating differences that we do, and those that we do not, observe.

The same regression approaches are used when analysing findings from group (b), where average GCSE points scores are the same (23) amongst individuals who take a GFE pathway and those who do not. As suggested in our discussions around Diagrams 4 and 5, the concern here is that if we do not effectively control for these differences, we may potentially over-state returns to GFE learning (as we see the more socially advantaged having a higher probability of selecting into GFE amongst this lower attaining group).

### Achievement of NQF Level 3 from Institutional Pathways

This section summarises findings and considers outcomes from Ordinary Least Squares (OLS) regression and Two-Stage Least Squares (2SLS) regression (with the latter approach based on the use of crow-flies distance as an Instrumental Variable, IV)<sup>37</sup>. Output 1 summarises findings from an analysis that estimates impacts of the GFE pathway<sup>38</sup> on the probability of achieving National Qualifications Framework (NQF) Level 3 by the age of 19; for all pupils who did not achieve threshold grades in Maths and/or English at GCSE. In the 2SLS regression, distance to nearest GFE in the relevant choice set is used as an Instrument.

#### Output 1:

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Treatment: Registered with a GFE provider in October of academic year turn age 17<sup>39</sup>  
 Outcome: Achievement of NQF Level 3 by age 19 [outcome mean, 0.24]  
 Population: 2011 KS4 pupils achieving below **Maths and/or English** GCSE Thresholds

	OLS	IV	IV Rural	IV Urban
Coeff. estimate GFE	0.020***	0.086	0.370**	-0.009
Standard Error	(0.002)	(0.086)	(0.121)	(0.046)

\*\*\* Statistically significant 0.1% level; \*\* Statistically significant 1% level; \*Statistically significant 5% level

Overall, findings from Output 1 suggest that the GFE pathway had a positive and [statistically] significant impact on the probability that a young person would achieve NQF Level 3 by the age of 19; when compared to similar pupils on all other pathways (including

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<sup>35</sup> Ordinary Least Squares

<sup>36</sup> Instrumental Variables.

<sup>37</sup> Control variables include KS2 and KS3 performance measures, Ethnicity, *ever SEN*, *ever FSM*, gender, region of residence; Urban City and Town, Rural Town and Fringe, Rural Village; % FSM in MSOA; household net annual income decile of MSOA, and a range of additional locational variables. We have also added average GCSE points score at age 16 as a control to see if this changes outcomes and results remain unchanged. The addition of GCSE KS4 outcomes as a control is debatable as it is potentially endogenous - see Crawford et. al. (2011) and Bowyer et. al (2019) for a discussion (for instance, if pupils consider that their favoured post-16 pathway does not require good GCSEs, this may impact their KS4 performance). However, as a test of sensitivity we return to comment on findings when GCSE average points score is added to our analysis.

<sup>38</sup> All young people who are observed to be in General Further Education in the October they turn 17.

<sup>39</sup> We have varied our approach to definition of the treatment, and also estimated these models for an earlier cohort (pupils in the 2009 KS4 cohort), and these changes do not alter findings.

state school enrolment and non-education pathways). The statistically significant parameter estimates are 0.020 for the OLS regression and 0.370 for the IV regression estimated specifically for Rural settings. The OLS regression suggests that when we compare the [conditional] outcomes of all learners in GFE, relative to those in other pathways who have similar characteristics, the probability of achieving NQF Level 3 by age 19 is 2 percentage points higher. This is the estimated figure averaged across all learners in GFE<sup>40</sup>, whilst the figure of 0.37 suggests that for a very specific group of rural learners within this overall group<sup>41</sup>, the probability is 37 ppts higher for those attending GFE, when compared to the alternative pathways available to these young people<sup>42</sup>. As Alluvial Diagram 1 suggests, the main education alternative available to many of these young people is School Sixth Form and to a lesser extent Sixth Form College and work-based learning providers<sup>43</sup>.

### Output 2:

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Treatment: Registered with a GFE provider in October of academic year turn age 17  
 Outcome: Achievement of NQF Level 3 by age 19 [outcome mean, 0.07]  
 Population: 2011 KS4 pupils achieving **E, F or G grades in Maths and English GCSE**

	OLS	IV	IV Rural	IV Urban
Coeff. estimate GFE	0.023***	0.097*	0.125	0.085
Standard Error	(0.002)	(0.048)	(0.102)	(0.056)

\*\*\* Statistically significant 0.1% level; \*\* Statistically significant 1% level; \*Statistically significant 5% level

Output 2 presents the results of a similar analysis carried out for young people who are further down our profile of lower attainers – as our consideration of Diagrams 4 and 5 have suggested, the alternative education pathways for this group of young people are much more constrained. Thus whilst 59% have an initial GFE post-16 registration, only 13% are registered at a state funded school (this falls to 6% within a year) and 23% are initially in non-education pathways (including 12% *NCCIS Other* and 4% in *Employment*). Here OLS results suggest that those in GFE were significantly more likely to achieve NQF Level 3 - the estimated parameter implies a 2.3 percentage point impact, similar to that for our wider population of lower attainers.

However, from the previous discussions we note that (if anything) there is concern that this parameter may be an over-estimate, if we are not controlling for all differences between young people on GFE pathways and those who are not. Therefore, it is encouraging that the IV estimate (which we are more confident overcomes such problems) is significant at the 5%

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<sup>40</sup> This estimate is referred to as the *Average Treatment Effect on the Treated* or ATT.

<sup>41</sup> This estimate is referred to as a *Local Average Treatment Effect* or LATE.

<sup>42</sup> Rural and urban settings are considered separately as our 2SLS regression uses distance to nearest GFE as an instrument and these magnitudes differ significantly between the two locations. In the accompanying *Working Paper* we consider the findings from this analysis in more detail, in an attempt to explain the large and statistically significant coefficient in rural settings and the insignificant variable in urban settings. Here we emphasise that (i) it is hard to determine whether the reason for this difference in the two parameters is statistical in nature or reflects the fact that distance is more of a binding constraint in rural settings; but (ii) overall these are positive findings for GFE.

<sup>43</sup> As already suggested, all analyses include young people who are in Special Schools, but their numbers are small and so at this level of analysis their experiences do not influence findings.

level and suggests that amongst a specific group of these young people (those who are on the margins of choosing GFE) there is a 9.7 ppt higher probability that they would achieve NQF Level 3 by age 19<sup>44</sup>.

### Employment and Earnings outcomes from Institutional Pathways

Moving on to consider employment and earnings outcomes for our wider group, OLS results from outputs 3 and 4 suggest that pupils attending GFE have a significantly higher (3.7 ppt) probability of being in employment for at least one day during the year they turn 24; and their earnings are (on average) 1.1% higher than young people who are similar on observed characteristics but take alternative post-16 pathways (including non-education pathways). The IV results are all insignificant and this suggests that lower attainers who take GFE as a post-16 pathway, secure similar employment and earnings outcomes to comparable young people who take other pathways. It is worth emphasising why this is a relatively positive finding, as previous evidence (Bibby et al. 2014; 2015; Hedges et al., 2018; Cerqua et al., 2020) uncovers significant employment and earnings returns to Level 1 and Level 2 technical qualifications that are taken by many of these young people in the post-16 environment. Considered in this context, the findings here suggest that the level of these returns does not differ significantly for comparable young people, whether they are taken in GFE as a post-16 pathway or alternatives<sup>45</sup>.

#### Output 3:

Treatment: Registered with a GFE provider in October of academic year turn age 17  
 Outcome: At least one day in employment in year age 24<sup>46</sup> [outcome mean 0.70]  
 Population: 2011 KS4 pupils achieving below **Maths and/or English** GCSE Thresholds

	OLS	IV	IV Rural	IV Urban
Coeff. estimate GFE	0.037***	-0.002	-0.063	0.025
Standard Error	(0.002)	(0.041)	(0.102)	(0.042)

#### Output 4:

Treatment: Registered with a GFE provider in October of academic year turn age 17  
 Outcome: Natural log (Ln) of earnings aged 24 [outcome mean, 3.79]  
 Population: 2011 KS4 pupils achieving below **Maths and/or English** GCSE Thresholds

	OLS	IV	IV Rural	IV Urban
Coeff. estimate GFE	0.011***	0.025	0.102	-0.020
Standard Error	(0.003)	(0.058)	(0.155)	(0.057)

<sup>44</sup> These findings do not change when we utilise the same estimation approach with NQF Level 3 by age 24 as the outcome (to account for the possibility that achievement of Level 3 will be delayed by further study at Level 2 whilst in the early years of GFE).

<sup>45</sup> The positive and significant OLS results may be driven by differences between young people in the two pathways that we are not able to control for and also adds some support to this narrative.

<sup>46</sup> We have used alternative indicators such as how many days in employment and whether in continuous employment and these findings remain. Similarly, when we add average GCSE points score as a control across these analyses it does not change findings - other than the difference in findings that are driven by a smaller population sample size, as we drop young people from the analysis for whom we do not observe an average GCSE points score.

Our final analysis of employment and earnings outcomes that arise from Institutional pathways in Output 5 and Output 6 focus on young people further down our profile of lower attainers (they obtain E, F or G in Maths and English GCSE at KS4). The OLS estimate of 0.045 from Output 5 suggests that pupils attending GFE have a significantly higher (4.5 ppt) probability of being in employment for at least one day during the year they turn 24; when compared to young people who are on alternative post-16 pathways. However, once again our concern here is that OLS estimates may be (if anything) inflated because of the potential for selection of more advantaged young people into GFE, when considering this group of lower attainers. Consideration of the IV estimates in Output 5 suggests this concern is warranted, as the estimated probability of being in employment at age 24 for lower attainers who take GFE as a post-16 pathway, is significant and negative (reflected in a statistically significant parameter of -0.177). This suggests that young people towards the low end of our distribution of low attainers are less likely to be observed in employment, when compared to young people on alternative pathways. As we saw in our consideration of Alluvial Diagrams, for young people in this group the majority of ‘alternative pathways’ do not include education (only one year into their post-16 pathways most young people who are not in GFE are not in learning).

#### Output 5:

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Treatment: Registered with a GFE provider in October of academic year turn age 17  
 Outcome: At least one day in employment in year age 24 [outcome mean 0.66]  
 Population: 2011 KS4 pupils achieving **E, F or G grades in Maths and English GCSE**

	OLS	IV	IV Rural	IV Urban
Coeff. estimate GFE	0.045***	-0.177*	0.044	-0.243*
Standard Error	(0.005)	(0.089)	(0.186)	(0.102)

#### Output 6:

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Treatment: Registered with a GFE provider in October of academic year aged 17  
 Outcome: Natural log (Ln) of earnings aged 24 [outcome mean, 3.73]  
 Population: 2011 KS4 pupils achieving **E, F or G grades in Maths and English GCSE**

	OLS	IV	IV Rural	IV Urban
Coeff. estimate GFE	0.009	-0.149	0.014	-0.171
Standard Error	(0.006)	(0.125)	(0.300)	(0.134)

As suggested later, the negative IV parameters in Output 5 need to be considered with care and employment and earnings outcomes at age 24 are not necessarily those we would expect later in working life<sup>47</sup>. However, these results suggest that (at best) there is no significant employment return from post-16 learning for many of the lowest attaining young people (relative to a ‘no-learning’ alternative). We now consider the post-16 qualification pathways that this *E, F or G* group undertake in the post-16 environment, to better understand what is driving these findings.

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<sup>47</sup> Though on average lower attaining learners enter the labour market at an earlier age than higher attainers and therefore this is less of a limitation for our analysis (Bowyer et al., 2019).

## Post-16 Qualification Pathways for Lower Attaining Pupils

In this section we focus on the experiences of young people in our lowest attaining KS4 group, as this is where there are particular concerns over post-16 pathways to employment and earnings. Whilst the lowest attainers at KS4 have little choice over post-16 institutional pathways, they do face options over the specific qualification pathway – in this section we analyse the qualification pathways taken by young people to further identify which learners are, and which learners are not, gaining from post-16 learning.

Before doing so, it is useful to reiterate that the finding of a negative employment effect in Output 5 needs to be considered with care. The negative parameter of -0.177 is only just statistically significant at the 5 per cent level (the p-value is 0.048) and we analyse relatively large sample sizes, so even small differences are likely to be (or close to being) statistically significant. Put more simply, our findings across employment and earnings outcomes can be considered as (at best) insignificant when we use IV to obtain a more reliable estimate of the causal impact of the GFE pathway on labour market outcomes<sup>48</sup>.

Table 2a describes the initial qualification aims undertaken by lower attaining pupils as they start on their post-16 pathways – as already suggested, these are programme-level aims, which summarise the more detailed qualification aims data across GFE and schools' datasets. From Table 2a we may have initial concerns over the 61% of young people who registered for a post-16 programme that is 'Below Level 2' amongst our *E, F or G* group. However, these aims may reflect introductory learning for a specific technical (previously 'vocational') qualification pathway. We can also see that amongst our wider group of those not meeting *Maths and/or English* thresholds, higher proportions registered for qualifications at Level 3 and above outside of GFE<sup>49</sup>.

The figures in Table 2a for the *E, F or G* group of students cover the 38,300 young people in this group for whom we observe qualification aims in the October they turn 17, that can then be collated to a clear overall programme aim. For the remaining analysis of qualification programme pathways, we focus on this group and Table 2b presents the summary programme aims indicators used in the following mediation analysis (Keele, 2015; Huber, 2016). Table 2b now includes another 4,000 young people (11%) who have no qualification aim at this first post-16 census point and therefore we have around 4,000

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<sup>48</sup> As suggested earlier, it is debatable whether we should include average GCSE points score in our analysis – see Crawford et. al. (2011) and Bowyer et. al (2019) for a discussion. If we do include this in the IV analysis that provides us with a parameter of -0.177, the estimated parameter changes very little (to -0.157) but the p value becomes 0.070. We have carried out this check on all analyses and findings remain, but as already suggested, we would interpret our employment effect as 'at best' insignificant (adding GCSE average points scores to the OLS analysis changes parameter estimates only slightly - for instance, in Output 5 the parameter reduces slightly from 0.045 to 0.040).

<sup>49</sup> This is an interesting issue. One may consider that it raises concerns over our comparison of pupils in GFE, if these registrations outside of GFE are secured by higher attainers who are better able to access higher-level courses. However, when considering these young people in schools, many will be repeating Maths and/or English GCSE and therefore have specific qualification aims at Level 2 - even in this period prior to the 2014 introduction of rules regarding continued Maths and/or English study post-16. However, their overall programme aim is likely to be Level 3, whilst this may not be the case if they followed a GFE pathway. We observe significant drop-out from schools in our Alluvial Diagrams and return to consider this in light of the evidence on programme aims.

young people (8.5%) who are considered ‘missing’ in this analysis<sup>50</sup>. The ‘Below Level 2’ group are the same in both tables; ‘Other Full Level 2’ and ‘Partial Level 2’ have been combined in Table 2b and ‘Level 2 apprenticeship and above’ includes all remaining categories from Table 2a.

**Table 2a: Qualifications Pathways<sup>51</sup>, within Institutional Pathways, 2011 cohort**

Post-16 learning main qualification [programme] aim, in Oct of year turn 17			
Percentages	Maths and English E, F or G group post-16	Maths and/or English group in post-16 GFE	Maths and/or English group not in GFE post-16
Level 3 Apprenticeship	0.3	0.3	1.2
A-levels	*	1.1	13.7
Level 3 BTEC/OCR or T-levels	3.6	16.4	12.7
Mixed level 3	0.9	0.8	11.2
Other full level 3	0.2	1.5	0.7
Mixed/Partial level 2/3	0.4	0.3	1.0
Level 2 apprenticeship	7.1	3.5	12.5
Other full level 2	22.6	36.2	16.8
Partial level 2	3.9	1.6	5.5
Below level 2	60.8	38.1	24.5

**Table 2b: Summary post-16 Pathways for Maths and English E, F or G group**

Summary post-16 Programme aim	Maths and English E, F or G Group
L2 apprenticeship and above	11%
Full or partial Level 2	24%
Below Level 2	54%
No pathway	11%

Source: *Linked NPD and LEO data, 2011 KS4 School Cohort.*

Before estimating the value of these different qualification programme aim pathways, Diagram 6 sets out some key differences in the characteristics of young people who select into these different pathways. For instance, when considering standardised KS2 and KS3 scores, there is a pattern we might expect. Young people who have a smaller negative figure (i.e. they are below the cohort average KS2 and KS3 score, but by a lesser margin) are more likely to enrol in higher level qualification aims post-16. However, the differences are not as pronounced as one might expect – **the gap in performance between young people at KS2**

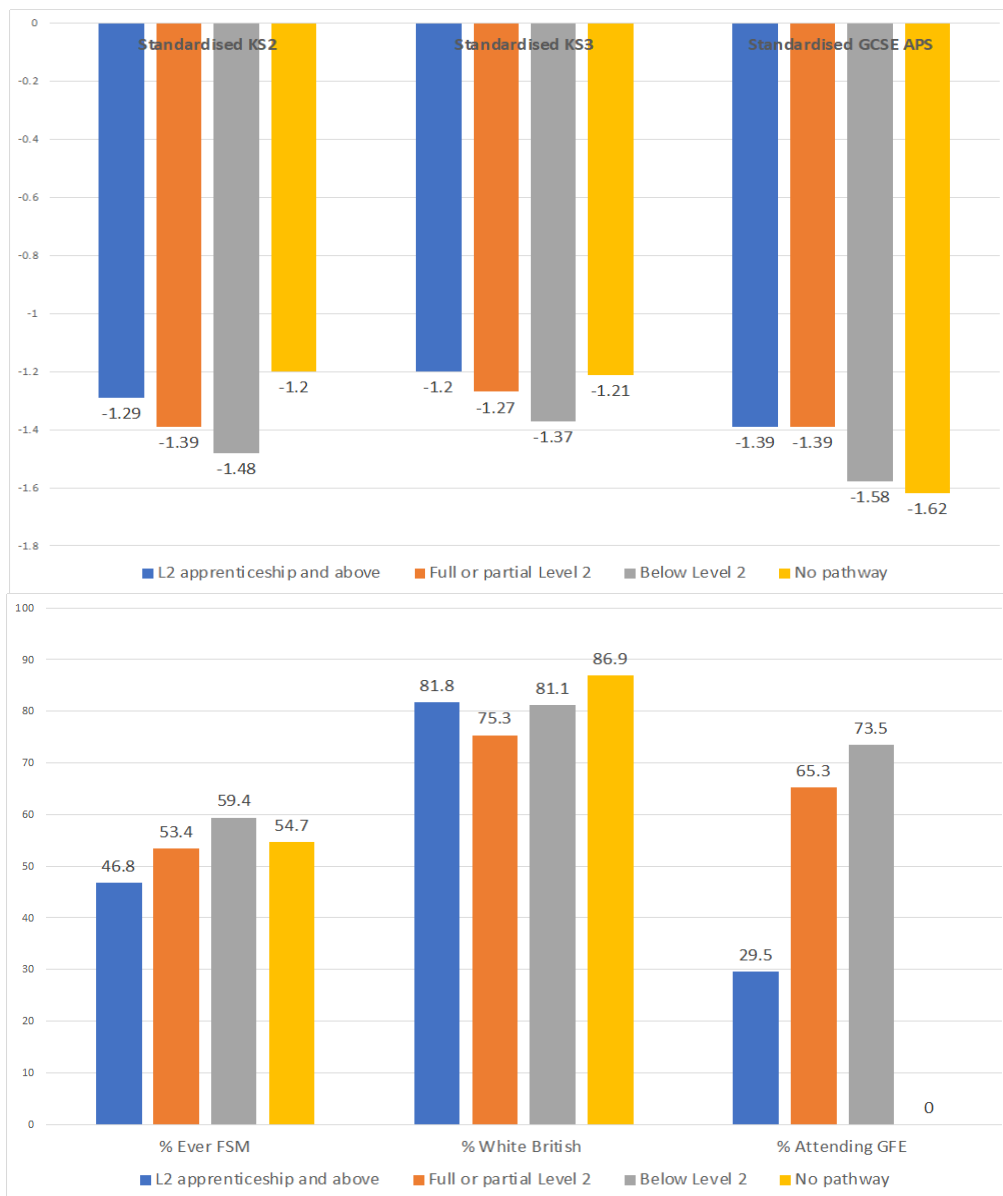
<sup>50</sup> We draw on different data sources to categorise the institutional pathways and qualification pathways (for instance, NCCIS data is used in the former and not the latter) therefore the young people missing from Table A and Table B cannot be described in the same detail as those who are NEET in the Sankey diagrams.

<sup>51</sup> Here individuals are categorised into programme pathway based on highest-level qualification aims (‘courses’ in the data) they are enrolled upon. The *A-levels* group includes those who are undertaking “full” Level 3 (2+ A-levels); the *Mixed level 3* group includes those who are enrolled on Level 3 courses of multiple types, which are not “full” (equivalent to 2 A-levels) until they are considered in combination; the *Mixed/Partial level 2/3 group* includes those enrolled on one or more Level 3 courses, but not enough for “full” Level 3 and may also be enrolled on some Level 2 courses (which might include English and/or maths GCSE, for example); *Partial level 2* includes those enrolled on some Level 2 courses, but not enough to reach the “full” Level 2 threshold (5+ grade A\*-C [9-4] at GCSE or equivalent); and *Below level 2* includes students enrolled on courses which can only result in Entry Level or Level 1 qualifications (so could not include any GCSEs).

and KS3 who we eventually see enrolling for *Below Level 2* as opposed to *Partial/Full Level 2* is relatively small. However, when we consider GCSE average points score at KS4 we can see a more apparent difference between those on *Below Level 2* learning pathways and all other lower attainers.

Our indicator of *ever FSM* also suggests that more socially disadvantaged young people are more likely to select into *Below Level 2* - though this is likely reflecting the attainment gap prevalent amongst young people who are *ever FSM* in early years education. The figures also suggest that those without a learning aim are more likely to be *White British* and less likely to be *ever FSM*. In a reflection of the findings from Table 1, GFE enrolment is more likely to be associated with initial aims at *Below Level 2* and less likely to be associated with higher level programme aims. To unpick this and gain a clearer idea of what is driving less favourable employment outcomes in Output 5, we now run a Mediation analysis.

**Diagram 6: Characteristics by qualification programme Pathway [E, F or G group]**



Source: Linked NPD and LEO data, 2011 KS4 School Cohort.



Analysis in the previous section estimates impacts from post-16 institutional pathways on employment outcomes, which is mainly Further Education for the *E, F or G* group of young people. The mediation analysis results presented here, allow insight into which of our qualification programme pathways [‘mediators’] are driving the overall impacts identified previously at an institutional level<sup>52</sup>. Which of the categories [mediators] in Table 2b are most closely associated with the concerning employment returns identified in the previous section at an institutional level?

The mediation regression still includes a term to capture the institutional-level effect of GFE and adds the categories of qualification from Table 2b as ‘mediators’. For instance, if we observe a negative and significant parameter on the variable capturing young people with aims at *Below Level 2* (which is a parameter impact that reflects the return to *Below Level 2*, whether the aim is located in GFE or not) it would suggest that young people embarking on this programme pathway account for some of the negative employment impacts observed in earlier analysis.

### Output 7: Mediation Analysis

Treatment: Registered with a GFE provider in October of academic year aged 17  
 Outcome: At least one day in employment in year age 24 [outcome mean 0.66]  
 Population: 2011 KS4 pupils achieving **E, F or G grades in Maths and English GCSE**

	OLS	OLS	IV	IV
Coeff. estimate GFE	0.0448***	0.0423***	-0.177*	-0.265*
Standard Error	(0.00449)	(0.00515)	(0.0892)	(0.119)
Coeff. Est. Below L2		-0.0573***		-0.0356***
Standard Error		(0.00548)		(0.0100)
Coeff. Est. Apprent. L2+		0.0390***		-0.0753
Standard Error		(0.00816)		(0.0451)
Coeff. Est. No pathway		-0.101***		-0.305***
Standard Error		(0.00878)		(0.0796)

\*\*\* Statistically significant 0.1% level; \*\* Statistically significant 1% level; \*Statistically significant 5% level

Findings suggest that young people who start on a pathway of registering for qualifications *Below Level 2* provide a key part of the explanation for our findings on employment outcomes - the OLS estimate for this pathway is -0.0573 and the IV result is -0.0356, suggesting that this programme pathway is associated with a significant negative employment impact. We also find a strong negative impact for young people who do not have a recorded pathway in the October they turn 17 - the estimates here are -0.101 from the OLS regression and -0.305 from the IV estimates. This is where much of the potentially negative employment impact seems to be located. The ‘no pathway’ group is relatively small

<sup>52</sup> It is worth noting that the estimated impacts arising from these qualification categories using mediation analysis cover all qualification programme aims – this includes those taken outside of GFE. However, the majority of qualification aims for this group of young people are in GFE and this is particularly the case when we consider the outcomes from initial programme aims at *Below Level 2*.

but the parameter estimate is large; whilst the ‘Below Level 2 group’ is large, but the negative parameter estimates are relatively small – both of these likely contribute to the employment impact identified in Output 5.

In contrast, young people with an initial programme aim of Full Level 2<sup>53</sup> (which includes a small proportion of partial Level 2 programme aims) are associated with statistically significant positive employment probabilities. FL2 is used as a reference category for Output 7, but when we use *Below Level 2* as a reference category, the OLS parameter on FL2 is 0.0573 and the parameter on the IV estimate is 0.0356. However, even accommodating all these specific pathways, the negative GFE parameter in the IV regression remains significant (-0.265) suggesting an overall institutional impact is still apparent.

Table 3 presents the outcomes of these pathways by age 19 amongst young people for whom we observe outcomes<sup>54</sup>. As already suggested, there are challenges collating the data on individual qualification aims and this is also the case when considering achievement of such aims<sup>55</sup>. It is also worth noting that the 10.7% with ‘nothing achieved’ is a percentage of all young people in this group for whom we observe a programme aim – more generally, 26% of young people across the full *E, F or G group* did not achieve a clear programme aim.

**Table 3: Achievement outcomes for those with a programme aim**

<b>Achievement of main qualification [programme] aim by age 19</b>		
<b>Highest achievement, percentages</b>	<b>Maths and English E, F or G group post-16</b>	<b>Maths and/or English group in post-16</b>
<b>Full Level 3</b>	<b>17.8</b>	<b>41.1</b>
<b>Full Level 2</b>	<b>39.0</b>	<b>34.2</b>
<b>Partail or below level 2</b>	<b>32.3</b>	<b>17.9</b>
<b>Nothing achieved</b>	<b>10.7</b>	<b>6.5</b>

Source: *Linked NPD and LEO data, 2011 KS4 School Cohort.*

Before moving on it is important to note the strengths and limitations of the parameter estimates we have obtained from our mediators (programme aims), and what these imply for our findings. The mediation analysis is attempting to identify specific post-16 qualification programmes that are most closely associated with the ‘significant negative employment impacts’ identified at an institutional level – the implication is that lower attaining young people on these programmes would secure better employment outcomes by age 24, if they did what the comparison group were doing post-16.

<sup>53</sup> For this group of young people, the FL2 category includes Level 2 Diplomas, vocational (and work-based) qualifications that are equivalent to 5+ grade A\*-C [9-4] at GCSE, or equivalent.

<sup>54</sup> Note that the figure of 17.8% achieving Full Level 3 includes only young people for whom we observe a programme aim in the post-16 environment and this is why it is higher than the figure in Table 1, which is taken as a percentage of the entire cohort.

<sup>55</sup> The approach to creation of programme aims is detailed in footnote 43 and Table 3 presents figures on the highest level of programme achievement by age 19. We have analysed the correspondence between (i) initial programme aims in Table 2b and (ii) outcomes in Table 3, but currently this adds little insight as the number of ‘initial programme aim’ – ‘programme achievement’ combinations is large.

The question is, what were the comparison group doing? In this analysis, where we now have a group who have 'no pathway', we can be more certain that the comparison group are in employment of some kind. We cannot capture the extent of any training undertaken whilst employed, but the implication is that workplace experience may be a better option for many lower attainers. We need to be aware there is also likely to be informal employment we do not capture in admin data sources – some of our findings may be driven by young people outside of post-16 education who 'look' NEET according to the admin data, but who are securing some form of workplace experience in the informal sector.

These findings need to be considered alongside the limitations of mediation analysis - whilst we do include estimated parameters from our IV regression, it is the impact of GFE that is instrumented for, not the programme aims. For instance, in this analysis we cannot rule out the possibility that the negative impact of *Below Level 2* learning could be a result of unobserved differences between young people on these courses and those in the comparison group. It is quite possible that lower attaining young people who have better employability at age 17 (which we may not fully capture in the data) are more likely to be in employment from this age and those who are less employable are more likely to enrol on *Below Level 2* courses – if this difference persists to age 24 it could explain some of our findings.

# The Effect of Educational Reforms on Disadvantaged Young People

To observe a significant period of post-16 education and labour market activity, the previous section utilises the 2011 KS4 cohort, allowing us to observe employment and earnings outcomes up to age 24 [2019]. However, the period between 2011 and 2016 contains a variety of policy interventions that may have impacted lower attaining students. Here we present the findings of investigations that shed light on the impacts arising from these policies, providing insight into whether we may expect to observe the same outcomes for more recent cohorts.

First, we compare the educational experiences of lower attainers in the 2011 cohort, during three years of post-16 learning, with those of the 2016 KS4 cohort, during their post-16 years in education from 2017 to 2019. We describe changes in the types of qualification and levels of achievement amongst lower attainers and consider what this implies for employment outcomes between the two periods. The investigation draws on a variety of descriptive analyses and utilises statistical techniques to facilitate comparison between similar pupils in the 2011 and 2016 cohorts who do not meet Maths and/or English GCSE thresholds at KS4.

This comparison between the 2011 and 2016 cohorts first considers changes in post-16 Maths and English achievement before and after the 2014 requirement that students aged 16 to 18 who do not hold GCSE Grades 9-4 (A\*-C) in Mathematics and/or English continue to study these subjects. The analysis then considers how qualification levels have changed for these young people beyond Maths and English, as a range of policies may have impacted post-16 learning outcomes. These include the 2012 Apprenticeship Reform; Raising of the participation age (RPA) from age 16 to 17 in the 2012/13 academic year, and to 18 from the 2013/14 academic year; the removal of NVQs (as part of Ofqual's new Regulated Qualifications Framework (RQF) introduced October 2015); and replacement of apprenticeships based on frameworks with those based on standards from 2015 onwards (BMG Research et al, 2017).

This wider investigation of learning outcomes shows how the types and levels of qualification changed between the two periods, and from this we can consider likely implications for labour market outcomes. However, one cannot directly compare labour market outcomes in this part of the study (due to the period of Covid disruption) and we therefore report the findings of a final investigation that analyses impacts arising from reforms that followed the Wolf Review (2011). This does not specifically focus on pupils who do not meet Maths and/or English GCSE thresholds but is necessarily focused on young people who are the subject of our study, as the reforms disproportionately affected disadvantaged, lower attaining pupils.

## Comparing post-16 experiences, 2011 and 2016 cohorts

Table 4 describes Maths and English qualification levels before and after the 2014 requirement that students aged 16 to 18 who do not hold GCSE Grades 9-4 (A\*-C) in Mathematics and/or English continue to study these subjects. Referring to our discussion on specific qualification aims ('courses' in the data) and overall programmes, here we are considering the former – for instance, in the previous section when considering pupils registered for *Full Level 2* programmes, the figures in Table 4 would relate to any specific aims related to Maths, English, Numeracy or Literacy observed alongside these wider programme aims in post-16 learning. The analyses in Tables 4, 5 and 6 are presented for three groups of lower attaining students and the following diagram shows how these relate to the overall group of lower attainers:

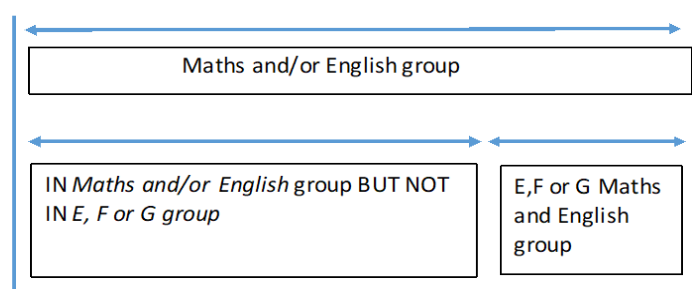


Table 4 shows that between 2011 and 2016, amongst our wider Maths and/or English group of students, there has been some improvement in Maths achievement post-16; some decline in English achievement and this contributes to a small fall in those who achieved both by age 19 (falling from 39% to 35%). However, we need to account for the fact that numbers in these groups reduced between the two periods (for this indicator, we have observations for 213,000 in 2011 and 182,000 in 2016). This fall of 15% is driven by a higher proportion of students achieving thresholds in Maths and English at KS4, so the remaining students are likely to be further down the profile of achievement and this may explain the slight fall in achievement of the combined Maths and English ('achieved both') between 2011 and 2016.

When we consider figures for the *E, F or G group*, one needs to be particularly careful as the numbers in this group fall from 39,000 observations to 20,000 between the two periods. Young people who remain in this group in 2016 are on average lower attaining in their earlier school careers, but the differences are not as pronounced as one might expect. For instance, in 2011 the *E, F or G group* have a -1.52 deviation from average GCSE points score and this is only slightly lower at -1.54 in 2016. There is a more pronounced difference in standardised Key Stage 3 scores (-1.32 and -1.49 respectively) between the two periods, but we observe very similar proportions of *ever FSM* in 2011 (56%) and 2016 (57%).

In the concluding section we return to consider these figures and the fact that between 2011 and 2016, the proportion of young people in the *E, F or G group* who register at GFE

increases from 65% to 79% (reflecting the impacts of RPA)<sup>56</sup>, whilst the proportion registering for *Below Level 2* programme aims falls from 61% to 48%. For now, we note the substantial improvement in post-16 Maths and English achievement amongst young people who achieve *E, F or G* at KS4 (from 61% to 75%) - these young people will mostly be studying for Maths and English qualifications that are not GCSE (as they have the option of Functional Skills).

**Table 4: Percentages of pupils with any Maths/English/Numeracy/Literacy /SfL post-16 learning aims and percentage achieving, 2011-2016**

	2011 KS4 Cohort					2016 KS4 Cohort				
	Any post-16 Maths	Achieved Maths age 19	Any post-16 English	Achieved English aged 19	Achieved both aged 19	Any post-16 Maths	Achieved Maths age 19	Any post-16 English	Achieved English aged 19	Achieved both aged 19
Maths and/or English group	63%	54%	62%	53%	39%	66%	55%	59%	49%	35%
E,F or G Maths and English group	79%	68%	81%	71%	61%	94%	78%	92%	76%	75%
IN Maths and/or English group BUT NOT IN E, F or G group	59%	50%	57%	49%	35%	62%	52%	55%	46%	31%

Sources: The data are derived using NPD and ILR data.

This first table makes clear some of the challenges of comparing students who are the focus of our study between 2011 and 2016. First, when considering the overall profile of lower attainers between the two years, there is a clear improvement in the distribution of Maths and English GCSE achievement at KS4. The number of pupils in our wider group of lower attainers falls by 15% as more young people achieved required threshold grades between 2011 and 2016 – as existing studies suggest (Machin et al, 2020), the gain for pupils who move from ‘just missing’, to achieving thresholds, are likely to be significant. In addition, Table 4 reflects a more general increase in KS4 Maths and English achievement across all lower attainers, with numbers in the *E, F or G group* halving between 2011 and 2016.

However, whilst we observe an increase [from 61% to 75%] in the proportion of young people in this shrinking *E, F or G group* who achieved both Maths and English qualifications by age 19; when we compare 2011 lower attainers in the wider *Maths and/or English group* who are not in the *E, F or G group*, with pupils in this group in 2016, the proportion achieving both Maths and English by age 19 falls [driven by achievement levels in English]. In 2016 this group contains many lower attainers who in 2011 would have been included in our *E, F or G group*. The changing numbers in our different lower attainer groups between 2011 and 2016 makes comparison harder, but overall Table 4 reflects improved post-16 Maths and English achievement between 2011 and 2016.

We now compare Full Level 2 (FL2) and Full Level 3 (FL3) post-16 programme outcomes between the 2011 KS4 cohort (in the post-16 years 2012, 2013 and 2014) and the 2016 KS4

<sup>56</sup> This figure captures any GFE attendance during the three post-16 years we use to compare the 2011 and 2016 cohorts, as opposed to the figures used in Alluvial Diagrams that capture the first point of registration.

cohort (in the post-16 years 2017, 2018 and 2019)<sup>57</sup>. As suggested above, these comparisons need to be made with care as numbers in our lower attainer groups change over the period, this likely impacts their composition and makes comparison harder. However, even with these caveats, when considering wider qualification achievement, we uncover some concerning changes between 2011 and 2016, that are pursued further in our final investigation.

In the following analysis, we consider the extent to which an improvement in the achievement profile of Maths and English at KS4, and some improvement in the post-16 environment, has been accompanied by improvements in achievement of wider programme aims by age 19. This analysis has four main components presented in Tables 5 and 6 – taking the example of the analysis presented in the top half of Table 5, which considers raw (unconditional) means:

- a) Top left figure suggests that, of the 45,965 pupils in the 2011 KS4 cohort who achieved *E, F or G* in Maths and English GCSE at KS4, 7% achieved NQF Level 3 by age 19.
- b) Top right figure suggests that, of the 200,173 remaining pupils in the 2011 KS4 cohort who did not achieve thresholds at KS4, 28% achieved NQF Level 3 by age 19.
- c) Bottom left figure suggests that, of the 26,252 pupils in the 2016 KS4 cohort who achieved *E, F or G* in Maths and English GCSE at KS4, 5% achieved NQF Level 3 by age 19.
- d) Bottom right figure suggests that, of the 209,369 remaining pupils in the 2016 KS4 cohort who did not achieve thresholds at KS4, 26% achieved NQF Level 3 by age 19.

**Table 5: Achievement of NQF Full Level 3 by age 19 across the 2011 and 2016 cohorts**

<b>Comparison of <u>unconditional</u> means, achieving FL3 by age 19</b>		
	<b><i>E, F or G</i> group</b>	<b><i>IN Maths and/or English</i> group <i>BUT NOT IN E, F or G</i> group</b>
<b>Percent 2011</b>	7%	28%
<b>Number</b>	45,965	200,173
<b>Percent 2016</b>	5%	26%
<b>Number</b>	26,252	209,369
<b>Comparison of <u>conditional</u> means, achieving FL3 by age 19</b>		
	<b><i>E, F or G</i> group</b>	<b><i>IN Maths and/or English</i> group <i>BUT NOT IN E, F or G</i> group</b>
<b>Percent 2011</b>	11%	26%
<b>Number</b>	42,669	185,494
<b>Percent 2016</b>	11%	25%
<b>Number</b>	24,163	192,897

Sources: The data are derived using NPD and ILR data.

<sup>57</sup> As already suggested, we would ideally consider a later cohort, but are constrained by Covid impacts from 2020. Also, it is worth noting that 2016 is the last year we have comparable KS4 grading, as from 2017 a numbered system from 1 to 9, replaced A\* to G for English language, English Literature and Maths.

As already suggested, the numbers in our groups of lower attainers change between 2011 and 2016, and this is especially pronounced in the *E, F or G group*. As one might expect, from our previous discussion this results in young people in this group who are on average further down the profile of lower attainers. The second half of Table 5 presents the averages described under a) to d) having controlled for differences in these characteristics<sup>58</sup> – when we use this approach to compare young people who are similar in these lower attaining groups, there is no change in the likelihood of achieving Full Level 3 by age 19 amongst pupils achieving *E, F or G* grades at KS4<sup>59</sup>.

Table 6 repeats the analysis in Table 5, with achievement of Full Level 2 by age 19 as the outcome and only presents the figures associated with conditional analysis<sup>60</sup>. This suggests that the proportions achieving Full Level 2 qualifications by age 19 fell substantially (from 56% to 40%) between the two periods for those who achieved *E, F or G grades* in Maths and English GCSE at KS4; and the fall from 67% to 57% across the remaining lower attaining pupils suggests that many of the young people who no longer obtain *E, F or G grades* in 2016 do not fare any better. The achievement of better grades at KS4 and the improvements in Maths and (to a lesser extent) English outcomes post-16 (from Table 4) have not been accompanied by improvements in achievement of Full Level 2 programme aims (investigated further in our analysis of impacts arising from the Wolf Review). When considering these trends separately for young people in these groups who are *ever FSM* and *never FSM*, the findings apply to both equally.

**Table 6: Achievement of Full Level 2 by age 19 across the 2011 and 2016 cohorts: pupils achieving *E, F or G* grades in Maths and English GCSE at KS4**

<b>Comparison of <u>conditional</u> means achieving a Full Level 2 qualification by age 19</b>		
	<b><i>E, F or G</i> group</b>	<b>IN <i>Maths and/or English</i> group BUT NOT IN <i>E, F or G</i> group</b>
<b>Percent 2011</b>	56%	67%
<b>Number</b>	42,669	185,494
<b>Percent 2016</b>	40%	57%
<b>Number</b>	24,163	192,897

Sources: The data are derived using NPD and ILR data.

To summarise our findings from this section of the report, we have some indication from Table 4 that achievement of Maths (and to a less extent English) qualifications in the post-16 environment improved between 2011 and 2016. Given the falling numbers of young people

<sup>58</sup> That is, controlling for KS2 and KS3 performance measures; ethnicity; ever SEN; ever FSM; gender; region of residence; urbanicity; percentage FSM in local area; and household net annual income decile of local area.

<sup>59</sup> We have also carried out this analysis separately for those who are *ever FSM* and *never FSM*, and these findings remain, in that there is little change in outcomes over the period for each of these groups.

<sup>60</sup> The unconditional figures on outcomes in 2016 are the same and 2011 figures change by only one percentage point compared to those presented in Table 6.



in our *E, F or G* group between these two periods it is encouraging that an increase in the proportions achieving post-16 Maths and English over this period is particularly concentrated amongst this group. However, whilst we do not wish to dismiss this improvement, our previous analysis raises concerns over the employment returns secured by lower attaining young people in the post-16 environment.

Specifically, findings from the mediation analysis suggest that this is closely associated with young people who embark on a post-16 qualification pathway ‘Below Level 2’, whereas those on a Full Level 2 pathway secure positive returns. As a result, the pronounced fall in achievement of Full Level 2 learning by age 19 across both groups of lower attainers between 2014 and 2019 (when these young people are aged 19) is a serious concern. To overcome some of the limitations of comparison through time, the following section presents findings from an analysis that moves away from our use of specific categories of Maths and/or English achievement at KS4 to categorise lower attainers.

## **Impacts Arising from Wolf Review Reforms**

We now present findings from an analysis of the impacts arising from reforms that followed the Wolf Review of Vocational Education (2011). This analysis does not specifically focus on pupils who do not meet Maths and/or English GCSE thresholds, but the reforms disproportionately affected pupils who are the focus of our study – they are more likely to be male, disadvantaged, have SEND and less likely to have achieved thresholds in GCSE English and Maths. This study builds on earlier work (Burgess and Thomson, 2019) examining early outcomes for the first affected cohort (pupils who reached the end of Key Stage 4 in 2014) and here we make use of LEO data to follow-up on the same cohort at the age of 21, providing initial findings on employment outcomes.

A number of changes to 2014 School Performance Tables (PT) were implemented following the Wolf Review, including:

- A raft of qualifications approved for 16-year-olds by Ofqual (the regulator of qualifications in England), such as short course GCSEs, were deemed ineligible;
- Qualifications could only be counted as equivalent to a single GCSE (previously some qualifications counted as up to four GCSEs);
- And only two non-GCSEs could be counted per pupil (extended to three in 2016).

In addition, and unconnected to the Wolf Review, the government of the day decided that only the first result achieved by a pupil in a particular subject would count towards Performance Tables - previously, a pupil’s best result would be counted if taken multiple times. This change countered the practice of repeatedly entering pupils for English and Maths (in particular) to try and “bank” a grade C. In addition, September 2010 saw the announcement that a new performance measure, the English Baccalaureate (or ‘Ebacc’) would be introduced for secondary schools<sup>61</sup>; with further detail in the *White Paper* of November 2011.

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<sup>61</sup> This summarised the percentage of pupils who achieved A\*-C passes in English, Maths, two Science subjects, a Language and History or Geography.

Given the timeline of subsequent government responses and announcements it is unlikely that the 2012 cohort would have been affected by Wolf Review reforms. By contrast, the 2013 cohort would have begun their Key Stage 4 courses after the EBacc announcement but before introduction of changes from the Wolf Review. Schools which had reacted to EBacc, particularly those who increased the numbers of pupils taking GCSEs in sciences, history, geography and languages, would already be well positioned to respond to the additional changes introduced following the Wolf Review. The 2014 cohort were affected by both sets of changes.

The approach to identification of pupils potentially impacted by these changes follows Burgess and Thomson (2019) – identifying pupils in post-reform cohorts who, in the absence of these reforms, would otherwise have been entered for a substantial number of PT ineligible qualifications (from here referred to as ‘ineligible qualifications’). The first step is to identify young people taking qualifications in earlier cohorts that were subsequently deemed ineligible and estimating their pupil characteristics. This information allows us to identify the group of pupils in post-reform cohorts who are in this Wolf-Relevant Group (WRG) – i.e. they are pupils who would otherwise have taken a range of qualifications, if they had not become ineligible<sup>62</sup>.

The investigation then assesses outcomes for the 13% of pupils with the highest probabilities of group membership in each of the 2012, 2013 and 2014 cohorts. Pupils in this Wolf-Relevant Group (WRG) were disproportionately more likely to be male, disadvantaged, have SEND, were lower-attaining at Key Stage 2 and less likely to have achieved threshold grades in GCSE English and Maths. For further detail on the processing and some of its limitations see Burgess and Thomson (2019).

### **Results: Wolf Relevant Group compared to all other pupils**

By age 21, 35.1% of pupils in the Wolf-Relevant Group in each of the 3 cohorts are observed to have qualifications equivalent to NQF Level 3 or above. However, a lower percentage of the 2014 cohort, who were affected by the Wolf reforms, were observed to hold qualifications equivalent to Level 2 or above by age 21. This is true whether the Level 2 measure includes the wider set of qualifications included in Key Stage 4 PTs or not.

These findings mirror those in Tables 5 and 6 for our groups of lower attaining pupils identified using Maths and/or English GCSE achievement at KS4. Specifically, for the WRG of pupils we observe 61.4% of those in the 2014 cohort achieving (at least) Level 2 by age 16, compared to 73.4% amongst the WRG in the 2012 cohort. This 12 percentage point (ppt) gap reduces to 5 ppts by age 21 as a result of young people achieving qualifications at Level 2 and above in the post-16 environment, but as a result pupils in the 2014 WRG remained less qualified by age 21. As we would expect, amongst the group of pupils not in the WRG

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<sup>62</sup> Specifically, we look back to an earlier cohort, which reached the end of KS4 in 2012 and identify a group of pupils who (i) were entered for three or more qualifications that were subsequently deemed to be ineligible for Performance Tables from 2014 onwards; and (ii) entered for fewer than eight GCSEs (or equivalent qualifications) that were deemed eligible for Performance Tables in 2014. For pupils in the 2014 (and 2013) cohort, we estimate the probability of belonging to this group as a function of prior attainment, disadvantage, special educational needs, gender, ethnicity and school attended.

effects of reforms on highest qualification levels appear small. Including attrition cases<sup>63</sup>, 68.0% of pupils from the 2014 cohort were observed to hold qualifications equivalent to Level 3 or above at age 21; compared to 67.9% of the 2012 cohort.

In summary, reforms following the Wolf Review had no effect on attainment at Level 3 and above by age 21 for the first affected cohort of pupils and had a negative effect on attainment at Level 2. However, as suggested in Burgess and Thomson (2019), this is not necessarily a problem if some of the qualifications that contributed to the Level 2 threshold before the reforms were of limited value in the labour market.

Considering **labour market outcomes** for each cohort, it is important to note that the choice of including or excluding attrition cases can result in differing inferences from the results and we return to this issue in considering implications for policy. For instance, including the attrition cases, 66.6% of WRG pupils from the 2014 cohort were observed to be in continuous employment for 6 months or more at age 21. This compares to 68.3% of the 2012 cohort, a difference of (almost) 2 pts in favour of the 2012 cohort. However, if the attrition cases are excluded, 73.3% of pupils from the 2014 cohort were observed to be in continuous employment at age 21 compared to 71.3% of the 2012 cohort, a difference of 2 pts in favour of the 2014 cohort.

Future data updates may clarify, but at this stage including attrition cases appears to offer the fairest basis for comparison. Adopting this approach, at age 21 not only were a slightly lower percentage of WRG pupils from 2014 in continuous employment compared to previous cohorts, but a slightly higher percentage were in receipt of continuous out-of-work benefits<sup>64</sup>. However, a lower percentage of the 2014 cohort (26.7%) were in receipt of out-of-work benefits for at least one day at age 21 compared to the 2012 cohort (28.0%). Similarly, a slightly higher percentage (74.9%) were in employment for at least one day at age 21 compared to the 2012 cohort (74.2%).

Data for the group of pupils not in the WRG exhibits a similar pattern, however, which may suggest these differences are driven more by economic conditions than qualifications held. Proportionately more pupils in the 2014 cohort were in receipt of continuous out-of-work benefits at age 21 and proportionately fewer in continuous employment compared to the 2012 cohort. Yet almost paradoxically, a higher percentage were employed for at least 1 day and a lower percentage in receipt of out-of-work benefits at any time at age 21.

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<sup>63</sup> The use of administrative data sources reduces, but does not eliminate, attrition ('drop-out'). Within the data, we cease to observe some individuals but do not know (with any certainty) whether they are inactive, overseas or deceased. We identify attrition cases by calculating the final year in which we observe each individual and when considering labour market outcomes, consider results with, and without, attrition cases.

<sup>64</sup> 22.6% of the 2014 cohort compared to 21.2% of the 2012 cohort and 20.9% of the 2013 cohort.

## Results: Wolf Relevant Group compared to matched comparison group

The previous results provide evidence of falling achievement at Level 2 amongst the WRG but there is some conflicting evidence on labour market impacts. Here we consider the findings for a WRG relative to a matched comparison group (MCG), rather than 'all other pupils', as this enables comparison of the outcomes of pupils in the WRG to a group of pupils with similar observable characteristics<sup>65</sup>. The basic premise for this approach is that there are pupils with characteristics similar to those of pupils in the WRG, but they are located in schools that had adopted approaches to qualification, which meant the Wolf Reforms did not have an impact (these constitute our matched comparison group, MCG). A higher percentage of pupils in the WRG group in 2012 achieved Level 2 at 16, relative to pupils in this MCG. Among the 2014 cohort, although the WRG were still more likely to achieve Level 2 at 16 according to Performance Tables, they were less likely according to the YPMAD definition<sup>66</sup> (41% WRG compared to 44% MCG).

Nonetheless, a higher percentage of pupils in the MCG achieved qualifications equivalent to Level 3 and above by both age 19 and age 21 across all three cohorts; though there is little evidence to show that the gap in attainment increased between 2012 and 2014. Using the YPMAD definition, a higher percentage of pupils in the MCG compared to the WRG achieved Level 2 by age 19 and age 21. The size of the difference between the two groups increased by 2.3 percentage points (including or excluding attrition cases) between 2012 and 2014.

Considering **labour market outcomes**, among the WRG we observe an increase in employment-based measures at 19 across the 3 cohorts. For example, and including attrition cases, 65.4% of the 2014 WRG cohort were in continuous employment at 19 compared to 63.1% of the 2012 cohort, an increase of 2.3 percentage points. However, the same was true of the MCG, the equivalent figures standing at 66.8% and 63.7% respectively, an increase of 3.1 percentage points.

At both age 19 and 21, differences grew larger in the employment measures we observe between the WRG and MCG. However, these differences are relatively small at between 0.5 and 1.0 percentage points. Similarly, the differences between the WRG and MCG also grew larger in the benefits measures we observe at age 19 but not at age 21. Young people in the 2014 cohort of the WRG were slightly more likely than their predecessors to be in receipt of out-of-work benefits relative to the MCG.

Previous work (Burgess and Thomson, 2019) has found that reforms following the Wolf Review led to major changes in the number and types of qualification offered by schools during Key Stage 4 but there were no apparent impacts on post-16 study choices. In this

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<sup>65</sup> Almost 80% of the WRG we identify attended 20% of schools and therefore we reduce the WRG sample so that it only includes this subset of schools. Similarly, we reduce the potential comparison group from 'all other pupils' to the approximate 40% of schools without any pupils in the WRG. We then match these two sets of pupils on a range of pupil-level and school-level variables. Pupil level Characteristics include Standardised mean Key Stage 2 score; ever FSM; First language (English/ other); Gender (male/ female); Month of birth; Ethnic background; and Cohort. School characteristics include mean standardised KS2 score; % disadvantaged pupils; Number of pupils in Year 11 cohort and Region.

<sup>66</sup> The Young Persons Matched Administrative Dataset (YPMAD) is a component dataset within the NPD that contains details of qualifications achieved at Level 3 and below.

further work, we have tracked education and labour market outcomes for the cohorts observed in the original study up to the end of the academic year in which they turned 21. We find that the cohort affected by the Wolf reforms were less likely than their predecessor cohorts to have achieved Level 2 of the national qualifications framework by age 21. However, there was little indication of any impact on attainment at Level 3 or above. In terms of labour market outcomes, the group of pupils most likely to have been affected by the Wolf reforms had slightly poorer employment outcomes at both age 19 and 21 relative to similar pupils.

Considering the previous and current work, and findings from the previous section, the suggestion is that reforms following the Wolf Review had little initial impact on post-16 study choices and on the acquisition of higher-level skills, but there is a fall in achievement at Level 2 amongst lower attaining learners. There is some indication that this was accompanied by a worsening of employment outcomes for lower attainers, but the evidence here is more mixed due to data limitations. What we can say with a high degree of confidence, is that (at best) the education and labour market outcomes of lower attainers did not improve following these reforms. Therefore, whilst much has changed in education policy in the period since the 2011 KS4 cohort entered post-16 learning, this has not improved the outcomes of lower attainers.

## Conclusions and Next Steps

This report provides a summary of research conducted as part of a Nuffield Foundation funded study that uses linked National Pupil Database (NPD) and Longitudinal Education Outcomes (LEO) administrative data, to carry out three quantitative investigations. These analyse the experiences of different groups of learners between 2011 and 2019, to shed new light on the educational experiences of lower attaining young people, with a particular focus on their post-16 pathways. We draw together findings from these studies to identify the labour market outcomes secured by lower attainers. Our findings identify a pressing need to improve outcomes for these learners, who are predominantly from disadvantaged backgrounds and often have some form of Special Educational Need (SEN) identified early in their school career.

### **Education pathways taken by the lowest attaining pupils in their transitions through education and into employment are not working**

Analysis of approximately 50,000 young people in the 2011 KS4 cohort captures experiences of the lowest attaining pupils, who make up just under 10% of the cohort. Around 90% of these lowest attaining learners are identified as ever having SEN during their school career. Many therefore enter post-16 learning having been behind in their studies for most of their school career and the extent of this gap in learning seems to worsen up to KS4. Pupils from disadvantaged backgrounds are five times more likely to have an indicator of SEN and we find that 56% of the lowest attainers in the 2011 cohort had been eligible for free school meals at some point in their school career (*ever FSM*). This compares to 20% of young people who met threshold grades in Maths and English GCSE at KS4 in this year.

As Lupton et al. (2021; page 109) suggest, “disadvantaged young people are over-represented [amongst lower attainers] and some young people with multiple needs are doing very badly in the education system”. Most of these young people, who make up 10% of the cohort, do not have a good education experience and when they reach the age of 16 their options for post-16 learning are constrained. Amongst the 2011 cohort, only 13% have an initial post-16 registration at a state funded school and this falls to 6% within a year. At this point in their educational careers few of these young people are prepared for transition to a very different educational setting. As a result, they have ‘fractured’ post-16 learning pathways and high levels of drop-out, which are particularly apparent for young people who are *ever FSM*.

General Further Education (GFE) faces an enormous challenge to help these young people successfully transition from ‘doing very badly in the education system’, to recovery of educational outcomes that can enhance their employment prospects. Between 2011 and 2016, the proportion of young people in the *E, F or G group* registering at GFE increased from 65% to 79% (reflecting the impacts of RPA), and we find no significant employment return from post-16 learning for many of these young people. Findings from analysis of the 2011 KS4 cohort suggest those who start on a post-16 pathway of registering for qualifications *Below level 2* are particularly at risk of securing poor labour market outcomes. Whilst much of our investigation focuses on evaluation of post-16 interventions, analysis of the lowest attaining KS4 pupils in 2011 identifies problems from KS3 onwards.

Studying more recent KS4 cohorts and the post-16 experiences of low attainers immediately before the pandemic between 2017 and 2019, suggests this situation has not changed. In a study of policy changes that followed the Wolf Review (2011) we provide further evidence that education and employment outcomes for low attainers have not improved and may actually have worsened, during this period. This adds to concerns (Farquharson et al., 2021; Farquharson, McNally and Tahir, 2022; Andrews, 2023) that the attainment gap amongst disadvantaged young people was widening, even before the pandemic and that policy is failing these young people from KS3 onwards.

Our work does uncover some positive findings – for instance, when comparing post-16 experiences of the 2011 and 2016 KS4 cohorts we observe an increase in the proportion of lower attaining young people who achieve both Maths and English qualifications such as *Functional Skills* by age 19. However, the proportions achieving *Full Level 2* qualifications by age 19 fell substantially between these two periods. This is particularly worrying given that lower attainers with a programme aim of *Full Level 2* were associated with statistically significant positive employment probabilities. Any improvements from the achievement of more *Functional Skills* qualifications by age 19 is offset by falls in achievement of *Level 2* qualifications, which from existing studies are associated with positive and significant employment returns.

### **Many pathways taken by lower-attaining pupils who are closer to GCSE thresholds support post-16 transitions but falling Level 2 achievement is a concern**

Analysis of approximately 200,000 young people in the 2011 KS4 cohort, captures the experience of pupils who have not met threshold grades (C or 3) in Maths and/or English GCSE at KS4; but whose achievement is higher than the 10% of pupils who are lowest attaining. This group represents just under 35% of the relevant cohort - some of these pupils will have good GCSE grades and have narrowly missed a Maths or English threshold; others will have missed both thresholds and this will reflect their wider GCSE achievement.

We find that young people amongst this 35% who take GFE as a post-16 pathway, secure similar employment and earnings outcomes to young people taking other pathways. This can be interpreted positively, as previous evidence uncovers significant employment and earnings returns to Level 1 and Level 2 technical qualifications taken by many of these young people. Findings here suggest that the level of these returns does not differ significantly for comparable young people, whether they are taken in GFE as a post-16 pathway or alternatives such School and Sixth Form Colleges. However, studying the post-16 experiences of these lower attainers between 2017 and 2019 suggests a fall in achievement of *Full Level 2* learning, similar to that seen amongst the 10% who are lowest attaining.

The proportion of *Maths and/or English group* pupils in the 2011 cohort who had been eligible for free school meals at some point in their school career (45%) is not as high as that seen amongst the lowest attaining *E, F or G group*. This shows a clear gradient, with levels of socio-economic disadvantage increasing as we consider lower levels of attainment at KS4. Considering their earlier school careers, young people in the wider *Maths and/or English group* also experience a developmental gap that is apparent from KS2 (and by KS4 69% are ever SEN), but this seems to stay relatively constant up to KS4 (rather than widening further, as is implied by key stage figures for the lowest attainers).

## **Education policies introduced since 2012 have not worked for the lowest attainers, who make up between 50,000 and 80,000 pupils per year**

Our analysis of the 2011 KS4 cohort considers just under 50,000 young people who are the lowest attaining in their cohort. Whilst comparison with the 2016 cohort shows that the number of pupils in the *E, F or G group* falls substantially, there is no apparent gain to pupils in the 2016 cohort who secure a slight improvement in Maths and/or English GCSE grades that raise them out of this group, but still leave them below thresholds. In our analysis of reforms following the Wolf Review we identify around 13% of the relevant school cohort (just under 80,000) as being potentially impacted by reforms introduced as a consequence. The evidence is that for these young people, who number between 50,000 and 80,000 each year, education policies introduced since 2012 have not worked to improve education or employment outcomes.

Policies that do not seem to have improved post-16 outcomes for low attainers include, the 2012 Apprenticeship Reform; Raising of the participation age (RPA) from age 16 to 17 in the 2012/13 academic year, and to 18 from the 2013/14 academic year; the removal of NVQs (as part of Ofqual's new Regulated Qualifications Framework (RQF) introduced in October 2015); replacement of apprenticeships based on frameworks with those based on standards from 2015 onwards; reforms that followed the Wolf Review (2011); and *the 2014 requirement* that students aged 16 to 18 who do not hold GCSE Grades 9-4 (A\*-C) in Mathematics and/or English continue to study these subjects. Our findings suggest the situation of lower attaining learners has not improved, even though social mobility and disadvantaged young people have often been the stated focus of these policies (e.g. Social Mobility Commission, 2020).

This is perhaps not surprising when one considers patterns of funding for education and training in recent years. Lower attaining young people enter post-16 learning having been behind in their studies for most of their school career and the extent of this gap in learning seems to worsen at KS4 for the lowest attaining. The decline in school spending per pupil seen in England over the last decade has fallen particularly on the most disadvantaged, with deprived schools suffering the largest cuts (Farquharson, Sibieta, Tahir and Waltmann, 2021). This will have impacted the level of support lower attaining young people, who are more likely to be socially disadvantaged, receive prior to entering post-16 pathways; at which point they will enter FE colleges and sixth forms that have experienced 'the largest falls in per-pupil funding of any sector of the education system' (ibid).

The reality is that the policies listed above were introduced in a context where per pupil funding was falling and this has been particularly impactful for the lowest attaining. Either there was no change to the nature of post-16 interventions lower attaining pupils could access, but the policies mandated they continue with the same learning for longer (e.g. 'the 2014 requirement' and RPA); or the qualifications they could access were reduced (removal of NVQs and changes following the Wolf Review). These policies often had a stated aim of improving the quality of learning, but when viewed from the perspective of options facing the lowest attaining, they served to reduce post-16 options. For instance, entry-level apprenticeship starts (Level 2) fell by 56% from 2011 (Fraser and Hawksbee, 2022), negatively impacting access (Nafilyan and Speckesser, 2017); and in our study of reforms



following the Wolf Review, we see Level 2 achievement falling as a result of reduced opportunities.

### **Policy solutions needed for the lowest attaining are different to those who are closer to GCSE thresholds. Failure to recognise this can result in unintended consequences**

Good practice suggests we begin policy development by identifying and understanding the specific challenges faced by those who are the target of policy<sup>67</sup>. We argue that the evidence presented in this report supports policy debate that differentiates between (i) the lowest attaining young people, who enter post-16 education with a need to recover performance at KS4, often necessitating initial post-16 learning *Below Level 2*; and (ii) those who are choosing to follow a technical education pathway and may have some need for ‘recovery’, but are ready to start post-16 learning at *Level 2* and above. This is not an argument that stems from a desire to subject GFE to further radical change, but a recognition of the different challenges these two groups face and the potential for current policy prescriptions to be inappropriate for those who require significant recovery in the post-16 environment.

There is a clear need for policy that ensures high-quality Technical Education pathways to rival HE and these need to be appropriately funded (see for instance, Layard, McNally and Ventura, 2023). However, this policy focus is necessarily on pupils who are close to GCSE threshold grades at KS4, as it is achievement of these thresholds that would allow them to take pathways to HE. The government’s plans on [Post-16 qualifications at level 2 and below from spring 2023](#) and the current [Advanced British Standard consultation](#) may have some potential to support lower attaining young people further below GCSE thresholds at KS4, to progress to higher levels of post-16 study. However, to develop appropriate policy for the 50,000 to 80,000 pupils in each cohort who require post-16 study that recognises their challenge in achieving *Level 2*, greater understanding and empathy is required.

For instance, many of these young people are not prepared for the educational transition at age 16 from a school to college environment. Prior to reforms that followed the Wolf Review, many would have had the chance to experience and engage with their local GFE at KS4, as part of a technical vocational programme of learning. This followed an increased flexibility from around 2002/03 that allowed young people to engage with college over a longer period, smoothing this important educational transition. This is no longer the case, as a result of unintended consequence from post-Wolf reforms. There is also a clear potential for unintended consequences in post-16 learning arising from the 2014 Maths and English requirement – this has the potential to raise academic barriers to access and progress on technical vocational programmes.

### **What might work for the lowest attaining pupils?**

Whilst much of our study is focused on evaluation of post-16 interventions, the findings identify a policy challenge from KS3 onwards, particularly for the lowest attaining young people in each cohort. Many of these young people do ‘very badly in the education system’ and policies introduced over the last decade have not improved the support they require, not least in their educational transitions at age 16. Whilst policy in Scotland since 2011 has

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<sup>67</sup> See for instance [The Green Book](#) and accompanying documents on Business Cases.

allowed 14-to-18 year olds to engage in school-college partnerships, unintended consequence of policy in England have worked in the opposite direction. A reversal of such impacts would perhaps be a good starting point, but our study also suggests that the nature of learning undertaken by the lowest attainers from KS4 needs reform.

In our analysis we cannot observe the extent of any training undertaken whilst employed, but the implication is that workplace experience may be a better option than some existing post-16 pathways for many of the lowest attainers. Some of our findings may be driven by young people outside of post-16 education who 'look' NEET according to the data, but who are securing some form of workplace experience in the informal sector. Recent evidence (Aghion et al., 2023) that details the importance of *Social Skills in the Wage Growth of Less Educated Workers* provides further support for this suggestion that early experience in the workplace may be particularly valuable for the lowest attaining. It is worrying therefore that opportunities for young people to gain such experience as part of, for instance, Traineeships have declined in recent years, with the 11,610 Traineeship starts in 2022/23 the lowest on record. Changes from 2023 will likely see Traineeships disappear and this is frustrating given positive findings from evaluation of these interventions (Dorsett, Gray, Speckesser and Stokes, 2019; Dorsett and Stokes, 2021).

As the Social Mobility Commission (2020) has suggested, there is little clear evidence regarding the appropriate pedagogical approach for disadvantaged and lower attaining young people and this is particularly apparent in the post-16 environment. We hope our report can spark debate in this election year on what needs to change, to ensure that appropriate evidence-based policies are introduced to change outcomes of the lowest attaining students.

### **There is now a unique opportunity to drive change, improve outcomes of the lowest attaining and advance social justice**

Our study is not the first to call for a change of policy to ensure better outcomes for low attaining pupils (see for instance, Lupton et al., 2021). Sibieta, Tahir and Waltmann (2022) identify the need for greater support for young people leaving school with few qualifications, but in reality the opposite has happened. Disadvantaged students make up a higher proportion of lower attainers and the fact that the education system in England has become less progressive (Farquharson, McNally and Tahir, 2022) reflects a fall in the education resources secured by these young people. A Raising of the Participation Age (RPA) has made it more likely that young people with significant challenges securing Level 2 will be the responsibility of GFE in the post-16 environment. This growth in numbers will further impact funding per pupil, having significant negative implications for social justice and levelling up.

There is now a chance to change this situation, as post-Brexit and post-Covid employers in sectors such as hospitality, retail, construction, social care, and others that provide entry-level jobs to many of the lowest attainers, have begun to focus on this area of their recruitment. Whilst levelling up and social justice are compelling arguments in themselves, a growing recognition of the importance of these young people for UK productivity provides new opportunities to build a coalition for change.

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# Appendix: Glossary

## Qualifications:

- Level 1 qualification a GCSE D-G (3-1) or equivalent
- Level 2 qualification a GCSE A\*-C (9-4) or equivalent
- Level 3 qualification an A-level or equivalent
  
- Full Level 1 5+ GCSEs D-G (3-1) or equivalent
- Full Level 2 5+ GCSEs A\*-C (9-4) or equivalent, including Level 2 apprenticeship, Level 2 Diploma, Level 2 NVQ, and other full Level 2 qualifications.
- Full Level 3 2+ A-level or equivalent, including Level 3 Apprenticeship, A-levels, Level 3 Diploma, Level 3 BTEC/OCR or T-levels, and other full Level 3 qualifications.
  
- Partial Level 2 1-4 GCSEs A\*-C (9-4) or equivalent
- Partial Level 3 Achievement of one or more Level 3 qualifications but not equivalent to 2 A-levels
- Mixed Level 2/3 a set of qualifications at Level 2 and 3, which combined constitute a "full" programme of study; for example 3 AS-levels (75% of "full" Level 3) and 2 GCSEs A\*-C (9-4) (40% of "full" Level 2).

## Characteristics:

- Ever FSM Student eligible for Free School Meals at any time during their school career from Reception to Year 11
- Ever SEND Students receiving special educational provision at any point during their school career from Reception to Year 11

## Outcomes:

- Qualification Gaining an NQF Level 3 qualification by age 19 years.
- Employment Having at least 1 day in employment at age 24 years
- Earnings (logged) earnings per day at age 24 years.