WIDER BENEFITS OF LEARNING RESEARCH REPORT NO.21

Determinants and Pathways of Progression to Level 2 Qualifications: Evidence from the NCDS and BHPS

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on the Wider
Benefits of Learning

DETERMINANTS AND PATHWAYS OF PROGRESSION TO LEVEL 2 QUALIFICATIONS: EVIDENCE FROM THE NCDS AND BHPS

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February 2007

Published by: Centre for Research on the Wider Benefits of Learning
Institute of Education, 20 Bedford Way, London WC1H 0AL
www.learningbenefits.net

ISBN: 978-0-9552810-1-3

Individual copy price: £ 10

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Executive Summary

Introduction and Background

The commitment of the government to improving the education of the workforce has been emphasized both in the Five Year Strategy for Children and Learners of the Department for Education and Skills (DFES, 2004) and in the recently published Leitch Review, which calls for the UK to be a "world leader in skills". Leitch also called for over 90 per cent of adults qualified to at least Level 2, an increase from 69 per cent in 2005, with a commitment to go further and achieve 95 per cent as soon as possible.

However, our understanding of the characteristics and motivations of individuals who participate in level 2 courses is limited. While their demographic features are well-known, few studies have used longitudinal data to look at the life histories of participants and thus our understanding of what may influence or predict their participation in learning is limited. This report aims to address this issue, describing the characteristics of people who return to learning to take level 2 qualifications and their pathways to progression. The research draws on two nationally representative longitudinal studies, the National Child Development Survey (NCDS) and the British Household Panel Survey (BHPS).

Key Findings

Who achieved level 2 in adulthood?

- Within the NCDS cohort, 24.6% of people obtained qualifications to at least level 2 between the age of 23 and 42, compared with 53.2% who did so before the age of 23, and 22.1% whose qualification level remained below level 2.[1]

- Adults who gained a level 2 qualification were more likely than those who did not to have been **engaged and relatively successful in a range of learning activities at earlier ages**, including learning during childhood, staying in education during adolescence and undertaking courses leading and not leading to qualifications during adulthood.

- The factor that best predicts progression by age 33 and by age 42 is early school attainment. This means that for **individuals who do relatively well at school** there is a greater chance of achievement of qualifications during adulthood, even when this qualification is not achieved by age 23.

- Socioeconomic constraints in adulthood may be less of a barrier to progression than is often believed, and less influential than other factors. Those from a high SES group are more likely to gain level 2 than those from low SES groups, by a margin of 9 percentage points. In comparison, the gap between high and low

[1] These figures are net of non-response

school achievement at age 7 is 31 percentage points. Moreover, of all the measures for socioeconomic barriers at age 23, only employment status and SES are significantly associated with progression to level 2. In addition, none of the socioeconomic factors at age 33 analysed are significantly associated with progression between 33 and 42.

How did they achieve level 2?

- Of the total sample of 7,457 working age individuals in the BHPS, 2060 (27.6%) had no qualifications in 1991. Of these 222 (11%) achieved level 2 or above between 1992 and 2003. 58% of those did so directly, without obtaining any other qualifications. For the rest of the individuals (42%), we find that 18% gained level 1 qualifications as well as level 2 or above qualifications and 24% achieved "other" qualifications to which the grade is unknown as well as level 2 or above.

- Of the 1285 individuals (17.2% of the estimation sample) with previous level 1 qualifications, only 29% progressed to level 2 or higher directly, 45% progressed to level 2 in combination with level 1 or qualifications above level 2 and 26% achieved "other" qualifications as well as level 2 or above.

- Where level 1 or "other" qualifications were taken, in the great majority (74%) of cases these were obtained prior to, or simultaneously with, the level 2 qualification.

- Achieving level 2 was mainly done through vocational routes (86% of all those who achieved level 2).

Methodology

We use two datasets to investigate the factors that predict participation in courses leading to qualifications at level 2: the National Child Development Survey (NDCS) and the British Household Panel Survey (BHPS).

The NCDS comprises all births in a single week in Britain in 1958. The NCDS starts with a survey of perinatal mortality and followed by subsequent surveys at ages 7, 11, 16, 23, 33, and 42. The sample used in this study is all cohort members who did not achieve level 2 qualifications by the age 23.

Explanatory variables are selected on the basis of prior research and theory in the field of adult education and the availability of data. We estimate the relative contribution of each of these factors to achievement of qualifications at level 2 or beyond using a probit model, differentiating between:

1. childhood factors associated with school success and engagement in learning, that may impact on the attitudes of individuals to learning, and;

2. structural factors in adulthood that may limit or constrain progression

The BHPS surveys each adult (16+) member of a nationally representative sample, a total of approximately 10,000 individual interviews. The same individuals are re-interviewed annually. Currently, there are 14 waves or sweeps of annual interviews. The sample used in this study is all working age adults (aged 20 to 65 for men and 20 to 60 for women) who have not achieved a level 2 qualification during their first appearance in the survey.

Our main outcome variable is an indicator of progression to level 2 or beyond. Explanatory variables available in the data include income, employment status, self-rated financial situation, self-rated health, psychological wellbeing, household structure, number of children in the household, achievement of qualifications below level 2, achievement of other qualifications, and experiences of training.

We used two main research methods. Firstly we examined those individuals who achieved a qualification of at least level 2 between 1992 and 2003 and described patterns of qualifications achieved. Secondly, we investigated the characteristics of those who achieved level 2 using logit models, with and without fixed effects. For these models, we report odds ratios. Interpretation of the odds ratio between these models is different. The logit model indicates differences between individuals whereas the fixed effects model indicates differences within individuals.

Findings

Context
We look here only at those who did not achieve level 2 qualifications prior to age 23. In all these constitute just under half of the NCDS cohort. There are large differences between cohort members who did not achieve level 2 by age 23 and the rest of the cohort members. Compared to those who attained level 2 by age 23, those who did not were characterised principally by:

- Lower overall levels of parental schooling
- Their parents being less likely to read to them when young
- Worse attainment in school in maths and reading
- Higher probability of being a single parent
- Higher probability of being disabled

Who gains level 2 in adulthood?

The table below shows the factors which were important for progression to level 2 at different ages.

	Increase in probability of progression to level 2 between ages (Percentage points):-	
	23-33	**33-42**
Good early school achievements (at age 7)	✓ **(11)**	✓ **(3.3)**
Improved school attainments between 7-16	✓ **(14)**	✓ **(3.9)**
Constant parental expectations regarding schooling	✓ **(20)**	
Participation in education beyond age 16 and before 23	✓ **(24)**	
Enrolment on courses leading to qualifications between age 16-23	✓ **(3.2 for any additional course)**	
Enrolment on 1 course not leading to qualifications between 23-33		✓ **(4.7 compared with no courses)**
Enrolment on 2 to 3 courses not leading to qualifications between 23-33		✓ **(15 compared with no courses)**
Enrolment on 4 or more courses not leading to qualifications between 23-33		✓ **(17 compared with no courses)**
Being recipients of training	✓ **(7) (*age 16-23)**	✓ **(0.8) (*age 23-33)**
Improved maths skills between 23 and 33.		✓ **(4.6)**

The table clearly shows that the predictors of progression to level 2 qualifications are similar for those who obtain them by 33 and those who do so by age 42, but these variables have less power in predicting progression by age 42 than by age 33. It is possible that individuals who achieve qualifications later in life are qualitatively different to those who achieve qualifications early, for example in terms of aspirations and motivations for learning.

Who gained level 2 in adulthood? Learner characteristics

The factor that has the highest impact on achievement of level 2 qualifications by 33 and by 42 is early school attainment. Improving attainment from age 7 to age 16 was also amongst the most important predictors of progression during adulthood.

However, participation in education and training later in life is also important. While it is self-evident that some form of training and education must be undertaken in order to achieve level 2, the role of education is more than simply being a means to an end. In the NCDS being enrolled on courses *not leading to qualifications* is a strong predictor of progression to level 2, particularly for those doing so later in life, while being enrolled in training or achieving level 1 qualifications are predictors of progression to level 2 in the BHPS.

Who gained level 2 qualifications in adulthood? Socio-demographic characteristics

When analysed over the lifecourse, socio-economic factors during adulthood seem less important determinants of progression than suggested by other studies based on NIACE and NALS surveys. Of the socioeconomic factors analysed at age 23, (household structure and composition, employment status, and SES, plus their interaction effects), only employment status and SES are significantly associated with progression to level 2. And none of these socioeconomic factors when analysed at age 33 have a significant association with progression between 33 and 42.

Results from the BHPS show a clear age difference with respect to achieving level 2, with older individuals being less likely to achieve level 2 than younger individuals. There are two components to this probability –those who obtain level 2 early on, and the rate at which others subsequently obtain level 2. For younger individuals, the proportion gaining level 2 early on, is higher than for older individuals but the increments in the proportions attaining level 2 over time is the same for younger than for older individuals. Thus, the probability of progression is not a function of age or cohort. Rather, we interpret this finding as a historical shift in educational attainment during the 1990s.

How did they achieve level 2?

Of the total sample of 7,457 working age individuals, 2060 (27.6%) had no qualifications. Of these 222 (11%) achieved level 2 or above between 1992 and 2003. 58% of those did so directly, without obtaining any other qualifications. Achieving a lower grade (level 1) qualification accounted for around 18% of individuals, and our evidence suggests that in the majority of the cases they achieved this prior to, or at the same time as, level 2. A further 26% who achieved level 2 or higher also took "other" qualifications with the majority achieving these prior to, or at the same time as, level 2.

For those who already held level 1 but did not have level 2 qualifications in 1991 (1285 individuals, 17.2% of the sample), 282 (22%) achieved level 2 or above between 1992 and 2003. Of this group, 29% achieved the level 2 or higher qualification directly, 45% achieved level 1 and level 2, with the majority of them achieving the low grade qualification prior to, or at the same time as, level 2, and finally 26% achieved level 2 and "other" qualifications. These results suggest variety, with many different pathways followed.

We further find that achieving level 2 and beyond is mainly done through vocational courses, with 88% of individuals without qualifications and over 84% of individuals with level 1 who achieved level 2 between 1992 and 2003 following a vocational route. Academic routes tend to be used only by those in their late teens and early twenties.

What happens beyond level 2?

There was also progression for those who already had level 2 in 1991. Of the 1,640 individuals in this group, 18% went to on achieve a higher qualification – half of them at

level 3, and half at level 4 or higher. Looking at pathways to these higher qualifications, we find that roughly 87% took additional lower level qualifications (level 1 or additional level 2), with (63%) or without (24%), "other" qualifications. The vast majority (81%) took these additional qualifications prior to, or at the same time as, the higher qualifications, and, as with those achieving level 2, most (78%) took a vocational rather than an academic route.

Conclusions and Implications

Attitudes and propensity for learning

The propensity of people to continue in learning until they obtain level 2 qualifications, is strongly related to two groups of measures in particular – those which indicate positive educational experiences, attitudes and attainment at school (people who had not obtained level 2 qualifications on leaving school or through other routes by age 23 were more likely to do so after age 23 if they had done relatively well earlier in school), and those which indicate participation in post-compulsory education and training, whether or not this leads to qualifications. These measures maintain their significance even after accounting for a large number of other variables. Thus prior learning and experience of learning both in childhood and adulthood is an important predictor of progression to level 2.

This analysis shows that socio-demographic factors may be less significant in predicting subsequent participation in learning than suggested by previous research: early attitudinal factors to schooling – both of parents and the cohort members themselves, are stronger predictors of further learning than are adult socio-demographic factors. Provision of learning therefore needs to take into account the existence of differing levels and sources of motivation, recognising that for some, there are significant attitudinal barriers.

We would stress that no single measure determines the likelihood of the individual to progress. Rather, the learning trajectory is dependent on the interaction of many factors through the life-course. These tend to reinforce one another such that those at early disadvantage continue to be at greater risk of non-progression throughout their lives, while those who established positive early trajectories are more likely to maintain involvement in learning. This may be a reflection of the positive effects of underlying personal factors such as ability or enjoyment of learning, or conversely, the negative effects of difficulties in mastering skills, or antipathy to learning.

However, that propensity to learn is not fixed. It has been shown for example that learning in adulthood can influence attitudes and well-being and that this in turn can encourage further participation in learning (Feinstein et al, 2003; Aldridge and Tuckett, 2006 ; Snape et al, 2006).

Age and cohort effects

The finding that while older learners are less likely to have level 2 compared with younger learners, they are equally likely to progress, suggests that age is not, in itself, a barrier to achieving level 2 qualfications In addition, our analysis from the NCDS

indicates that there are fewer (and slightly different) predictors of progression for older individuals. This suggests important differences between those who gain level 2 qualifications early in life and those who do so later. Qualitative evidence suggests that their confidence, motivations and aspirations will play an important part in this. In policy terms it may be better to view those obtaining level 2 relatively late in life (in their early forties or later) differently from their younger counterparts, placing emphasis on improving skills and ability and promoting confidence rather than on obtaining qualifications.

Progression pathways

Pathways to progression are extremely varied. While the majority of those who achieved level 2 in adulthood did so by obtaining lower level qualifications prior to, or simultaneously with, level 2, not all did so. In particular, it is notable that a large proportion of those achieving level 2 from a base of no qualifications did so without obtaining any intermediate qualifications. Further, those with an existing level 1 qualification were more likely than their unqualified counterparts to obtain additional level 1 qualifications prior to achieving level 2. Thus while a ladder of qualifications is an important means of assisting progression, progression is neither inevitable, nor, for many a simple upward trajectory. Similar complexities were revealed in other research (Lillis and Stott, 2006) where it was apparent that there was substantial participation on low level courses which did not lead to progression. Without understanding the reasons for such non-linear progression, the full policy implications of this remain unclear.

Finally, we find that the majority (86%) of individuals who gain level 2 in adulthood obtained a vocational qualification. Therefore, promotion of vocational type courses should continue to be the emphasis in promoting progression.

Acknowledgments

We would like to thank research staff at the Centre for Research on the Wider Benefits of Learning for their useful comments on this report and to Rachel Barker (DfES) for helpful suggestions.

The report has also benefited from comments during presentations at the Bedford Group for Lifecourse and Statistical Studies Seminar, Institute of Education, (November 2006) and at the National Institute for Adult and Continuing Education in Leicester, UK (December, 2006).

We would particularly like to thank Fiona Aldridge, from the National Institute for Adult and Continuing Education, for her useful comments and suggestions during earlier drafts of this report and Augustin de Coulon from NRDC for acting as an internal referee for this report. Annik Sorhaindo and Natalie Heath from WBL provided helpful assistance in editing the report. All errors and omissions are our own.

We would also like to thank the Department for Education and Skills for their financial support of this project.

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1. Introduction

Promoting lifelong learning is a social challenge as well as an economic one, since a more educated workforce will lead to broader social changes, such as reduced crime and better health. The commitment of the government to improving the education of the workforce has been emphasised both in the Department for Education and Skills Five Year Strategy for Children and Learners (DFES, 2004) and in the recently published Leitch Review, which calls for the UK to be a "world leader in skills" (HM Treasury, 2006).

A particular policy of the DFES Five Year Strategy is to increase the number of adults with level 2 qualifications, which is equivalent to 5 A*-C GCSEs. Leitch called for over 90 per cent of adults qualified to at least Level 2, an increase from 69 per cent in 2005, with a commitment to go further and achieve 95 per cent as soon as possible (HM Treasury, 2006). However, there is limited research on the life histories of adults who progress to level 2 qualifications. This is because most quantitative evidence is based on cross-sectional studies, which have restricted information about the lifecourse of individuals. As a result, it has not been possible to establish the relative strength of factors such as childhood and school experiences as well as occupation and social circumstances during adulthood in predicting progression to level 2.

A recent study by Bynner and Parsons (2006) highlights the importance of using longitudinal data. The authors investigated whether improvements in basic skills during adulthood were associated with attainment of qualifications, as well as with other positive outcomes in adulthood such as mental health, well-being and civic participation, in the 1970 British Cohort. Their results showed that men who improved their literacy and numeracy between the age of 21 and 34 were more likely to have gained some kind of formal qualification by the age of 34. This result suggests that factors that occur previous to the attainment of qualifications, such as improving basic skills, may be fundamental in explaining progression in education.

Following this line of research, this report aims to describe the characteristics of people who return to learning, whether and how they achieve level 2 qualifications (or higher) and the factors which predict likely success, drawing on two nationally representative longitudinal studies. Particular questions to be addressed are:

(i) Which factors, measured over the life histories of individuals, carry the most predictive information for progression to level 2 qualifications in adulthood?
(ii) Is age an important factor in determining progression to level 2 qualifications?
(iii) What are the pathways of qualifications achieved that lead to level 2 or higher qualifications?

We do not assess or evaluate policy in the analysis as we cannot genuinely identify whether or not observed patterns of participation are the result of policy mechanisms or

of other contextual or personal factors in the lives of learners and non-learners. However, we hope that by observing the characteristics of learners and describing them accurately we can deepen appreciation of the structural factors that limit or support participation, the extent of labour market or social constraints on participation and the ways in which prior experiences of learning, good and bad, are associated with subsequent levels of participation. We take a developmental perspective, observing and describing the naturally occurring patterns in the life histories of individuals that lead to progression in adult learning.

This report is organised as follows: Section 2 summarises the main results from the existing quantitative empirical literature on progression. Section 3 introduces the methodology, describes the data utilised in the report and outlines the estimation strategies. The next section presents results, first from the analysis using the National Child Development Survey data and then from the analysis using the British Household Panel Survey data. We conclude this report with a discussion of the results and the implications of the analysis for policy.

2. Review of current studies

The review of the current empirical studies is divided into three sections. In the first section we review studies looking at the main factors associated with participation and progression to level 2 qualifications. In the second section we review studies on the nature of participation for individuals at different ages and in the last section we describe pathways for progression.

2.1 Variations in participation

Many studies have established that participation in courses leading to academic or vocational qualifications varies by age, gender, ethnicity and region of residence. Below, we describe evidence in each of these areas.

Age
An age divide was prevalent in all studies. According to the 2002 NALS and NIACE surveys younger adults (under 20) were around 3 to 4 times more likely to participate in adult education than the oldest age group (Fitzgerald, Taylor, et al. 2002; Sargant and Aldridge 2002). However, this could be a cohort effect as more respondents in each generation reported staying on after school leaving age and work based training (Gorard, Rees et al, 2001).

Gender
Evidence on gender gaps was largely contested, although most evidence pointed towards some significant differences, with women significantly more likely than men to participate in learning (Hillage, et al. 2000; Aldridge and Tuckett, 2006). DfES (2005), using the Labour Force Survey, indicated that although job related learning was roughly equal for men and women in 1998, the overall rate of learning increased by 0.02% over 7

years, while the rate of learning for women increased by 19%[1]. According to Gorard, Rees, et al. (2001) gender was the clearest determinant of participation, which affected the frequency and length of the learning episode, as well as the type of learning.

Ethnicity

There was less evidence on participation in learning by ethnic minorities, which was mainly due to the lack of data. In a study by IFF Research Ltd (2005) involving about 9,000 FE learners in Learning Skills Council-funded provision, 17% of learners were non-white, with 9% Asian and Black. Aldridge, Dutton and Tuckett (2006) found that while the participation rate of ethnic minority groups as a whole is within a single percentage point of the UK's population, adult women from Bangladeshi and Pakistani backgrounds have much lower rates of participation than all other groups. This highlights the importance of interactions between gender and ethnicity.

Geography

Significant differences of participation were found between England, Wales, Scotland and Northern Ireland. The 2005 NIACE survey found that England and Wales had higher participation rates than Scotland and Northern Ireland (Aldridge and Tuckett, 2006), although the 2006 survey showed high levels of participation in Northern Ireland. The DfES (2005) found that Northern Ireland had the lowest participation rate in work-based learning using the Labour Force Survey. Within the UK, there was little consensus on which of the regions had the highest participation rates. Fitzgerald, Taylor et al. (2002) asserted that the East and South East had the highest participation rate, and the North East tended to have the lowest. In contrast, the 2006 NIACE survey showed little variation between English regions.

2.1.1 Early life context

Gorard, Rees, et al (2001) explored family background in their retrospective study in South Wales. Background, in terms of income, parents' education or parents' occupation was found to be a key predictor of later participation in adult learning. However, the size of the effect was not clear, as well as the relative importance of each background factor.

Conlon (2005) used the NCDS to investigate childhood determinants of attaining academic and vocational qualifications by the age of 23, in 1981. He found that although fathers' social class at birth was significant for females who attained academic or vocational level 2, it was not so for males. The study also found that the number of siblings at 7 and region of residence at 7 were significant for all children. However, the study did not look at predictors after the age of 7 and the variable of interest was attainment at 23, which is relatively soon after leaving full-time education.

Other studies revealed that staying on in education is an important predictor of subsequent learning (McGivney, 1999; Fitzgerald, Taylor et al. 2002). The earlier an adult initially left full-time education, the less likely they were to participate in adult learning. The NALS (2002) and NIACE (2002) surveys found that adults who delayed

[1] Table 3.3. page 43. Data used from the Spring, learning taken as learning in the last 4 weeks.

leaving until they were at least 21 were around twice as likely to have recently participated in learning as an adult than those who left school at the earliest opportunity.

2.1.2 Context in adulthood

Adults in work were more likely to participate in adult learning than unemployed or inactive adults (Hillage, et al. 2000; Fitzgerald, Taylor et al. 2002; Sargant and Aldridge, 2002; Jenkins, 2004; Aldridge and Tuckett, 2006). However, in the 2002 NIACE survey there were proportionally more unemployed recent learners than employed recent learners, which highlights the importance of distinguishing between the long term and short term unemployed. In the 2006 NIACE survey, slightly more part-time workers were engaged in formal and informal learning than full-time workers.

For individuals not in the labour force, the 2002 NALS survey distinguished between those looking after a family and those unable to work due to poor health or a disability. Those looking after a family had a participation rate similar to that of retired people, but those unable to work due to health reasons or a disability were 20% less likely to participate in learning than other inactive groups. Over time, the NIACE surveys found that while participation had increased for workers, the unemployed and those 'not working', participation had remained constant while it had decreased for retired adults.

Furthermore, the NIACE survey also showed a difference (although much smaller) between current and recent participation among all 'not working' adults, with more adults having recently undertaken some learning than currently participating in learning. Although for the study of progression in education it is more important to investigate the linkages between previous learning experiences and current achievements of qualifications than learning episodes in isolation.

As expected there was a strong correlation between socioeconomic group and lifelong learning (Hillage, et al. 2000; Fitzgerald, Taylor et al. 2002; Aldridge and Tuckett, 2006). Professionals and non-manual workers were over twice as likely as unskilled or 'other' workers to have recently participated in adult learning (Aldridge and Tuckett, 2006). Since 1996, the survey had shown consistently higher levels of participation among adults in the top SEG. In 1996, participation among white collar workers was at a similar high rate but had failed to keep pace since 1999. Since 2005, participation among skilled manual workers had begun to increase, although participation rates among those in the lowest SEG had remained broadly unchanged over time.

Bynner and Parsons (2006) used the 1970 British Cohort Study to investigate the relationship between changes in cohort members' literacy and numeracy skills during adulthood and their subsequent adult outcomes. They found that although adults with poor entry level skills were associated with lack of qualifications, improving skills between age 21 and 34 had a substantial impact on achieving some form of formal qualification by the age of 34.

2.2 Participation over the lifecourse

Although lifelong learning has been encouraged throughout the lifecourse (The Learning Age, DfEE, 1998; Leitch Review, HM Treasury, 2006), there was ample evidence to show that younger adults were more likely to engage in learning than older adults. Although there was some research looking at the learning of specific age groups, there was little research that brings evidence together to look at how learning varies over the lifecourse. Furthermore, there was little literature that was able to distinguish between age and cohort effects. For this reason, we looked at research that focuses on adults at different stages of the lifecycle.

2.2.1 Younger adults

Much of our knowledge in this area came from Joan Payne's (2003) study. The study used the Youth Cohort Study to analyse trends in participation for 16-19 year olds. It found that prior attainment (GCSE) had a strong impact on whether the young adult took a vocational route or not. Within this study, 41% of adults reported that their main study aim was academic, 34% vocational and 25% were not learning. For those studying vocational subjects, 11% were working towards level 3 qualifications, 14% level 2 and 6% towards level 1 (Payne, 2003).

The majority of those studying for vocational qualifications were in full-time education (77%), with another 18% in Government Supported Training (GST). Qualifications studied varied, depending on whether the students were in full-time education or GST; while the most common qualification in full-time education was an Advanced Vocational Certificate of Education (AVCE), less than half of GST students worked towards this, and instead over 55% worked towards a National Vocational Qualification (NVQ).

Payne (2003) also analysed data on drop out rates. Although 14% who started working for a vocational qualification after the end of Year 11 gave up by the following spring, it was found that the lower the qualification rate the higher the drop out rate, with almost a fifth of all vocational students studying for level 1 quitting within a year. Alarmingly, most who gave up at this stage stopped studying altogether (although the dataset only followed them for 2 years). Women were more likely to drop out of a vocational qualification, as well as those who had a history of truancy or unfavourable attitudes to school, and young people from one-parent families. Students from ethnic minorities and those living in the North East were less likely to drop out of education. There was no difference between drop out rates for full-time education and GST and, all other things being equal, Year 11 GCSE results and careers guidance made no different to vocational students staying on. Finally, AVCEs had higher drop out rates than NVQs or City and Guilds.

2.2.2 Working adults

Most of the research in this area focused on work-related training (Marks, 2000; Rainbird, 2000). Findings from the Labour Force Survey suggested that, in terms of

length of training, the majority of workers undertook training for less than a week. A third of economically inactive adults were studying for 3 years or more. However, this was mostly made up of under 25s. In most industrial sectors, the majority of training lasted for less than a week. Within agriculture, forestry and fishing, construction, and distribution, hotels and restaurants, over 15% of training was for 3 years or more (DfES, 2005).

Most training took place in further education colleges or universities, or on the employers' premises, depending on whether the adult was economically active or not and their age. The main place of training did not vary greatly by region. In terms of industrial sector, distribution, hotels and restaurants were most likely to undertake learning at a FE college or university, as were sales and customer service occupations.

2.2.3 Older adults

Dench and Regan (2000) revisited a sample of adults aged over 50 from the 1997 NALS survey after 2 years, in order to explore the nature of participation of older adults in more detail. Using the relatively broad definition of learning adopted by NALS, Dench and Regan (2000) found that, although participation in vocational learning ranged from 82% for 20-29 year olds to 28% for 60-69 year olds, participation in non-vocational learning remained constant at around 29% for all ages.

The difference in motivations was also apparent for older learners. Both within their literature review and their findings, Dench and Regan (2000) found that those in full-time employment were more likely to be motivated by work-related reasons, whereas retired adults were more likely to be learning out of personal interest and fulfilment. Learners in full-time employment were also more likely to have rated their health as excellent/very good and not to have a disability or illness that limited their normal activities.

Over a five-year period, 60% of respondents were learners who remained as learners. A further 10% became learners, 14% dropped out, (these were more likely to be retired people), and 16% never participated in learning. New learners were over 3 times more likely to pick a non-taught course (studying for qualifications without taking part in a taught course; supervised training doing a job; time spent keeping up to date with developments in the work without taking part in a taught course; deliberately trying to improve knowledge or self-teach a skill without taking part in a taught course) than a taught course (taught courses meant to lead to qualifications; taught courses designed to help develop general skills; driving courses, musical, art or craft, or sports practical skills; evening classes with instructors; learning which has involved working from a package of materials)[1].

Although most of learning for the general population took place in the workplace or employer's training centre, those over 60 were more likely to learn in an adult education institution or further education college. Very little of the measured learning took place in other local and community-based locations, and this could be a reflection of respondents

[1] Definitions on taught and non-taught learning come from NIACE (1997).

disassociating this type of learning from adult education (McGivney, 1999). While a third of learners did not pay any fees, one third did and for 22%, the employer paid.

2.3 What are the pathways for progression?

Having considered the nature of participation in learning, we now turn to learning pathways and the nature of progression, with a particular focus on adults' attainment of level 2 and beyond. Again we found there was limited literature on who gets to level 2 later in life and the pathways they had taken. Over the past decade, the level of qualification of the working age population had improved, much of it brought about by improvements in the qualifications held by young people flowing into the working age population, and older, less well qualified people, retiring. For example, in 2004, 35 per cent of 25-34-year-olds had at least a level 4 qualification, compared with only 24 per cent of 55-64-year-olds. Only 8 per cent of 25-34-year-olds had no qualifications, compared to 25 per cent of 55-64-year olds (Leitch, 2005)

The NIACE (2002) survey provided some data on the qualifications that adults were working towards. 17-19 year olds stood out as studying for level 2, 3, or 4/5 qualifications, reflecting participation in A levels and further and higher education. To a large extent this reflected an expected progression pathways after age 16. A large percentage of 20-24 year olds were studying for level 4/5 – reflecting patterns of university attendance. Furthermore, most learners on accredited courses were likely to be working towards levels 4/5, i.e. degree level. This was in line with research that showed that those in learning at a given point in time tended to have higher levels of education than other adults (Ferri, Bynner, et al., 2003).

Those aged 20-74 and working towards qualifications were all most likely be taking level 4 or 5 qualifications, and slightly more likely to take level 2 qualifications compared to level 3.

Less than 1% of over 75 year olds were working towards a qualification of below level 3. However, adults aged over 75 were almost 3 times more likely not to be aiming for a qualification, which would explain the lack of participation in lower level qualifications.

The data, however, investigated qualifications rather than learning and progression pathways. Learning pathways were examined in a study by Morrell, Chowdhury et al. (2005) who revisited almost 1000 respondents from an earlier study looking at those who had taken adult education courses provided by their LEA. A qualitative exercise involving 20 in-depth interviews also took place involving learners with below level 2 qualifications. The study found that 73% of respondents had engaged in subsequent learning since their last interview, and those for whom the education provided by the LEA was their first learning experience were less likely to have continued working. Of those that studied the same subject, 32% moved to a more advanced level and 30% changed provider. Almost 60% were studying different subjects to that covered in their 2001/2 course and 28% had gained or were expecting to gain a qualification. Furthermore, those with less than level 2 qualifications were more likely than others to

have moved up a qualification level, 20% and 13% for those with no or level 1 qualifications.

3. Methodology

The review of studies suggested that several socioeconomic factors in childhood and adulthood, as well as demographic characteristics and region of residence, were important determinants of participation in learning during adulthood. However, none of these studies investigated the relative importance of these factors or the pathways followed to achieve qualifications. This section sets out the methodology to investigate the main research questions of this report: what are the most important factors, over the life histories of individuals, in predicting progression to level 2 in adulthood? Is age an important factor in determining progression to level 2 qualifications? What are the most prevalent pathways of qualifications for individuals who achieved level 2 or higher qualifications?

We utilised two datasets to investigate these research questions: the National Child Development Survey (NDCS) and the British Household Panel Survey (BHPS). The NCDS comprised all births in a single week in Britain in 1958. The NCDS started with a survey of perinatal mortality and then carried out follow-up surveys at various ages, i.e. 7, 11, 16, 23, 33, and 42.

The usefulness of the NCDS rested in the availability of information about the lifecourse of cohort members. As we were interested in progression for individuals who leave the educational system with qualifications below an equivalent to 5 GCSE grades A*-C, we focused on individuals after the age of 16 (please see Appendix 1 for reference on the National Vocational Qualification Framework to classify qualifications). As the primary aim was to describe the main factors that predict progression to level 2, we distinguished between childhood learning experiences (for example school attainment and engagement) and current contextual factors (such as the socioeconomic and demographic situation at age 23 or at age 33).

There were two main limitations with the NCDS for our purposes. First, the data were representative of one British cohort and results were not generalisable to the British population. Second, there was a long gap between sweeps. The analysis on the NCDS focused primarily on the cohort members' lives from 23 to 33, and from 33 to 42. Not only was this limiting in terms of recall bias—for instance if they did not complete a course or forgot to mention one—but it also inhibited us from viewing their trajectories within this period. For instance, we did not know the exact route a cohort member took from no qualifications to attaining level 2.

In order to overcome these difficulties we also investigated educational progression in the BHPS. The BHPS was designed as an annual survey of each adult (16+) member of a nationally representative sample. It was comprised of approximately 10,000 individual interviews. The same individuals were re-interviewed in successive waves and, if they split-off from original households, all adult members of their new households were also

interviewed. Children were interviewed once they have reached the age of 16. Thus, in each successive wave new entrants as well as the existing individuals were interviewed. There were 14 waves or sweeps of annual interviews at the time of this study. The sample was representative of the population in Britain in 1991 and, as long as major demographic changes have not occurred in the British population over time, this sample remains representative of the population today (Taylor et al. 1996).

The BHPS produced information on educational background and recent attainments and, in addition, numbers of subjects passed for some school qualifications such as O-levels and A-levels. In terms of educational background, the BHPS recorded all qualifications obtained including school, higher education and vocational qualifications. In relation to recent attainments, it recorded all qualifications obtained since September of the year before. We used information on educational background to select a sample of adults who had not achieved level 2 qualifications when they joined the BHPS. From that point forward, we used the yearly information on qualifications obtained to investigate learning trajectories to achieving level 2. As the BHPS is a sample of the British population, we also investigated the impact of age on progression. Unfortunately, the BHPS did not contain the richness of information on the life histories of individuals, so it was not possible to replicate the NCDS analysis with the BHPS.

Each of the datasets used had its pros and cons. Therefore, we considered the use of both longitudinal studies as complements in investigating the research questions of this project.

3.1 NCDS

The sample within this study was taken to be all cohort members who did not achieve level 2 qualifications by age 23. From the initial sample of over 15,000 observations, we used 4,727 adults who had not obtained a level 2 qualification by age 23 and 2,310 adults who still hadn't attained level 2 by 33 (Table 1)[1].

Table 1: Highest educational qualifications at 23 & 33 in NVQ level equivalents (%).

NVQ equivalents	At age 23	At age 33
0	30.5	11.8
1	16.3	13.5
2	18.2	31.7
3	16.7	17.3
4	17.2	15.2
5	1.1	10.5

Source: NCDS. Notes: Total number of cohort members 12,537 (NCDS 4) and 11,077 (NCDS 5).

There were significant differences in terms of socioeconomic background, early school achievements, parental expectations and emotional and behavioural disorders during childhood between cohort members who had not achieved level 2 by age 23 and the rest

[1] Our sample size combines both attrition and the sample restriction "not level 2 qualifications by age 23(33)". No effort has been made in determining these proportions.

of the sample (Table 2). The following factors were more likely for cohort members who had not achieved level 2 by age 23 than for those who had:

- Parents with low educational qualifications.
- Low family SES.
- Low school attainments in childhood.
- High scores for behavioural and emotional disorders in childhood.
- Low parental expectations.
- Experiences of lone parenthood.

From the total sample, over 4,000 cases were dropped due to attrition or non-response. Almost half of these cases were accounted for by permanent emigrants or cohort members who have died. Of the remaining adults attrition tended to be higher among cohort members whose fathers belonged to the lowest SES groups. For our purposes, attrition implied that the estimation sample contained fewer individuals from the lowest SES, who were also less likely to achieve qualifications. Hence, our parameters might be upward biased. In terms of non-response, Hawkes and Plewis (2006) found that non-response in the NCDS tended to be predicted by variables that were measured at the previous sweeps, and concluded that although non-response was systematic, applying corrections for this problem had relatively little effect on modelling the probability of no qualifications at age 23. For this reason, we did not correct for non-response in our estimations.

In order to minimise further loss of data, it was decided to impute the mean value of a continuous variable where the data were missing, and added an extra category for missing data in discrete variables. For the estimation of models of progression, we included dummy variables indicating missing values for continuous variables as controls. As mean imputation increases the number of observations, and hence the likelihood of a variable to be significant, we decided to use a conservative rule for the selection of significant variables, which was that the variable must be statistically significant below the 5% level.

Table 2: Background differences between cohort members with and without level 2 at age 23

Variable	Description	Below Level 2 by Age 23	Level 2 by Age 23
At Birth			
CM mother's education	Proportion with SLA only	92.00	72.20
CM mother age at delivery	Proportion of teenage mothers	11.10	7.60
CM father SES at birth	Proportion of SES 1 & 2	7.40	23.20
CM father' education	Proportion with SLA only	89.40	68.50
CM birth order	Average birth order	2.60	2.00
CM gender	Proportion male	43.60	55.30
At Age 7			
Number of children	Average number of children under 21	3.45	2.74
Household size	Average size	5.50	4.81
Maths test score	Average standardised score	-0.30	0.30
Reading test score	Average standardised score	-0.33	0.35
Draw a man test score	Average standardised score	-0.24	0.23
Parental expectations	Proportion parents who expect CM to stay in education	87.14	94.44
CM Rutter's score at 7	Average score	0.35	0.32
Parents read	Proportion who read to CM	49.99	61.07
At Age 11			
Parental expectations	Proportion parents who expect CM to stay in education	87.97	97.90
Financial hardship	Proportion of parents who reported facing difficulties	0.16	0.05
CM Rutter's score at 11	Average score	0.38	0.33
FSM at 11	Proportion of FSM	15.15	4.16
Maths test score	Average standardised score	-0.48	0.48
Reading test score	Average standardised score	-0.45	0.45
Copying test score	Average standardised score	-0.22	0.22
At Age 16			
CM had basic skills	Proportion without basic skills	5.60	0.50
FSM at 16	Proportion of FSM	14.40	4.30
CM Rutter's score at 16	Average score	0.38	0.31
Maths test score	Average standardised score	-0.57	0.50
At Age 23			
CM employment	Proportion in FT employment	59.80	80.00
CM disability	Proportion with disability	5.20	2.46
CM lone parent	Proportion who have been lone parent	19.22	8.80
CM marital status	Proportion separated or divorced	5.70	1.80
CM household size	Average household size at 23	2.38	2.12

3.1.1 Selection of variables in the NCDS

We selected two separate outcome variables for progression to level 2 qualifications. The first variable was an indicator for achieving at least a level 2 qualification between age 23 and 33. From 4,727 cohort members without qualifications by age 23, 34.8% achieved level 2 qualifications or above by age 33. The second was an indicator for achieving at least a level 2 qualification between age 33 and 42. From 2,310 cohort members without qualifications by age 33, only 10.2% achieved level 2 or above by age 42.[1]

Explanatory variables were selected on the basis of prior research, theory in the field of adult education and the availability of data. The set of variables included followed a chronological order, from birth to adulthood, to account first for those variables that had the earliest effect on individuals' progression, for example the influence of early social experiences, followed by features of the child, childhood experiences about school, learning attempts after schooling and finally contextual barriers to progression.

Consequently, six initial groups of controls were set up to estimate progression to level 2 qualifications between ages 23 and 33: the social background in which the child was born, features of the child at age 7 (just after entry to school), change in behaviour or attainment during school years, school experiences measured at age 16, learning attempts or opportunities between ages 16 to 23 and the contextual factors measured at age 23, such as employment status (see Table 3). Additionally, for the estimate of progression between ages 33 and 42, two extra sets of factors were included: learning achievements between ages 23 and 33, and contextual factors at age 33 (see Table 3).

The NCDS contains a rich set of possible variables within each group. We selected variables that met our inclusion criteria, namely that their inclusion improved the log likelihood of the estimated model. The tests were performed in chronological order, starting with the socioeconomic status, education and other background information of the parents when the cohort member was born. Once these variables were selected, the next set of variables, features of the child measured at age 7, was included and their selection was conditional on the previous set of controls being reduced. The procedure continued until contextual factors at age 23 and at age 33 were included to account for structural barriers for progression between 23 and 33 and between 33 and 42, respectively. Results from this procedure are shown in Appendix 2. The list of all the factors included in the analysis with descriptive statistics is shown in Appendix 3.

[1] See Appendix 1 for the classification of qualifications into NVQ level equivalents.

Table 3: Controls included in the analysis of progression

Set of Factors	Dependent variable: Level 2 at 33	Dependent variable: Level 2 at 42
Early social background (measured at birth)	✓	✓
Features of the child at 7	✓	✓
Averaged attainment and behaviour data 11-16	✓	✓
Adolescent data at 16	✓	✓
Learning achievements 16-23	✓	✓
Context at 23	✓	
Learning achievements 23-33		✓
Context at 33		✓

One of the problems with this methodology was that the exclusion of relevant variables from the estimation led to bias in the estimation of other factors. This was only the case for factors that did not exert a direct effect on progression during adulthood but its effect was mediated via other factors. If, for example, parental education did not have long lasting effects on progression during adulthood, but impacted on attainment during childhood, then exclusion of parental education would lead to bias in the effect of attainment during childhood. Depending on the size of the bias, we might also reject the hypothesis that attainment during adulthood improved the log likelihood of the model. In order to deal with this problem, we also estimated a model of progression during adulthood using all available factors.[1]

3.1.2 Estimation method for analysis using NCDS

Once the variables were selected, probit estimations were performed to estimate the impact of the selected variables on the likelihood of achieving at least a level 2 qualification between 23 and 33 for cohort members who had not achieved this level of qualification by 23. Similarly, probit estimations were performed to estimate the impact of the selected variables on the likelihood of achieving at least a level 2 qualification between 33 and 42 for cohort members who had not achieved this level of qualification by 33.

Estimated parameters from these models were interpreted as increasing or decreasing the likelihood that the cohort member achieved level 2 qualifications. To quantify the individual impact of the variables on the probability of achieving level 2 we calculated marginal effects. These represented the change in the probability when each explanatory variable changes, holding other variables constant. The elasticities could not be inferred without knowledge of the metric and range of the explanatory variables and, as such, could not be used to make comparisons on the relative strength of each of the factors.

[1] The addition of irrelevant variables, for which the coefficients were no more statistically significant than zero, that were correlated with the variables already included reduced the precision of the latter variables but not their consistency.

Therefore, we estimated the standardised parameters in order to compare the relative impact of the different factors associated with progression.

3.2 BHPS

The sample from the BHPS was taken to be all working age adults (aged 20 to 65 for men and 20 to 60 for women) who had not achieved a level 2 qualification during their first appearance in the survey. Our analysis was restricted to this age group for two reasons. The lower bound was imposed as we were interested in adults who returned to learning. We set this bound to be four years post minimum school leaving age. The upper bound was imposed as several of the questions regarding training and achievement of qualifications were targeted at the working age population.

From the initial sample of over 10,000 individuals, we focused on 45% of the working age population who did not have qualifications at level 2 in 1991 (Table 4). Our estimation sample contained 4,286 individuals of which 12% gained level 2 qualifications.

Table 4: Highest educational qualifications in 1991 and during the last survey participation in NVQ level equivalents for all adults and working age adults (%).

	Population aged 16+		Working age population	
NVQ equivalents	In 1991	At last interview	In 1991	At last interview
0	33.69	22.36	27.63	19.02
1	16.95	15.48	17.23	15.20
2	22.34	19.95	23.33	20.25
3	10.42	17.06	11.75	16.26
4	15.36	22.45	18.57	25.93
5	1.24	2.70	1.49	3.36

Source: BHPS waves 1 to 13. Notes: Number of panel members: total of 10,154 in 1991 and 7,457 working aged in 1991.

3.2.1 Selection of variables in the BHPS

Our main outcome variable was an indicator of progression to level 2 or beyond. We also disaggregated this variable into academic and vocational related qualifications.

Explanatory variables were selected based on theory and their yearly availability in the data. This was done in order to estimate a model in changes, that is, whether achieving level 2 was predicted by change in socioeconomic status, health or previous engagement in learning. Among the most important time-varying explanatory variables we included: income, employment status, self-rated financial situation, self-rated health, psychological wellbeing, household structure, number of children in the household, achievement of qualifications below level 2, achievement of other qualifications and experiences of training. A list of these variables and descriptive statistics is shown in Appendix 4.

3.2.2 Estimation method for analysis using BHPS

The research questions that can be answered drawing on the BHPS are: do people of different ages have different probabilities to progress? What are the pathways of qualifications achieved in order to obtain level 2? Each of these questions followed an empirical method. For the former, we first plotted the cumulative proportion of individuals achieving level 2 qualifications by age groups between 1992 and 2003. Age groups were defined according to the age of the individual in 1991. The first group contained individuals aged 20 to 29, the second 30 to 39, third 40 to 49 and fourth 50 and above. This method provided a clear picture of the relationship between age and progression to level 2, but it was limited to a bivariate relationship.

Hence, we estimated the conditional likelihood to achieve level 2 qualifications using logit models, with and without fixed effects (see Wooldridge, 2002 and Hsiao 2003 for details on the estimation of these models), in order to investigate the impact of age conditional on other determinants of progression. The logit model was useful in estimating factors that accounted for the differences between individuals who gained level 2 and those who did not. In order to separate age from cohort effects, the estimation included a dummy variable for cohorts (to account for differences between individuals of different ages in their probability to have level 2 qualifications) and the interaction between the dummy variable for cohort and time (to account for differences between individuals of different ages in progressing to level 2 qualification over time).

The fixed effect logit model was restricted to only those individuals who gained level 2, and so looked at the within individual differences in factors that predict progression. The fixed effect logit utilised a transformation of the variables to obtain deviations from each individual's average and to difference out any time-invariant heterogeneity.

For the logit and fixed effect logit model we reported the odds ratio. Interpretation of the odds ratio between these models was different. The logit model compared the odds between those who progressed and those who did not for the different explanatory variables. This indicated differences between individuals. It addressed the question: are there differences in the progression to level 2 qualification between older and younger learners? The odds from the fixed effects models indicated that, in any given year, a change in the explanatory variable was associated with a change in the odds of progression to level 2. This indicated differences within individuals. It addressed the question: for those individuals who progressed, what were the factors associated with their achievement of level 2?

To investigate pathways for progression, we kept those individuals who achieved a qualification of at least level 2 between 1992 and 2003 and described patterns of qualifications achieved. Patterns of qualifications were described for individuals with no qualifications in 1991 and for individuals with level 1 in 1991 separately. In particular, we investigated the prevalence of achieving level 2 and above directly versus achieving low level qualifications in order to achieve level 2 or above. In order to estimate these patterns, we divided qualifications into four categories: level 1, level 2, level 3 or above,

and other qualifications.[1] This analysis was also performed by treating academic and vocational qualifications separately. For each of the main patterns of qualifications achieved we also considered the timing of events. That is, from the proportion of individuals who held both low grade and level 2 qualifications, we indicated the proportion who gained the low grade qualification prior to, or at the same time as, level 2.

4. Predictors of progression

4.1 Progression to level 2 between 23 – 33 (NCDS cohort)

Table 5 contains a summary of the results for the variables that remained statistically significant of progression to level 2 between 23 and 33 after the inclusion of other sets of controls. For this section, we refer to "progression" instead of "progression to level 2 and beyond between 23 and 33". Appendix 5 reports marginal effects from the probit estimates, the standardised parameters and their ranking in terms of effect size. We highlight that the variables described in Table 5 remained also significant when we estimated a model on progression to level 2 by age 33 without excluding any variables.

From all early social background variables, only mothers' education and the free school meal indicator of poverty during childhood were significant predictors of progression to level 2 between 23 and 33. For mothers' education, the only significant difference was found for those who stayed on in schooling for 3 or more years after the minimum required. Cohort members whose mothers stayed on in schooling for over 2 years had a probability of progression that is 12 percentage points higher than that of cohort members whose mothers left education at the first opportunity. Living in poverty, as indicated by receiving free school meals at age 11 or at age 16, was associated with a decrease of 6 percentage points in the probability of progression to level 2.

Both early school attainment and behavioural and emotional problems during childhood remained highly associated with progression to level 2. The importance of this finding lies in the fact that these variables, which were measured during childhood, continue to predict progression to level 2 during adulthood. It was not only early achievement which was important in predicting progression, but improved school performance as well as constant parental expectations of the child continuing in education. Improved attainment was measured as a dummy variable that indicated improvement by comparing the average test scores from ages 11 and 16 with the initial test score at age 7. Those cohort members who improved their school attainment had 14 percentage points higher probability to progress to level 2. Compared to cohort members whose parents did not expect them to stay on in schooling, those whose parents expected them to stay on when they were 11 or 16 had 11 percentage points higher probability to progress to level 2 between 23 and 33. Those whose parents had expected consistently that the cohort member would stay on had 20 percentage points higher probability to achieve level 2 between 23 and 33. This was all evidence of delayed or sleeper effects of family context.

[1] Any qualification not reported in the NVQ framework in Appendix 1 is considered other qualification.

Table 5: Summary of results of progression to level 2 between 23 and 33.
Only individuals without qualifications by 23.

Set of Controls	Significant variables	Results
Early Social Background	Mothers and fathers education and cohort members' household size at age 7.	• Cohort members whose mothers stayed on in schooling for over 2 years had a 12 percentage points' higher probability to achieve level 2 between 23 and 33 than cohort members whose mothers left education at the first opportunity. • Cohort members who received FSM at 11 or 16 had a 6 percentage points' lower probability to achieve level 2.
Child level variables at 7	School attainment and behavioural and emotional control	• Higher school attainment was associated with an increase of 11 percentage points in the likelihood to achieve level 2 by 33. • Greater behavioural problems during childhood remained associated with lower probability of progression (0.2 percentage points).
Averaged attainment and behaviour data 11-16	Improved attainment, and parental expectations to stay on in education.	• Improved attainment from 7 was associated with a 14 percentage points' higher probability to achieve level 2. • Compared to cohort members whose parents did not expect them to stay on in schooling, those whose parents expected to stay on when they were 11 or 16 had an 11 percentage points' higher probability to progress to level 2. Those whose parents had expected consistently that the cohort member would stay on had a 20 percentage points' higher probability to achieve level 2 by 33.
Adolescent data at 16	Stay on in education, type of school attended, externalising and internalising behaviours and positive attitudes towards school.	• Cohort members who stayed on in education at 16 had a 24 percentage points' higher probability to achieve level 2 by 33 than those who did not stay on in education. • Compared to cohort members who studied in a comprehensive school, those who studied in a grammar school had a 12 percentage points' higher probability to achieve level 2 and those who studied in a special education had a 10 percentage points' lower probability to achieve level 2. • High scores in externalising and internalising behaviours were associated with lower probability of progression, 9 and 6 percentage points, respectively. • Positive attitudes towards school were associated with a 4 percentage points' higher probability to achieve level 2.
Education 16-23	Training, number of courses leading and not leading to qualifications and	• Cohort members enrolled in training between 16 and 23 had a 7 percentage points' higher probability to achieve level 2. • Any additional course taken leading to a

	having basic skills.	qualification increased the probability of progression by 3.2 percentage points. • Courses not leading to qualifications increased progression by 6 percentage points. • Not having basic skills by 23 reduced the probability of progression by 7 percentage points.
Base at 23	Employment status and socioeconomic status	• Compared to employed individuals, those at home had 6 percentage points, and those unemployed had 5 percentage points, lower probability to progress to level 2. • Compared to high SES (1&2), those in SES 3 had a 6 percentage points' higher probability to progress.

Notes: Proportion of CM achieving Level 2 between 23 and 33 = 34%.
Pseudo R-squared = 0.20.

Experiences at school during teenage years were also important. The probability of progression to level 2 between 23 and 33 was: 4 percentage points higher for children with positive attitudes towards school; 12 percentage points higher for teenagers who studied at grammar schools; 10 percentage points lower for those who studied in a special education school. Behaviour in school also impacted on future progression. Extreme forms of behaviour had a negative impact on getting to level 2 qualifications, as indicated by the associations between high scores in externalising and internalising behaviours at age 16 and the probability to achieve level 2 qualifications between 23 and 33.

However, early life factors were not the only determinants of progression. Educational experiences and decisions in adulthood also predicted later progression above and beyond this. Perhaps inevitably, continued participation in learning was key. We found that cohort members who stayed on in education at age 16 had a 24 percentage points' higher probability to achieve this qualification by age 33 than cohort members who did not stay on. Cohort members who were enrolled in training between 16 and 23 had a 7 percentage points' higher probability to achieve level 2. Taking a course leading to a qualification increased progression by 3.2 percentage points. Similarly, being enrolled in courses not leading to qualifications increased the likelihood to achieve level 2 by 6 percentage points. Not having basic skills by 23 reduced the chances to progress to level 2 by 7 percentage points.

Household constraints at age 23 did not seem to be important predictors of progression. We investigated the impact of household size, having children at home, employment status, socioeconomic status and all possible interactions between these variables and found that only employment and socioeconomic status were statistically significant predictors. Employed individuals were more likely to achieve level 2 than those at home and individuals in occupations in SES 3 (skilled manual and non-manual) were more likely to progress to level 2 than individuals in higher SES (1 or 2) occupations.

Using standardised coefficients we found that the most important factor in predicting progression between 23 and 33 was early school attainment (standardised coefficient 0.213) followed by parents having constant expectations that the cohort member would

stay on in education (standardised coefficient 0.172). Improved attainment during childhood was the third most important factor (standardised coefficient 0.154) followed by the cohort member staying on in education at 16 (standardised coefficient 0.125).

4.2 Progression to level 2 between 33 – 42 (NCDS cohort)

Table 6 contains a summary of the results for the variables that remain statistically significant predictors of progression to level 2 between 33 and 42 after the inclusion of other sets of controls. For this section, we refer to "progression" instead of "progression to level 2 or above between 33 and 42". We focused on the variables that improved the likelihood of the model and remained significant when all the controls were included. Appendix 5 shows the marginal effects from the probit estimation, standardised parameters and a ranking of the standardised parameters for these variables. As with progression by 33, the variables described in Table 6 also remained significant when we estimate a model without excluding any variables.

From all the early socioeconomic background variables included in the model, only fathers' education remained a significant predictor of level 2 qualifications. But as with progression between 23 and 33, the impact of parental education only occurs for those whose parents had the highest achievements in schooling. Cohort members whose fathers had 3 or more years of schooling after the minimum required had a probability of progression that is 7.5 percentage points higher than that of cohort members whose fathers only completed compulsory schooling.

We also found evidence of delayed or sleeper effects. Early school attainment remained a significant predictor of progression. Higher school attainment was associated with an increase of 3.2 percentage points in the probability to progress to level 2. Similarly, improved attainment was associated with an increase of 4 percentage points in the probability to progress to level 2.

Finally, continuing learning between 23 and 33 was associated with progression to level 2. We found a gradient with respect to taking courses not leading to qualifications, whereby the more courses not leading to qualifications the greater the impact on the probability of progression. The probability of progression increased by 5 percentage points for individuals taking 1 course, by 15 percentage points for individuals taking 2 or 3 courses, by 17 percentage points for individuals taking 4 or more courses, compared with individuals who did not take any courses.

Table 6: Summary of results of progression to level 2 between 33 and 42.
Only individuals without qualifications by 33.

Set of Controls	Significant variables	Results
Early Social Background	Fathers education.	• Cohort members whose fathers stay on in education for 3 years had a 7.5 percentage points' higher probability to achieve level 2 than those whose parents left schooling at the first opportunity.
Child level variables at 7	School attainment	• Higher school attainment was associated with an increase of 3.2 percentage points in the likelihood to achieve level 2.
Averaged attainment and behaviour data 11-16	Improved attainment	• Cohort members who improved their attainment from their scores from age 7 to 11-16 had a 4 percentage points' higher probability to progress to level 2 between 33 and 42.
Adolescent data at 16	None	
Education 16-23	None	
Education 23-33	Access courses, training and courses not leading to qualifications. Improving maths skills.	• Compared to no courses, taking 1 course not leading to qualifications between 23 and 33 improved the likelihood to achieve level 2 by 5 percentage points, taking 2 to 3 courses improved the likelihood by 15 percentage points and taking 4 or more courses improved the likelihood by 17 percentage points. • Each additional training, lasting 3 or more days, taken between 23 and 33 improved the likelihood to achieve level 2 by 1 percentage point. • Cohort members who improved their maths skills between 23 and 33 had a 4.5 percentage points' higher probability to achieve level 2 than cohort members whose skills remained unchanged.
Base at 33	None	

Notes: Proportion of CM achieving Level 2 between 33 and 42 = 10%.
Pseudo R-squared = 0.08.

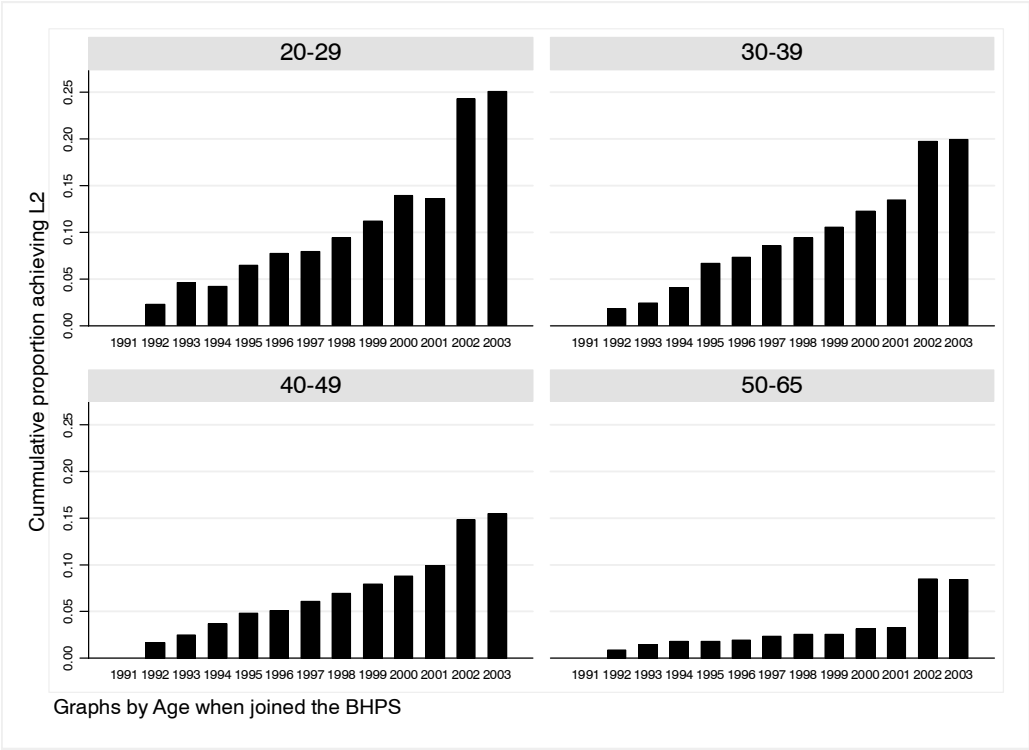
Each additional training episode, lasting 3 or more days, taken between 23 and 33 improved the likelihood to achieve level 2 by 1 percentage point. Cohort members whose maths skills improved from 23 to 33 had a 4.5 percentage points' higher probability to achieve level 2 between 33 and 42.

Using standardised coefficients we found that the most important factor in predicting progression between 33 and 42 was early school attainment (standardised coefficient 0.166) followed by: taking courses not leading to qualifications between 23 and 33 (standardised coefficient 0.146); improved attainment during childhood (standardised coefficient 0.106); and improving maths skills between age 23 and 33 (standardised coefficient 0.095).

4.3 Progression to level 2 by age (BHPS)

Our sample of BHPS participants who did not have level 2 qualifications in 1991 was subdivided into groups according to their age in 1991 (20 to 29; 30 to 39; 40 to 49; 50 and above). Figure 1 shows the cumulative proportion of individuals achieving level 2 between 1992 and 2003. Around 25% of individuals from the youngest group achieved level 2 qualifications over the course of 12 years. Clearly, the cumulative proportion decreased for the older groups, since 20% of individuals aged 30 to 39 in 1991 achieved level 2, 15% of individuals aged 40 to 49 achieved level 2, and less than 10% of the oldest age group.

Figure 1: Cumulative proportion achieving level 2 qualifications by age groups



Another feature of Figure 1 is the marked increase in the proportion of individuals getting level 2 qualifications in 2002 and 2003 with respect to previous years. This increase occurred for all individuals regardless of their age. For individuals aged 20 to 29 the proportion getting level 2 increased from around 15% in 2001 to nearly 25% in 2002. Similarly, for individuals aged 30 to 39 the proportion getting level 2 increased from less than 10% in 2001 to nearly 15% in 2002. The average increase was around 7%. We were unable to establish the reasons for these increments, whether these were the result of policies or survey designs. In order to account for the impact of these increments on the estimation of parameters, we generated a dummy variable, “accreditation”, for the years 2002 and 2003.

Results from models that utilise yearly information on adults' progression to level 2 and beyond are presented in Table 7. We estimated two components of the relationship between age and progression. First, the proportion of older learners who achieve level 2 qualifications was lower than the proportion of younger learners who achieve level 2 qualifications. Second, the rate at which individuals' progress to level 2 qualifications was similar for older learners than that of younger learners. We discuss the implications of these results in Section 5.

4.4 Other predictors of progression to level 2 between 1992 and 2003 (BHPS)

As with the analysis of the NCDS data, there were indications that achieving level 2 in adulthood was associated with participation in learning that was not directly associated with the learning experience that led to level 2 (Table 7). We found that individuals who gained level 1 were 2.5 times more likely to achieve level 2 than individuals who did not achieve level 1. Similarly, individuals who were in training had 5.6 times higher odds of achieving level 2 than individuals who were not in training. We also found that income was associated with progression. Individuals with higher incomes have higher odds to achieve level 2 than individuals with lower incomes.

The odds from the fixed effect logit model compared individuals as they achieved level 2 qualifications over time. Individuals who achieved level 1 qualifications had higher odds of achieving level 2 qualifications concurrently (Table 7). This was not the case for individuals who achieved "other" qualifications. We further found that being enrolled in training increased the odds of achieving level 2 by a factor of 4.4. The only other significant predictor of progression to level 2 in this model was accreditation, as individuals were more likely to achieve level 2 in 2002 and 2003 than in previous years.

Table 7: Estimates of progression to level 2 or above qualifications (working age adults in the BHPS without level 2 in 1991)

	Logit Model		Fixed Effect Logit Model	
Variables	Odds Ratio	Std. Err.	Odds Ratio	Std. Err.
Other qualifications gained	1.21	(0.19)	0.93	(0.18)
Level 1 gained	2.50	(0.42)***	3.75	(0.83)**
Training	5.60	(0.48)***	4.43	(0.61)***
Age group 30-39	0.99	(0.11)		
Age group 40-49	0.99	(0.11)		
Age group 50+	0.27	(0.63)***		
Age	1.00	(0.02)	1.00	(0.04)
Age*Cohort 30-39	0.99	(0.02)	0.96	(0.04)
Age*Cohort 40-49	0.99	(0.03)	0.98	(0.04)
Age*Cohort 50+	1.01	(0.04)	0.99	(0.08)
Financial difficulties current year	1.21	(0.24)	1.00	(0.26)
Income current year	1.00	(0.00)***	1.00	(0.00)
Job satisfaction current year	0.99	(0.04)	1.02	(0.05)
Single parenthood current year	1.32	(0.29)	1.09	(0.38)
Number of children 5 to 18	1.03	(0.07)	1.11	(0.13)
Number of children under 5	0.92	(0.12)	1.01	(0.18)
Health status	0.73	(0.17)	0.72	(0.22)
Psychological well-being	0.99	(0.02)	0.99	(0.02)
Gender (Female)	0.91	(0.11)		
Accreditation (years 2002 & 2003)	6.97	(0.72)***	11.85	(2.30)***

Source: BHPS waves 2 to 13. Data: Working age adults in BHPS. The logit model includes 2,655 individuals and 17,300 observations. The fixed effect logit includes 328 individuals and 2,996 observations.
Notes: Asterisks, (***), (**), or (*) indicate significant at 1, 5 and 10% level, respectively. Categories for comparison: for age 'group 20-29'.
Fixed effect logit model is only estimated for individuals with more than 2 years of observations with at least one qualification above level 2 gained during this period.

4.5 Pathways to level 2 qualifications and beyond (BHPS)

Table 8 shows patterns of qualifications gained between 1992 and 2003 for individuals who had no qualifications or had only level 1 in 1991. Results for each group are discussed separately.

Individuals without qualifications in 1991

Of the total sample of 7,457 working age individuals in 1991, 2060 (27.6%) had no qualifications. Of these, 222 (11%) achieved level 2 or above of whom 45% gained level 2 directly, without obtaining any intermediate qualifications, and an additional 13% gained qualifications at level 3 or above directly. Therefore, 58% of individuals without previous qualifications achieved level 2 or above without getting level 1 or "other" qualifications. For the rest of the individuals (42%), 18% gained level 1 qualifications as well as level 2 or above qualifications and 24% achieved "other" qualifications as well as level 2 or above.

The timing of events was estimated for three groups of individuals. First, for individuals who achieved level 1 and level 2 or above, 53% gained level 1 prior to, or at the same time as, level 2 or higher qualifications. Second, for individuals who achieved "other" qualifications and level 2 or above, 56% gained "other" qualification prior to, or at the same time as, level 2 or higher qualifications. Lastly, for individuals who achieved level 1, "other" qualifications, and level 2 or above, 74% achieved low level qualifications (either level 1 and/or other qualifications) before (or at the time of) achieving level 2 or higher qualifications.

Individuals with level 1 qualifications in 1991

1285 individuals (17.2% of the sample) had level 1 qualifications in 1991. Of these, 282 (22%) achieved level 2 qualification or higher. For this group, we found that 29% achieved level 2 or higher qualifications directly. For the rest, 45% achieved additional level 1 and level 2 or higher qualifications during this period and a further 26% achieved "other" qualifications as well as the higher grade qualification. One warning here is the potential double counting of qualifications in the BHPS. It may be possible that individuals who had previously obtained level 1 qualifications recalled this qualification in several surveys. If this were the case, then the percentage of individuals who actually achieved an additional level 1 qualification might be lower than that suggested here.

In terms of the timing of these events, we estimated that 82% of individuals who achieved level 1 and level 2 or above gained the former qualification prior to, or at the same time as, level 2. For individuals who achieved "other" qualifications and level 2 or above, 70% gained the former qualification prior to, or at the same time as, level 2. Finally, for individuals who achieved level 1, "other" qualifications, and level 2 or above, 91% achieved low level qualifications (either level 1 and/or other qualifications) before (or at the time of) achieving level 2 or higher qualifications.

It was interesting that those achieving level 2 from a base of no qualifications were less likely to take sub-level 2 qualifications than those who already had level 1. It was also apparent that, while most take sub-level 2 prior to achieving level 2, a substantial minority (40%) did so after obtaining level 2. Thus not all learning trajectories were progressive.

Table 8: Patterns of qualifications achieved between 1992 and 2003

Individuals with no qualifications in 1991 (n_1=222)				
%	L1	L2	L3+	% with other qualifications(*)
43.70	.	**X**	.	19.59
8.10	**X**	**X**	.	38.89
6.30	**X**	**X**	**X**	71.43
3.60	**X**	.	**X**	75.00
19.82	.	**X**	**X**	50.00
18.46	.	.	**X**	26.81
100				
Individuals with Level 1 in 1991 (n_2=282)				
%	L1	L2	L3+	% with other qualifications(*)
20.57	.	**X**	.	34.47
15.60	**X**	**X**	.	34.10
13.47	**X**	**X**	**X**	71.05
15.96	**X**	.	**X**	48.87
10.64	.	**X**	**X**	66.64
23.76	.	.	**X**	50.76
100				

Source: BHPS waves 2 to 13. Note: (*) Represents the percentage from the proportion of individuals who achieve the qualifications marked in columns 2, 3 and 4. For example, of 222 individuals without qualifications in 1991 who achieved level 2 between 1992 and 2003, 43.7% achieved level 2 directly. However, 19.6% of them also achieved "other" qualification.

We also examined the prevalence of academic and vocational qualifications by previous qualifications obtained in 1991 (Table 9). For those with no qualifications and for those with existing level 1 qualifications, the vocational route was by far the most popular, the most common patterns being (in order, most common first) vocational level 2,[1] vocational level 3,[2] and vocational level 2 with "other" qualifications. These 3 patterns made up 50% of all patterns of qualifications gained for individuals without qualifications between 1992 and 2003.

For those with existing level 1 qualifications, these routes accounted for 29% of individuals, suggesting that there was greater heterogeneity of pathways for those with existing qualifications. However, for both those with and those without existing qualifications, the proportion of individuals getting to level 2 qualifications via the academic route was relatively small, as only 17% of individuals without qualifications and 22% of individuals with level 1 achieved academic qualifications at level 2 or above.

[1] For example via City & Guilds Certificate (Craft/Intermediate/Ordinary/Part I), recognised trade apprenticeship or NVQ level 2.

[2] For example via Ordinary National Certificate or Diploma, BEC/TEC/BTEC, City & Guilds Certificate (Advanced/Final/Part II) or NVQ level 3.

In comparison over 88% of individuals without qualifications and over 84% of individuals with level 1 achieved vocational qualifications at level 2 or above.[1]

Table 9: Most common patterns of academic and vocational qualifications gained between 1992 and 2003

Individuals with no qualifications in 1991									
			Academic			Vocational			Other
Frequency	%	Cum.	L1	L2	L3	L1	L2	L3	Qualifications
70	31.53	31.53	.	.	.	.	**X**	.	.
22	9.91	41.44	.	.	.	.	.	**X**	.
19	8.56	50.00	.	.	.	.	**X**	**X**	**X**
18	8.11	58.11	.	.	.	.	**X**	.	**X**
16	7.21	65.32	.	.	.	.	**X**	**X**	.
Individuals with Level 1 in 1991									
			Academic			Vocational			Other
Frequency	%	Cum.	L1	L2	L3	L1	L2	L3	Qualifications
35	12.41	12.41	.	.	.	.	**X**	.	.
27	9.57	21.99	.	.	.	.	.	**X**	.
19	6.74	28.72	.	.	.	.	**X**	.	**X**
18	6.38	35.11	.	.	.	.	.	**X**	**X**
17	6.03	41.13	.	.	.	.	**X**	**X**	**X**

Source: BHPS waves 2 to 13. The five most important patterns of qualifications for individuals without qualifications in 1991 represent 65% of all patterns of qualifications achieved between 1992 and 2003. The five most important patterns of qualifications for individuals with level 1 in 1991 represent 41% of all patterns of qualifications achieved between 1992 and 2003.

Thus, in all 15% of those who had level 1 or no qualifications in 1991, went on to achieve level 2 or beyond by 2003. In addition, there was also progression for those who already had level 2 in 1991. Of these, 18% went to on achieve a higher qualification – half of them at level 3, and half at level 4 or higher. Looking at pathways to these higher qualifications, we found that roughly 87% took additional lower level qualifications (level 1 or additional level 2), with (63%) or without (24%), "other" qualifications. The vast majority (81%) took these additional qualifications prior to, or at the same time as, the higher qualifications, and, as with those achieving level 2, most (78%) took a vocational rather than an academic route.

5. Implications

The DFES Five Year Strategy for Children and Learners committed the government to increasing the number of adults in the workforce with full level 2 qualifications. Examining data on adults born in 1958, who had not obtained a level 2 qualification by age 23 and by age 33, enabled us to identify key factors from birth to adulthood which predicted progression to a level 2 qualification during adulthood. The focus was on

[1] The percentage of individuals who achieved academic qualifications at level 2 or vocational qualifications at level 2 did not add to 100. This was because a small proportion of individuals achieved both vocational and academic qualifications above level 2 during this period.

investigating the predictive capacity of early life experiences versus the predictive capacity of later adult circumstances in progression to level 2 qualifications.

The historical era in the lives of the 1958 cohort matters. It is characterised by different opportunities with respect to adult education. Between 1981 and 1991, in which we analysed progression between the age of 23 and 33 for this cohort, adult education was mainly provided by employers. Between 1991 and 2000, in which progression between 33 and 42 was analysed, the provision for learning for those adults not in the labour market had increased drastically. By focusing on the 1958 cohort, we faced the limitation that age and period effects were mixed. To unpick these effects, we turned to a representative longitudinal study of the British population in 1991. We examined the impact of age and of period differences in progression to level 2 qualifications between 1992 and 2003 for adults who had not obtained qualifications at level 2 in 1991. For these adults, we also investigated pathways of qualifications achieved in order to obtain qualifications at level 2 or above.

Conclusions and implications for policy from the analysis on progression and pathways to level 2 using the NCDS and BHPS are presented below:

Who Progresses to Level 2 in Adulthood?

Our key finding is that progression to level 2 and beyond during adulthood for those who did not obtain level 2 between 16 and 23 is strongly associated with relative success in school and other earlier forms of educational participation. In particular, results from the NCDS suggest that adults who gained a level 2 qualification between the ages of 23 and 33, were likely to be characterised by early school achievements (at age 7), improved school attainments between the ages of 7 and 16, staying on in education at age 16, receiving training between age 16-23, and being enrolled in courses leading and not leading to qualifications between 16-23. Those who achieved level 2 by age 42 were characterised by early school achievements (at age 7), improved school attainments between 7 and 16, taking courses not leading to qualifications between 23 and 33, receiving training lasting three or more days between 23-33, and improving maths skills between 23-33. Interestingly, Bynner and Parsons (2006) using the BCS70 data, also found that adults who improved their basic skills between the ages of 21 and 34 were more likely to achieve some kind of formal qualifications by the age of 34.

Our indicators of learning are broad, spanning the life histories of individuals. These measures are indicative of different phases on the lifecourse of individuals, which means that the timing of events matters.

We find evidence of sleeper effects in predicting progression during adulthood. These effects are characterised by factors that are significant of progression during childhood, such as early school attainment or parental expectations during childhood, that continue to predict progression in adulthood, even for individuals who did not progress during adolescence. This has important implications, as individuals with positive early learning experiences are likely to achieve qualifications at level 2 or above. However, those

individuals who failed to achieve are likely to remain in a relatively disadvantaged position in terms of their educational attainment. Similar results were obtained by Schoon (2006), also using the NCDS. She found that individuals from advantaged backgrounds showed greater resilience and adaptive functioning in the face of adverse conditions, than individuals from less advantaged backgrounds. This implied an increasing marginalisation of less privileged individuals and relatively disadvantaged social groups.

In terms of the relative magnitude of these factors we find that the factor that has the highest impact on progression by age 33 and by age 42 is early school attainment. Besides early school attainment, improving attainment from age 7 to age 16 is amongst the most important predictors of progression during adulthood. This means that individuals who did well at school but who did not obtain level 2 qualifications by the age of 23 were more likely to achieve level 2 during adulthood. This result is consistent with Heckman's (2000) suggestion that early ability fosters further learning. In other words, individuals with higher attainments acquire more skills, and more skilled people are more likely to progress in education.

But school attainment is not the only factor that matters for progression. For progression by age 33, parental expectations regarding the child's schooling and whether the child stayed in education are also important predictors of progression. For progression by age 42, taking courses not leading to qualifications and improving maths ability during adulthood are also amongst the most important predictors of progression. This indicates the important role of family expectations along with learning achievements and skills formation in adulthood, to achieve educational qualifications.

Our analysis of socioeconomic, demographic and continuous learning variables indicates that structural constraints in adulthood may be less of a barrier to progression than is often believed. Results from the NCDS suggest that doing well at school at age 7, improving school attainment from childhood to adolescence, parental expectations towards the cohort member's schooling and the cohort member's own attitudes towards school are important factors that predict progression to level 2 between the ages of 23 and 33. From all the socioeconomic barriers at age 23 analysed, which included independent and interaction effects between family structure and composition, employment status and SES, only employment and SES are significantly associated with progression to level 2. Similarly, early school attainment and improved attainment between ages 11 and 16 are predictors of progression between ages 33 and 42. However, none of the socioeconomic factors analysed at age 33 (independently and with interactions) have a significant association with progression between ages 33 and 42.

Moreover, our model predicts that the probability to achieve level 2 at age 33 is 48% for those in the upper 25th percentile of the early school attainment distribution and only 17% for those in the lowest 25th percentile, holding other variables constant. This is a difference of more than 30 percentage points. In comparison, the model predicts that the probability to achieve level 2 for individuals from the highest SES (1 or 2) at age 23 is 32% whereas for those in the lowest SES (4 or 5) is 23%. This difference is less than 10 percentage points. For progression by 42, the gap in the predicted probability to achieve

level 2 between early school attainment and SES at age 33 is less pronounced. For early school attainment, the gap is 9 percentage points whereas for SES at age 33 the gap is 6 percentage points.

In terms of policy, these findings suggest that the main focus should be on paying particular attention to attitudinal barriers to learning, rather than just being concerned with removing economic and social constraints. The solution is not simple and policy is needed that recognises the complexity of agency and social structure. An immediate recourse to narrowly-based intervention is unlikely to be effective. Therefore, multi-levelled interlinked policy action is needed. Interventions should aim to address interlinked problems that relate to attitudes towards learning over the lifecourse. For children, the emphasis should be on the ways in which schools and families nurture positive attitudes towards learning. For adults, the emphasis is different, the focus should be on making learning attractive to individuals who have not been engaged with learning or whose previous experiences of learning have not been positive. Lillis and Stott (2006) reached similar conclusions from their analysis of progression to level 2 qualifications. They argued that for progression to take place during adulthood, the emphasis must be on addressing learners' needs and motivations, making attractive the learning experience so that learners would engage in further learning.

Although our evidence points to the importance of early school attainment and other forms of educational participation, the datasets utilised do not contain information on the types of schooling, learning experiences or curricula followed. This means that we cannot assess the importance of these issues on progression to level 2. Therefore, we do not address the important question: to what extent do content, schooling or curricula matter for progression?

Cohort Age Differences

We find evidence of a historical shift in progression for individuals of all ages. Results from the BHPS show a clear age gradient with respect to achieving level 2, with older individuals being less likely to achieve level 2 than younger individuals. However, the probability of progression is not a function of age. We find a similar rate of progression to level 2 between 1992 and 2003 for older individuals as for younger individuals. These findings combined suggest that age is not, in itself, a barrier to achieving level 2 qualifications.

The older adults get without achieving a level 2 qualification the fewer are the variables predicting their progression to level 2. One possible explanation is that there are fewer individuals achieving level 2 qualifications between age 33 and 42 than between 23 and 33, which implies less variability in our outcome variable. For progression between 23 and 33 the empirical model predicts 20% of the total variation, whereas for progression between 33 and 42 the model only predicts 8% of the total variation. We translate this finding into a high degree of heterogeneity with respect to age, which means that older learners are qualitatively different than younger learners. This interpretation is supported by the result that none of the adolescent data at age 16 and none of the educational data

between ages 16 and 23 appear to be predictive of progression by age 42, whereas some of these variables were predictive of progression by age 33.

In terms of policy, these results suggest that older individuals without level 2 qualifications should be a distinct target group for policy. Our results indicate that these adults are characterised by poor educational attainments, low parental expectations during childhood, and do not engage in learning during adulthood. For these individuals, the emphasis should be on improving skills and ability and promoting confidence rather than on obtaining qualifications.

Pathways of Progression

Existing studies suggest that the skill level of the UK workforce is increasing, much of it brought about by improvements in the qualifications held by young people flowing into the working age population, as older, less well qualified people, retire. However, it remains important to up-skill the existing workforce and we need therefore to know about the uptake of different progression pathways.

What is remarkable about the pathways to progression is the degree of heterogeneity involved. While the majority of those who achieved level 2 in adulthood did so by obtaining lower level qualifications prior to, or simultaneously with, level 2, our results also suggest important differences in terms of progression pathways to level 2 between individuals who previously held no qualification and those with low grade qualifications. Those achieving level 2 from a base of no qualifications were markedly less likely to take level 1 or "other" qualifications (42% did so) than those who already had level 1 (71% did so). It is possible that this is influenced by double counting of qualifications in the dataset, i.e. individuals reported level 1 qualifications in more than 1 survey. Nonetheless a substantial proportion of those with an existing level 1 qualification who achieve level 2 go on to further level 1 learning before they progress to level 2. Thus while a ladder of qualifications is an important means of assisting progression, that progression for many is not a simple upward trajectory (Wake, 2004).

Furthermore, it is important to highlight that engagement in learning is a necessary, but not sufficient, condition for progression. A recent study by Lillis and Stott (2006) of provision to Level 2 concluded that adult learning below level 2 is often marked by engagement rather than progression. The authors suggested the importance of understanding learners' needs and motivations, as well as supply side improvements, for example developing curricula to meet the needs of those from the hardest to reach groups, as potential solutions to promote progression. However, given the lack of information on learners needs and motivations it is difficult to be sure to what extent obstacles to progression arise from the supply or from the demand side. Thus, while supply side interventions may promote progression for some, for others this may not be sufficient. Without further evidence in this area, policy implications remain unclear.

Finally, we find that the majority (86%) of individuals who gain level 2 in adulthood obtained a vocational degree. Therefore, promotion of vocational type courses should continue to be the emphasis in promoting progression.

6. Methodological issues and caveats

There are some limitations in the analysis. The first problem is the inability to estimate the underlying factors that promote positive learning trajectories. There is a difference between taking many courses as a result of an underlying predisposition to learn, and taking many courses because one has a good experience of learning which inspires one to do more. The latter implies that learning begets learning. The former implies that it may be individual's cognitions, e.g. self-esteem, self-efficacy, motivations, that promote learning in the first place. Our findings cannot differentiate between these possible explanations.

Second is the problem of missing data which is more frequent for individuals from low socioeconomic backgrounds. In order to minimise this problem, we imputed missing values. However, we remain cautious of the potential attrition bias in our estimated parameters due to attrition.

Another issue with the NCDS is the long gap between surveys. The analysis was focused primarily on the cohort's life from age 23 to 33, and from age 33 to 42. Not only is this limiting in terms of recall bias, for instance if they did not complete a course or forgot to mention one, but it also inhibits us from viewing their trajectories within this period. We tried to overcome this issue by also drawing on the BHPS, which contains yearly information on the socioeconomic and demographic circumstances of the household, but contains less information about the lifecourse of the individual. These analyses complement each other because they provide evidence into different aspects of progression.

Finally, a restriction of the research framework concerns the recognition of 5 A-C GCSEs as a full level 2 qualification. Progression in this sense is narrowly defined. This is because the value placed on level 2 varies across the sectors in relation to the perceived need of level 2, as some sectors are satisfied with level 1 qualified applicants, whereas others require level 3 or higher (Tennant, Brown, et al., 2005). It is also possible that many adults took one or two GCSEs in the key skills, but did not take 5 different subjects.

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Appendix 1: NVQ Framework

Table 10: National Qualifications Framework

NVQ Level	Academic Qualifications	Vocation Qualifications
5	Higher Degree	NVQ level 5, 6 PGCE
4	Degree HE Diploma	NVQ level 4 Nursing / Paramedic qualifications Other teaching qualifications BTEC Higher Certificate Diploma City and Guilds Part 4/ Career Ext/ Full Technological Certificate RSA Higher Diploma Pitmans Level 4 HNC qualifications
3	A level 2 AS levels Scottish Highers Scottish Cert of 6th Year studies Advanced GNVQ	NVQ level 3 BTEC National Certificate Diploma City and Guilds Part 3/ Final/ Advanced Craft RSA Advanced Diploma or Certificate Pitmans Level 3 ONC qualifications
2	AS level 5 GCSEs grade A*-C O levels grade A-C CSE grade 1 Scottish standard grades 1-3 Scottish lower or ordinary grades Intermediate GNVQ	NVQ level 2 BTEC First/ General Certificate or Diploma City and Guilds Part 1/Part 2/ Craft/ Intermediate RSA First Diploma Pitmans Level 2 Recognised trade apprenticeship qualifications Modern Apprenticeships Access Courses
1	Up to 4 GCSEs grade A*-C GCSE grade D-E O levels grade D-G CSEs grades 2-5 Scottish Standard grades 4-5 Other Scottish school qualifications Foundation or other GNVQ	NVQ level 1 Other NVQ Other BTEC Other City and Guilds RSA Certificate/ Other Pitmans Level 1 HGV qualifications Other vocational qualifications

Appendix 2: Selection of variables for NCDS

Social background factors were chosen in order to account for family influences and attitudes that may affect the value an individual places on education. These variables included whether the cohort member's parents stayed on in post-compulsory schooling and the number of years, the cohort member's mothers' family size and birth order, whether the cohort member had a teenage mother, and the cohort members' paternal and maternal grandfathers' socioeconomic status.

We also included the cohort member's birth order and two indicators of poverty during childhood (financial hardship of the household where the cohort member was raised, taken hardship of 1, 2 or 3 periods between 7, 11 and 16, and the cohort member receiving free school meals at 11 and 16).

> *For progression between 23 and 33, the age the cohort's parents left education, the cohort's birth order and poverty indicators were all found to be significant for taking level 2 by 33. However, only the father's number of years staying in post-compulsory schooling was significant for taking level 2 by 42.*

Childhood level variables, measured at age 7, were included to look at the child's school attainment and their parents' expectations and attitudes just after the child started school. It was hoped that the small amount of time in school would minimise school influences. Individual variables included whether the parents expected that the child will stay on in education after compulsory schooling when the child was 7, whether the parents read to the child, the teacher's rating of the parents interest on the child's schooling (rated as no interest or over concern, medium interest or high interest). Another variable was the mother's report of the child being happy in school, whether the child went to preschool and the age at which the child started school, all of them incorporated in order to account for early school experience.

In terms of attainment, maths and reading standardised test scores at age 7 were combined into a single variable. For behavioural and emotional controls, the Bristol Social Adjustment Guide (BSAG), supplied by the teacher, contained information on the child's attitude towards the teacher, school work, other children, and when playing games. It also contained information on child's personal attributes and health. A high score indicated low levels of social adjustment for the child. Finally, parental rating of their child's emotional and behavioural problems, measured by the Rutter parent scale (Rutter, Tizard, and Whitmore, 1970). A high score in the Rutter scale indicated more behavioural or emotional disorders.

After controlling for selected early socioeconomic factors, it was found that early parental expectations, parental interest on the child's school progress, child attainment, and the BSAG score, were all key factors to predict progression to level 2 by age 33. For progression to level 2 between 33 and 42, only early attainment was found to add value to the model.

We also incorporated variables to indicate changes in attainment and behaviour between ages of 11 and 16. To do this, we calculated the average maths and reading scores over 11 and 16 and compared this to the average score at age 7. An indicator variable was constructed for improved attainment (same score or higher) or worse attainment (lower score). The same method was used to generate an indicator for improved behaviour using the Rutter parental scale for emotional and behavioural problems. Another factor that measured change was the number of schools attended by the child between age 11 and 16.

Another indicator was parental expectations of cohort members' schooling. We generated a variable to distinguish between cohort members whose parents wanted them to stay in schooling post compulsory age when the child was 11 and 16 from those who did not and from the ones who changed their expectations between 11 and 16. We also included an indicator for parents increasing their interest in the child's school progress over time.

Improved attainment in maths and reading over 11 and 16 was found to be a significant predictor of progression by 33 and by 42. Parental educational expectation between 11 and 16 was found to be a significant predictor of progression between 23 and 33 only. Change in behaviour from 7 to 11 and 16 did not improve the likelihood of the model.

Adolescent data were measured by indicators at age 16. We included information on whether the cohort member stayed on in education at 16 and the school type that the cohort member attended at age 16. School type was categorised as comprehensive (about 50%), grammar (less than 2.8%), secondary modern (about 20%), private (about 1%) and special education needs (about 3.5%). For about 22% of children school type was missing.

Internalising and externalising behaviours using the BSAG at age 16 were used to control for social adjustment. Factor analysis on six attitudinal questions was used to generate a score for the cohort's attitudes towards schooling. These questions were: school is a waste of time; being quiet in the classroom and getting on with work; homework is boring; find it difficult to concentrate on work; never take work seriously; and dislike

school. The score had a mean of 0 and a higher score implied positive attitudes towards school.

Whether the cohort members stayed in schooling, the school type, internal and external measures at 16, and positive attitudes towards schooling were significant predictors for level 2 by 33. However, none of the selected variables were significant for progression to level 2 by 42.

Between 16 and 23 we generated several indicators to measure the degree of continuing education or training. First was an indicator of whether the cohort member received any induction from any of the jobs between 16 and 23. Second was an indicator of whether the cohort member received training that was more than induction from any of the jobs between 16 and 23. Third, we quantified the number of courses leading to qualifications between age 16 and 23 that the cohort member was enrolled and finally we included an indicator for taking other courses not leading to qualifications.

We further considered the possibility that failing a course may create a barrier to progression, so we included an indicator for failing any courses between 16 and 23. Finally, we controlled for cohort member's basic skills at 23.

Training, the number of courses leading to qualifications, and other courses not leading to qualifications all predicted taking level 2 by 33. However, only the number of courses between 16 and 23 were significant predictors by age 42. Not having basic skills by age 23 was a barrier to progression to level 2 qualifications both by 33 and by 42.

Contextual variables at age 23 were only considered for progression between age 23 and 33. We investigated socioeconomic and demographic factors such as employment status, number of children, family structure, social class of the cohort member and of their partner, education of the partner, and whether the cohort member was registered as disabled. Several interactions of these variables were investigated, for example, family structure and number of children. From these we generated meaningful variables such as one-parent household with or without children and two-parent household with or without children. The variables shown here were found to be more important in predicting progression between 23 and 33.

Only two variables were important to predict progression: employment status and social class. As expected from the literature, employment status at 23 was significant, although it was grouped into 3 categories: full-time and part-time work, unemployed or home/other/student. Socioeconomic status of the cohort member, classified as SES 1 & 2, SES 3 and SES 4 & 5, was also significant. None of the other variables, or their interactions was found to improve the likelihood of the model.

We included information on education and training from 23 to 33 to capture the effect of continuing learning on progression to level 2 between 33 and 42. There were different measurements to represent continuing learning between 23 and 33: the number of courses leading to qualifications, the number of courses taken not leading to qualifications, and the number of training courses of over 3 days' duration.

To capture the effect of improved attainment on progression we included self-reported information on whether the cohort member felt that maths abilities improved, remained the same, or decreased between 23 and 33. Finally, we also included cohort members' basic skills at 33.

The number of courses not leading to qualifications between 23 and 33 was one of the most important predictors of achieving level 2 between 33 and 42. Having taken training from employers of duration over 3 days was also a significant predictor of progression between 33 and 42. In addition, improvement of maths skills between 23 and 33 was another key variable.

Finally, we included the impact of household composition and life circumstances at 33 on progression between 33 and 42. Variables included whether the cohort member was registered as disabled or had a long-term illness, whether the cohort member lived in a one-adult or two-adult household, whether children lived at home, the cohort member's class and employment status. Class, employment, number of children and household structure were analysed independently and with interactions.

None of these variables or their interactions was found to add any value to the model.

Appendix 3: Descriptive statistics for NCDS

Table 11: Descriptive statistics of variables used for predicting progression between 23 and 33

Description	Obs	Mean	Std. Dev.
CM mother's schooling (SLA only to 3 years of above SLA)	5015	1.14	0.54
CM father's schooling (SLA only to 3 years of above SLA)	4633	1.23	0.71
CM mother age at delivery less than 20	5705	0.11	0.32
CM birth order	5076	2.59	1.63
CM mother's family size	5658	4.75	2.61
CM mother's birth order	5658	3.04	2.23
Financial hardship during childhood	3878	0.52	0.74
Free school meals during childhood	3966	0.36	0.62
Mother's fathers SES	5992	18.74	33.28
Father's father SES	5992	4.47	3.11
CM attended pre school	4778	0.19	0.39
Age CM started school	5178	5.40	0.83
CM household size at 7	4970	5.51	1.87
Parents want CM to stay on in education at 7	4502	0.87	0.34
Parental interest in CM education	5549	1.85	0.75
Parents read to CM	5169	0.50	0.50
CM is happy at school	5147	2.08	0.29
CM attainment at 7	5325	-0.32	0.88
CM BSAG at 7	5302	10.70	9.52
CM Rutter's score at 7	5992	0.35	0.29
Parental interest 7 to 16	5415	0.64	0.48
Parents want CM to stay on in schooling 11-16	3893	1.21	0.55
CM improved in attainment 7 to 16	5083	0.39	0.49
CM improved behaviour 7 to 16	5992	0.49	0.50
Number of schools attended 11 to 16	4286	1.26	0.54
CM stayed on post 16	5594	0.07	0.25
School attended by CM at 16	4676	1.81	1.16
CM externalising behaviour at 16	4597	1.31	0.38
CM internalising behaviour at 16	4578	1.29	0.34
CM attitudes towards school at 16	4044	-0.35	0.91
CM received induction from jobs 16 to 23	5594	0.33	0.47
CM received training from jobs 16 to 23	5594	0.42	0.49
Number of courses leading to qualifications 16 to 23	1427	1.53	1.05
CM has basic skills at 23	5584	0.21	0.41
CM has taken course not leading to qualifications 16 to 23	5594	0.37	0.48
CM has failed courses 16 to 23	5594	0.04	0.21
CM employment status at 23	5993	1.69	0.89
CM family type at 23	5590	2.45	1.29

CM marital status at 23	5993	1.73	0.66
CM SES at 23	5507	2.28	0.58
CM is registered as disabled at 23	5594	0.05	0.22
CM partner's SES	5993	0.33	0.47
CM partner's education	5993	0.03	0.17

Table 12: Descriptive statistics of variables used for predicting progression between 33 and 42

Description	Obs	Mean	Std. Dev.
CM mother's schooling (SLA only to 3 years of above SLA)	2332	1.09	0.44
CM father's schooling (SLA only to 3 years of above SLA)	2133	1.18	0.63
CM mother age at delivery less than 20	2628	0.11	0.32
CM birth order	2350	2.70	1.66
CM mother's family size	2604	4.90	2.64
CM mother's birth order	2603	3.13	2.29
Financial hardship during childhood	1820	0.60	0.77
Free school meals during childhood	1831	0.43	0.66
Mother's fathers SES	2749	19.41	33.89
Father's father SES	2749	4.47	3.08
CM attended pre school	2191	0.18	0.38
Age CM started school	2386	5.41	0.83
CM household size at 7	2289	5.65	1.84
Parents want CM to stay on in education at 7	2006	0.85	0.36
Parental interest in CM education	2531	1.79	0.72
Parents read to CM	2378	0.47	0.50
CM is happy at school	2367	2.09	0.31
CM attainment at 7	2458	-0.48	0.87
CM BSAG at 7	2438	11.61	9.58
CM Rutter's score at 7	2749	0.35	0.28
Parental interest 7 to 16	2479	0.60	0.49
Parents want CM to stay on in schooling 11-16	1646	1.10	0.54
CM improved in attainment 7 to 16	2344	0.37	0.48
CM improved behaviour 7 to 16	2749	0.47	0.50
Number of schools attended 11 to 16	1939	1.26	0.56
CM stayed on post 16	2351	0.03	0.17
School attended by CM at 16	2117	1.82	1.19
CM externalising behaviour at 16	2080	1.35	0.40
CM internalising behaviour at 16	2067	1.32	0.36
CM attitudes towards school at 16	1798	-0.49	0.92
CM received induction from jobs 16 to 23	2351	0.36	0.48
CM received training from jobs 16 to 23	2351	0.35	0.48
Number of courses leading to qualifications 16 to 23	448	1.46	0.99
CM has basic skills at 23	2347	0.26	0.44
CM has taken course not leading to qualifications 16 to 23	2351	0.33	0.47
CM has failed courses 16 to 23	2351	0.03	0.18
Number of courses leading to qualifications 23 to 33	2207	0.22	0.84
Number of courses not leading to qualifications 23 to 33	2207	0.29	0.69
Change in maths skills 23 to 33	1883	2.14	1.01
Number of 3 day training received 23 to 33	2207	0.47	1.55

CM has basic skills at 33	2202	0.24	0.43
CM is registered as disabled at 33	2207	0.19	0.39
CM family type at 33	2150	1.70	0.46
CM has been in long term unemployment	2689	0.11	0.32
CM SES at 33	1985	2.27	0.69
CM has children at 33	2207	0.80	0.40
CM employment status at 33	2203	1.31	0.46
Number of times CM has moved since age 16	2138	4.23	2.49

Appendix 4: Descriptive statistics for BHPS

Table 13: Descriptive statistics of variables used for predicting participation in level 2 courses between 1992 and 2003 using the BHPS

Variable	Description		Mean	Std. Dev.	Obs.	
PL2	Participation in courses leading to L2	overall	0.03	0.16	N	32520
		between		0.09	n	3973
		within		0.14	T-bar	8.19
L1	Achieving level 1 qualifications	overall	0.03	0.16	N	32520
		between		0.19	n	3973
		within		0.14	T-bar	8.19
othsch	Achieving other qualifications	overall	0.03	0.17	N	32520
		between		0.14	n	3973
		within		0.15	T-bar	8.19
train	Participation in training	overall	0.16	0.37	N	30882
		between		0.26	n	3822
		within		0.30	T-bar	8.08
finsit_d	Subjective financial status (difficult)	overall	0.11	0.31	N	30929
		between		0.26	n	3832
		within		0.24	T-bar	8.07
eqhhinc	Equivalent household income	overall	1645.18	1208.08	N	32520
		between		1002.97	n	3973
		within		824.17	T-bar	8.19
empsta~d	Employment status (employed)	overall	0.60	0.49	N	31910
		between		0.42	n	3941
		within		0.27	T-bar	8.10
jobsatis	Job satisfaction (scale 1-7)	overall	5.50	1.35	N	18712
		between		1.05	n	2886
		within		1.00	T-bar	6.48
singpar	Single parenthood	overall	0.06	0.23	N	32520
		between		0.20	n	3973
		within		0.14	T-bar	8.19
nchu18	Number of children in the household between 5 and 18	overall	0.54	0.93	N	32520
		between		0.85	n	3973
		within		0.47	T-bar	8.19
nchu5	Number of children in the household under 5	overall	0.14	0.41	N	32520
		between		0.34	n	3973
		within		0.30	T-bar	8.19

hlstat_d	Health status (poor)	overall	0.13	0.34	N	32405
		between		0.25	n	3972
		within		0.25	T-bar	8.16
hlghq2	GQH subjective wellbeing	overall	2.01	3.11	N	30299
		between		2.40	n	3807
		within		2.24	T-bar	7.96

Appendix 5: Full set of results for NCDS

Table 14: Estimated marginal effect, z statistic, and standardised parameter of progression to level 2 between 23 and 33. Only individuals without level 2 qualifications by 23

Variable	Marginal Effect	Robust Z-statistic	Standardised Parameter	Parameter Ranking
Mother's education (SLA +1)	0.096	2.29*	0.033	31
Mother's education (SLA +2)	0.035	0.77	0.012	42
Mother's education (SLA +3)	0.118	2.10*	0.033	32
Mother's education (missing)	0.008	0.42	0.007	47
Father's education (SLA +1)	-0.002	-0.04	-0.001	55
Father's education (SLA +2)	0.070	1.81	0.028	35
Father's education (SLA +3)	0.014	0.34	0.005	49
Father's education (missing)	-0.016	-0.65	-0.016	40
CM birth order	-0.007	-1.50	-0.025	38
CM birth order (missing)	0.042	1.15	0.034	30
Financial hardship (1 year)	-0.002	-0.09	-0.002	53
Financial hardship (2 years)	0.027	0.73	0.014	41
Financial hardship (3 years)	0.014	0.18	0.003	51
Financial hardship (missing)	0.039	1.76	0.042	23
FSM at 11 or 16	-0.061	-2.61**	-0.049	21
FSM at 11 & 16	-0.054	-1.43	-0.028	34
FSM (missing)	-0.011	-0.55	-0.012	43
Parental expectations when CM was 7	0.005	0.22	0.006	48
Parental expectations when CM was 7 (missing)	-0.027	-0.89	-0.027	37
Parental interest (medium)	0.002	0.13	0.003	52
Parental interest (high)	0.030	1.33	0.027	36
Parental interest (missing)	0.002	0.05	0.001	54
CM attainment at 7	0.112	9.75**	0.213	**1**
CM attainment (missing)	0.127	1.67	0.086	7
CM BSAG at 7	-0.003	-2.92**	-0.054	19
CM BSAG (missing)	-0.089	-1.36	-0.069	12
Parental interest high or increased from 7 to 16	0.008	0.48	0.009	45
Parental interest (missing)	0.010	0.37	0.007	46
Parental expectations 11 or 16	0.112	2.71**	0.126	**4**
Parental expectations 11 & 16	0.205	4.50**	0.172	**2**
Parental expectations 11 to 16 (missing)	0.064	1.51	0.068	13
CM improved attainment from 7 to 16.	0.142	8.37**	0.154	**3**
CM stay on post 16	0.236	7.85**	0.125	**5**
School type (Grammar)	0.118	2.53**	0.041	24
School type (Secondary Modern)	-0.011	-0.61	-0.010	44
School type (Private)	0.075	1.11	0.017	39
School type (Special Education)	-0.097	-2.35*	-0.044	22
School type (missing)	0.039	0.61	0.036	28

Externalising at 16	-0.093	-3.35**	-0.070	11
Externalising at 16 (missing)	-0.106	-1.00	-0.107	6
Internalising at 16	-0.061	-2.30*	-0.041	25
Internalising at 16 (missing)	0.041	0.40	0.039	26
Positive attitudes towards school at 16	0.043	4.57**	0.074	10
Positive attitudes towards school at 16 (missing)	-0.049	-2.12	-0.052	20
Training between 16-23	0.070	4.70**	0.078	8
Number of qualifications courses 16-23	0.032	3.81**	0.063	17
CM had basic skills at 23	-0.068	-3.65**	-0.066	14
CM has taken other courses 16-23	0.059	4.10**	0.064	15
Employment status (unemployed)	-0.049	-2.23*	-0.038	27
Employment status (home / other)	-0.064	-3.58**	-0.064	16
SES 3 at 23	0.066	2.39*	0.075	9
SES 4 & 5 at 23	-0.026	-0.86	-0.028	33
SES (missing)	-0.016	-0.23	-0.004	50
CM partner is in top 3 SES groups	0.033	2.19*	0.036	29
Gender (male)	-0.053	-3.27**	-0.060	18

Source: NCDS. Notes: Sample 4,727 cohort members. Pseudo-R2 = 0.20. Asterisks indicate (*) significant at 5%; (**) significant at 1%. Categories for comparison: For mothers' and fathers' education (school leaving age only); for parental interest (low); for parental interest high or increased 7 to 16 (no change or low); for parental expectation 11 to 16 (not expecting the CM to stay on); for school type (comprehensive); for employment status at 23 (employed); for SES at 23 (SES 1 or 2).

Table 15: Estimated marginal effect, z statistic and standardised parameter of progression to level 2 between 33 and 42. Only individuals without level 2 qualifications by 33

Variable	Marginal Effect	Robust Z-statistic	Standardised Parameter	Parameter Ranking
Father's education (SLA +1)	0.018	0.32	0.011	13
Father's education (SLA +2)	0.058	1.47	0.045	11
Father's education (SLA +3)	0.080	2.20*	0.059	9
Father's education (missing)	0.039	2.28*	0.088	**5**
CM attainment at 7	0.033	3.75**	0.166	**1**
CM attainment (missing)	-0.016	-0.75	-0.031	15
CM improved attainment from 7 to 16.	0.039	2.48**	0.106	**3**
Number of qualifications courses 16-23	0.012	1.66	0.050	10
CM had basic skills at 23	-0.027	-1.82	-0.075	18
Courses not leading to qualifications 23-33 (one only)	0.047	2.25*	0.072	7
Courses not leading to qualifications 23-33 (2-3)	0.146	4.72**	0.131	**2**
Courses not leading to qualifications 23-33 (4 or more)	0.175	2.99**	0.078	6
Maths skills got better	0.046	2.65**	0.095	**4**
Maths skills got worse	0.041	1.36	0.043	12
Maths skills do not apply	-0.026	-1.31	-0.056	17
Maths skills (missing)	-0.016	-0.78	-0.046	16
Number of 3-day training 23_33	0.008	2.69**	0.070	8
Gender (male)	-0.001	-0.11	-0.004	14

Source: NCDS. Notes: Sample 2,310 cohort members. Pseudo-R2 = 0.08. Asterisks indicate (*) significant at 5%; (**) significant at 1%. Categories for comparison: For fathers' education (school leaving age only); for courses not leading to qualifications (no courses taken); for maths skills between 23 - 33 (no change in skills).

WIDER BENEFITS OF LEARNING RESEARCH REPORT NO.21

Determinants and Pathways of Progression to Level 2 Qualifications: Evidence from the NCDS and BHPS

The commitment of the government to improving the education of the workforce has been emphasized both in the Five Year Strategy for Children and Learners of the Department for Education and Skills (DFES, 2004) and in the recently published Leitch Review, which calls for the UK to be a "world leader in skills". Leitch also called for over 90 per cent of adults qualified to at least Level 2, an increase from 69 per cent in 2005, with a commitment to go further and achieve 95 per cent as soon as possible.

However, our understanding of the characteristics and motivations of individuals who participate in level 2 courses is limited. This report aims to address this issue, describing the characteristics of people who return to learning to take level 2 qualifications and their pathways to progression. The research draws on two nationally representative longitudinal studies, the National Child Development Survey (NCDS) and the British Household Panel Survey (BHPS).

Our results showed that adults who gained a level 2 qualification were more likely than those who did not to have been engaged and relatively successful in a range of learning activities at earlier ages, including learning during childhood, staying in education during adolescence and undertaking courses leading and not leading to qualifications during adulthood. The factor that best predicts progression by age 33 and by age 42 is early school attainment. This means that for individuals who do relatively well at school there is a greater chance of achievement of qualifications during adulthood, even when this qualification is not achieved by age 23.

We further found that socioeconomic constraints in adulthood may be less of a barrier to progression than is often believed, and less influential than other factors. Of all the measures for socioeconomic barriers at age 23, only employment status and SES are significantly associated with progression to level 2. In addition, none of the socioeconomic factors at age 33 analysed are significantly associated with progression between 33 and 42. Provision of learning therefore needs to take into account the existence of differing levels and sources of motivation, recognising that for some, there are significant attitudinal barriers.

Pathways to progression are extremely varied. While the majority of those who achieved level 2 in adulthood did so by obtaining lower level qualifications prior to, or simultaneously with, level 2, not all did so. In particular, it is notable that a large proportion of those achieving level 2 from a base of no qualifications did so without obtaining any intermediate qualifications. Further, those with an existing level 1 qualification were more likely than their unqualified counterparts to obtain additional level 1 qualifications prior to achieving level 2.

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ISBN 978-0-9552810-1-3