

New Light on Adult Literacy and Numeracy in Scotland:

Evidence from the 2004 survey of the 1970 British Cohort Study (BCS70)

A Report commissioned by the Scottish Government, Lifelong Learning Directorate

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Foreword

Analysis of the UK data reported in *New Light on Literacy and Numeracy*¹ indicated that there are some differences between performance of adults in Scotland and those from other parts of the UK. A second analysis was commissioned by Learning Connections, Directorate of Lifelong Learning, the Scottish Government.

This report presents the findings of that analysis. It provides valuable insights into the social, educational and economic factors associated with the acquisition of effective literacy and numeracy and the consequences for those who have not yet mastered literacy and numeracy skills to the level demanded by modern day life.

There are lessons here for policy makers and providers of tuition in all educational sectors. There are also significant messages for a range of other services, such as Health, Social Care and Social Work concerning the relationship between their service users and educational attainment, and the potential for learning to contribute to service outcomes.

¹ Bynner J & Parson, S. (2006) *New Light on Literacy and Numeracy*, NRDC, http://www.nrdc.org.uk/publications_details.asp?ID=78

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A word about comparing levels between Scotland and England

England and Scotland use different terms to refer to levels of education. For example, Entry levels in England (National Qualifications Framework (NQF)) cover the same qualification range as Access levels 1, 2 and 3 in Scotland (Scottish Credit and Qualifications Framework (SCQF)). This may cause some confusion on first reading of this report. To facilitate understanding we have included how the Scottish and English qualifications map onto each other at the bottom of each page throughout this report.

An interactive Qualifications can Cross Boundaries website has been developed by the Five Country Framework and Qualifications Group to provide more information on qualifications and their levels, and how they broadly compare across the UK and Ireland:

http://www.qualifications-across-boundaries.org/compare/uk_ireland

Executive Summary

This report gives the results of a separate analysis for Scotland of literacy and numeracy data collected in the 1970 British Cohort Study at age 34. It relates performance in these skills to a wide range of other features of Scottish cohort members' lives.

Chapter 2 Self-reported difficulties

The results point to a continuing low self-awareness of literacy and numeracy difficulties which is not surprising among adults. The very low number of adults who report difficulties with reading, writing or numbers and have attended provision to help improve their skills – just 3% to improve reading or writing and no-one to improve numberwork – needs to be set against the significant proportion of those acknowledging a problem who say that they want to improve their skills (29% reading or writing, 38% numberwork). This first points to

challenges and opportunities that the Adult Literacy and Numeracy Strategy in Scotland needs to address. The *Big Plus* campaign obviously stimulated awareness of problems in some people, but the unmet need to improve skills – particularly number skills – suggests that further campaigns and learning opportunities are required that match the specific needs identified by potential learners.

Chapter 3 Assessed literacy and numeracy levels

Performance in the literacy and numeracy assessments was more weakly related for men and women in Scotland compared with BCS70 overall. Within Scotland men had stronger numeracy skills than women, and slightly more men and women living within the Central Belt area performed at the higher end of the distribution for both literacy and numeracy. However, men who had moved away from Scotland had the strongest skills of all, with more than 8 in 10 having SCQF Level 5 or higher literacy or numeracy skills. Comparable levels for all other men were 6 in 10 for literacy, and 1 in 3 for numeracy.

Chapter 4 Family background and family support factors

Cohort members with the poorest grasp of literacy and numeracy, particularly literacy, had a relatively disadvantaged home life in childhood, both economically and in terms of education levels and educational support offered by parents. Although more families in Scotland had grown up in rented overcrowded accommodation compared to those across Great Britain as a whole, those with the poorest grasp of literacy in Scotland were the most likely of all to live in such accommodation. Far fewer parents of cohort members with the poorest skills had enjoyed any extended education or gained any qualifications (87% of mothers of those with SCQF Access Level literacy had no qualifications, compared with 43% of mothers of cohort members with SCQF Level 5 or higher literacy). Fewer such parents had read to their children when they were young (40% of those with SCQF Access Level literacy had never been read to, compared with 19% SCQF Level 5 or higher literacy), or had been viewed by teachers as interested in their

children's education towards the end of primary school. Reflecting their own poor educational experiences, far fewer parents of those with SCQF Access Level literacy held aspirations for them to continue in education after age 16.

Chapter 5 Early education performance and school environment

Cohort members with the poorest grasp of literacy or numeracy were less likely to have had formal pre-school experiences (47% of cohort members with SCQF Access Level literacy, compared with 81% of cohort members with SCQF Level 5 or higher literacy), and as early as age 5 they had performed less well in cognitive assessments, falling further behind by age 10, as revealed by scores in the reading and maths assessments. Although half of cohort members with poor skills had been identified as such by their parents, and identified themselves as having had poor skills in childhood (a far cry from the small percentages in adulthood), it still meant that the needs of half of them remained invisible. Teachers were even less likely to recognise these difficulties, with relatively few cohort members having received help with reading or understanding of numbers when at school (highest at just 28% for those with SCQF Access Level literacy). School intake reflected the poorer socio-economic background and local area of cohort members with the poorest grasp of skills in adulthood. But other characteristics of the school, including its teaching characteristics did not differ across adult skills groups. What seems to be critical is what the child brings with them into the classroom acquired from their family background.

Chapter 6 Post-16 education and learning experiences

Just as we found for all cohort members, men and women in Scotland with the poorest grasp of literacy or numeracy were by far the most likely to have left full time education at the earliest opportunity with no qualifications. This combined educational disadvantage was most apparent among the poorly skilled living within the Central Belt region (1 in 2 with SCQF Access Level literacy had no qualifications, compared with around 1 in 3 living elsewhere in Scotland). On the other hand, those living outside the Central Belt were more likely to be aware of

their limited grasp of literacy (21% compared with 12% in the Central Belt) or numeracy (49% compared with 27% in the Central Belt), though the motivation to improve poor skills in Scotland was far lower than we found for Great Britain as a whole.

A potential added disadvantage was that as many as 1 in 4 men, and 1 in 5 women, with the poorest literacy were also assessed with a very high risk of being dyslexic, which has obvious implications for the progress of adults attending literacy and numeracy provision. The exclusion of adults with the poorest skills, particularly literacy, from the digital revolution that has taken place over the last decade is clear to see, with far more being without a computer (44% compared with 17% SCQF Level 5 or higher skills) or access to the internet at home (64% compared with 18% SCQF Level 5 or higher skills). Inclusion of a digital element within literacy and numeracy learning may be another way to attract adults to provision.

Chapter 7 Employment and economic disadvantage

Large numbers of men and women with the poorest skills first entered the workforce at 16, but they had spent the least amount of time in full-time or part-time employment over the following eighteen years. Men with SCQF Access Level skills spent more time unemployed or sick, and women in a full-time home-care role. At age 34, men and women in work had very different occupational profiles than men and women with a better grasp of literacy and numeracy, being far more likely to be in labour intensive low skilled jobs, often in the less secure unregulated parts of the labour market (19% men and 17% women with SCQF Access Level literacy, compared with just 5% men and 4% women with SCQF Level 5 literacy). Lower levels of training (19% men and 20% women with SCQF Access Level 2 numeracy, compared with 42% of men and 36% women with SCQF Level 5 numeracy) and promotion (25% men with SCQF Access Level literacy, compared with 55% of men with SCQF Level 5 literacy) show that their

disadvantage had been made worse by employers being less likely to have invested in these men and women.

Questions about finances revealed the continuation of the (relative) economic disadvantage, or poverty, which has surrounded men and women with SCQF Access Level skills over their lives. Fewer of them reported being able to make regular savings or to have investments (13% SCQF Access Level 2 to 46% SCQF Level 5 numeracy), but more were in receipt of state benefits and part of a non-working household – particularly women with SCQF Access Level literacy (24% compared with 4% SCQF Level 5 literacy).

Chapter 8 Home, local environment and community participation

Men and women with the poorest literacy and numeracy, again particularly literacy, were less likely to have taken advantage of the recently thriving housing market. As in their childhood, they were most likely to be living in rented, overcrowded housing (62% women with SCQF Access Level literacy, compared with 17% SCQF Level 5 literacy, lived in rented housing; 32% with SCQF Access Level literacy to 7% with SCQF Level 5 literacy lived in an overcrowded home). Women with poor skills, and those living within the Central Belt, were more likely to have experienced a spell of homelessness (10% with SCQF Access Level literacy, 3% with SCQF Level 5 literacy in the Central Belt). Questions on local environment revealed that men and women with SCQF Access Level skills were more likely to feel dissatisfied with their local environment or to not trust others living around them. They were generally less engaged with their community, being less involved in clubs, groups or activities or to hold any political interest. Once again, men and women in the Central Belt region appeared the most excluded.

Chapter 9 Family life and well-being

Men with SCQF Access Level literacy or SCQF Access Level 2 numeracy were the most likely to be living with one or other of their parents at age 34. More of

the men and women with SCQF Access Level literacy had never lived with a partner by age 34 but, on the other hand, women with poor literacy skills were also the most likely to have first moved in with a partner when still a teenager and to have become a teenage mother (24% to 5% with SCQF Level 5 or higher literacy). They went on to have more children, with three or four children not being uncommon by age 34 (29% to 8% with SCQF Level 5 or higher literacy). It seems that although as many as 1 in 5 women with SCQF Access Level literacy did not form (live-in) partnerships by age 34, the majority began the transition to partnership forming and family life earlier than women with a better grasp of literacy.

Poor physical and mental well-being, together with poor health related practices, were also associated with men and women with the poorest grasp of literacy or numeracy. More of these men and women had symptoms associated with depression (28% men and 29% women with SCQF Access Level literacy, compared with 13% men and 16% women with SCQF Level 5 of higher literacy). They were also more likely to report to never get what they want out of life (42% men and 29% women with SCQF Access Level literacy, compared with 17% men and 16% women with SCQF Level 5 of higher literacy), and that their health limited their daily activities in some way. They were more likely to smoke cigarettes every day, and men who drank alcohol were also more likely to consume a higher number of units than men with good literacy and numeracy skills.

Chapter 1 Introduction

Adult literacy and numeracy has enjoyed a high profile in Scotland since the Scottish Executive, in 2001, pledged political commitment and financial support through community partnerships. The Executive also established, in 2003, a national development engine ('Learning Connections'). £51 million pounds of new resources were invested over five years (2001-6), with a further £37.1 million from 2006-8 – by far the biggest initiative in the field for over 20 years. 15,000 learners were engaged in literacy programmes across Scotland in 2001 and more than 137,000 learners were supported by 2006. The target is to support 200,000 learners by 2008.

A realisation that Scottish based research into adult literacy and numeracy difficulties was virtually non-existent at that time led to the commissioning of a further analysis of Scottish data from the 1996 International Adult Literacy Survey (IALS). This suggested that 800,000 adults in Scotland had literacy and numeracy difficulties, with only 15,000 (or 2%) having their needs met through provision from various providers. This, and other research, influenced the 2001 *Adult Literacy and Numeracy in Scotland report (ALNIS)* and the development of the subsequent adult literacy and numeracy strategy. *Literacies in the Community*, which had been published in 2000, supplied the guidance and resources that practitioners and managers needed to implement the strategy. However, there is still much to learn about the lives of adults in Scotland who have a poor grasp of literacy and numeracy.

In 2004, the latest survey of the 1970 British Cohort Study (BCS70) took place, with a special emphasis on assessing the literacy and numeracy skills of all participating cohort members, then aged 34. The initial report on the results of the survey, *New Light on Literacy and Numeracy* compared distributions of cohort members across literacy and numeracy levels and showed interesting

differences between Scotland, Wales and England, with the Scottish and English distributions of both literacy and numeracy performance showing the most in common – despite the different education systems.

Substantial differences in life chances, quality of life and social inclusion were evident between individuals at or below SCQF Access Level 2 and often those with SCQF Access Level 3 literacy, compared with others at higher levels of literacy and numeracy competence. Earlier work, based on smaller samples of English and Welsh cohort members, showed that these poor literacy and numeracy skills had foundations in poor family background and bad educational experience pointing to continuing trajectories of disadvantage in which weak literacy and numeracy had a central part. SCQF Access Level 2 skills were associated with lack of qualifications, poor labour market experience and prospects, poor material and financial circumstances, poor health prospects and lack of social and political participation. This report has been commissioned by the Learning Connections team to discover whether similar patterning prevailed in Scotland. Concentrating on Scottish cohort members, we replicate much of the analyses undertaken in the original *New Light* report, but additionally profile the early life experiences and transitions made to independent adult life. Where possible, we will also explore any differences in these relationships between the different Scottish regions, more specifically those living within the Central Belt and other parts of Scotland.

Introduction to Britain's birth cohort studies

Before moving on to the analyses, the following background to Britain's birth cohort studies is provided. Britain's nationwide birth cohort studies follow the same group of people from birth into and through adulthood, thus giving a picture of whole generations. By following up people from birth it is possible to find how present situations relate to past circumstances and to predict future functioning. Cohort studies are one of the richest resources for the study of human development, covering all aspects of life. They are widely used by government

and in academic research, both nationally and internationally. There are four such surveys in Britain:

- National Survey of Health and Development (NSHD), which began in 1946;
- National Child Development Study (NCDS), which began in 1958;
- 1970 British Cohort Study (BCS70), which began in 1970;
- Millennium Cohort Study (MCS), which began in 2000.

The first three of these studies are based on all births in Great Britain in one week in 1946, 1958 and 1970 respectively, whereas the MCS is based on births over a period of 12 months in selected areas in the United Kingdom. NCDS, BCS70 and MCS are all managed by the Centre for Longitudinal Studies (CLS) at the Institute of Education, University of London. NSHD is based in the Department of Epidemiology and Public Health at University College, London.

BCS70 in detail

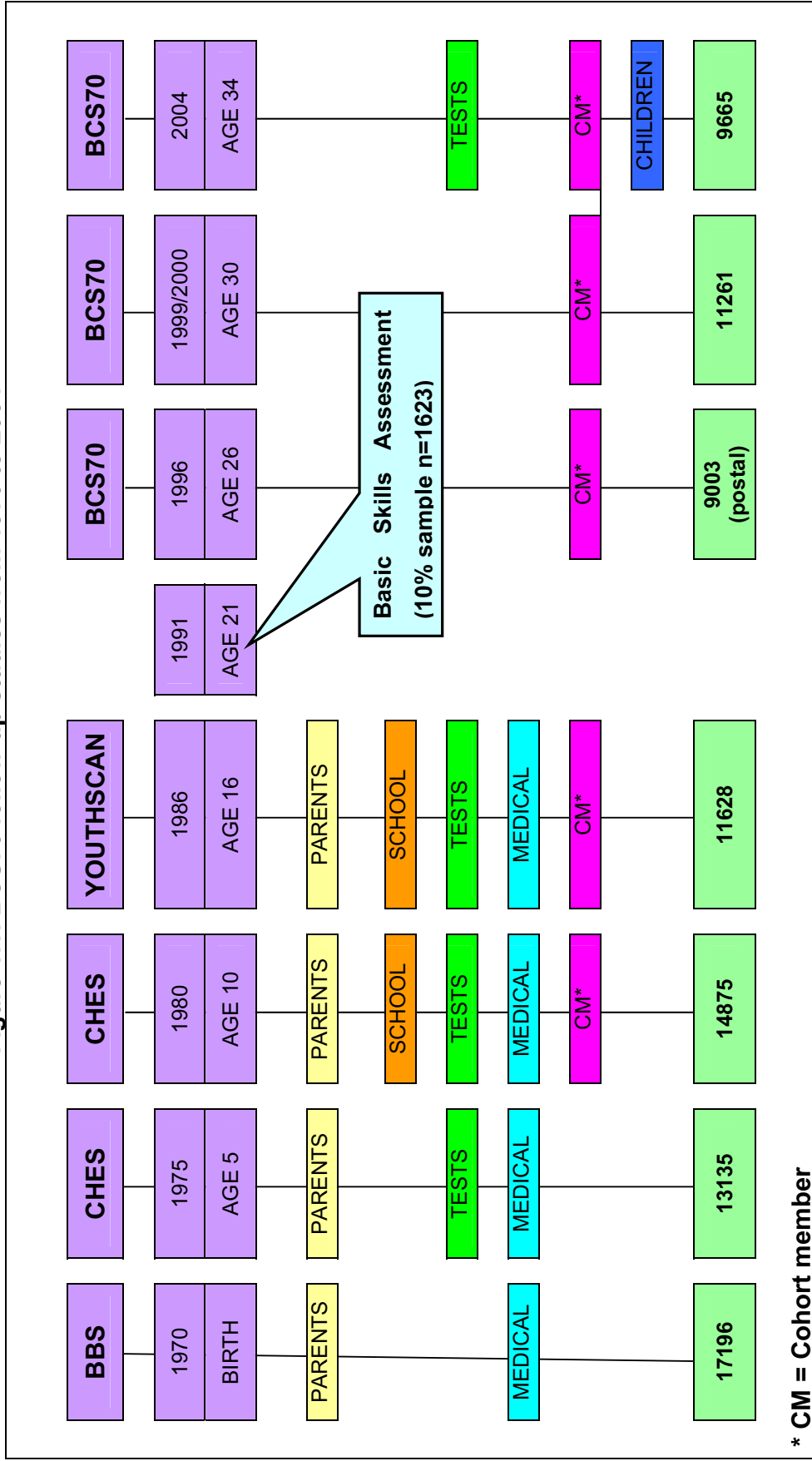
BCS70 began in 1970, when data were collected about all the babies born in England, Scotland and Wales² in one week of April 1970. As shown in Figure 1.1, cohort members have since been followed up six times, at ages 5, 10, 16, 26, 30, and most recently at age 34, to collect data about their health, educational, social and economic circumstances. Additionally, a representative sample was followed up at age 21. In the early years information was collected from parents, health professionals and teachers; the questionnaires were generally cross-sectional in design. As the cohort members became the primary source of the information gathered, the focus shifted to obtaining the 'complete history' of a cohort member's experience or involvement in, for example, education, full-time employment, independent living and home ownership, marriage, pregnancies and having children. Not all information is longitudinal, and current statuses that provide a snapshot of British life for the cohort

² Data were collected about children born in Northern Ireland, but these children were not subsequently followed up.

members are routinely collected in all surveys. In the most recent (sixth) follow-up, carried out in 2004 when most cohort members were aged 34³, histories were updated and a wide variety of current information pertinent to all domains of adult life was also gathered. The final 2004 sample size was 9665 – 56% of the original birth cohort and 74% of the first (age 5) follow-up sample.

³ Cohort members interviewed during February/March 2004 were still age 33; cohort members interviewed after their birthday in April 2005 were age 35.

Figure 1.1: BCS70 follow-up studies from 1970 to 2004



The Scottish sample

Of the 9665 BCS70 cohort members interviewed in 2004, 99.8% supplied good geographic information. In line with the spread of the UK population in mid 2004, 9% of all cohort members lived in Scotland (n=891). 86% lived in England, leaving 5% in Wales⁴. Taking this further, we used address information to place cohort members living in Scotland in either the 'Central belt' or the 'Rest of Scotland'⁵. 57% of all cohort members in Scotland lived in areas deemed to fall within the Central Belt.

With an eye to the issue of 'skill gain', or 'skill loss' from the different countries within Great Britain, we also looked into the geographic background of cohort members. Had those born in Scotland remained in Scotland or moved away, and how many of those born in either Wales or England had moved to Scotland later on in their life?⁶ This is obviously not a comprehensive look at movement in or out of Scotland by cohort members, but a (simple) way of identifying the Scottish 'roots' of cohort members. Of the 891 cohort members living in Scotland in 2004, 89% (n=793) had been born there and 11% (n=98) had moved there at a later age. Table 1.1 details all BCS70 cohort members participating in 2004 by whether they were born or currently live in Scotland. We can see that just 1% of our longitudinal sample had been born in Scotland and currently lived in either England or Wales (predominantly England) and 1% had moved to Scotland after they were born.

⁴ Source: Office for National Statistics; National Assembly for Wales; General Register Office for Scotland; <http://www.statistics.gov.uk/census2001/profiles/64.asp>

⁵ NUTS level 3 area information supplied in excel datasets by UKBorders (<http://edina.ac.uk/ukborders>) and census output codes derived from address information supplied by cohort members during the interview in 2004 was used to do this. To maintain confidentiality of cohort members finer geographic coding was not used in this report. A list of the areas included within the Central Belt is supplied in a separate document. Our special thanks go to Gareth Hughes, a geographer at the Centre for Longitudinal Studies, who carried out this work.

⁶ As with all longitudinal data, not all participating cohort members had taken part in all previous BCS70 surveys. However, of the 9665 taking part in 2000, 92% had been present in the first survey back in 1970, meaning 8% joined in later on in either 1975 (age 5) or in 1980 (age 10).

Table 1.1: BCS70 cohort members by their ‘Scottishness’

Born & live in Scotland	Born in Scotland	Live in Scotland	Born & live in England or Wales
8.3% (736)	1.3% (115)	1.1% (95)	89.4% (7968)

What’s covered in the report

Chapter 2 focuses on self-awareness of literacy and numeracy difficulties, attendance at learning provision and motivation to improve skills within the overall Scottish population.

Chapter 3 turns attention to the assessment of adult literacy and numeracy, briefly describing the assessment instruments before comparing the distribution of scores for men and women drawing attention to differences by their Scottish profile.

Chapters 4 and 5 - in these two chapters we profile the early life experiences of cohort members living in Scotland in 2004, making use of the full range of information collected during their childhood, at their birth, and at ages 5, 10 and 16. In Chapter 4 we detail family socio-economic background, parental education and family support measures, and in Chapter 5 we look at early cognitive and educational achievement, together with identification of difficulties at early ages by parents and teachers, and consider some characteristics of the school environment itself. These various indicators of skills acquisition will flag up key targets of intervention prior to adulthood.

From this point on we focus on differences across the performance levels in cohort members’ experiences from age 16 up to age 34. First up in Chapter 6 is education and qualifications. We then return to the issue of self awareness of difficulties and motivation to improve skills alongside learning difficulties, or more specifically, evidence of symptoms associated with dyslexia. We finally consider the relationship between poor literacy and numeracy and exclusion from digital media in the home.

Chapters 7, 8 and 9 move on to compare outcomes at age 34 in many spheres of adult life. Expanding the original *New Light* analysis, we use work and family life history data to look at how men and women in Scotland in 2004 with the poorest skills compared with men and women with more accomplished literacy or numeracy. In Chapter 7 we look at first employment up to current situation at age 34, including work-related and other associated financial disadvantages. In Chapter 8 we turn to age of first leaving the parental home and experiences in the housing market up to age 34, including a look at the local environment and community participation and, finally, in Chapter 9 we describe relationship formation, becoming a parent and health and well-being.

Chapter 10 offers concluding remarks.

Chapter 2 Self-reported reading, writing and number difficulties

It has been argued that self-appraisal of a difficulty may in fact be the more important indicator of the need for improvement than the objective measure itself because it is closely linked to the motivation to change⁷. Fundamental to raising adult literacy and numeracy levels is for people's recognition that they have poor skills (latent need), and then to perceive these poor skills as a difficulty (expressed need). However, much need remains invisible, that is, people with poor skills do not perceive they have difficulties and thus have no motivation to improve their skills. In research carried out for the *Basic Skills Agency* (BSA) using birth cohort data collected in the 1990s, acknowledgement of difficulties with basic skills was low, barely exceeding 5%, even among those identified by the literacy and numeracy assessments⁸ as having very poor skills. The results in the original *New Light* pointed to a continuing low awareness of literacy and numeracy difficulties among cohort members, being lowest of all among those living in Scotland, with only a moderate association between awareness of difficulties and interest in, and attendance at, learning. Between January 2004 and March 2005, almost the entire period of fieldwork for the 2004 survey, the first *Big Plus* awareness raising campaign ran in Scotland⁹. The findings here will be particularly relevant to seeing how effective this campaign had been on cohort members' motivation to improve skills and therefore likely take-up in the future.

In an attempt to capture more specific difficulties cohort members might be experiencing, all questions on skills difficulties included in 2004 were for the first time put to all participating cohort members¹⁰. This amounted to three questions on reading

⁷ Tom Sticht. *ALL Wrong – Again! Can Adult Literacy Assessments Be Fixed?* May 17, 2005. www.nald.ca/WHATNEW/hnews/2005/murray.htm and personal communication.

⁸ Ekinsmyth, C. and Bynner, J. (1994). *The Basic Skills of Young Adults*. London: The Basic Skills Agency. Bynner, J. and Parsons, S. (1997): *It doesn't get any better*. London: The Basic Skills Agency. Parsons, S. (2002). *Do I want to improve my reading, writing or maths?* London: The Basic Skills Agency.

⁹ The *Big Plus* campaign involved TV and radio advertising and was supported by learndirect Scotland. To date it has resulted in over 8,000 calls to the national helpline. www.thebigplus.com

¹⁰ In previous surveys cohort members who did not report difficulties to the first questions that was put to them were not asked any additional questions.

difficulties, four on writing difficulties and six on number and maths difficulties¹¹. We look first at levels of self-reported difficulties with no reference to the assessed skills level of cohort members and then at the relationship between the two measures.

Levels of self-reporting reading, writing or numberwork difficulties in Scotland

In table 2.1 we compare the percentage of cohort members who reported difficulties with any of the three reading, four writing or six numberwork tasks by their Scottish profile¹². It seems that despite the *Big Plus* campaign, men and women living in Scotland in 2004, or indeed those who had been born there were less likely to self-report difficulties with one literacy or numeracy, compared to men and women who had no Scottish heritage.

Table 2.1: % of cohort members reporting difficulties by their Scottish profile

	Born & live in Scotland	Born in Scotland	Live in Scotland	Born & Live elsewhere
Any reading difficulty?	4%	6%	3%	8%
Any writing difficulty?	19%	20%	15%	26%
<i>n(100%)</i>	<i>711</i>	<i>113</i>	<i>95</i>	<i>7707</i>
Any numberwork difficulty?	6%	5%	7%	11%
<i>n(100%)</i>	<i>736</i>	<i>115</i>	<i>95</i>	<i>7941</i>

In Tables 2.2a, 2.2b and 2.2c we look in more detail at the specific difficulties reported by cohort members living in Scotland at the time of interview in 2004. We distinguish between those who live in the ‘Central Belt’ and the ‘Rest of Scotland’. Writing difficulties were the most widely reported (18%) while difficulties with reading were reported least often (4%). Although the differences were not statistically significant¹³,

¹¹ In line with previous sweeps, cohort members were first asked if they had a sight problem. The 3% of cohort members who reported they were blind or had a sight problem were not asked questions on reading or writing.

¹² The increased level of reported skills difficulties in the 2004 survey is as a result of the change in question format. For further details see *New Light* report.

¹³ For the purposes of this report statistical significance is determined at the 5% level, that is the odds are 19:1 against the result having arisen by chance.

residents in the Central Belt were slightly less likely those living in other (predominantly more remote) parts of Scotland to self report difficulties with literacy or numeracy.

Table 2.2a: % reporting difficulties in response to the individual reading questions

READING	Overall	Central Belt	Rest of Scotland
Any reading difficulty?	4%	4%	5%
Can you usually read and understand what is written in a magazine or newspaper?	1%	1%	1%
Can you read aloud to a child from a children's storybook?	1%	1%	1%
Can you usually read and understand any paperwork or forms you would have to deal with?	3%	4%	3%
<i>n(100%)</i>	865	492	373

Table 2.2b: % reporting difficulties in response to the individual writing questions

WRITING	Overall	Central Belt	Rest of Scotland
Any writing difficulty?	18%	16%	21%
Can you write a letter to a friend to thank them for a gift or to invite them to visit?	2%	2%	2%
When you try to write something do you find it difficult to spell some words correctly?	13%	12%	15%
Do you find it difficult to make your handwriting easy to read?	5%	5%	5%
Do you find it difficult to put down in words what you want to say?	6%	5%	8%
<i>n(100%)</i>	865	492	373

Table 2.2c: % reporting difficulties in response to the individual number questions

NUMBERWORK	Overall	Central Belt	Rest of Scotland
Any number / maths difficulty?	7%	4%	10%
When you buy things in shops with a five or ten pound note, can you usually tell if you have the right change?	0%	0%	0%
When you have to do things with numbers do you find it difficult to recognise numbers when you see them?	1%	1%	1%
Do you ever have difficulty adding up?	2%	1%	2%
Do you ever have difficulty with subtraction - that is taking one number away from another?	2%	1%	4%
Do you ever have difficulty with multiplication?	4%	3%	5%
Do you ever have difficulty with division?	5%	3%	8%
<i>n(100%)</i>	<i>891</i>	<i>505</i>	<i>386</i>

As Table 2.2a shows, of the three aspects of reading covered, difficulties with form-filling and similar paperwork were reported most frequently (3%). Of the four writing questions (Table 2.2b) spelling was the most widely reported difficulty (13%) and, not unexpectedly, of the six questions to do with numbers and mathematical calculations (Table 2.2c), most cohort members reported difficulties with division (5%). Cohort members living outside the Central Belt were slightly more likely to self-report difficulties with spelling, putting down in words what they wanted to say and the four mathematical calculations.

Figures 2.1a, 2.1b and 2.1c show the percentages of men and women who reported each of a number of specific situations in which they had reading, writing or number difficulties by current location in Scotland. For the three aspects of reading there were very little differences between percentages of men and women who reported difficulties, **Key to comparison of Levels between Scotland and England.** SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

but more women living outside the Central Belt tended to report difficulties. Differences between men and women reporting difficulties with each of the four aspects of handwriting were more noticeable (Figure 2.1b), particularly for spelling (16% men, 11% women), with men living outside the Central Belt the most likely of all to report difficulties (18% men, 12% women).

For number and maths difficulties (Figure 2.1c) there were virtually no differences between percentages of men and women reporting difficulties. However, men and women living outside the Central Belt area were more than twice as likely as those living within the Central Belt to report overall difficulties (10% to 4% for both men and women) and with each of the mathematical operations. Women living outside the Central Belt were the most likely of all to report difficulties with division (8% to 4% in the Central Belt). The results here do not support the gender-typical stereotyping that was found in the *New Light* report where more men perceive difficulties associated with written communication and more women report difficulties with the more advanced mathematical operations (multiplication and division).

Figure 2.1a: % men and women who reported specific reading difficulties by where live in Scotland

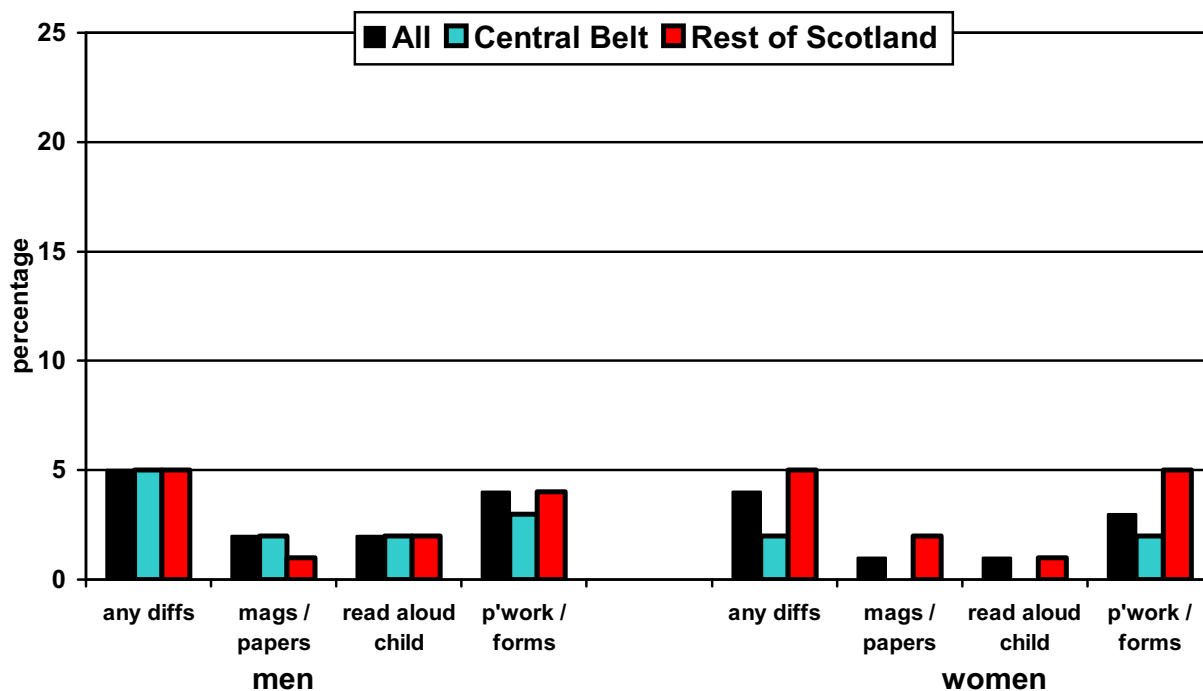
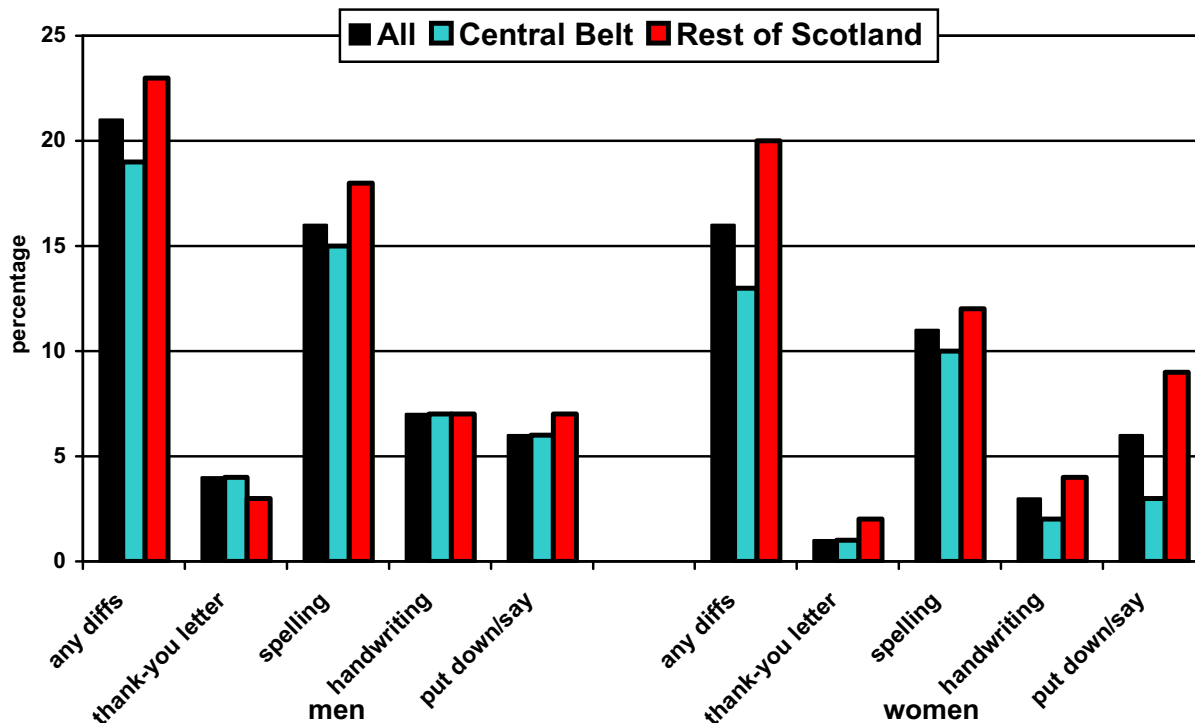
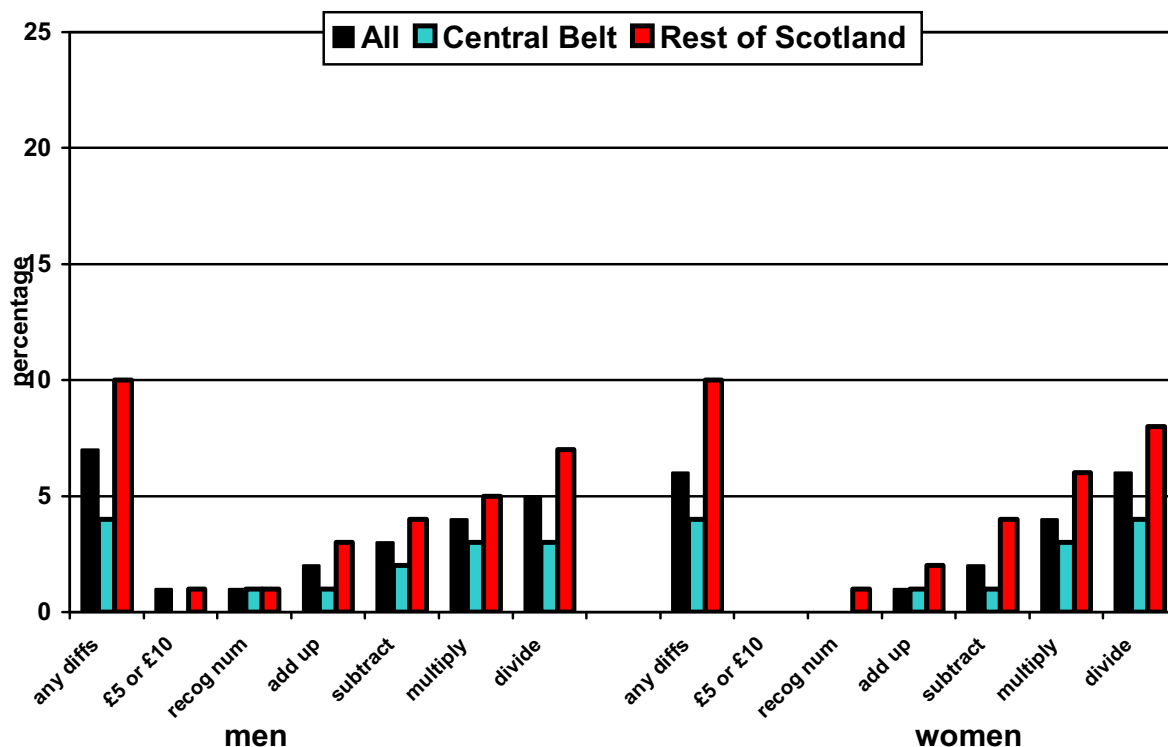


Figure 2.1b: % men and women who reported specific writing difficulties by where live in Scotland



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 2.1c: % men and women who reported specific number / maths difficulties by where live in Scotland



Literacy and numeracy learning and the wish to improve skills

4% of all men and women in BCS70 had been on a course to help them improve their reading, writing or number and maths calculations however, this fell to just 1% of men and 2% of women living in Scotland in 2004. In comparison to those who had been born in Scotland, men and women who had moved to Scotland were more likely to report attendance on a course (3% to 1%), as were women outside of the Central Belt (3%). Figure 2.2 shows that even among the men and women who reported skills difficulties, no more than 3% also reported that they had been on a reading or writing course in the last four years to help overcome these difficulties. Less than 1% had been on a course to help with their numbers. This is in line with the acknowledgment that opportunities for

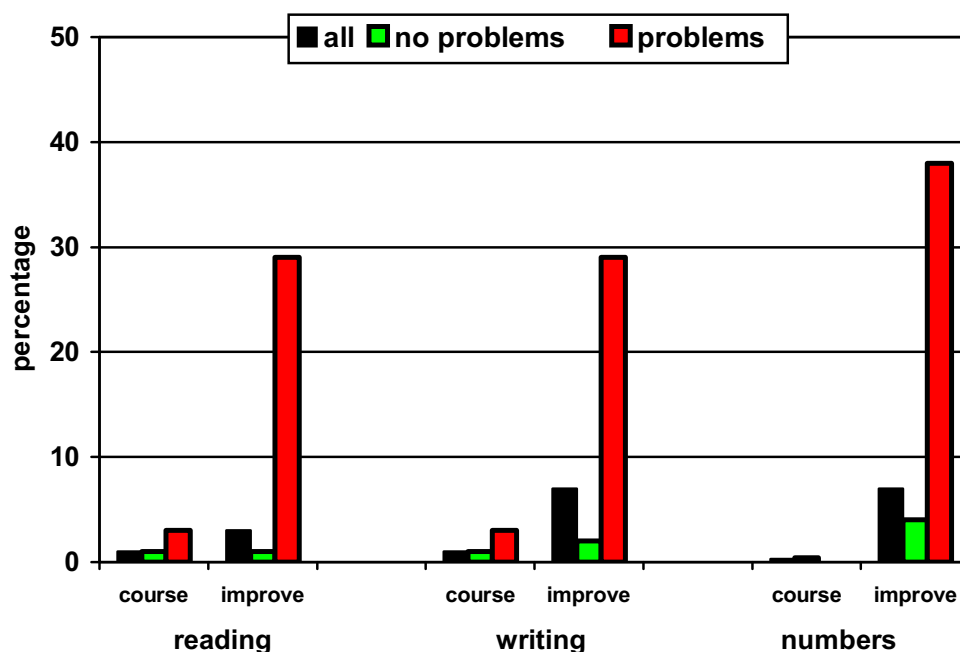
learners to improve their numeracy have been underdeveloped, and that literacy programmes have dominated provision in Scotland¹⁴.

However, more than 1 in 7 (13%) of all men and women wanted to improve their reading, writing or number skills, with more men reporting that they wanted to improve their reading skills (4% men, 2% women) and writing skills (9% men, 6% women) and women *slightly* more likely their grasp of numbers (6% men, 7% women). More men born in Scotland wanted to improve any of these skills, compared to those who had moved to Scotland later on (15% to 3%). Compared to those within the Central Belt, more men and women living in other parts of Scotland wanted to improve their skills: 1% to 3% reading, 5% to 7% writing, 6% to 9% numbers.

Among men and women who reported reading, writing or number difficulties more than 1 in 3 wanted to improve at least one of their skills. More specifically, Figure 2.2 shows that among both men and women reporting reading or writing difficulties, 29% reported that they wanted to improve their skills. Among the men and women who reported difficulties with some aspect of numberwork, as many as 38% wanted to improve their skills. By comparison, among the respondents who did not acknowledge difficulties, very small proportions wanted to improve their skills (usually less than 4%).

¹⁴ Report on the Scottish Adult Literacy and Numeracy Strategy 2004-2005, Communities Scotland.

Figure 2.2: % men and women who had been on a course or wanted to improve their skills, by self-reported difficulties



Summary self-reported difficulties

The results point to a continuing low self-awareness of literacy and numeracy difficulties which is not surprising among adults, The very low number of adults who report difficulties with reading, writing or numbers and have actually been on a course to help improve their skills – just 3% to improve reading or writing and no-one to improve numberwork – needs to be set against the significant proportion of those acknowledging a difficulty who say that they want to improve their skills (29% reading or writing, 38% numberwork). This first points to challenges and opportunities that the *Adult Literacy and Numeracy* strategy in Scotland needs to address. The *Big Plus* campaign obviously stimulated awareness of difficulties in some adults, but the unmet need to improve skills – particularly number skills – suggests that further campaigns and learning opportunities are required that match the specific needs identified by potential learners.

Chapter 3 Assessment of literacy and numeracy skills in Scotland

This was the first time that the literacy and numeracy skills of cohort study members living in Scotland had been assessed by objective methods¹⁵. The new literacy and numeracy assessments designed for assessing cohort members in 2004 combined

1. Open-response (OR) literacy and numeracy questions previously used to assess the functional literacy and numeracy skills of BCS70 cohort members' in 1991 (England and Wales sample only)¹⁶.
2. Multiple-choice (MC) questions extracted from the 2002 *Skills for Life Survey*¹⁷.

The aim of importing items from the *Skills for Life (SfL)* Survey was to enable cross-referencing from one survey to another and supply benchmarking to the national standards¹⁸. The OR items were included for continuity purposes. In this report we will be concentrating on the multiple choice assessments. The MC items selected from the *SfL* survey were selected to provide as comprehensive coverage as possible of the Adult Literacy and Numeracy Core Curricula for England. The questions are set at four levels of difficulty: Entry Level 2, Entry Level 3, Level 1 and Level 2, the most difficult. Entry levels in England (National Qualifications Framework (NQF)) cover the same qualification range as Access levels 1, 2 and 3 in Scotland (Scottish Credit and Qualifications Framework (SCQF)). For further details on the mapping of qualifications across the UK and Ireland see the *Qualifications Can Cross Boundaries* leaflet included in the Annex. A brief description of the design of the literacy and numeracy assessments are given below.

¹⁵ Earlier assessments on 10% representative samples of the 1970 BCS70 cohort in 1991 and the 1958 NCDS in 1995 were funded by the Basic Skills Agency whose remit did not include Scotland.

¹⁶ Ekinsmyth, C. and Bynner, J. (1995). *The Basic Skills of young adults*. London: The Basic Skills Agency.

¹⁷ Williams, J., Clemens, S., Oleinikova, K. and Tarvin, K. (2003). *The Skills for Life survey: A national needs and impact survey of literacy, numeracy and ICT skills*. DfES Research Report 490. The baseline survey was devised by the Centre for the Development and Evaluation of Lifelong Learning (CDELL) at the University of Nottingham, for the Department for Education and Skills. Special thanks are reserved for Peter Burke, John Gillespie and Bob Rainbow, consultants at CDELL., for their help and guidance in all stages of development.

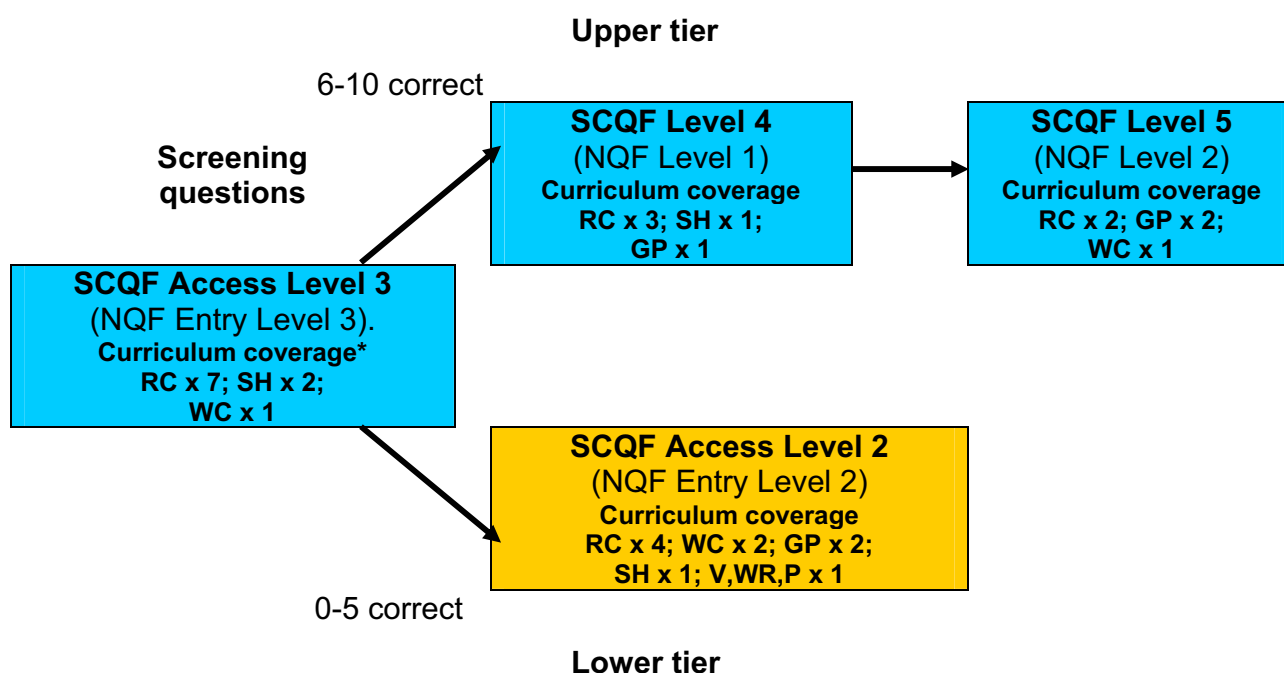
¹⁸ For a comprehensive review of adult reading, writing and numeracy assessment instruments for use in a UK setting see Brooks, G., Heath, K. and Pollard, A. (2005). *Assessing adult literacy and numeracy: a review of Research instruments*. London: National Research and Development Centre for Adult Literacy and Numeracy.

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Literacy

A total of 30 multiple-choice literacy questions made up the final assessment, of which ten were screening questions SCQF Access Level 3 (NQF Entry Level 3). Respondents failing to answer at least six of these questions correctly went on to answer ten SCQF Access Level 2 (NQF Entry Level 2) questions on the lower tier. Respondents who answered between six and ten screening questions correctly proceeded to the upper tier and answered five SCQF Level 4 (NQF Level 1) and five SCQF Level 5 (NQF Level 2) questions. Although question selection was heavily concentrated on the many aspects of 'Reading Comprehension', Figure 3.1 shows that 'Writing Composition', 'Grammar and Punctuation' and 'Spelling and Handwriting' were also covered by items on both the lower and upper tiers.

Figure 3.1: Final literacy multiple-choice assessment



**The number of questions covering specific aspects of the literacy core curriculum. Reading: RC = Reading Comprehension, GP = Grammar and Punctuation, V,WR,P = Vocabulary, Word Recognition, Phonics. Writing: WC = Writing Composition, GP = Grammar and Punctuation, SH = Spelling and Handwriting.*

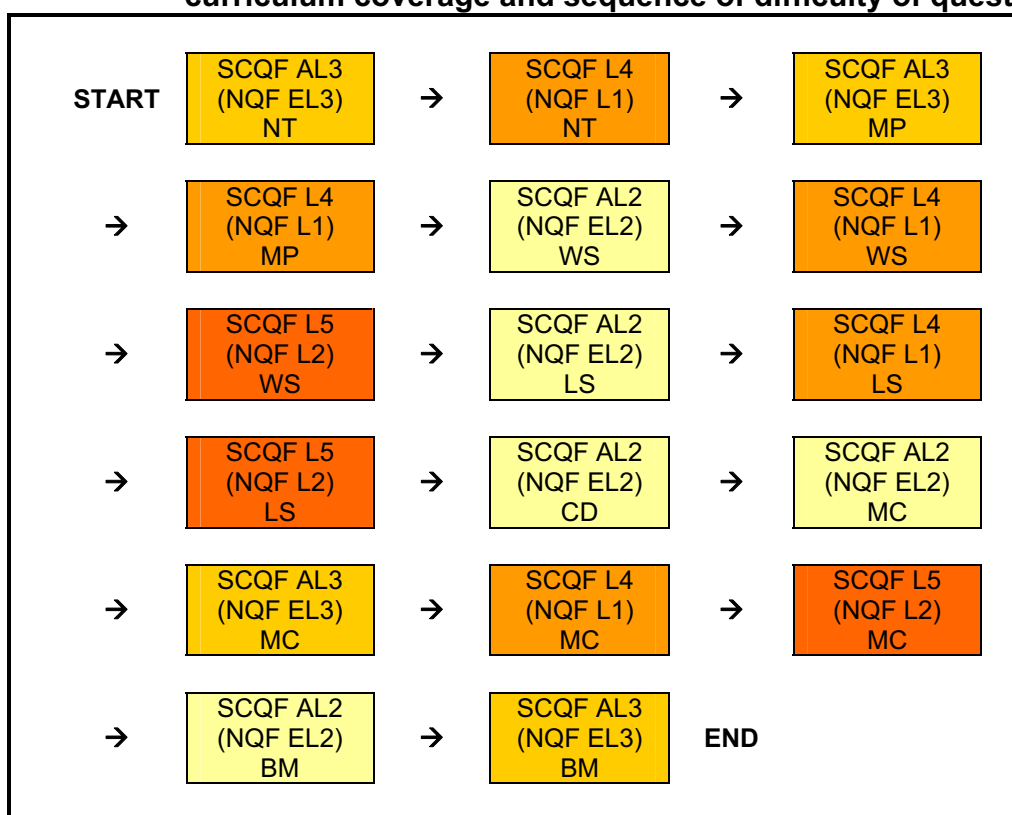
Numeracy

Unlike for literacy, all respondents attempted all questions in the numeracy multiple-choice assessment. The widespread and diverse nature of difficulties associated with numeracy – that people can be good at some numerical tasks and not others at the same level of difficulty – suggested that allowing a ‘spiky profile’ for number skills at the population level, would have equal, if not more, value than restricting this examination to the one in four or one in three with the poorest grasp of numeracy. There were 17 questions in the final version of the assessment. To obtain as balanced a set of questions as possible in relation to curriculum coverage and difficulty levels, the final instrument was made up of five questions set at SCQF Access Level 2 (NQF Entry Level 2), four at SCQF Access Level 3 (NQF Entry Level 3), five at SCQF Level 4 (NQF Level 1) and three at SCQF Level 5 (NQF Level 2). Seven aspects of number skill from the numeracy curriculum were assessed by the selected items. These were:

- Basic Money (BM)
- Whole Numbers and Time (NT)
- Measures and Proportion (MP)
- Weights and Scales (WS)
- Length and Scaling (LS)
- Charts and Data (CD)
- Money Calculations (MC)

The 17 selected questions were presented in order of difficulty within each curriculum topic, for example, all questions set at different levels of ‘Money Calculations’ were attempted, before moving to the next set of questions on ‘Whole Numbers and Time’. This method was adopted because of its potential value for capturing more of the elements of numeracy that an individual respondent could and could not do. The assessment started and ended with an SCQF Access Level 3 (NQF SCQF Access Level 3) question, as shown in Figure 3.2.

**Figure 3.2: Final numeracy assessment:
curriculum coverage and sequence of difficulty of questions**



Note 1: Aspects of the Skills for Life numeracy core curriculum: NT = Whole Numbers and Time, MP = Measures and Proportion, WS = Weights and Scales, LS = Length and Scaling, CD = Charts and Data, MC = Money Calculations, BM = Basic Money.

Note 2: In combination, the selected MC and OR questions ensured that each aspect of the curriculum was covered by at least three questions at different levels of difficulty.

Calculation of overall scores

For numeracy, computation of an overall score was straightforward as all cohort members completed all questions. Any correct answer was given '1' point, any incorrect answer '0' points. The maximum numeracy score available from the multiple-choice questions is within the range 0 to 17 for all cohort members.

For the vast majority of cohort members who progressed along the upper tier of the literacy assessment the identical scoring technique applied: any correct answer was given '1' point, any incorrect answer '0' points. However, to calculate an overall score that included the 4% of cohort members who, because they failed to answer six or more

of the screening questions correctly, moved down to the lower tier of the MC assessment, we have to assume they would not have been able to answer any of the more difficult questions on the upper tier, SCQF Level 4 and SCQF Level 5. Accordingly, a score of '0' was automatically awarded to this group for the ten questions on the upper tier. Likewise, a score of '1' for each of the ten questions on the lower tier was automatically awarded to the 96% of cohort members who progressed along the upper tier. The maximum literacy score available from the multiple-choice questions is therefore within the range 16 to 30 for cohort members on the upper tier and 0 to 15 for cohort members who progressed on the lower tier.

For cohort members living in Scotland in 2004, the distribution of their total literacy score (0 to 30) is shown in Figure 3.3a. The performance of lower tier cohort members is represented by the long tail towards the low scores, reflecting the relatively low incidence of very poor reading skills in the population. The total numeracy score is displayed in Figure 3.3b. We can see that men rather than women answered more of the questions correctly in the numeracy assessment: 51% answered at least 15 of the 17 questions correctly compared to 36% of women.

We also looked at the relationship between performance in the literacy and numeracy assessment. The Pearson correlation coefficient¹⁹ showed a strong and highly significant relationship between cohort members' performance in the literacy and numeracy multiple choice assessments. This was slightly weaker for cohort members' living in Scotland than in Great Britain overall, being weakest of all among those living in the Central Belt region of Scotland.

¹⁹ Correlation coefficients measure the (linear) association between two scores. They range from -1.0 to +1.0, with a correlation coefficient of 0 signifying that there was no relationship between performance in one score and another. The closer the correlation coefficient is to -1 or +1, the stronger the relationship between the two scores. A positive correlation signifies that a high score in one test is associated with a high score in the other; a negative correlation signifies that a high score in one test is associated with a low score in the other. The correlation coefficient between performance in the literacy and numeracy assessment was 0.64 for all cohort members and 0.60 for cohort members living in Scotland. Within Scotland the correlation coefficient between performance in the literacy and numeracy assessments was 0.57 for those living in the Central Belt region, 0.63 for those living in other parts of Scotland. All correlation coefficients were highly significant ($p < .001$).

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 3.3a: Total literacy score from multiple-choice questions

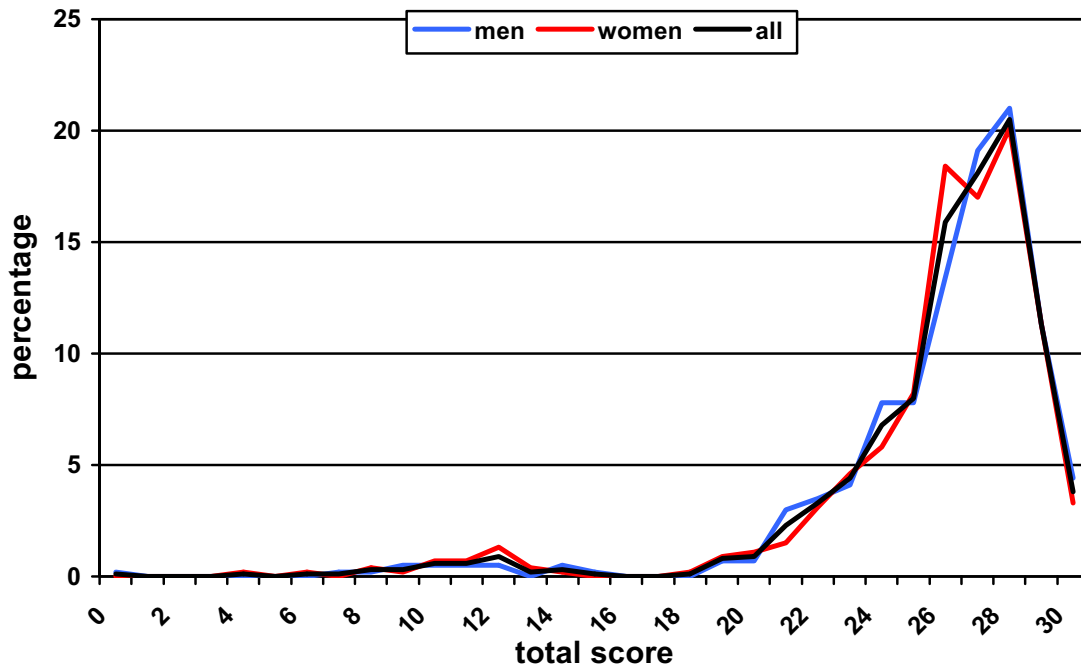
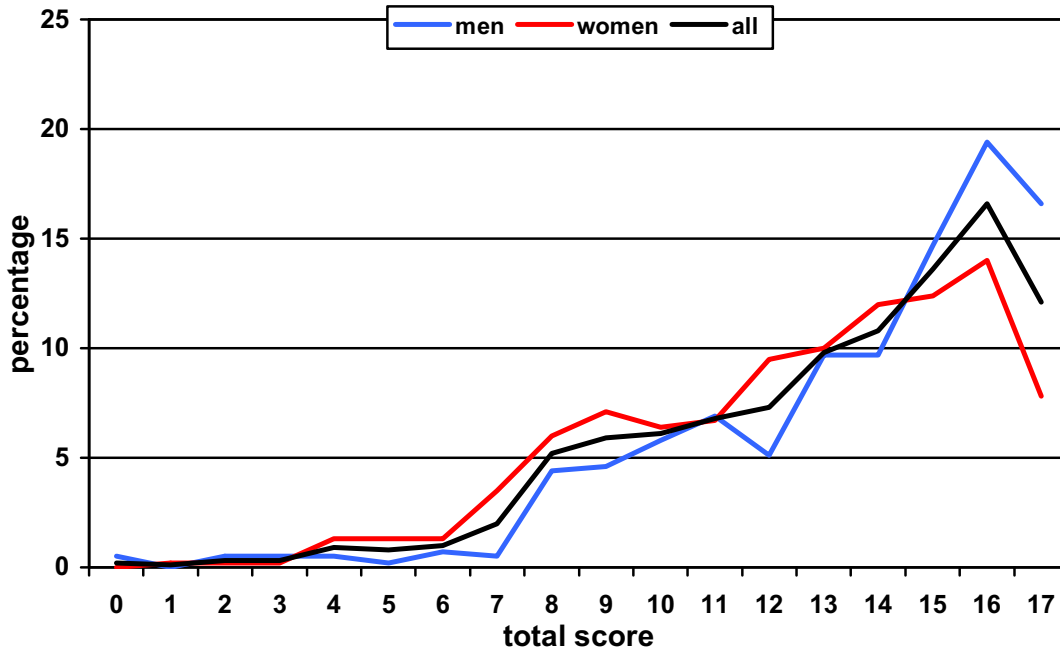


Figure 3.3b: Total numeracy score from multiple-choice questions



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Converting performance in literacy and numeracy assessments into levels

By converting performance answers in the multiple choice assessment into levels, we were able to classify respondents by their achieved level²⁰. The classification by levels that was employed is based on the principle that, to pass a level, at least half the test questions at the given level had to be answered correctly, as follows.

For Literacy

- Below SCQF Access Level 2: 0 - 5 correct at SCQF AL2
- SCQF Access Level 2: 6 - 10 correct at SCQF AL2 and 0 - 5 at SCQF AL3
- SCQF Access Level 3: 6 - 10 correct at SCQF AL3 and 0 - 2 at SCQF L4
- SCQF Level 4: 3 - 5 correct at SCQF L4 and 0 - 2 at SCQF L5
- SCQF Level 5: 3 - 5 correct at SCQF L4 and 3 at SCQF L5

For Numeracy

- Below SCQF Access Level 2: 0 - 3 correct at SCQF AL2
- SCQF Access Level 2: 4 - 5 correct at SCQF AL2 and 0 - 2 at SCQF AL3
- SCQF Access Level 3: 3 - 4 correct at SCQF AL3 and 0 - 3 at SCQF L4
- SCQF Level 4: 4 - 5 correct at SCQF L4 and 0 - 2 at SCQF L5
- SCQF Level 5: 3 correct at SCQF L5

Literacy and numeracy levels in Scotland

After classifying performance on the number of correct answers to the multiple-choice questions in terms of the (Scottish equivalent) literacy and numeracy levels used in the *Skills for Life* Survey

(SCQF Access Level 2, Access Level 3, Level 4 and Level 5), we now compare the distribution of men and women in the 2004 survey across the four levels of literacy and numeracy by geographic region within Scotland and then by their Scottish roots. In the

As a guide to the possible totals represented by percentages quoted in the text, current figures from the Census give a total population for Scotland of 5,062,011 of which the adult population over 16 is 4,049,609.

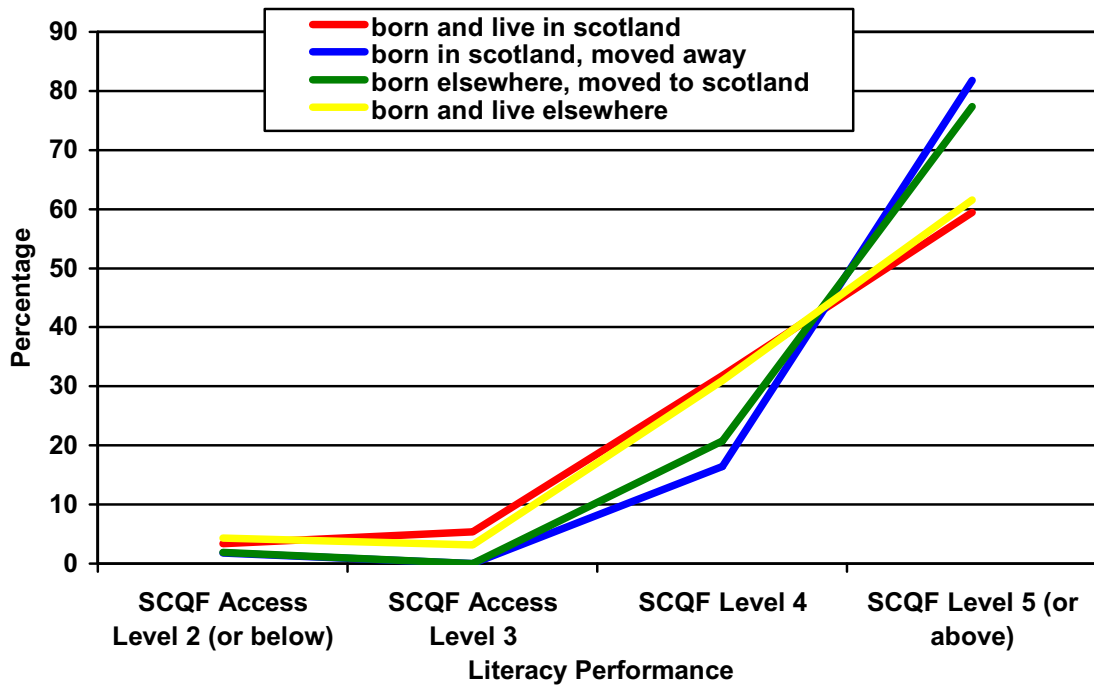
²⁰ National Qualification Framework (NQF) for England, Wales and Northern Ireland, as used in the *Skills for Life* survey

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

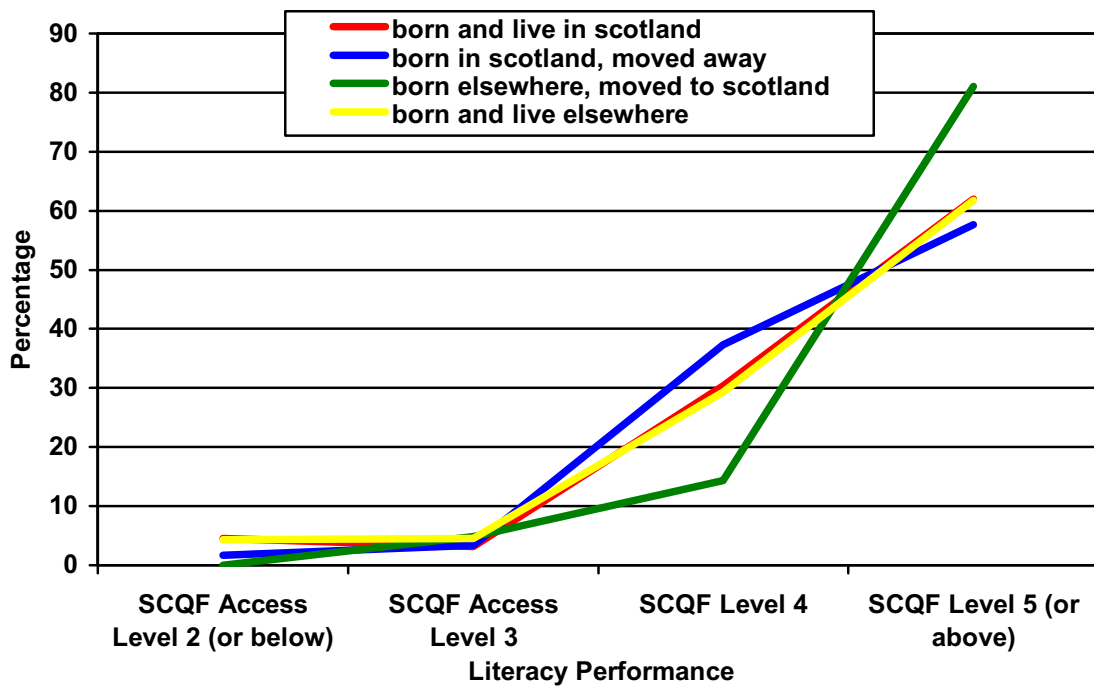
initial *New Light* report literacy performance among cohort members in Scotland was nearly identical to that of the majority living in England, but there were slightly more who performed at the upper end for numeracy. Overall, 8% of men and women in Scotland had literacy skills at SCQF Level 3 and below, while 31% of men and 29% of women (30% overall) had not progressed beyond SCQF Level 4. However, whereas 31% of men were assessed with SCQF Access Level numeracy this increased to 45% for women, meaning 69% of men and 55% of women had SCQF Level 4 or higher numeracy. Within Scotland, slightly more men and women living within the Central Belt performed at the higher end of the distribution for both literacy and numeracy (63% to 61% SCQF Level 5 or higher literacy; 31% to 25% SCQF Level 5 (or higher numeracy)). However, this better performance can be largely accounted for by the in-migration to the metropolitan areas of Scotland. As we can see in Figure 3.4a and 3.4b, the overall performance of men and women who by our simple classification were 'non-migrants', either born and living in Scotland or born and living elsewhere, was nearly identical and that performance was much higher among the 'migrants' – men and women who had moved to or from Scotland after they were born. Migrant men were four times less likely to have SCQF Access Levels 2 or 3 literacy, compared to non-migrants, and migrant women were half as likely to. Around 8 in 10 men who had moved to or from Scotland, and 8 in 10 women who had moved to Scotland, had SCQF Level 5 or higher literacy skills. Looking at numeracy performance, Figure 3.5a and 3.5b shows that both men and women who had moved away from Scotland were the least likely to have SCQF Access Level 2 numeracy and most likely to have SCQF Level 5 numeracy: 1 in 2 men had SCQF Level 5 or higher skills, compared with around 1 in 3 of all other men.

Figure 3.4: 'Profiles of competence'

a) Literacy performance of men in BCS70 (present at birth and 34)



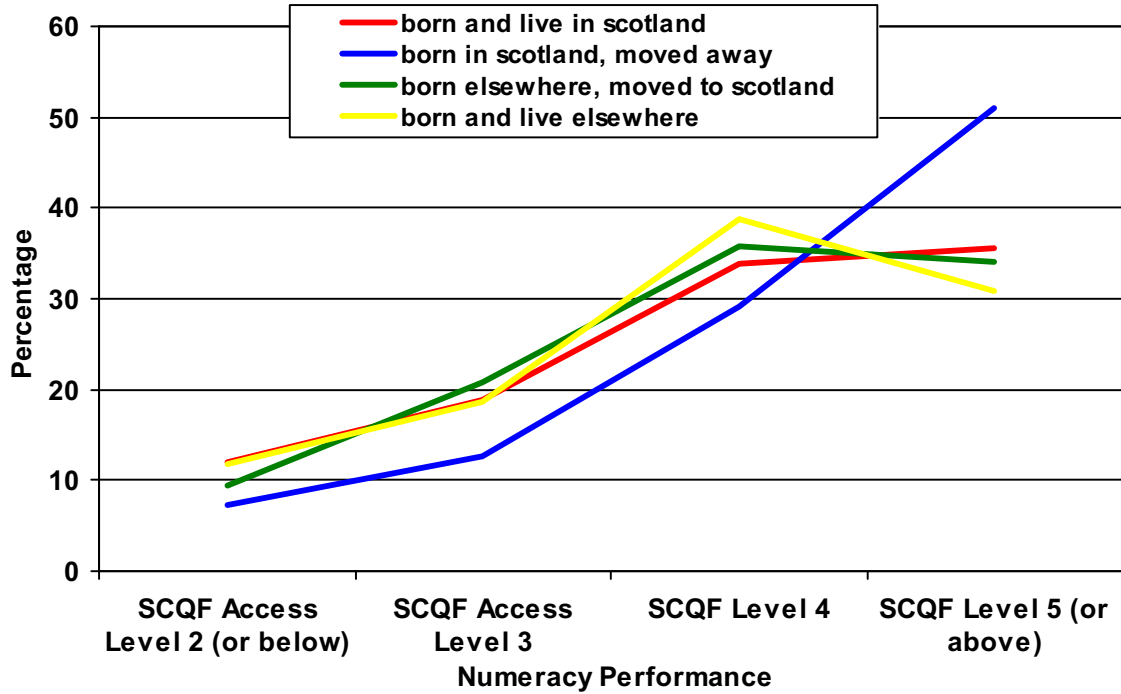
b) Literacy performance of women in BCS70 (present at birth and 34)



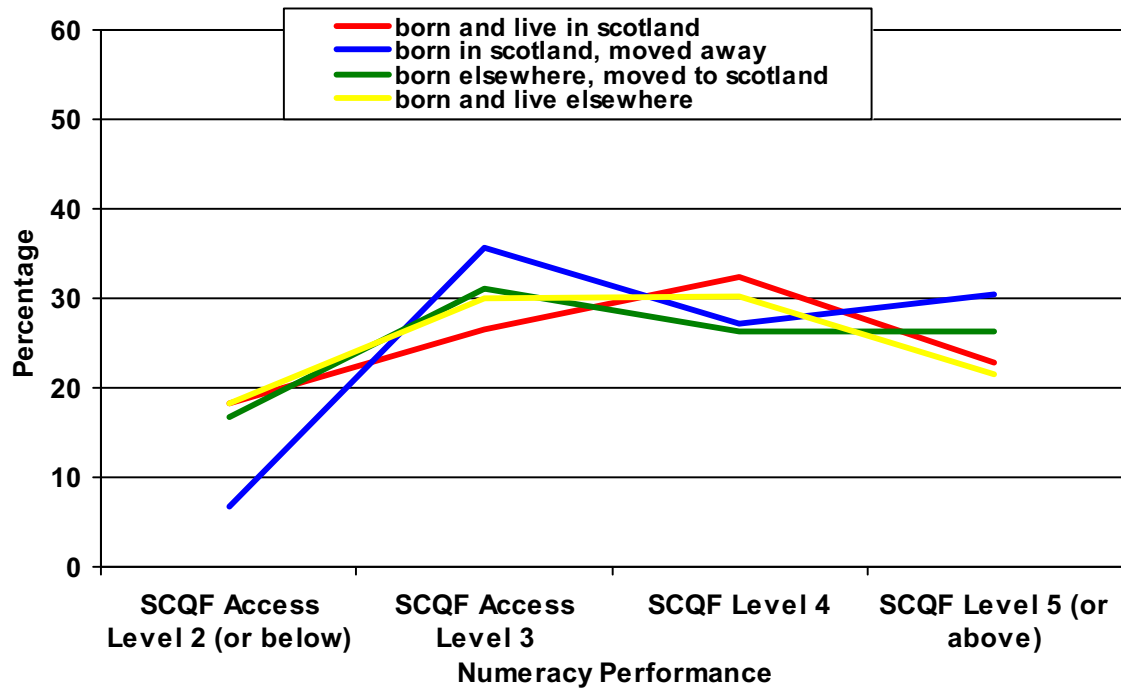
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 3.5: 'Profiles of competence'

a) Numeracy performance of men in BCS70 (present at birth and 34)



b) Numeracy performance of women in BCS70 (present at birth and 34)



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Summary of assessed Literacy and Numeracy Levels in Scotland

Performance in the literacy and numeracy assessments was more weakly related for men and women in Scotland compared with BCS70 overall. Within Scotland men had stronger numeracy skills than women, and slightly more men and women living within the Central Belt area performed at the higher end of the distribution for both literacy and numeracy. However, men who had moved away from Scotland had the strongest skills of all, with more than 8 in 10 having SCQF Level 5 or higher literacy or numeracy skills. Among all other men, around 6 in 10 had SCQF Level 5 or higher literacy and 1 in 3 SCQF Level 5 or higher numeracy.

Chapter 4 Early life experiences – family background, socio-economic disadvantage and family support measures

At each stage of development we all achieve a certain level of literacy and numeracy competence, which in turn influences later skills acquisition. There is a progressive build up of skills, or indeed difficulties, that occur throughout childhood. Adult literacy and numeracy acquisition can be seen as being underpinned by a number of interrelated family socio-economic and later educational experiences. In difficult, disadvantaged home and family circumstances, and if parents' own educational experiences had been poor, a crucial element of learning support may be missing in the early years of skills acquisition. It falls then to teachers to play an increased role in the skills development of children. In the next two Chapters we profile the early life experiences of cohort members living in Scotland in 2004, making use of the full range of information collected during their childhood, at their birth and ages 5, 10 and 16²¹. In this Chapter we detail family socio-economic background, parental education and family support measures, and in Chapter 5 we look at early cognitive and educational achievement, together with identification of difficulties at early ages by parents, teachers and consider some characteristics of the school environment itself. These various indicators of skills acquisition will flag up key targets of intervention prior to adulthood.

Family background

Fixed characteristics present at birth such as sex and birth weight, together with social and economic factors in childhood, teenage motherhood and family social class, etc, cannot be changed, but it is important they are accounted for as research has shown that they relate to cognitive development (Wedge and Prosser, 1973; Pilling, 1990) or literacy and numeracy acquisition (Bynner and Steedman, 1995; Parsons and Bynner, 1998). Such variables are not direct influences on literacy and numeracy skills but are indicators reflecting social background or the economic conditions of the child's home-

²¹ Only some measures are used at age 16 as a combination of data collection difficulties at the time and the relatively small Scottish sample reduced numbers to unreliable levels.

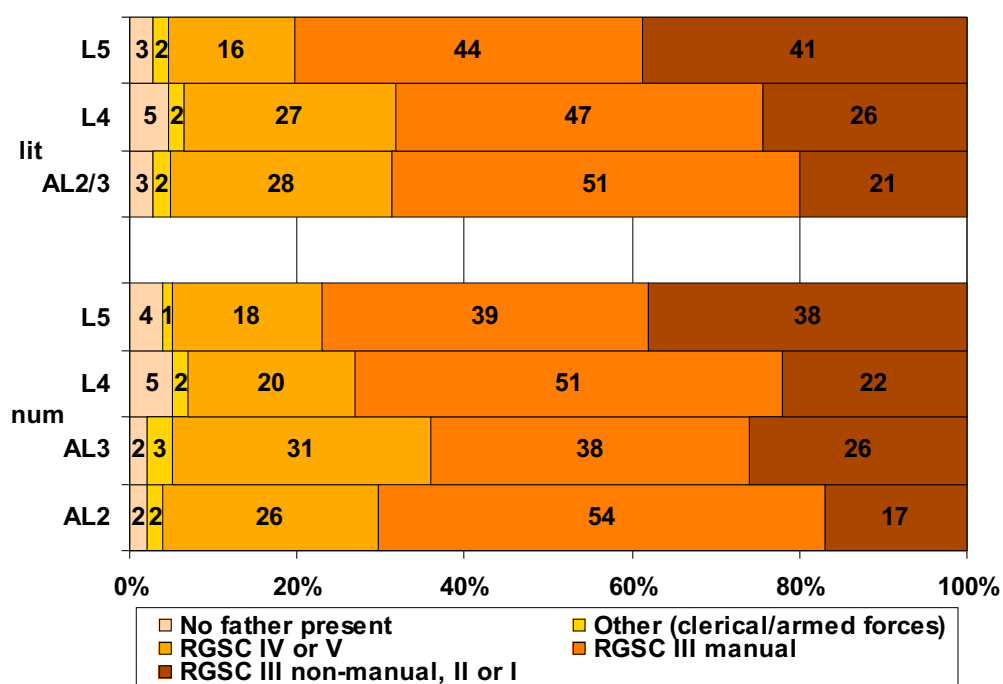
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

life, building up a picture of the type of home environment which works for or against the learning process. These fixed characteristics are built upon by circumstances and experiences later on in life.

As we saw in chapter 3, men are more likely than women to have more competence in literacy and numeracy, particularly numeracy. There were no differences across groups in average birthweight, but mothers of cohort members with SCQF Access Level 2 or 3 literacy were most likely to have been a teenage mother (27% to 13% SCQF Level 5 or higher literacy) .

Family social class, as derived from the father's occupation at the time cohort members were born in 1970, unsurprisingly showed differences across skills groups. Figure 4.1 shows that 1 in 4 fathers of cohort members with SCQF Access Level 2 or 3 literacy worked in unskilled or partly skilled manual jobs as did more than 1 in 4 fathers of cohort members with SCQF Access Level 2 or 3 numeracy skills. In contrast, more than 1 in 3 fathers of cohort members with SCQF Level 5 or higher literacy and numeracy held a professional or other white-collar occupation back in 1970. However, although there is a strong association between family social class and literacy and numeracy acquisition, coming from a manual, unskilled social class is not a precursor to skills difficulties in later life. The majority of children from such a background grow up to have a fine grasp of literacy and numeracy.

**Figure 4.1: social class of family back in 1970
by cohort members grasp of literacy or numeracy at age 34**



Socio-economic disadvantage during childhood

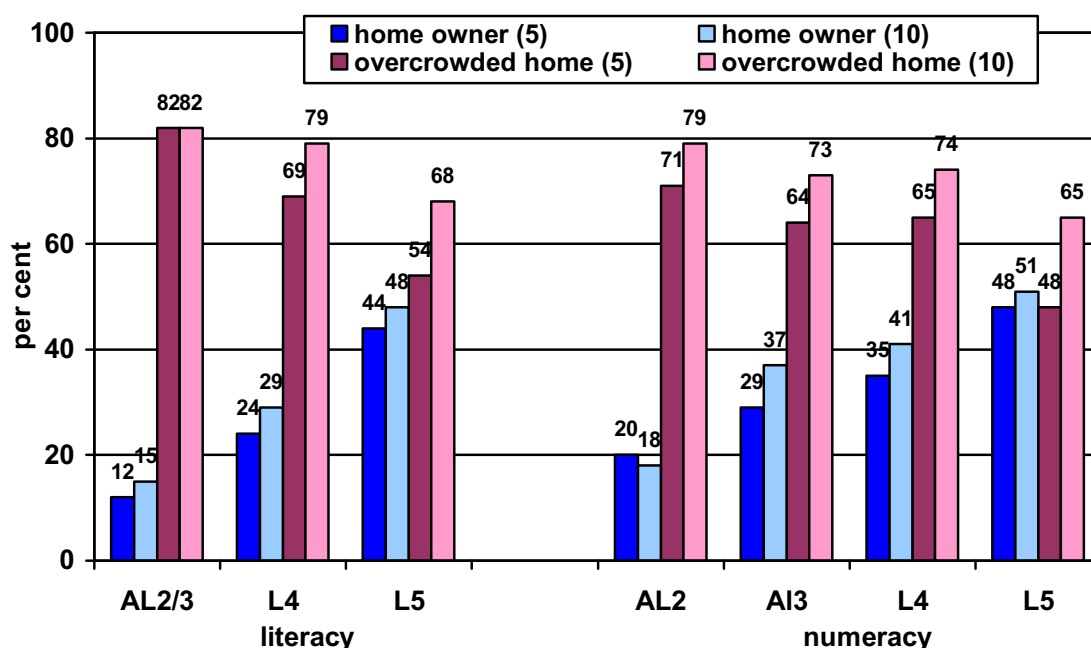
Overcrowding and housing

The first thing to note is that cohort members living in Scotland in 2004 were far less likely to live in an owner-occupied home, but far more likely to live in overcrowded conditions during childhood than in BCS70 overall. For example, at age 5 just 35% of Scottish cohort members lived in an owner-occupied home compared with 61% of cohort members across Great Britain (GB) as a whole. Similarly 61% of Scottish cohort members lived in an overcrowded home compared with 36% in GB overall. Differences between skills groups in Scotland were just as marked as in GB overall. Figure 4.2 shows that 8 in 10 cohort members with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy grew up in an overcrowded home and no more than 2 in 10 in an owner-occupied home. Comparable figures for those with SCQF Level 5 or higher skills were around 1 in 2 living in an overcrowded home at age 5, increasing to 2 in 3 at age 10, while around half lived in an owner-occupied home at both age points.

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher). 43

Completing the picture of childhood housing, just over half of all cohort members in Scotland lived in an ‘inner city urban’ or a ‘council estate’ environment at age 10, with those with the poorest skills being unsurprisingly the most likely to – highest at 88% of those with SCQF Access Level 2 or 3 literacy, 77% with SCQF Access Level 2 numeracy.

Figure 4.2: % cohort members living in an owner-occupied or overcrowded home at age 5 or 10 by grasp of literacy or numeracy at age 34



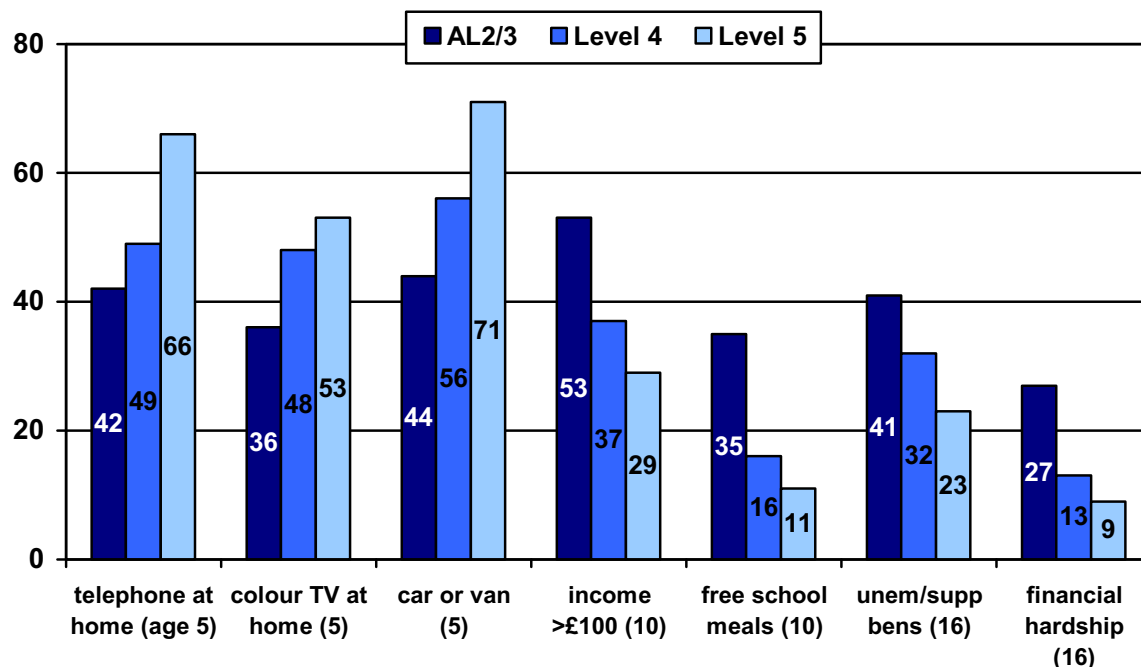
Financial circumstances

Many measures directly or indirectly assess the financial circumstances of cohort members during childhood. Figure 4.3 shows that far more cohort members with SCQF Access Level 2 or 3 literacy and, to a lesser extent, SCQF Access Level 2 and sometimes SCQF Access Level 3 numeracy grew up experiencing many aspects of economic disadvantage throughout their childhood, compared to cohort members with a better grasp of literacy or numeracy. For example, compared to those who grew up to have SCQF Level 5 or higher literacy, families of cohort members who grew up to only have an SCQF Access Level grasp of literacy were far less likely to have a phone (42%

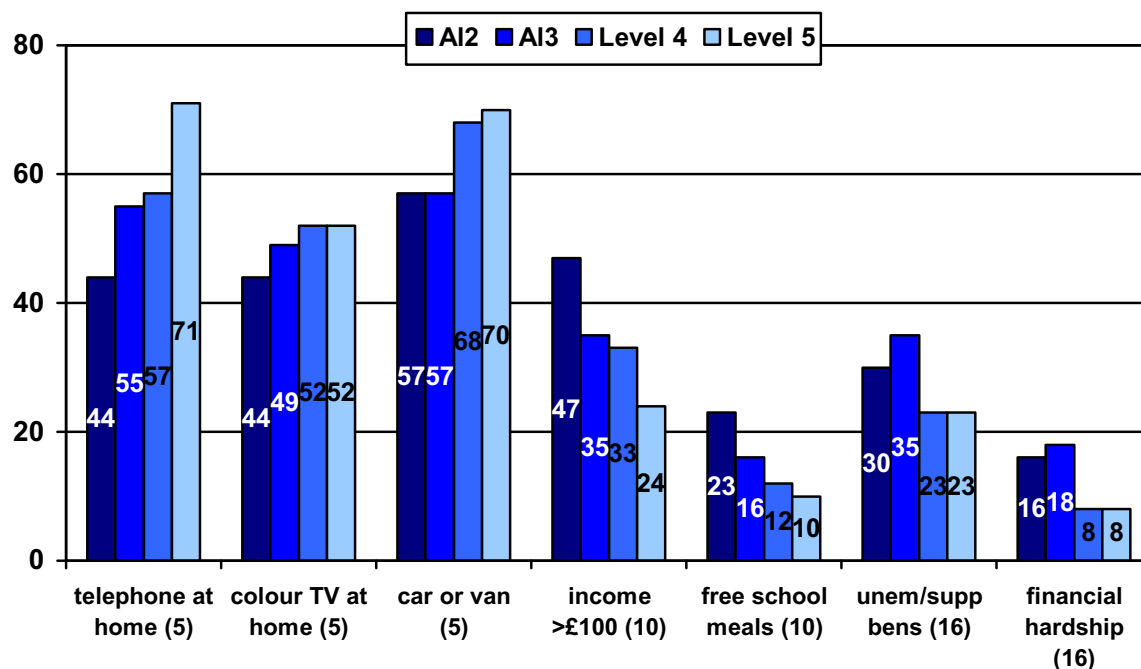
to 66%), a colour television (36% to 53%) or a car (44% to 71%) in 1975. They were far more likely to have had a low family income (53% to 29%) and to have received free school meals in 1980 (35% to 11%). In 1986, they were also more likely to have received state (unemployment or supplementary) benefits (41% to 23%) or to have reported experiencing financial hardship (27% to 9%). A picture is created of disadvantaged family circumstances preceding literacy and numeracy difficulties. Economic disadvantage is part of the whole syndrome of factors which work against educational progress and inhibits literacy and numeracy skills acquisition.

Figure 4.3 measures of economic disadvantage in childhood by cohort members grasp of literacy or numeracy at age 34

a) Literacy



b) Numeracy



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

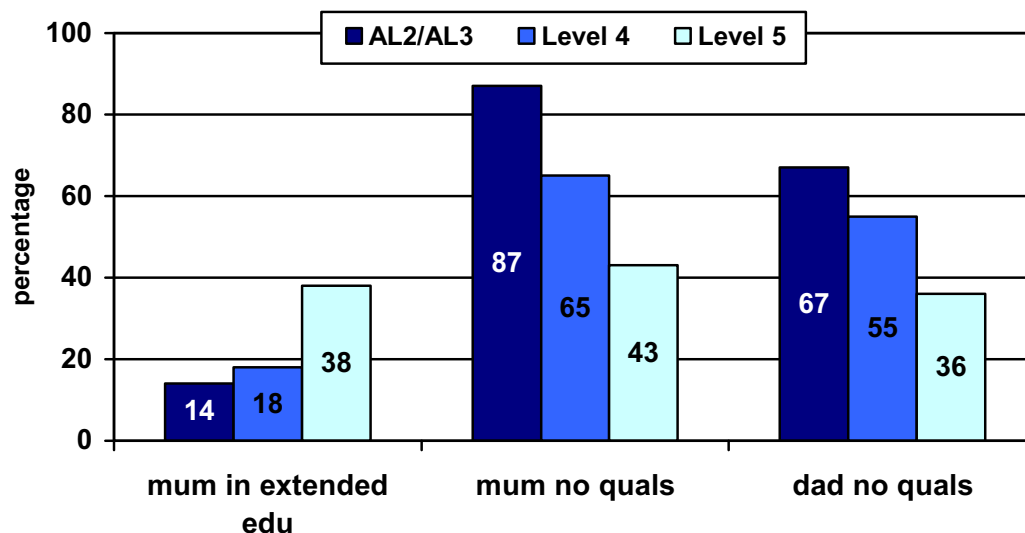
Family support factors

Parental education

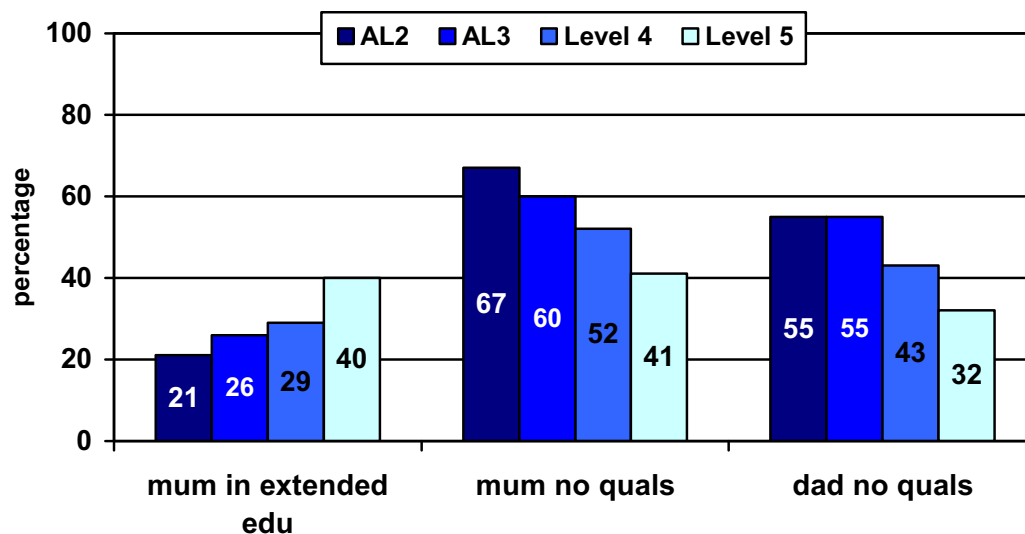
The educational level of parents has an obvious relationship with the literacy and numeracy development in their children. Figure 4.4 shows that, compared to cohort members with SCQF Level 5 or higher skills, all other cohort members were less likely to have a parent who stayed on in post compulsory education, but this was lowest at just 1 in 7 mothers of cohort members with SCQF Access Level 2 or 3 literacy. Cohort members with SCQF Access Level skills were also far more likely to have a mother or father who had no formal qualifications at all in comparison with those with SCQF Level 5 or higher skills. Compared with those with SCQF Level 5 or higher skills, most likely of all to not have any qualifications were mothers or fathers of cohort members with SCQF Access Level 2 or 3 literacy (87% to 43% mothers, 67% to 36% fathers). Least likely of all to not have any qualifications were fathers of cohort members with SCQF Level 5 numeracy (32%). At the other end of the qualification scale, as many as 1 in 4 fathers of cohort members with SCQF Level 5 or higher numeracy had a degree (or equivalent) qualification compared with 1 in 20 fathers of cohort members with SCQF Access Level 2 numeracy or SCQF Access Level 2 or 3 literacy (5%).

Figure 4.4: % parents education and highest qualification level by cohort members grasp of literacy or numeracy at age 34

a) Literacy



a) Numeracy

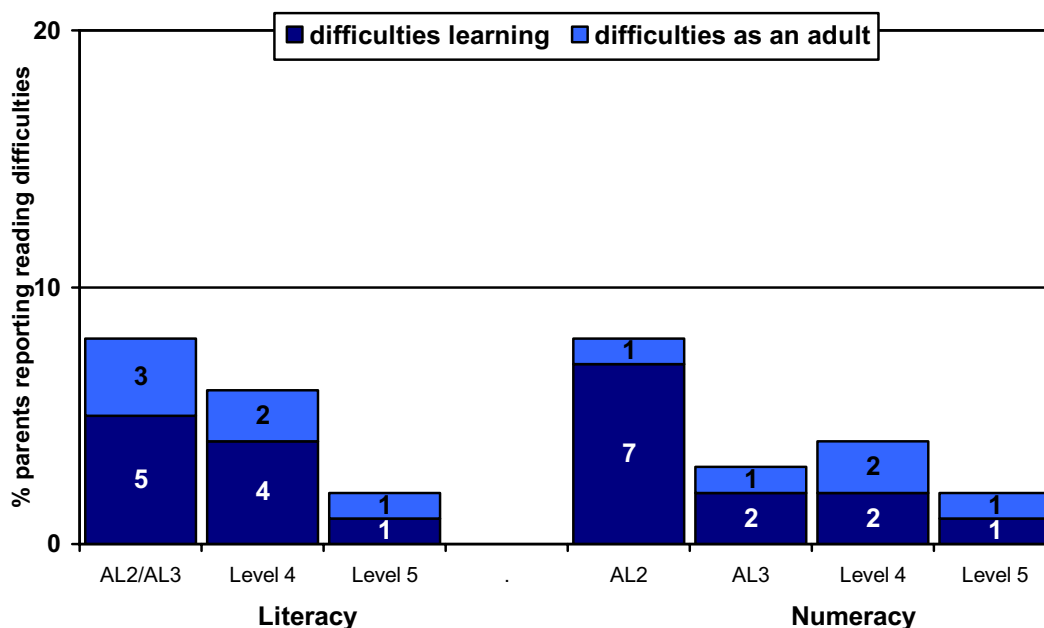


But what about parents grasp of the basics? In 1986, when cohort members were 16, parents were asked about any difficulties they had in learning to read or in reading at that time. As we will find when looking at levels of self-reported difficulties with reading or numbers among cohort members in adulthood, parents of our Scottish cohort

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

members were less likely than parents of the overall BCS70 cohort to report difficulties with either learning to read or currently reading – 3% to 8%. Figure 4.5 shows that among those with the poorest grasp of literacy or numeracy in Scotland, four times as many of their parents reported difficulties in comparison with parents of cohort members with SCQF Level 5 or higher skills. However, compared with those with the poorest grasp of literacy or numeracy in the overall BCS70 cohort, percentages of parents of cohort members in Scotland reporting difficulties with reading remained markedly lower (8% to 15% SCQF Access Level 2 or 3 literacy, 8% to 13% SCQF Access Level 2 numeracy).

Figure 4.5: parents self-reported reading difficulties by cohort members grasp of literacy or numeracy at age 34



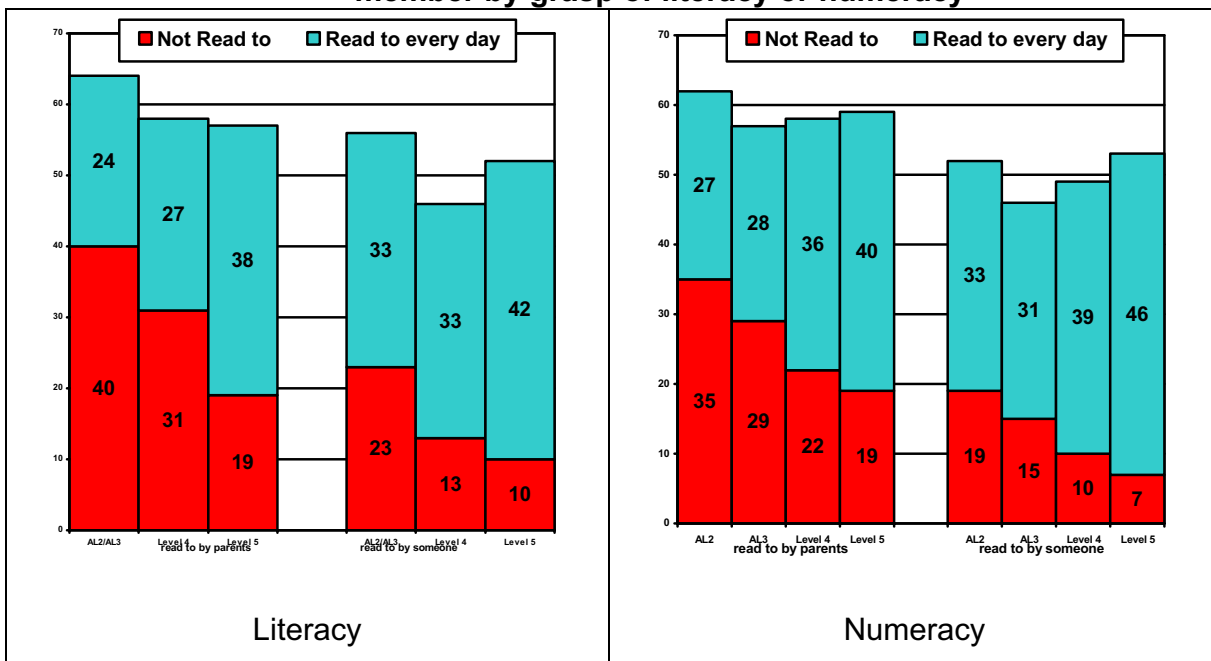
Reading by parents to their child

When their child was age 5, parents were asked if they, or another family member, read to them and, if so, how often in a week. Cohort members who grew up to have the poorest literacy or numeracy were the most likely to have not been read to by their parent or another family member (older sibling) at least once in a week at this time. Among those with SCQF Access Level 2 or 3 literacy, 40% were *not* read to by their

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

parents and although this fell to 23% when reading by other family members was included it remained more than twice that of those with SCQF Level 5 skills (10%). Figure 4.6 also shows that cohort members with the poorest grasp of literacy and numeracy were the least likely to have been read to every day in a week when they were age 5 – 1 in 4 by their parents, 1 in 3 when reading by older siblings was included. Most likely to have been read to every day were cohort members with SCQF Level 5 or higher numeracy.

Figure 4.6: how often cohort member read to at 5 by parent or other family member by grasp of literacy or numeracy



Watching television and reading

There is a view that watching a lot of television has a negative association with the development of reading skills. What we found was that cohort members with SCQF Access Level 2 or 3 literacy were the most likely to have watched four hours or more television a day on the weekend, compared to cohort members in all other skills groups (26% to 10% with SCQF Level 4 or higher literacy skills). On the other hand, when cohort members reached age 10, compared with other parents far fewer parents of

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

cohort members with SCQF Access Level 2 or 3 literacy reported that they ‘often’ read in their spare time (29% compared with 53% SCQF Level 4 and 64% with SCQF Level 5 or higher skills). Also, at age 16 these cohort members were the least likely to report that they had read a book for pleasure in the four week prior to interview (38% to 67% with SCQF Level 5 or higher literacy).

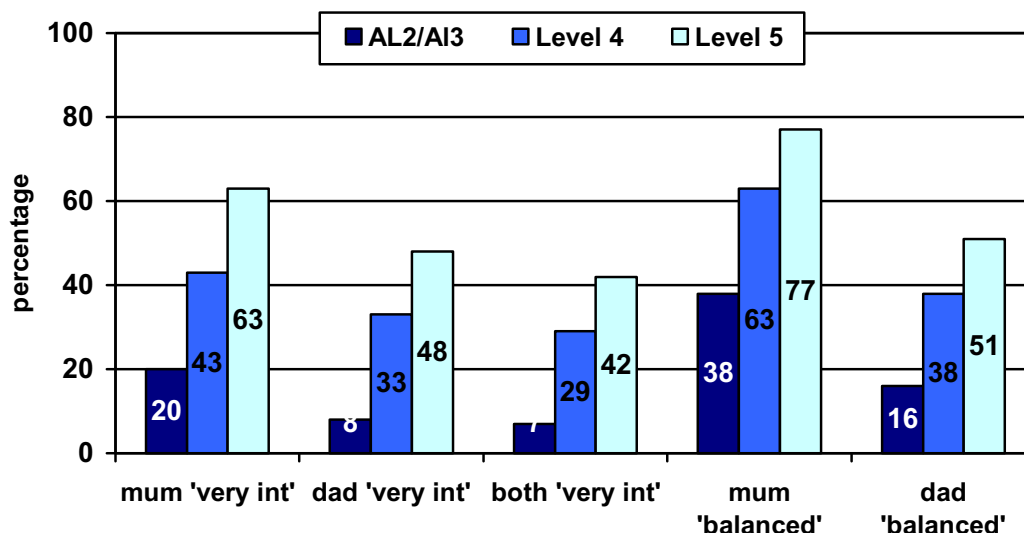
Parental interest in their child’s education

When cohort members were age 10, their current teacher was asked to grade the level of interest parents had shown in their child’s education and what attitude they held towards their child at school – ‘over concerned’, ‘balanced’, ‘dismissive’, etc. Figure 4.7 shows that compared with cohort members with SCQF Level 5 or higher skills, cohort members who had SCQF Access Level 2 or 3 literacy were three times less likely as to have had a mother and six times less likely to have a father who was ‘very interested’ in their education. They were also half as likely to have a mother and three times less likely to have a father with a ‘balanced’ attitude to their education. Reflecting that fathers traditionally tended to become steadily more involved in their child’s education as they progressed through secondary education, teachers felt they ‘could not say’ about the interest of 1 in 3 of all fathers, presumably as they had not seen them at the school²². However, this response was highest for fathers of cohort members with SCQF Access Level 2 or 3 literacy (63%) and lowest at 31% for fathers of cohort members with SCQF Level 5 or higher numeracy. When interest of both parents was combined, cohort members with SCQF Access Level 2 or 3 literacy were six times less likely than those with SCQF Level 5 or higher literacy to have two parents who were thought to be ‘very interested’ in their education. For numeracy groups, cohort members with SCQF Access Level 2 numeracy were half as likely as those with SCQF Level 5 or higher numeracy to have a mother, father or both parents very interested in their education at age 10.

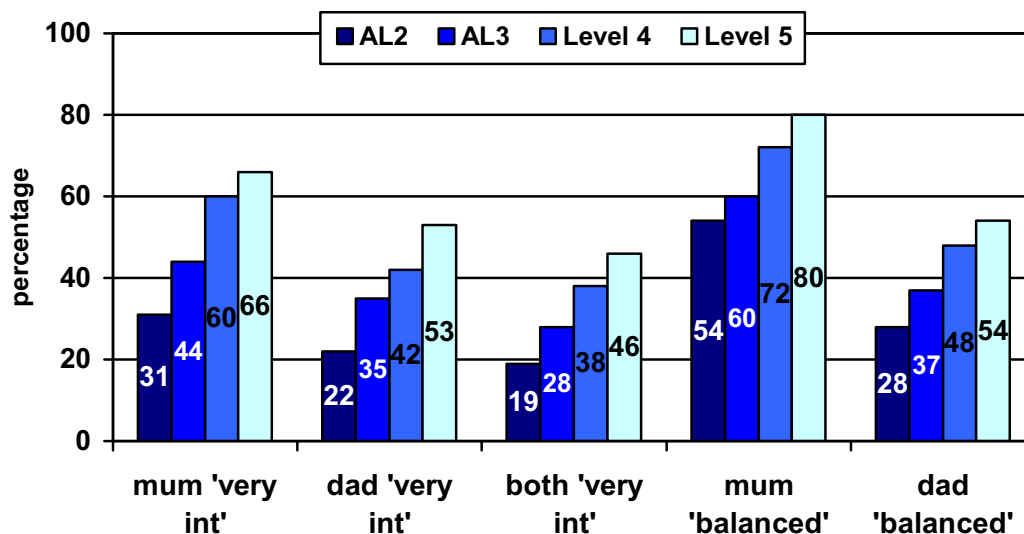
²² It was not that the child did not have a stable father Figure. This was a separate answer category.

Figure 4.7: Mothers' and fathers' interest and attitude to their child's education when they were age 10 by their grasp of literacy or numeracy

a) Literacy



a) Numeracy

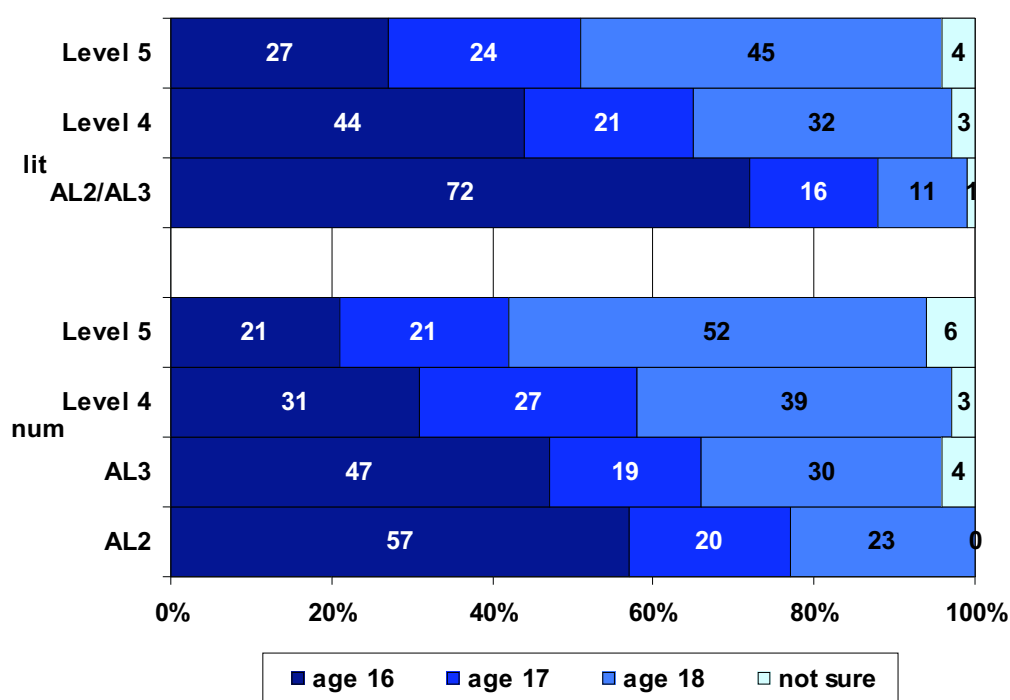


Parents held post-16 education aspirations for their child?

At this time (age 10), parents were also asked if they wanted their child to continue in education post-16. Figure 4.8 shows that cohort members with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were nearly three times as likely to have

had parents who wanted them to leave full-time education at the earliest opportunity compared to parents of cohort members with SCQF Level 5 or higher skills. These educational aspirations were replicated in the cohort members themselves. At age 16, although numbers are restricted, more than 8 in 10 children with SCQF Access Level 2 or 3 literacy wanted to leave education at the earliest opportunity as did nearly 6 in 10 with SCQF Access Level 2 numeracy. This compared with 1 in 3 of those with SCQF Level 5 literacy, and 1 in 4 with SCQF Level 5 numeracy.

Figure 4.8: Parental aspirations of cohort members continuing with education (age 10) by cohort members grasp of literacy or numeracy



Summary of family background and family support factors

Cohort members with the poorest grasp of literacy and numeracy, particularly literacy, had a relatively disadvantaged home life in childhood, both economically and in terms of education levels and educational support offered by parents. Although more families in Scotland had grown up in rented overcrowded accommodation compared to those

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across Great Britain as a whole, those with the poorest grasp of literacy in Scotland were the most likely of all to live in such housing conditions. Far fewer parents of cohort members with the poorest skills had enjoyed any extended education or gained any qualifications (87% of mothers of those with SCQF Access Level 2 or 3 literacy had no qualifications in comparison with 43% of mothers of cohort members with SCQF Level 5 or higher literacy). Fewer such parents had read to their children when they were young (40% of those with SCQF Access Level 2 or 3 literacy had been never read to compared with 19% SCQF Level 5 or higher literacy) or been viewed by teachers as interested in their children's education towards the end of primary school. Reflecting their own poor educational experiences, far fewer parents of those with SCQF Access Level 2 or 3 literacy held aspirations for them to continue in education after age 16.

Chapter 5 Early education performance and school environment

Cognitive and educational achievement assessment

Previous research has shown that early measures of cognitive development and educational attainment are closely related to performance in the adult literacy and numeracy assessments (Bynner and Steedman, 1995; Parsons and Bynner, 1998). Many assessments were undertaken by the children at age 5 and 10. We explored performance in all of the assessments and found the same pattern of results was replicated across the adult skills groups. Adults with the poorest grasp of literacy or numeracy had the lowest average scores in childhood, adults with SCQF Level 5 or higher the highest average scores in childhood. We report here the assessments showing the biggest differences in performance scores.

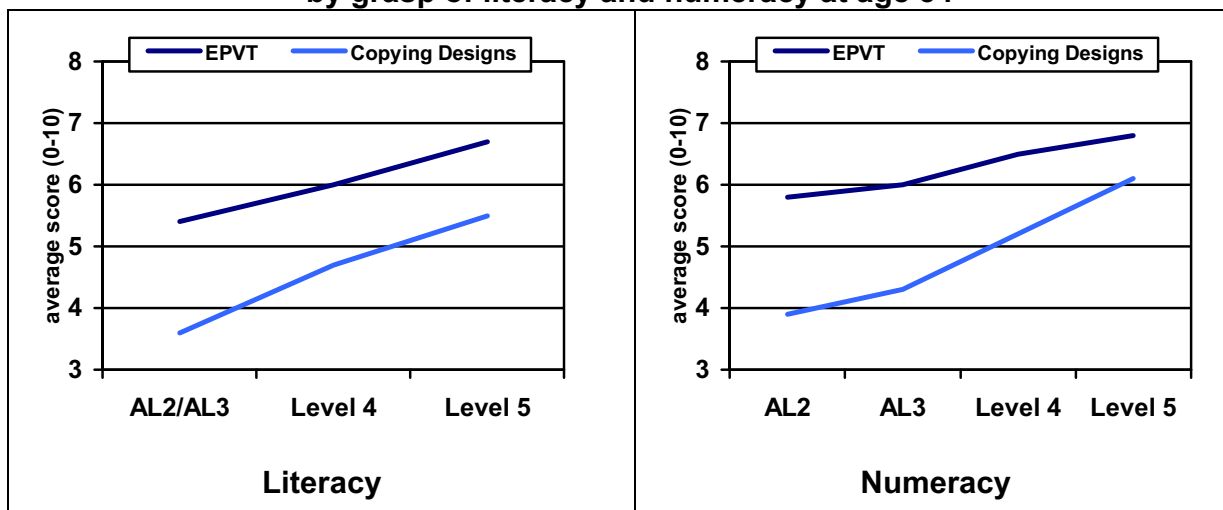
Age 5

By examining the results of performance in tests as early as age 5, the age the vast majority of children in the UK start their formal education, it was possible to see if adults with a poor grasp of literacy or numeracy had struggled at the very first stage of their formal education. As most children at age 5 were not readers (see reports by their mothers later in this section) the most salient measures we have at age 5 are to do with language development, the *English Picture Vocabulary Test (EPVT)* and visual-motor co-ordination, the *Copying Designs* test²³. The age of cohort members at the time they completed these tests varied between 4 years 11 months and 5 years 11 months, however average age was identical across adult literacy and numeracy groups (5 years 1 month). The range of scores in the two tests varied, so for easier comparison these were rescaled to both fall within the range 0-10. Figure 5.1 shows that performance in the *Copying Designs* test differentiated most across adult skills groups. But men and women with the poorest literacy and numeracy at age 34 also had the lowest

²³ In the *EPVT* the interviewer says a word e.g. 'drum', 'insect', and the child has to point to the picture (from a possible four) that corresponds to this word. In the *Copying Designs* test the child has to copy eight different shapes, such as a square, circle, diamond. For further details on these assessments see documentation on the CLS website: <http://www.cls.ioe.ac.uk/studies.asp?section=00010002000200090001>

performance scores in both of these assessments at age 5; men and women with SCQF Level 5 or higher skills the highest performance scores.

Figure 5.1: average scores in cognitive assessments at age 5 by grasp of literacy and numeracy at age 34

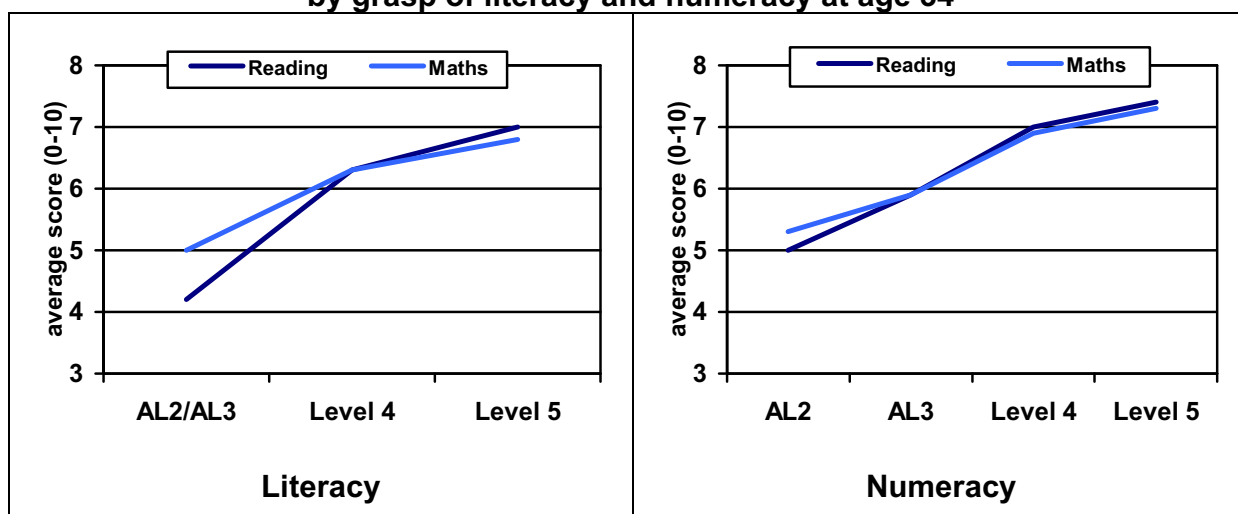


Age 10

Assessments at age 10 are a way of summarising individual achievement at primary school prior to the big move up to secondary school. We look at performance in the two assessments most closely related to adult literacy and numeracy performance: the *Edinburgh Reading Test* and the *Friendly Maths Test*²⁴. Figure 5.2 shows that once again performance in both assessments was lowest for adults with the poorest grasp of literacy and highest for adults with SCQF Level 5 or higher numeracy, but that the 'gap' in performance between groups had increased between age 5 and 10. This highlights that the earlier difficulties are identified and intervention measures are put in place, the more likely that literacy and numeracy difficulties in adulthood can be prevented, or at least minimised.

²⁴ For further details on these assessments see documentation on the CLS website: <http://www.cls.ioe.ac.uk/studies.asp?section=00010002000200080001>

**Figure 5.2: average scores in assessments at age 10
by grasp of literacy and numeracy at age 34**



Identification of difficulties

Questions of learning or educational 'difficulties' have a strong presence in cohort studies, with Chapter 3 detailing questions on self reported reading, writing and number difficulties being included in the most recent survey. Back in earlier surveys questions were put to parents, teachers and the cohort member themselves.

What did parents think of their child's reading, writing and grasp of numbers?

Early identification of literacy and numeracy difficulties, together with early help and assistance from both parents and teachers can be critical for the child acquiring the foundations of learning. If difficulties are not detected, they can be compounded over time. Before completing a reading test at age 5²⁵, cohort members' mothers were asked if their child could read at all. In BCS70 overall, 33% reported their child could not read at all and a further 18% that their child 'could recognise a few letters'. However, among the cohort members in Scotland in 2004, a huge 73% were reported by their mother as

²⁵ Schonell, F.J. and Schonell, F.E. (1950), *A Graded Word Reading Test*. Edinburgh: Oliver and Boyd; Schonell Graded Word Reading Test (1972 Revised Norms). Edinburgh. Oliver And Boyd. Also see the test booklet produced for the age 5 survey on the Centre for Longitudinal Studies website.
<http://www.cls.ioe.ac.uk/studies.asp?section=00010002000200090001>

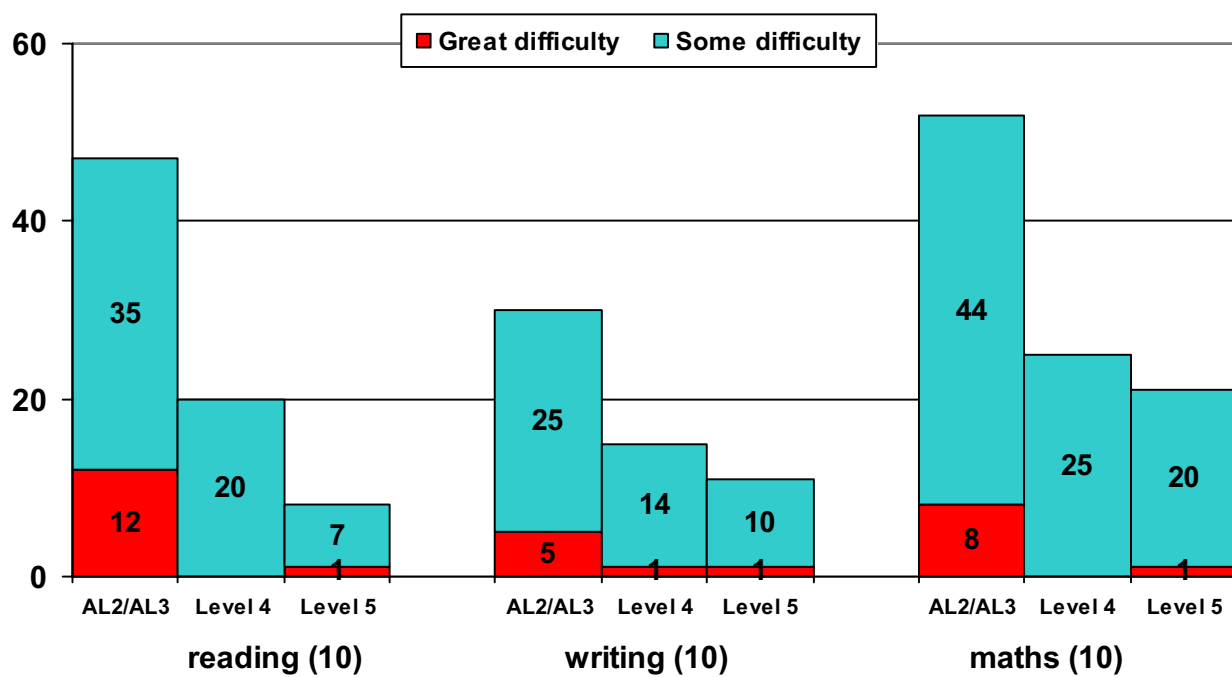
'not being able to read at all' with a further 15% only able to 'recognise a few letters'. However, 'not being able to read at all' was reported most by parents of those who grew up to have SCQF Access Level 2 or 3 literacy (83%).

In the interview at age 10, the mother or father figure was asked if they thought their son or daughter had 'no difficulties', 'some difficulties' or 'great difficulties' with reading, writing or maths. Figure 5.3 shows that nearly half of cohort members who had been assessed with SCQF Access Level 2 or 3 literacy skills at age 34 had been thought by their parents to have 'some' or 'great' difficulties with reading by a parent, but this meant that nearly half had parents who did not think they had any problems at all – which would be very unlikely to be the case. More than twice as many adults with SCQF Access Level 2 or 3 literacy were also thought by their parents to have 'great difficulty' or 'some difficulty' with writing and maths at age 10 in comparison with those who went on to have SCQF Level 5 or higher literacy skills (30% to 11% writing, 52% to 21% maths). By the time cohort members reached 16, no more than 1 in 10 mothers of those who grew up to have SCQF Access Level literacy thought their child currently had difficulties with reading, with an additional 1 in 10 reporting their child had had difficulties learning to read.

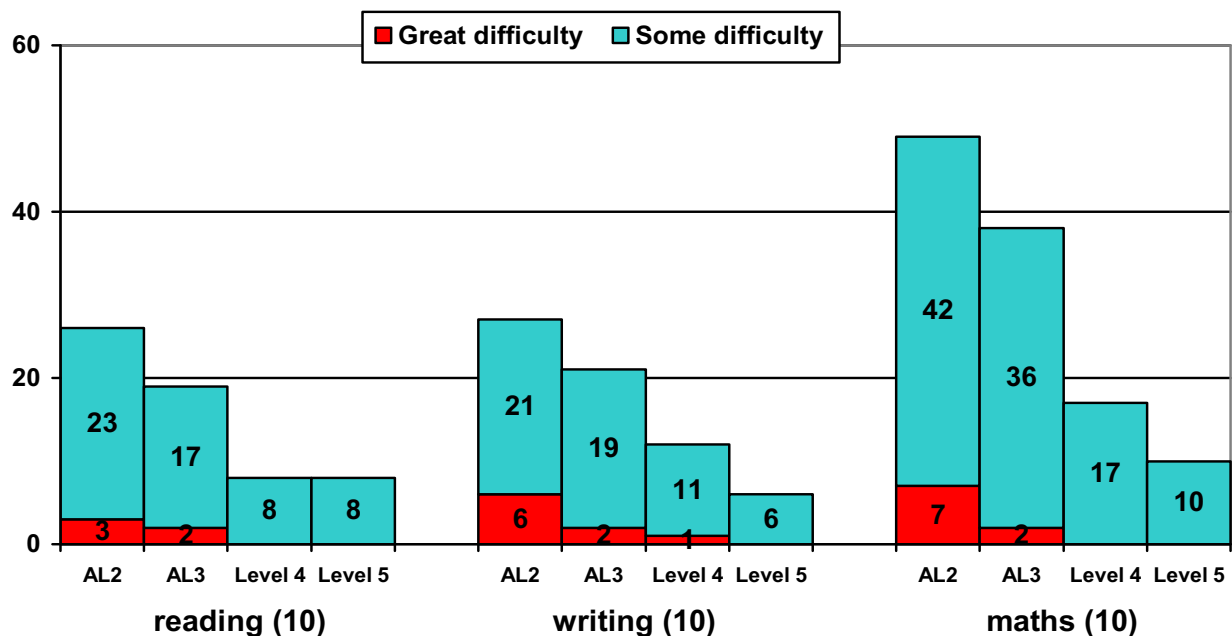
Around 1 in 4 parents of cohort members with SCQF Access Level 2 numeracy also reported that their child had 'some' or 'great' difficulty with maths at age 10, and 1 in 4 some or great difficulty with reading or writing. Although many parents of children who did not develop a basic competency in reading or numbers did identify these difficulties at age 10, half of these parents did not. If parents don't think a child has a problem then the onus is on their teacher to identify and address the problem.

Figure 5.3: parents who reported their child had 'great' or 'some' difficulty with reading wring or maths at age 10 by grasp of literacy or numeracy at age 34

a) Literacy



a) Numeracy

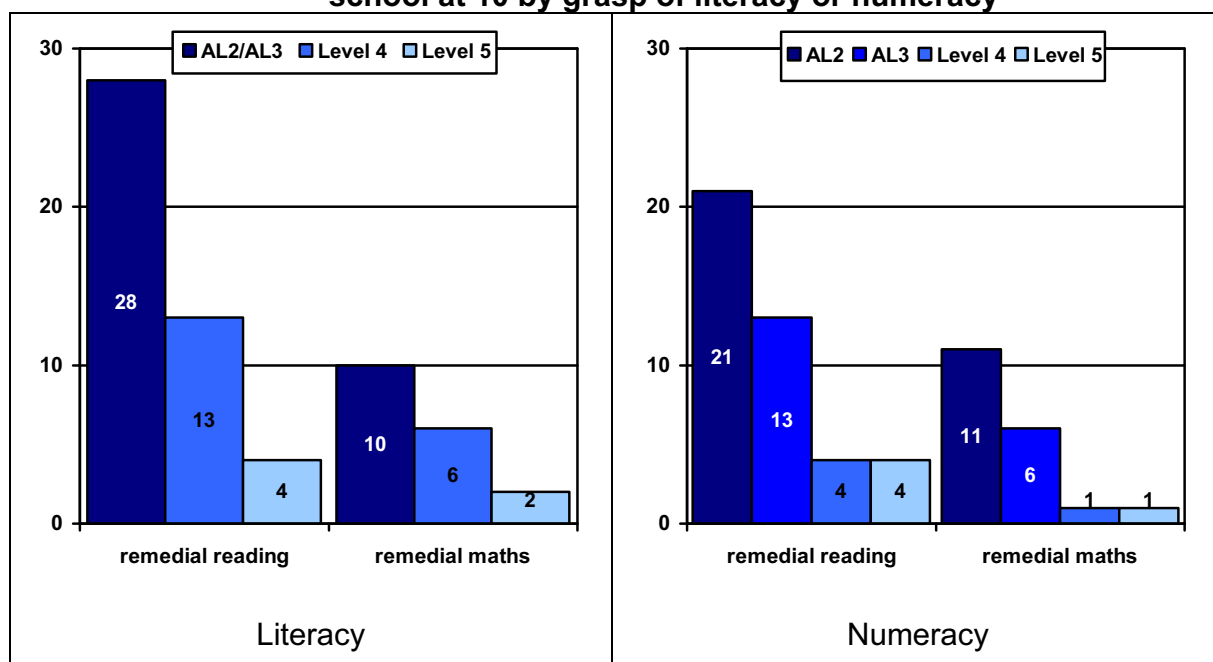


Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Teachers view of child's ability at age 10

The teachers of the children when they were age 10 were asked to say whether the child received any therapeutic or special help when they were at school. 88% of all children received no special help at all and 12% were either in a remedial class or received some kind of remedial help. Although remedial help had been received by more adults with the poorest literacy or numeracy, the vast majority had not been identified as needing any additional help. Figure 5.4 shows that 28% of adults with SCQF Access Level 2 or 3 literacy and 21% of adults with SCQF Access Level 2 numeracy had received occasional or regular remedial help for their reading development, around 1 in 10 in both skills groups had received occasional or regular remedial help for their mathematics development, at age 10. This compared with 4% of adults with SCQF Level 5 literacy or numeracy having received remedial help with reading, and no more than 2% remedial mathematics help, at age 10.

Figure 5.4: cohort member receiving remedial reading or mathematics help at school at 10 by grasp of literacy or numeracy

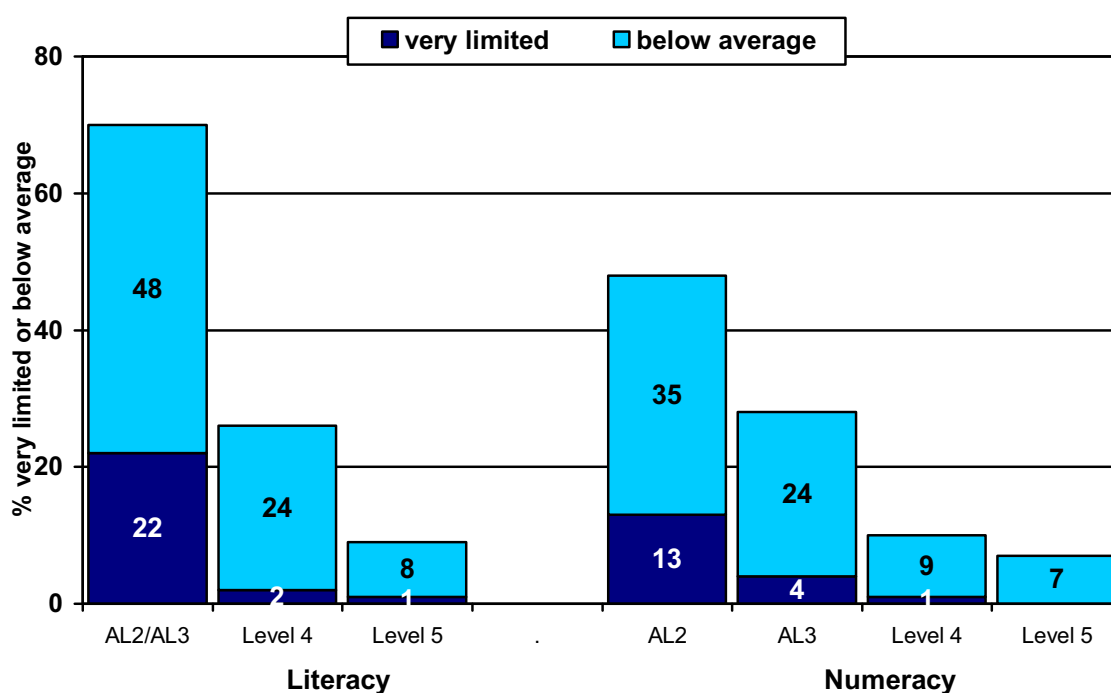


Although not a direct measure of reading and/or difficulties with numbers, teachers were also asked to rate the children's general knowledge. Figure 5.5 shows the vast

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differences that emerged by adult skills groups. Teachers of more than 1 in 5 cohort members with SCQF Access Level 2 or 3 literacy and 1 in 8 with SCQF Access Level 2 numeracy thought they had ‘very limited’ general knowledge. Nearly 1 in 2 with SCQF Access Level 2 or 3 literacy and 1 in 8 with SCQF Access Level 2 numeracy had ‘below average’ general knowledge. No adults with SCQF Level 5 numeracy had been thought to have a ‘very limited’ general knowledge at age 10, just 7% ‘below average’. More than 2 in 3 teachers of adults with the poorest literacy correctly identified, if not a learning difficulty, at least a limitation in wider learning experiences. It was the more specific needs of the children – help with reading or numbers – that teachers were less able to correctly identify.

Figure 5.5: teachers reporting cohort members with a ‘very limited’ or ‘below average’ general knowledge at age 10 by their grasp of literacy or numeracy at age 34

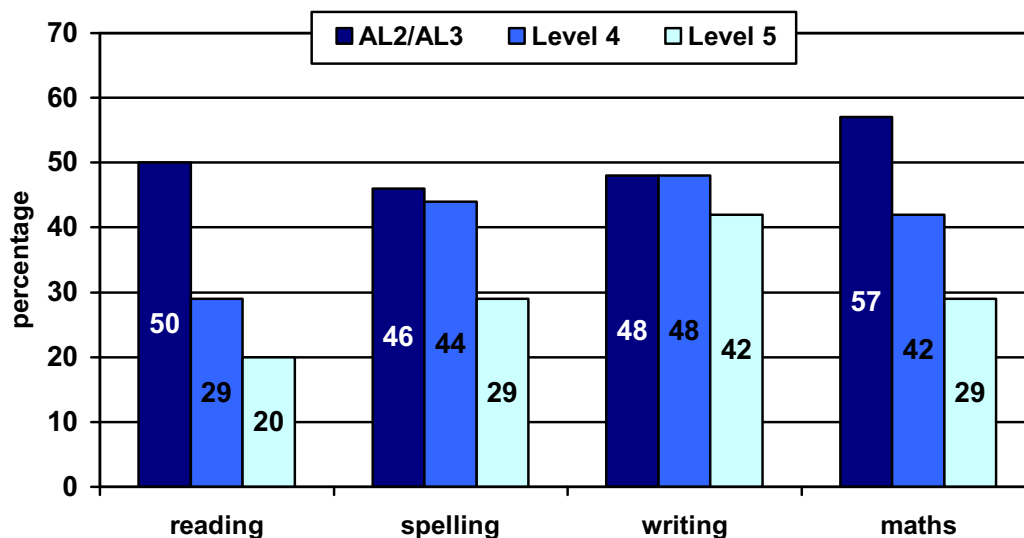


Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

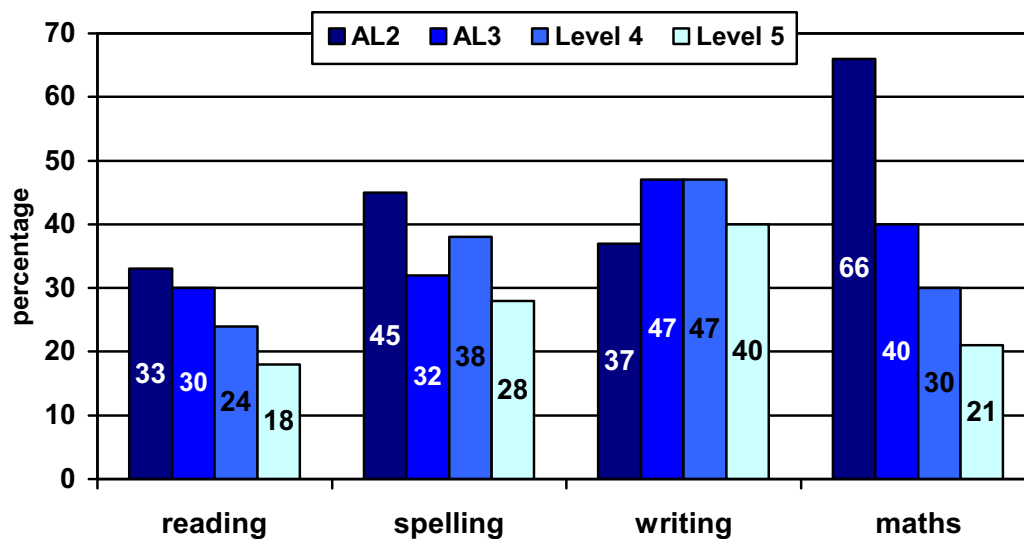
What did the cohort member think of their own skills?

Although cohort members completed various educational and medical assessments since their birth in 1970, at age 10 they also answered a short questionnaire. This included questions on their personality, behaviour, self-esteem and on how 'well' or 'not so well' they thought they were doing in a number of subjects at school. Figure 5.6 shows that around 4 in 10 of all children reported they did 'not so well' in writing, with only small differences being recorded across groups. However, cohort members with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy did have some insight into their poor grasp of literacy and numeracy as they were by far the most likely to report they did 'not so well' in reading, spelling or maths. At age 10, round 1 in 2 adults with SCQF Access Level 2 or 3 literacy thought they did 'not so well' in reading, spelling or maths compared with 1 in 2 adults with SCQF Level 5 or higher literacy for reading and less than 1 in 3 for spelling and maths. Differences between groups at age 34 were most pronounced in the percentages reporting they did 'not so well' in maths when they were age 10 (66% SCQF Access Level 2, 21% SCQF Level 5).

Figure 5.6 Cohort members who thought they did 'not so well' in reading, spelling and maths when they were 10 by their grasp of literacy or numeracy at age 34
a) Literacy



a) Numeracy



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

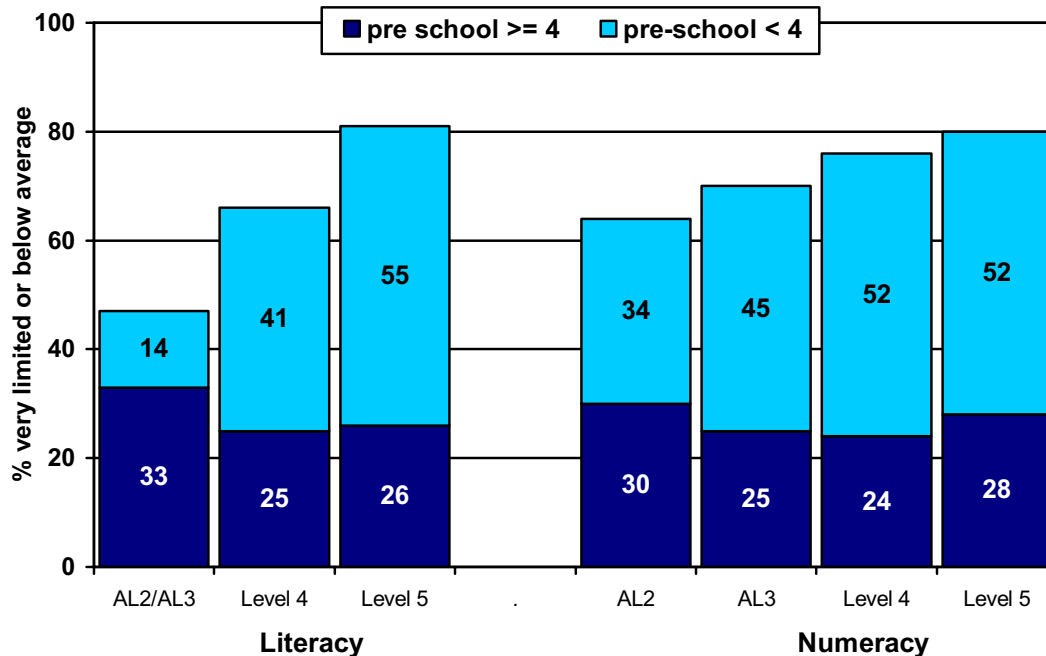
School factors

The majority of the measures on aspects of school life that might influence the development of a child's literacy and numeracy were gained at age 10, but we do know about any pre-school experience they might have had.

Attendance at pre-school

Cohort members with the poorest literacy were by far the least likely to have had some kind of pre-school experience such as a play group, nursery, etc, but particularly less likely to have had any pre-school experience before they were four years old. Figure 5.7 shows that compared to cohort members who developed SCQF Level 5 or higher literacy skills, less than half of cohort members with SCQF Access Level 2 or 3 literacy skills, less than half of cohort members with SCQF Access Level 2 or 3 literacy skills had any pre-school experience (47% to 81%) and just 1 in 7 had experience before they were 4 years old (14% to 55%). Differences were less extreme but still apparent between adult numeracy groups.

Figure 5.7: pre-school experience by cohort members grasp of literacy and numeracy at age 34

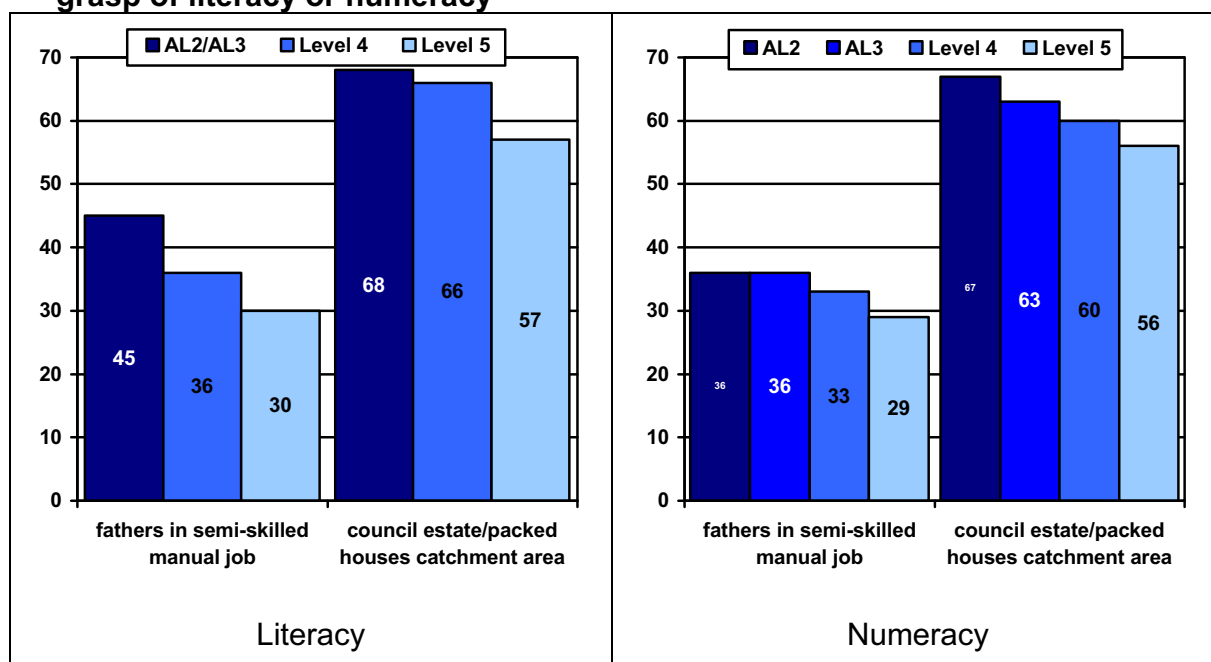


Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Type of school at age 10

At age 10, 91% of all cohort members went to a (government) maintained school as opposed to 9% in the private sector. There were no differences across adult numeracy skills groups, though 10% more children with the poorest literacy went to a maintained school in comparison with those with SCQF Level 5 or higher skills (98% to 88%). However, overall the data collected from schools revealed relatively little association between school characteristics and the acquisition of basic literacy and numeracy. The style of teaching approaches employed in the classroom, such as open or traditional teaching, didactic or exploratory, planned lessons, etc, did not differ between adult skills groups, and in a regular week all children spent an average of 4.6 hours developing reading skills and 5.4 hours on maths and numberwork. Average class size was 28 with, if anything, adults who had the poorest skills being in smaller classes at age 10: 25 for adults with SCQF Access Level 2/3 literacy and 26 for adults with SCQF Access Level 2 numeracy. Overall academic ability of all children in the different schools also did not differ, with similar proportions being rated by the head teacher with 'above' or 'below' average ability. However, what did differ across adult skills groups were the occupations of the fathers of children in the school. In comparison with adults with SCQF Level 5 skills, Figure 5.8 shows that adults with SCQF Access Level 2 or 3 literacy were more likely to have gone to a school with a higher proportion of children whose fathers worked in semi-skilled manual work (45% to 30%). Differences were less pronounced between numeracy groups. However, the difference in socio-economic intake of the schools cohort members went to at age 10 is further reflected by the higher proportion of children in schools where adults with the poorest literacy or numeracy went to, coming from 'council estate' or 'closely packed, multiple-occupied houses' catchment areas.

Figure 5.8: difference in student population in cohort members school at 10 by grasp of literacy or numeracy



Summary of early education performance and school environment

Cohort members with the poorest grasp of literacy or numeracy were less likely to have had formal pre-school experiences (47% of cohort members with SCQF Access Level 2 or 3 literacy compared with 81% of cohort members with SCQF Level 5 or higher literacy), and as early as age 5 they had performed less well in cognitive assessments, falling further behind by age 10, as revealed by scores in the reading and maths assessments. Although half of cohort members with poor skills had been identified as such by their parents and identified themselves as having had poor skills in childhood (a far cry from the small percentages in adulthood), it still meant that the needs of half of them remained invisible. Teachers were even less likely to recognise these difficulties, with relatively few cohort members having received help with reading or understanding of numbers when at school (highest at just 28% for those with SCQF Access Level 2 or 3 literacy). School intake reflected the poorer socio-economic background and local area of cohort members with the poorest grasp of skills in adulthood. But other characteristics of the school, including its teaching characteristics, did not differ across

adult skills groups. What seems to be critical is what the child brings with them into the classroom acquired from their family background.

Chapter 6 Post-16 education and learning experiences

From this point on we focus on differences across the performance levels in cohort members' experiences from age 16 up to age 34. We look at how men and women in Scotland in 2004 with the poorest skills compared, in many aspects of adult life, with men and women with more accomplished functional²⁶ literacy or numeracy. We expand the analyses from what was included in *New Light* and take a more comprehensive look at differences between skills groups in the timing of relationships, parenthood, the move to independent living and experiences in the labour market. First up is education and qualifications. We then return to the issue of self awareness of difficulties and motivation to improve skills alongside learning difficulties, or more specifically, evidence of symptoms associated with dyslexia. We finally consider the relationship between poor literacy and numeracy and exclusion from digital media in the home.

Leaving full-time education and gaining qualifications

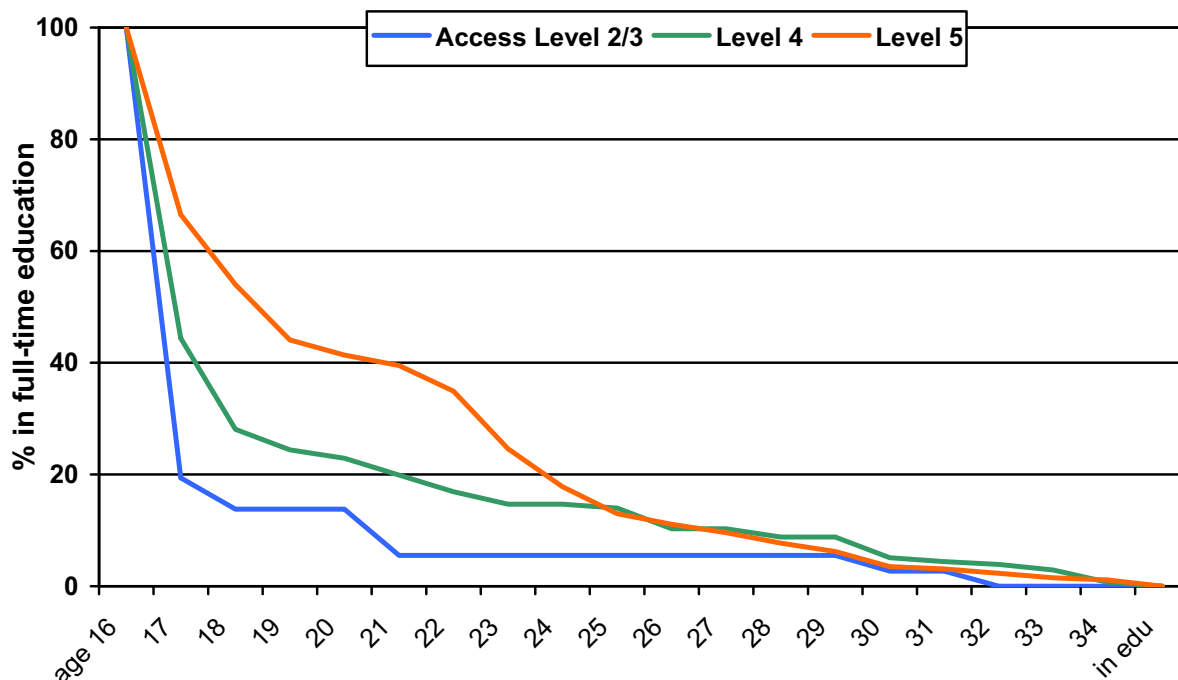
44% of men and 37% of women living in Scotland had left full-time education by the time they were 16, slightly lower than the comparable figures for men and women living in England (50% and 43% respectively). Figure 6.1 and 6.2 shows that this departure from education increased to more than 8 in 10 men with SCQF Access Level 2 or 3 literacy and 6 in 10 men with SCQF Access Level 2 or 3 numeracy. For women, more than 7 in 10 with SCQF Access Level 2 or 3 literacy had left full-time education by 16, and around 1 in 2 with SCQF Access Level 2 (54%) or 3 (47%) numeracy. Most likely to have spent time in post-16 education were women with SCQF Level 5 numeracy – just 20% left at age 16.

²⁶ Reports about levels of literacy or numeracy often refer to functional literacy or numeracy as the borderline separating the ability to function in a complex society. The Organisation for Economic Cooperation and Development defines functional literacy not as the ability to read and write but as "whether a person is able to understand and employ printed information in daily life, at home, at work and in the community".

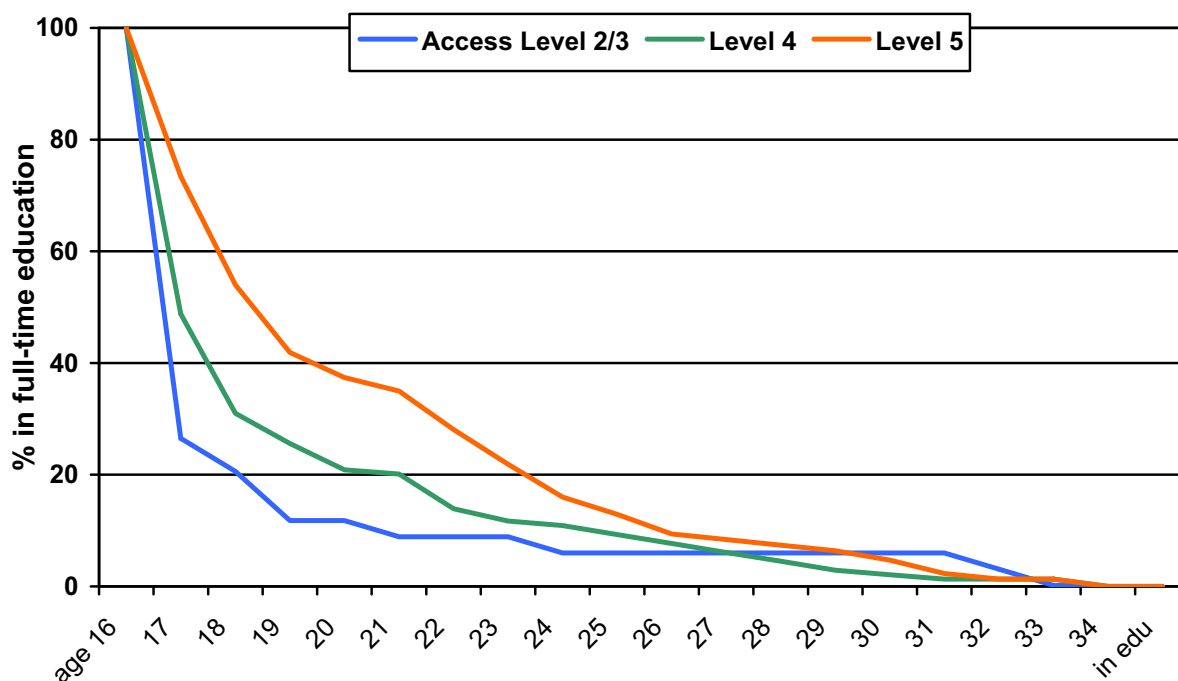
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 6.1 Percentage continuing in full-time education by grasp of literacy

a) men



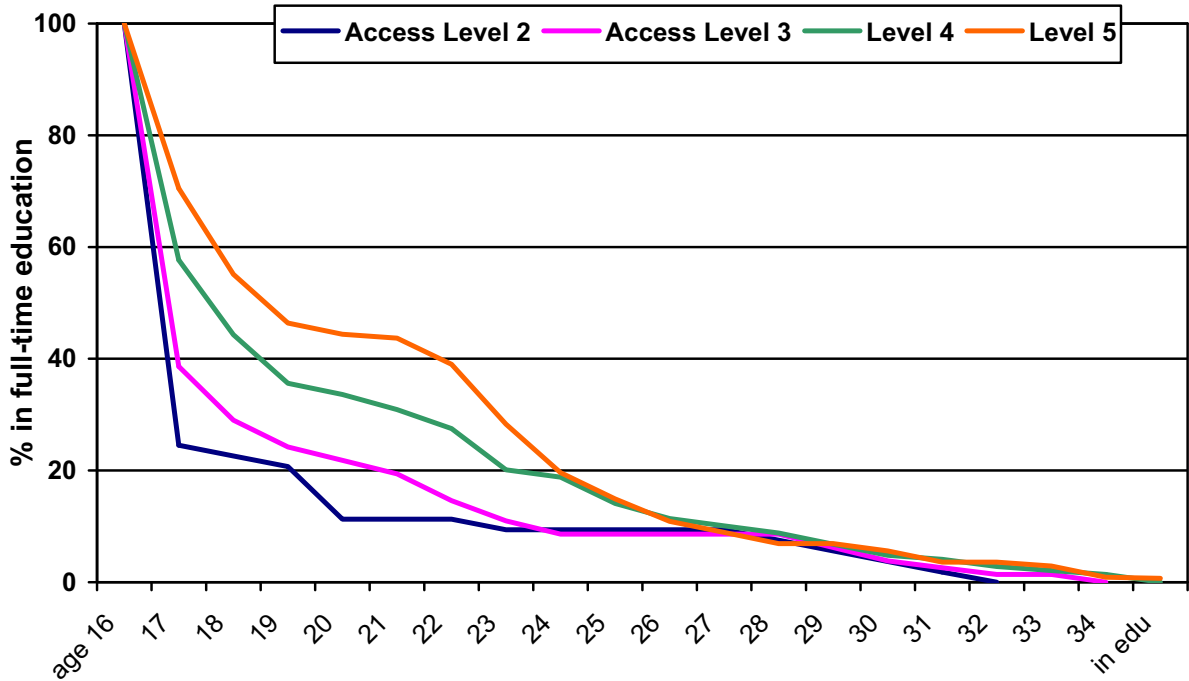
b) women



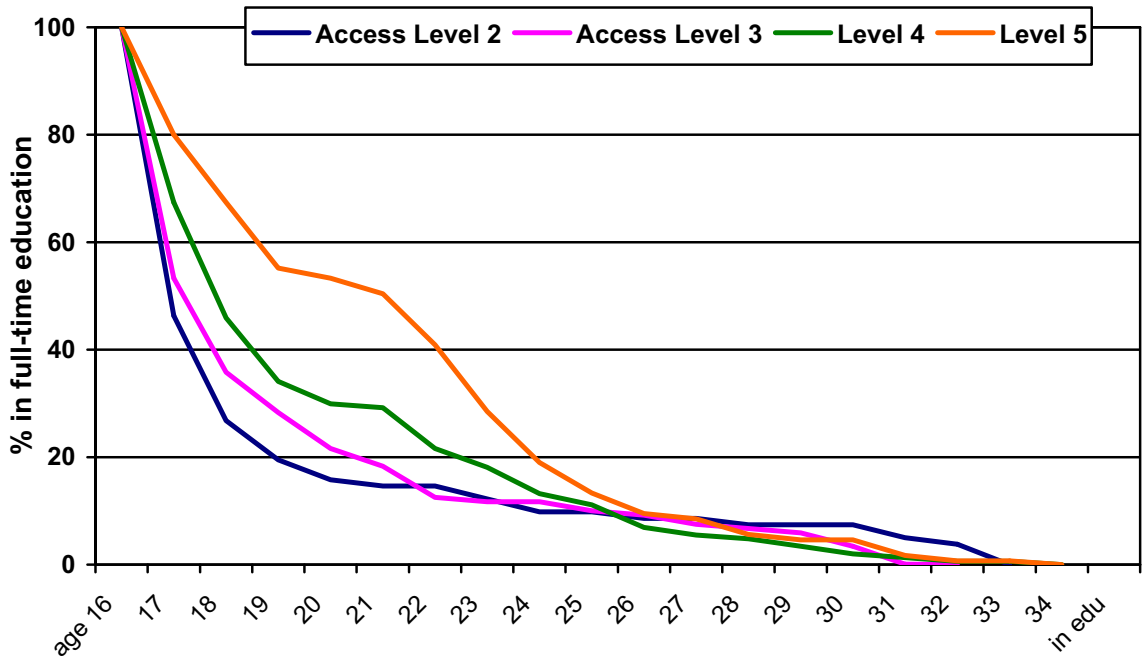
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 6.2 Percentage continuing in full-time education by grasp of numeracy

a) men



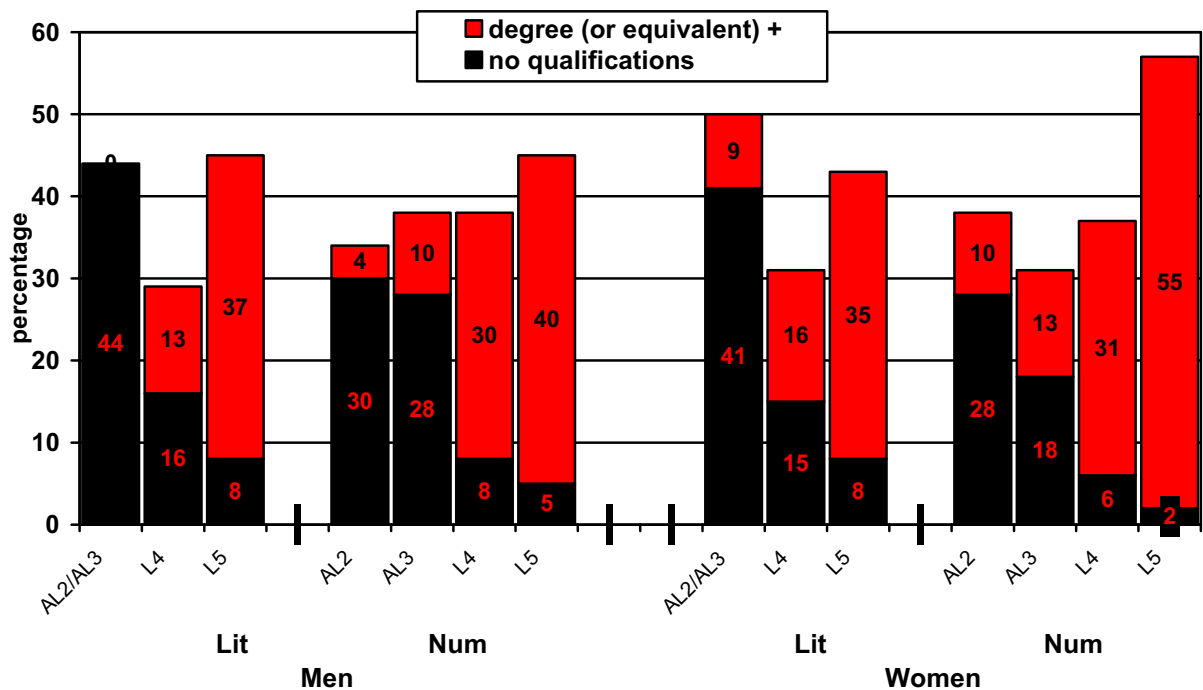
b) women



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

As might be expected, there were considerable differences in highest achieved academic qualification between the literacy and numeracy skills groups. Figure 6.3 shows that, whereas more than one in three men and women with SCQF Level 5 literacy had a degree or higher, no men and just 1 in 25 women with SCQF Access Level 2 or 3 literacy held such qualifications. 4 in 10 men and more than 1 in 2 women with SCQF Level 5 numeracy held a degree or equivalent. At the other end of the academic scale, as many as 4 in 10 men and women with SCQF Access Level 2 or 3 literacy, and around 3 in 10 men and women with SCQF Access Level 2 numeracy had no academic qualifications at all. This compared with just 1 in 13 men and women with SCQF Level 5 literacy, and 1 in 20 men and 1 in 50 women with SCQF Level 5 numeracy.

Figure 6.3: Literacy, numeracy and highest qualification by age 34



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Men and women living within the Central Belt appeared the most disadvantaged in terms of skills and qualifications. As many as 54% of men and women with SCQF Access Level 2 or 3 literacy living in the Central Belt have no qualifications at all compared with 31% of those with SCQF Access Level 2 or 3 skills living in other areas of Scotland. Smaller differences by location were apparent by numeracy skills groups: 32% of men and women with SCQF Access Level 2 numeracy in the Central Belt had no qualifications compared with 25% living elsewhere.

Relationship between assessed skills difficulties, an awareness of these difficulties and a wish to improve skills

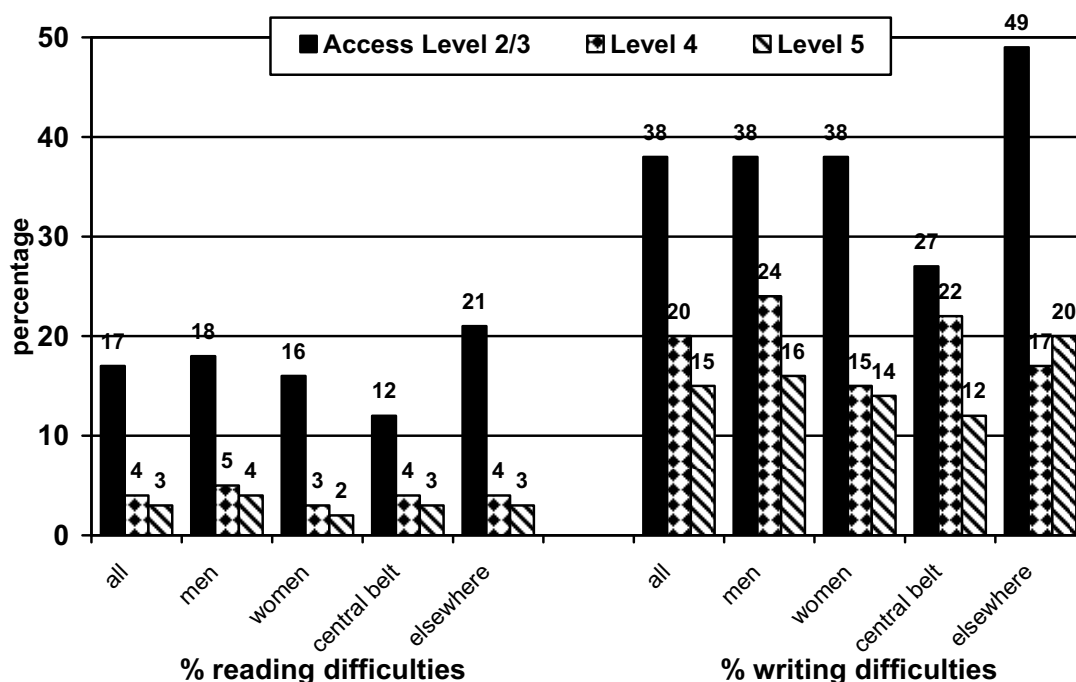
So, men and women with the poorest skills were the first to leave full-time education, acquiring few qualifications at this time. We saw earlier that as many as half of those with the poorest grasp of skills in adult life had thought that they performed 'not so well' as others of their own age at reading and maths, but what about as adults? We look now at the relationship between assessed skills and a self awareness of these difficulties, as measured through the questions on skills difficulties, and also their alienation from computer use and access to the internet.

Literacy

In comparison with the overall 4% of cohort members in Scotland who reported difficulties with reading, Figure 6.4 shows that this increased more than fourfold to 18% of men and 16% of women with SCQF Access Level 2 or 3 literacy. The difficulties were most likely to be related to understanding paperwork and forms (15% men, 16% women). Similarly, whereas 18% of all cohort members reported some difficulty with writing, this increased to 38% of men and women assessed with SCQF Access Level 2 or 3 literacy. Most of the reported difficulties were associated with spelling – more than one in three (35% men, 31% women) reported spelling difficulties - but 15% of men with SCQF Access Level 2 or 3 literacy said they struggled with writing a thank-you letter, making their handwriting legible and how 'to put down in words' what they wanted to say.

Compared with men living within the Central Belt area, men and women assessed with SCQF Access Level 2 or 3 literacy in other areas of Scotland were far more likely to be aware of their reading and writing difficulties: 12% compared with 21% reported reading difficulties, 27% compared with 49% writing difficulties.

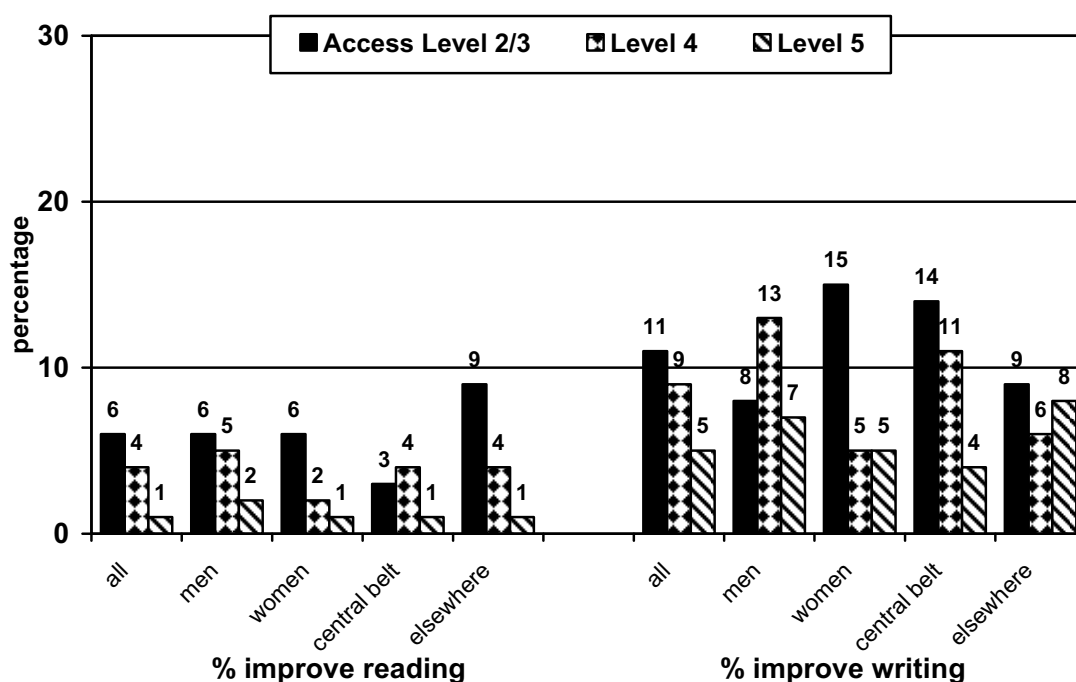
Figure 6.4: Literacy, awareness of reading and writing difficulties



In the original *New Light* report, men and women with SCQF Access Level 2 literacy were around nine times as likely as men and women with SCQF Level 5 skills to want to improve their reading skills and five times as likely to improve their writing skills. However, although men and women with the poorest grasp of literacy in Scotland were the most likely to want to improve their reading and writing skills, levels were much lower than we found across Great Britain overall. Figure 6.5 shows that just 6% of men and women with SCQF Access Level 2 or 3 literacy wanted to improve their reading and 8% of men and 15% of women their writing skills. Those living *outside* the Central Belt were three times more likely as those within to want to improve their reading skills (3% to 9%). Equally, more men and women with SCQF Access Level literacy *within* the

Central belt wanted to improve their writing skills (14% to 9%) Importantly, no men with SCQF Access Level 2 or 3 literacy had been on a course to help improve their reading or writing skills. Comparable Figures for women were 3% (reading) and 6% (writing).

Figure 6.5: Literacy and wish to improve reading and writing skills



Reading practices

Reading practices comprise the application of reading and numerical skills in everyday life. We asked all men and women how often they read magazines, newspapers and books: every day, most days, once in a week, once in a month, less often than that or never. 59% of all men and 45% of all women read a magazine or newspaper everyday, with only small differences emerging across skills groups. Men and women with SCQF Access Level 2 or 3 literacy were the most likely to report that they never read a magazine or newspaper men and women with SCQF Level 5 skills the least likely to (11% to 3% men, 12% to 1% women). However, differences across literacy and skills groups in how often a book was read were very apparent. Book reading was less common than magazine or newspaper reading among 34 year-olds, with 1 in 4 women and 1 in 6 men picking up and reading a book every day. This fell to just 1 in 8 for

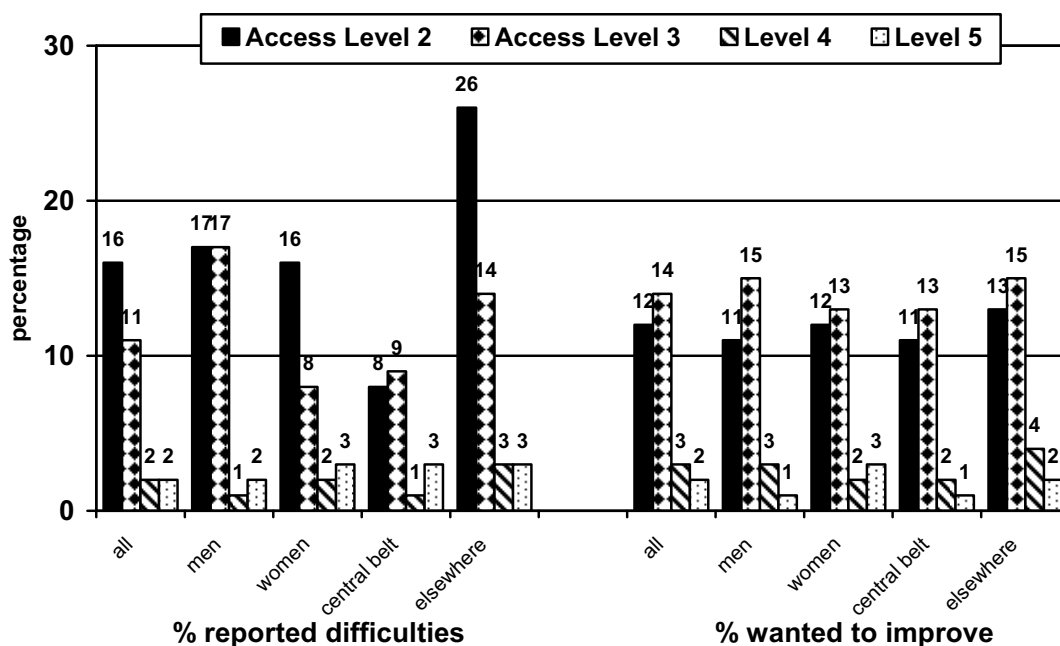
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

women and 1 in 33 for men with SCQF Access Level 2 or 3 literacy. A huge 47% of men and women with SCQF Access Level 2 or 3 literacy never read a book compared with just 15% of men and 14% of women with SCQF Level 5 or higher literacy. However, on a more positive note it did mean that more than half of those with the poorest literacy did occasionally pick up a book.

Numeracy

For numeracy, Figure 6.6 shows that around one in six men (14%) and women (16%) with SCQF Access Level 2 numeracy reported having some difficulties with numbers and mathematical calculations, compared with just 1 in 50 (2%) of men and 1 in 33 (3%) of women with SCQF Level 5 numeracy. As expected, most of the difficulties were associated with multiplication and division, but unlike in the original report there were no substantial differences between the percentages of Scottish men and women with SCQF Access Level 2 numeracy who reported difficulties with multiplication and/or division (11% men, 13% women). Among those with SCQF Access Level 2 numeracy, men and women living outside the Central Belt were three times more likely to acknowledge their difficulties with numbers in comparison to men and women within the Central Belt (8% to 26%). Notably, around six to seven times as many men and women with SCQF Access Level 2 or SCQF Access Level 3 numeracy wanted to improve their numerical skills in comparison with those with SCQF Level 5 skills. There were no big differences in desire to improve numbers skills by where cohort members lived and no men and women with SCQF Access Level 2 numeracy anywhere in Scotland had been on provision to help improve their grasp of numbers.

Figure 6.6: Numeracy, awareness of maths / numberwork difficulties, and wish to improve maths / numberwork skills



Symptoms associated with dyslexia

3% of cohort members in Scotland (5% men, 2% women) were identified as having a ‘very high risk’ of dyslexia from four exercises taken from *The Dyslexia Adult Screening Test (DAST)*²⁷. This is slightly lower than the 4% identified in *New Light*, which was in line with population estimates.

Relationship with literacy and numeracy

There were significant negative correlations between being ‘at risk’ of dyslexia and having a poor grasp of literacy (-.57 men, -.49 women) and/or numeracy (-.47 men, -.43 women), meaning that a high score in the literacy or numeracy assessment was associated with a low dyslexia ‘risk’ score. Figure 6.7 clearly shows the relationship between risk of dyslexia and grasp of literacy and numeracy. More specifically, it shows

²⁷ Fawcett, A. and Nicolson, R. (1998). *The Dyslexia Adult Screening Test (DAST)*. London: The Psychological Corporation. For details on how cohort members were identified as being ‘at risk’ of dyslexia from the four individual assessments, refer to the *New Light on Literacy and Numeracy* report.

the percentage of men and women assessed with a risk of dyslexia (as determined by their performance in the four DAST assessments) by their grasp of literacy or numeracy and that the relationship was strongest between literacy and risk of dyslexia. Very few men and women with SCQF Access Level 2 literacy were assessed with 'no risk' of dyslexia. In fact, men with SCQF Access Level 2 literacy were *eight* times less likely to be assessed with having 'no risk' at all of dyslexia compared with men assessed with SCQF Level 5 literacy (7% to 56%), women with SCQF Access Level 2 literacy were *five* times less likely than women with SCQF Level 5 literacy (10% to 54%).

Taking this further, we look at the relationship between literacy and numeracy competence and the 'very high risk' of dyslexia group – those that we are most confident of having specific dyslexic learning needs. 28% of men and 21% of women with SCQF Access Level 2 or 3 literacy were assessed with a 'very high risk' of dyslexia, as were 21% of men with SCQF Access Level 2 numeracy. Among the men and women with SCQF Level 5 or higher literacy skills, no more than 1% were assessed with a 'very high risk' of dyslexia. Similarly, 1% of men with SCQF Level 5 numeracy were assessed with a 'very high risk' of dyslexia. No women with SCQF Level 4 or higher numeracy were assessed with a 'very high risk' of dyslexia, compared with 9% of women with SCQF Access level 2 numeracy.

Awareness of learning needs

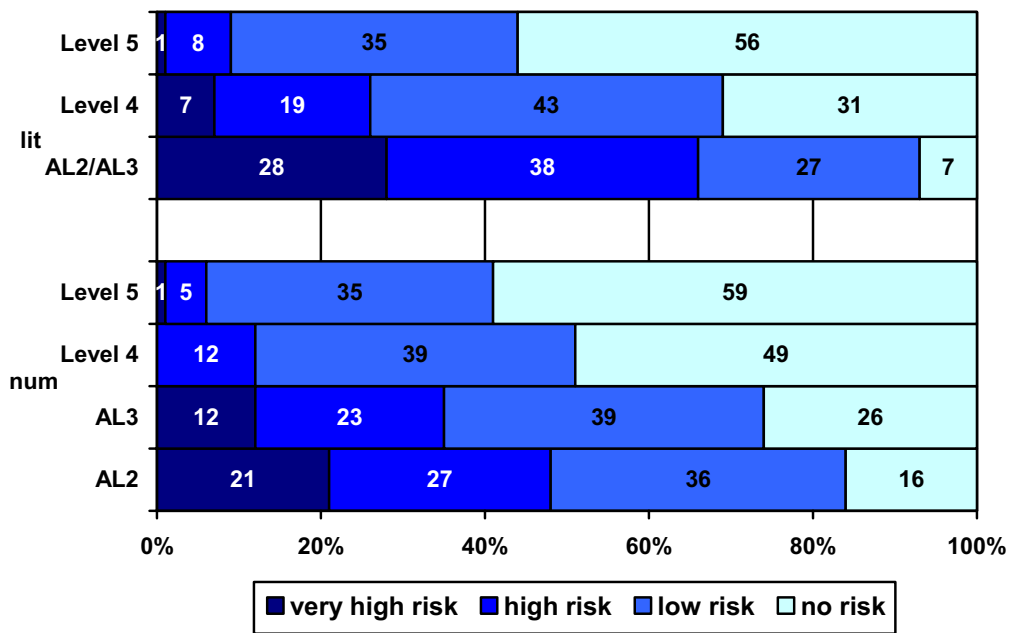
Given the strong relationship between risk of dyslexia and literacy and numeracy, we looked further into the associated difficulties cohort members had identified by their risk of dyslexia²⁸. Among the men and women with a 'very high risk' of dyslexia, 22% identified they had reading difficulties and a huge 63% writing difficulties. None had taken up provision for reading and writing, 13% reported wanting to improve their reading, 23% their writing. This compared with 8% who reporting difficulties with writing and no difficulties with reading among the majority of men and women assessed with

²⁸ Small numbers did not permit analyses of men and women separately .

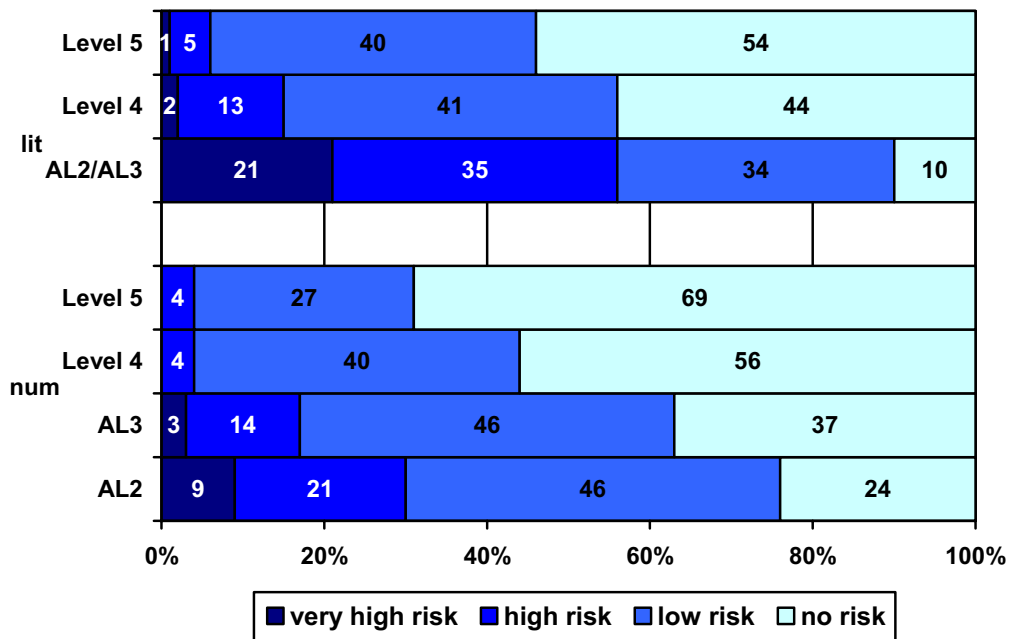
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

'no risk' of dyslexia. 3% of these men and women wanted to improve their writing skills, none their reading skills.

Figure 6.7 'risk' of dyslexia by cohort members grasp of literacy or numeracy
a) Men



b) Women



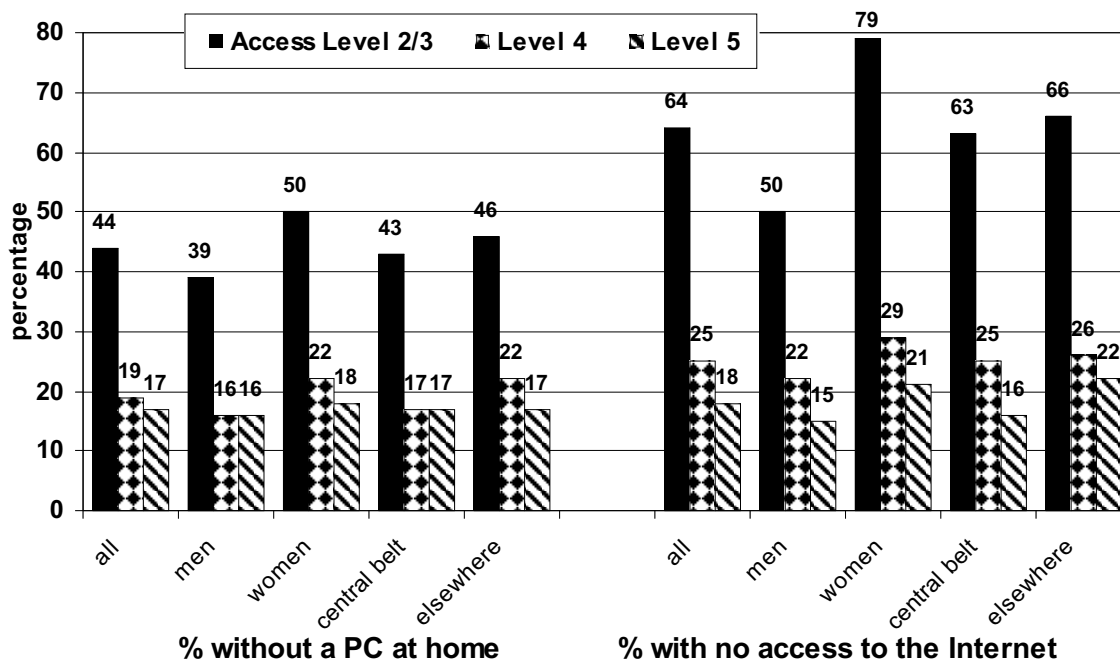
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Inclusion in the digital revolution?

Computer use and internet access have become almost an essential tool for modern living; to not have an email address is more and more excluding for men and women across all generations. Among our 34 year olds, men and women with poor literacy and numeracy were most likely to not have a computer at home. This 'digital divide' was most apparent across literacy groups, a reflection of the more disadvantaged socio-economic circumstances of the men and women with SCQF Access Level literacy that we discuss later. Figure 6.8 shows that 39% of men and 50% of women with SCQF Access Level 2 or 3 literacy did not have a computer in their home compared with just 16% of men and 18% of women with SCQF Level 5 or higher literacy. Similarly, 33% of men and women with a 'very high risk' of dyslexia did not have a computer in their home compared with just 16% of men and women with 'no risk' of dyslexia.

As we found among all BCS70 cohort members, around 1 in 4 households in Scotland (21% men, 27% women) did not have access to the internet. This increased to 50% for men and 79% for women with SCQF Access Level 2 or 3 literacy, and more than 1 in 3 men and women with SCQF Access Level 2 numeracy (38% men, 43% women) or SCQF Access Level 3 numeracy (37% men and women). Access to the internet was not notably lower in areas of Scotland outside of the Central Belt.

Figure 6.8 evidence of the Digital Divide in Scotland: % with no PC or Internet access at home by grasp of literacy



Summary of education and learning post-16

Just as we found for all cohort members, men and women in Scotland with the poorest grasp of literacy or numeracy were by far the most likely to have left full time education at the earliest opportunity with no qualifications. This combined educational disadvantage was most apparent among the poorly skilled living within the Central Belt region (1 in 2 with SCQF Access Level 2 or 3 literacy had no qualifications compared with around 1 in 3 living elsewhere in Scotland). On the other hand, those living outside the Central Belt were more likely to be aware of their limited grasp of literacy (21% compared with 12% in the Central Belt) or numeracy (49% compared with 27% in the Central Belt), though the motivation to improve poor skills in Scotland was far lower than we found for Great Britain as a whole.

A potential added disadvantage was that as many as 1 in 4 men and 1 in 5 women with the poorest literacy were also assessed with a very high risk of being dyslexic which has obvious implications for the progress of adults attending literacy and numeracy

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

provision. The exclusion of adults with the lowest skills, particularly literacy, from the digital revolution that has taken place over the last decade is clear to see with far more being without a computer (44% compared with 17% SCQF Level 5 or higher skills) or access to the internet at home (64% compared with 18% SCQF Level 5 or higher skills). Inclusion of a digital element within literacy and numeracy learning may be another way to attract adults to come to provision.

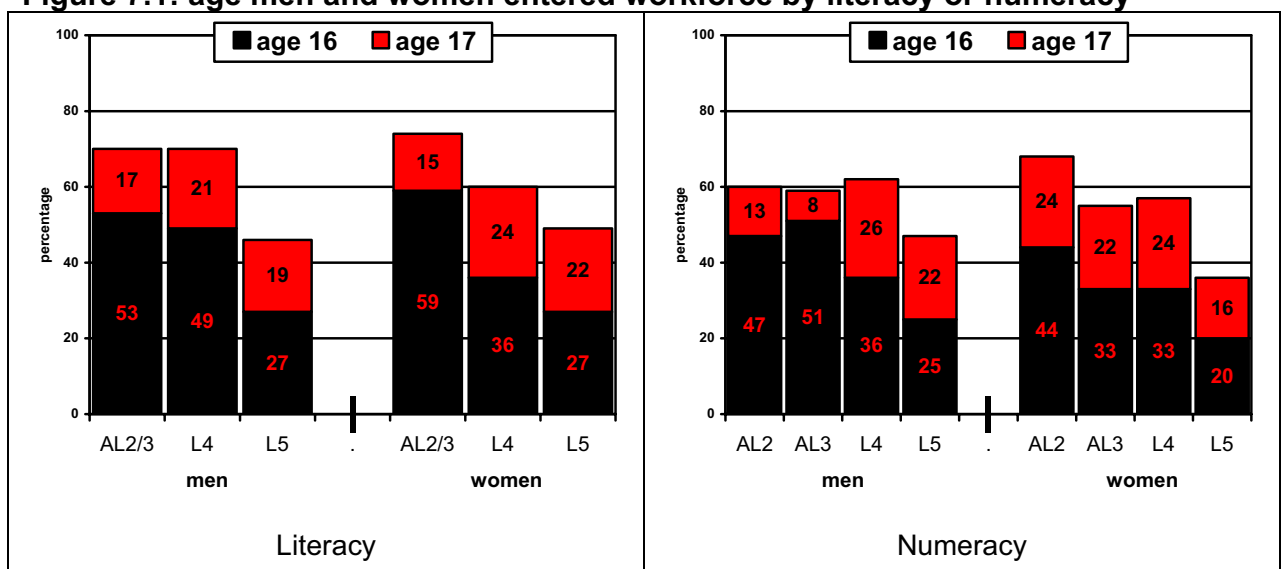
Chapter 7 Working life and economic disadvantage

We take a step back now and look at the first moves cohort members made to independence and taking on adult responsibilities. In this Chapter we look at first employment up to current situation at age 34 including work-related and other associated financial disadvantages. In Chapter 8 we turn to age of first leaving the parental home and experiences in the housing market up to age 34 including a look at the local environment and community participation, and finally in Chapter 9 we describe relationship formation, becoming a parent and health and well-being.

Age of first job

In line with an early exit from education, Figure 7.1 shows that more men with SCQF Level 4 or below literacy and numeracy entered the labour market at age 16 or 17. For women, those with SCQF Access Level literacy or SCQF Access Level 2 numeracy were also the most likely to have their first job after leaving school when they were still 16. Entrance to the workforce at age 16 was lowest for men and women with SCQF Level 5 numeracy – 25% men and 20% women.

Figure 7.1: age men and women entered workforce by literacy or numeracy



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Working Life

Between April 1986, when cohort members turned 16 and could leave full-time education, and March 2004, the month before their 34th birthday, there were 18 years of possible economic activity. We first look at the proportion of time men and women have spent in each 'status' such as full-time paid employment, full-time home-care role, education, training, unemployment, etc, during this time. We also chart the percentage of men and women in full-time employment in each year between age 16 and 34, highlighting the different experiences of the men and women with Access Level skills.

Men: employment between age 16 to 34

Figure 7.2 shows that although men in each skills group have spent a similar proportion of their working life to date in full-time employment (between 74-79%), when not in full-time employment men with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were most likely to have been unemployed, on a government training course or sick, whereas men with SCQF Level 5 skills were in full-time education. Compared with men with SCQF Level 5 skills, men with SCQF Access Level 2 numeracy have, on average, spent nearly four times as long in unemployment (19 months to 5 months) and men with SCQF Access Level 2 or 3 literacy three times as long (18 months to 6 months). The less stable working experiences of men with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy is further illustrated when we looked at the number of different episodes of unemployment men had suffered during their working life. Here differences were greatest across numeracy groups: 19% of men with SCQF Access Level 2 numeracy had been unemployed on 3+ occasions compared with 10% of men with SCQF Access Level 3 numeracy, 8% of men with SCQF Level 4 numeracy and 4% of men with SCQF Level 5 or higher numeracy. Just 45% of men with SCQF Access Level 2 numeracy had never been unemployed, compared with 73% of men with SCQF Level 5 or higher numeracy.

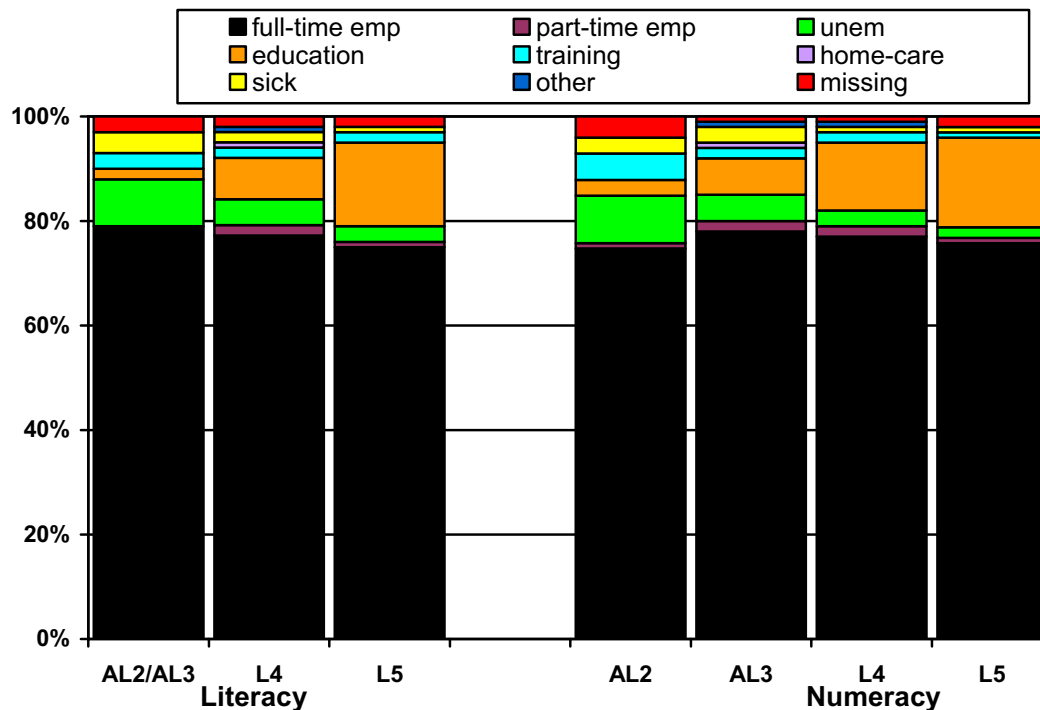
When we restrict the comparison to early school leavers – those who had left full-time education at age 16 – we find that men with SCQF Access Level literacy or numeracy

have spent the least time in full-time employment, but still the most time unemployed. In terms of years and months, men with SCQF Level 5 literacy have spent an additional one and a half years in full-time employment compared to men with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy (15 years 10 months to 14 years 4 months by literacy; 16 years to 14 years 4 months by numeracy). Differences in time spent unemployed among early school leavers are as wide between skills groups as when we looked at *all* men – regardless of their age when they left full-time education. The same is true for differences in the number of separate spells of unemployment. What this shows is that even with an increased exposure to the risk of unemployment and not having the higher level qualifications that extended time in education will have undoubtedly brought, men with SCQF Level 5 skills who left school at age 16 are no more likely to experience unemployment than those who left later on.

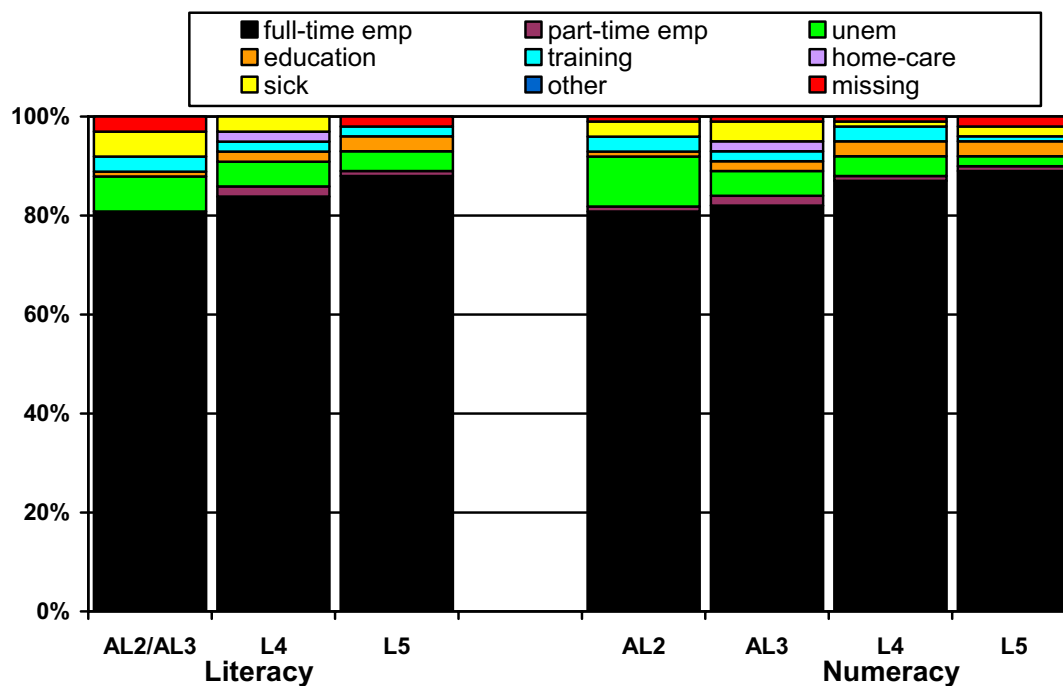
Figure 7.3 gives the percentage of men in each skills group who have spent the most time in each year in full-time employment²⁹. These graphs clearly show that once men with SCQF Level 5 skills have largely finished with full-time education in their early-mid twenties, they consistently have the highest levels of full-time employment. Among literacy groups, it is only men with SCQF Level 5 skills that have a notably higher level of engagement in full-time work in each year. By numeracy, percentages in full-time employment in each year are also notably higher for men with SCQF Level 4 skills, though levels of engagement for men with SCQF Level 5 skills are higher again.

²⁹ This was calculated in a 'positive' way. For example if a cohort member had spent 5 months of a year in full-time employment, 5 months unemployed and 2 months on a training course, their 'status' for that year would be 'full-time employed' not 'unemployed'.

Figure 7.2 proportion of time men spent in each economic status between April 1986 (age 16) up to March 2004 (age 33) by literacy and numeracy
a) All men



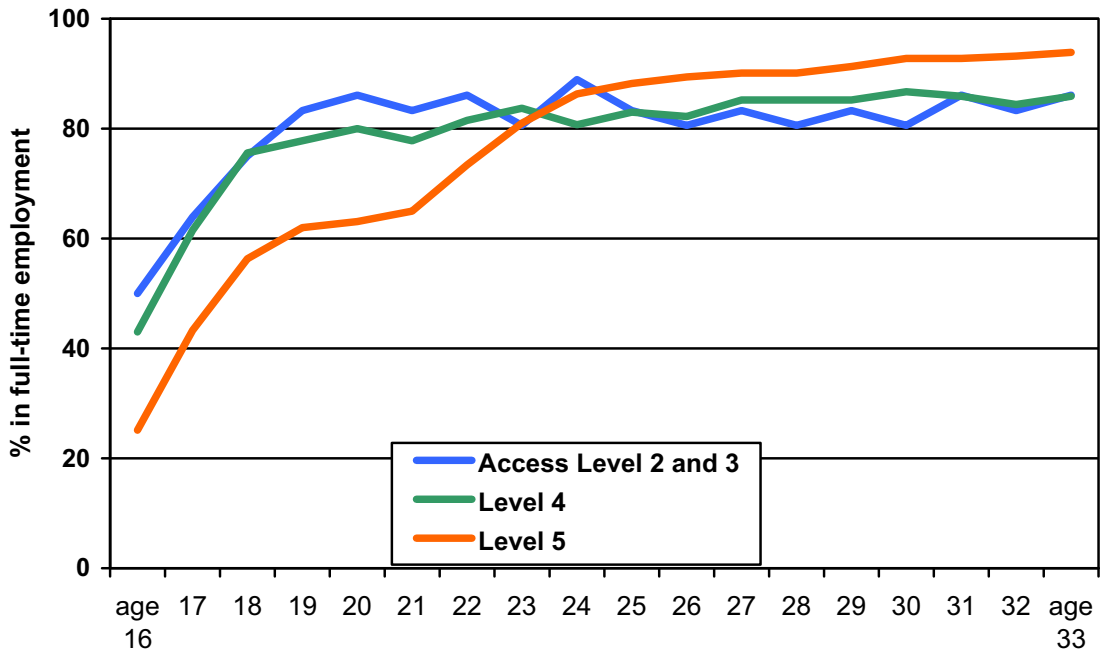
b) Early school leavers



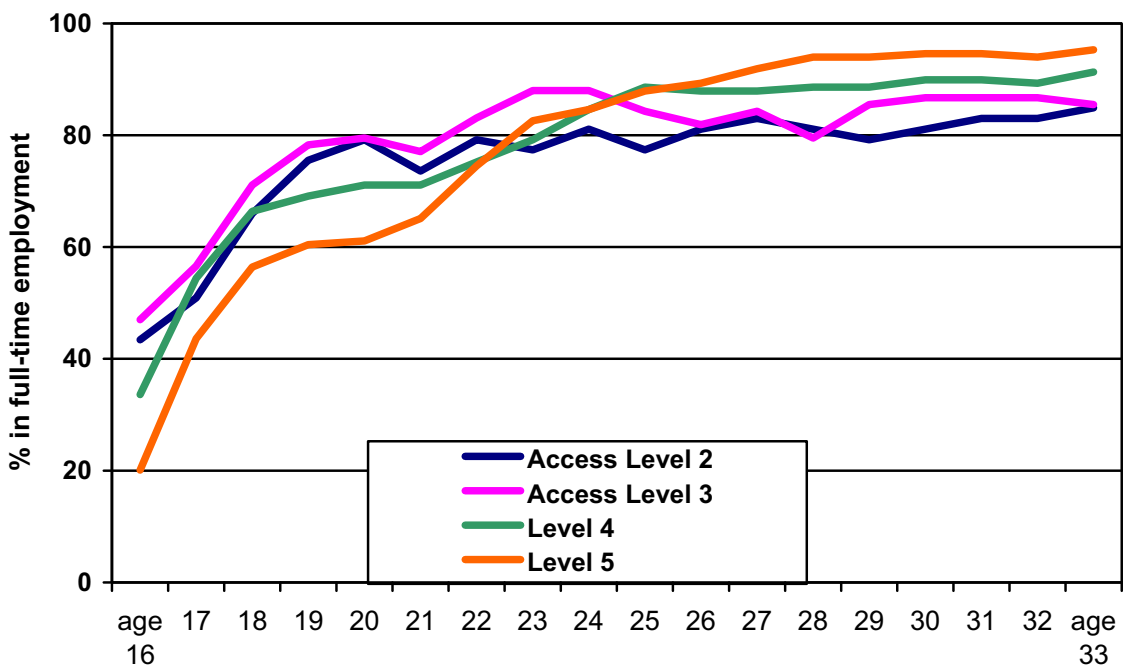
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Figure 7.3 % men in full-time employment from April 1986 (age 16) up to March 2004 (age 33)

a) literacy



b) numeracy

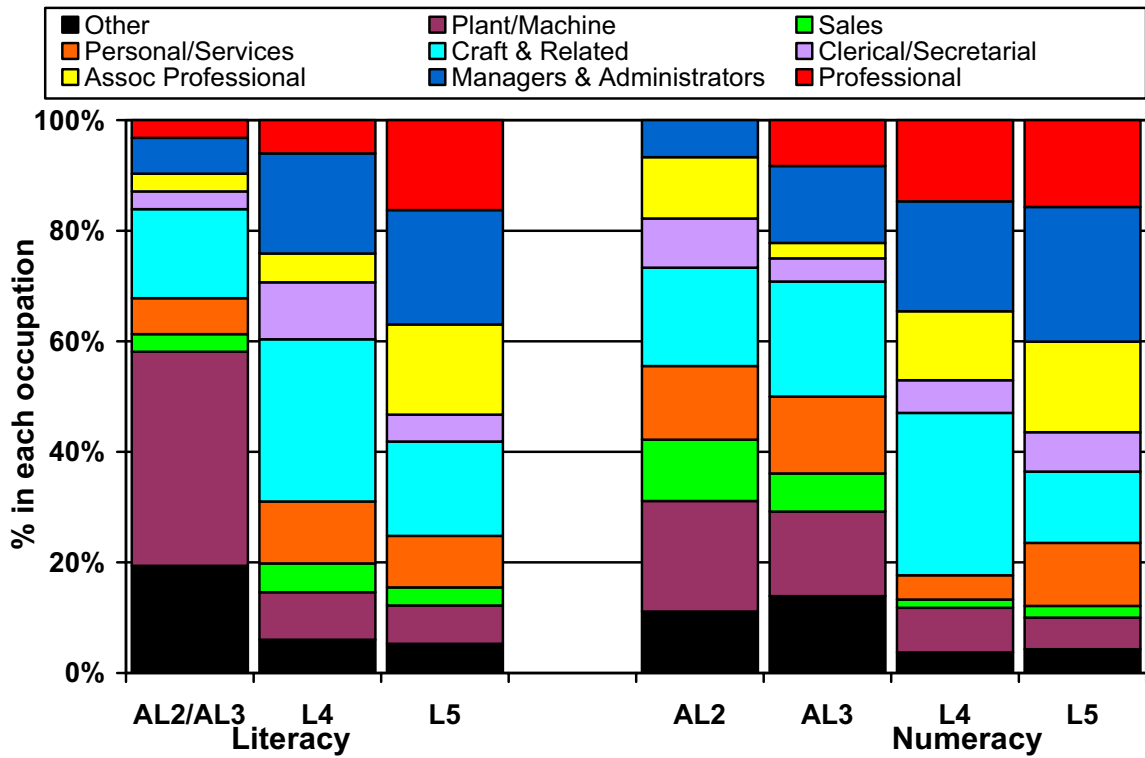


Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Men: current employment and occupation at age 34

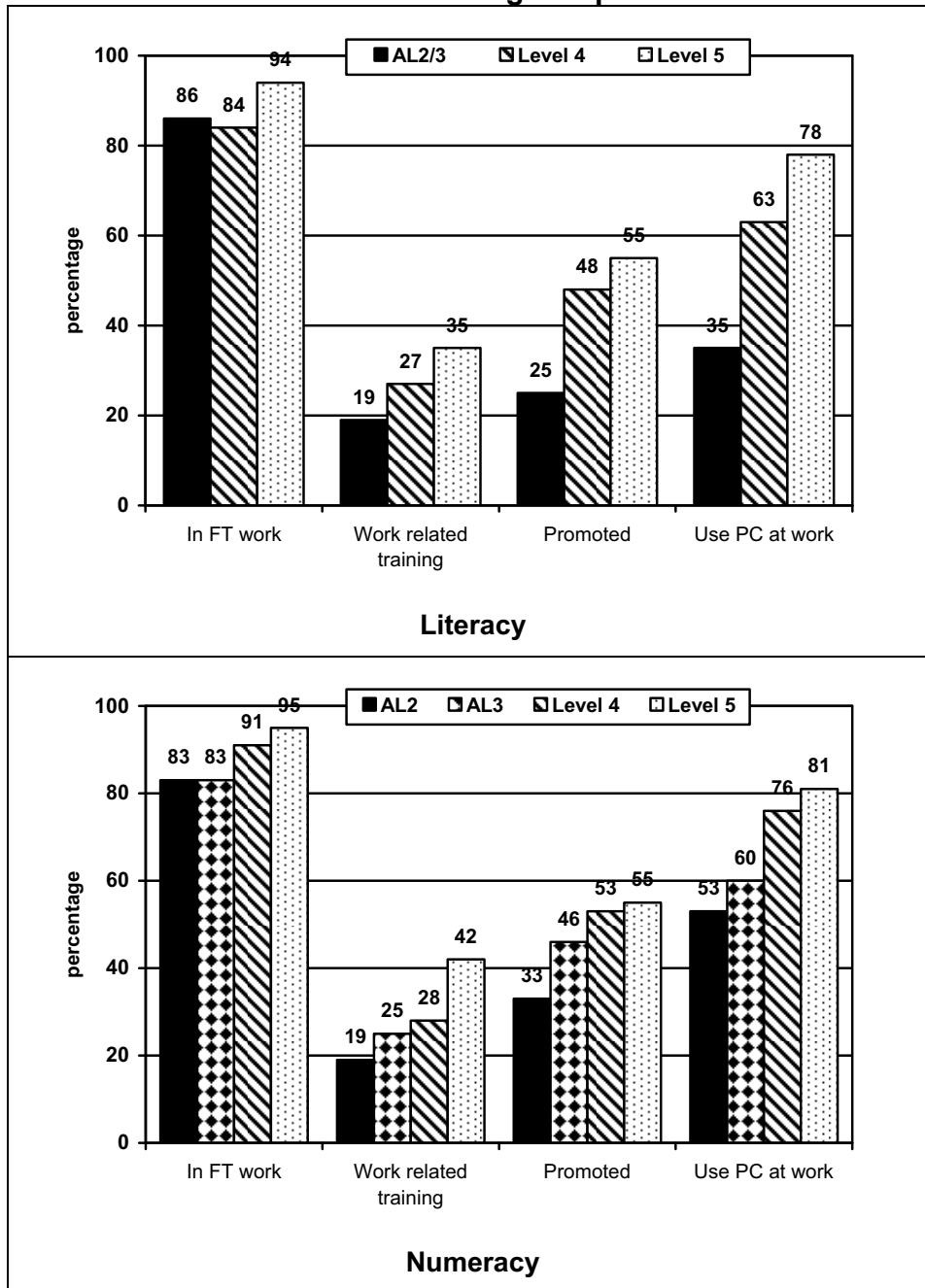
Unsurprisingly, men with SCQF Access Level literacy or numeracy were the least likely to be in full-time work at age 34, and the most likely to be unemployed or sick. Among those working at the time of interview in 2004, the very different occupation profiles of men with SCQF Access Level skills was very apparent. Figure 7.4 shows that 4 in 10 men with SCQF Access Level 2 or 3 numeracy skills worked as a Plant or Machine operative. 2 in 10 worked in the unskilled, insecure and more unregulated jobs that were classified under 'Other' occupations – four times as many as men with SCQF Level 5 literacy. Although 7% worked as a Manager or an Administrator, this was around three times more likely among men with SCQF Level 5 or higher skills. The exclusion of men with SCQF Access Level skills from the modern service sector office based jobs that increasingly make up today's job opportunities was clearly highlighted when asked if they used a computer at work. Figure 7.5 shows that just 38% of men with SCQF Access Level 2 or 3 literacy and 46% of men with SCQF Access Level 2 numeracy used a PC at work compared with three-quarters of men with SCQF Level 5 skills (75% literacy, 78% numeracy). Men with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy were also far less likely to have been promoted whilst in their current position (25% to 55% literacy, 33% to 55% numeracy), or to have received work related training. Men with SCQF Level 5 numeracy were the most likely to have been on at least one work-related training course (42% to 19% SCQF Access Level 2 numeracy).

**Figure 7.4 Current occupation at age 34 for men
by grasp of literacy and numeracy**



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 7.5: Men: numeracy, literacy, full-time work, PC use, work-related training and promotion



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Women: employment between age 16 to 34

As we might expect, women with SCQF Access Level literacy skills have spent less time in full-time employment – or indeed any paid employment – between age 16 and 34 than women with SCQF Level 4 or higher skills. Differences in amount of time spent in full-time or part-time employment were not so apparent between numeracy groups. Figure 7.6 shows that when not in paid employment, women with SCQF Level 5 skills were largely engaged in full-time education whereas women with SCQF Access Level 2 or 3 literacy were predominantly looking after their children in a full-time home-care role. To minimise the education effect, we again restricted our look to women who had all left full-time education by age 16. Differences between groups persisted. Women with SCQF Level 5 skills who had left school early had spent around 14 of the available 18 years in paid employment (13 years 11 months literacy, 14 years 2 months numeracy) compared with 10 years by women with SCQF Access Level 2 or 3 literacy and 10 years 9 months by women with SCQF Access Level 2 numeracy. Although much of their time was spent in a full-time home-care role, women with SCQF Access Level 2 or 3 literacy had been unemployed for more than four times as long as women with SCQF Level 5 literacy (18 months compared with 4 months). Compared with women with SCQF Level 5 numeracy, women with SCQF Access Level 2 numeracy had spent more than twice as long unemployed (13 months against 5 months) and three times as long in a home care role (4 years 4 months against 1 year 3 months). Reflecting their more disjointed employment trajectories, women with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy were twice as likely to have experienced 2+ separate spells of unemployment, compared with women with SCQF Level 5 or higher skills (12% to 6%).

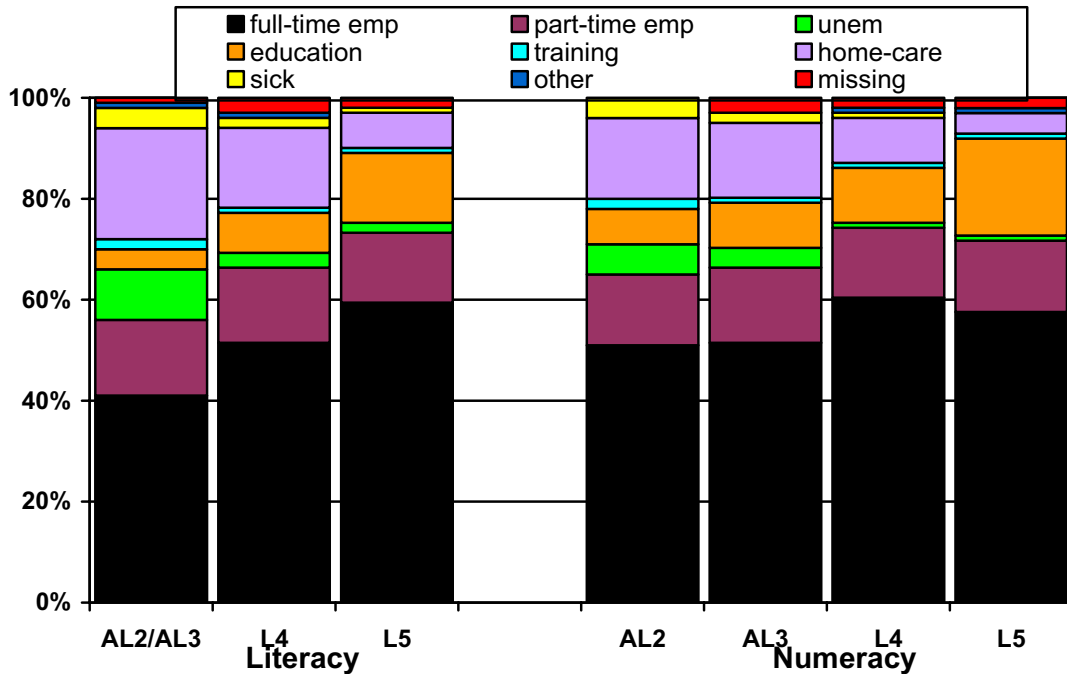
As for men, we also chart the percentage of women who spent the best part of each year in paid employment. In Figure 7.7 we chart full-time employment and in Figure 7.8 full-time employment in combination with part-time employment. Differences in full-time employment between literacy groups are very stark, remaining so even when part-time employment was included. No more than 1 in 2 women (around 50%) with SCQF

Access Level 2 or 3 literacy were engaged in paid employment during their mid-late

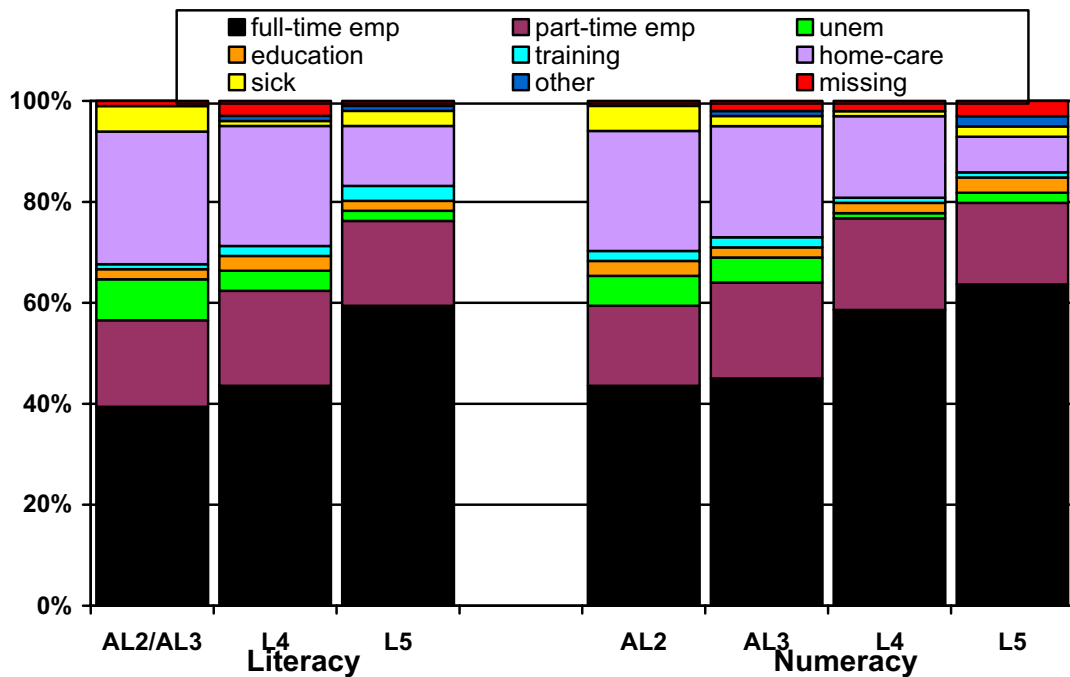
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

twenties, though this did increase to just below 60% when they reached their thirties. This suggests that women with SCQF Access Level skills were less likely to have combined child-care with part-time employment, though whether this was due to their restricted employment opportunities with poor economic returns or just simply that they wanted to be a full-time mum is not known. Conversely, when we combined part-time with full-time employment for women with SCQF Level 5 literacy, the percentage in paid employment in each year was comparable with those of men. Combining part-time with full-time employment increased levels of engagement in all numeracy groups, though women with SCQF Access Level 2 skills still had the lowest levels in paid employment in each year from their early twenties when more and more women begin to exit the labour market to have children. Unlike for literacy, the experiences of women with SCQF Level 4 numeracy skills are closer to those of women with SCQF Level 5 skills, with around 85% spending most time in any one year from age 24 in paid employment.

Figure 7.6 Proportion of time women spent in each economic status between April 1986 (age 16) up to March 2004 (age 33) by literacy and numeracy
a) All women



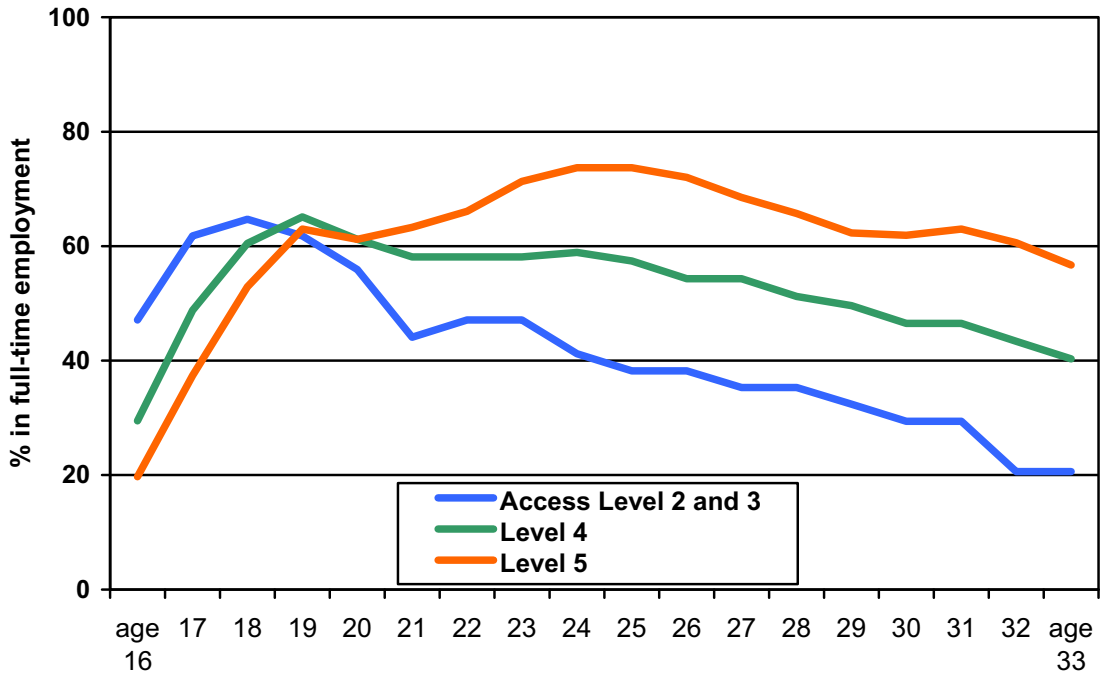
b) Early school leavers



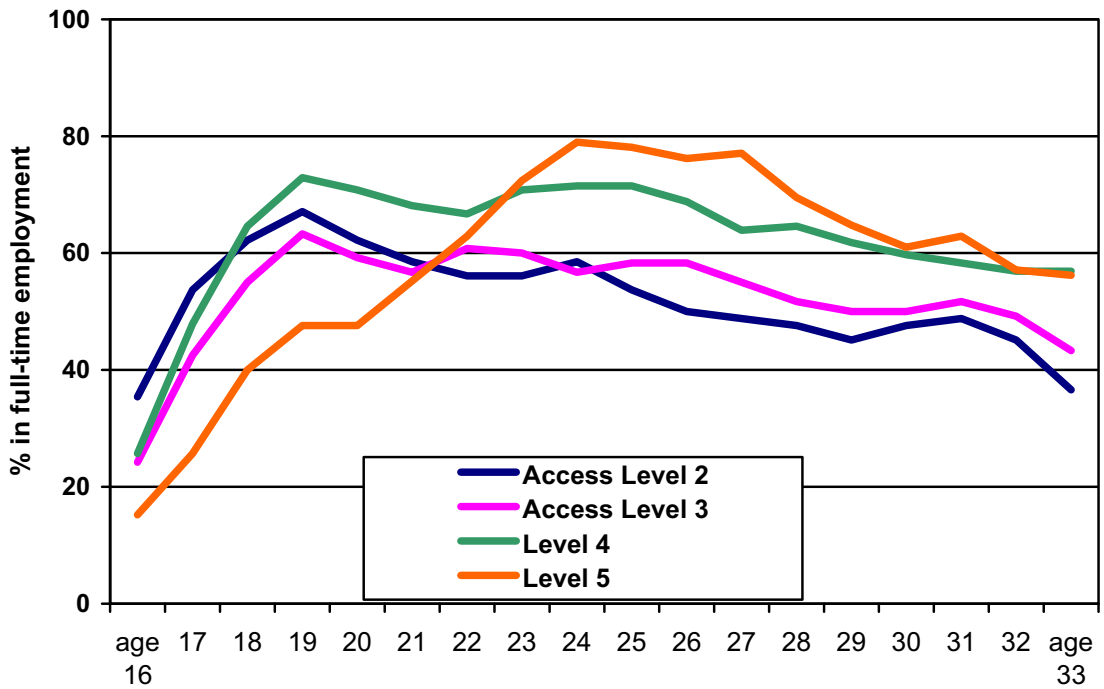
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 7.7 % women in full-time employment from April 1986 (age 16) up to March 2004 (age 33)

a) Literacy



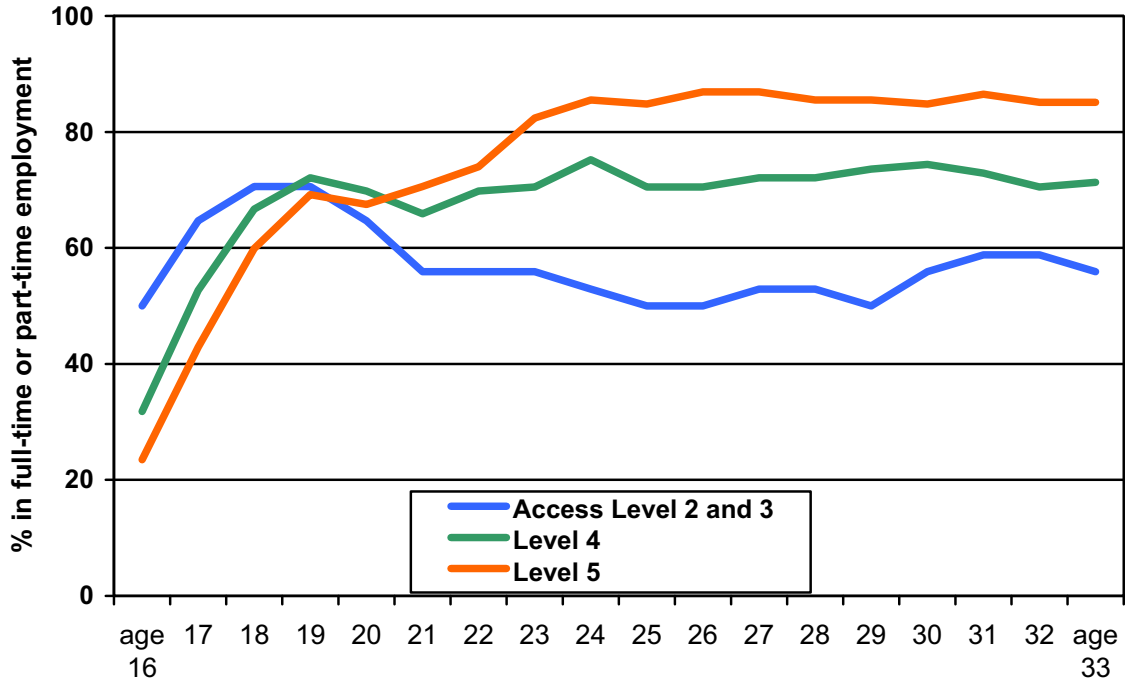
b) Numeracy



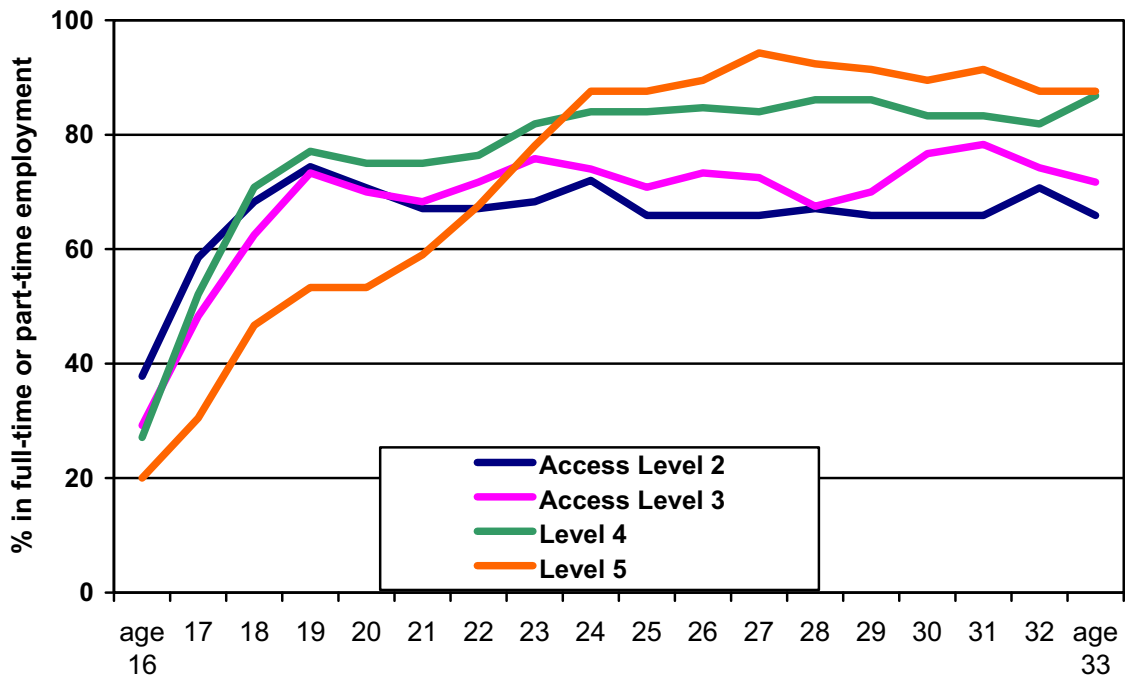
Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 7.8 % women in full-time or part-time employment from April 1986 (age 16) up to March 2004 (age 33)

a) Literacy



b) Numeracy



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Women: employment and occupation at age 34

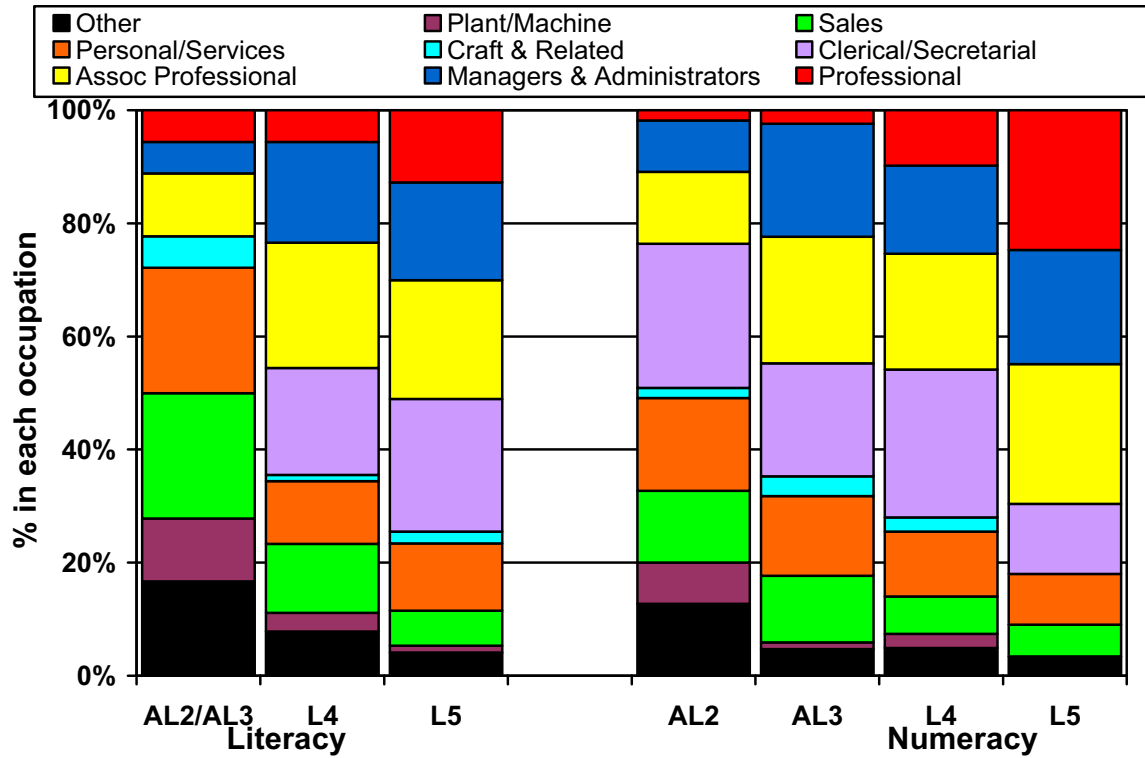
Unsurprisingly, women with SCQF Access Level skills were the least likely to be working full-time at age 34 (21% SCQF Access Level 2 or 3 literacy, 35% SCQF Access Level 2 numeracy and more than 50% SCQF Level 5 literacy or numeracy). They were most likely to be in an unpaid 'at home' role (29% SCQF Access Level 2 or 3 literacy, around 18% SCQF Access Level 2 or 3 numeracy, less than 10% SCQF Level 5 literacy or numeracy). Compared with women with SCQF Level 5 skills they were also the most likely to be 'unemployed' (6% to 1% literacy, 5% to 2% numeracy) or temporarily or permanently 'sick' (6% to 2% literacy, 6% to 1% numeracy).

As with men, women with SCQF Access Level 2 or 3 literacy were far more likely than any others to work in the myriad of unskilled insecure jobs classified as 'Other' occupations. In Figure 7.9 the concentration of these women to less skilled jobs in Sales (checkout work), Personal/Service (cleaning) jobs, or traditional 'male' work – as many as 1 in 10 work as Plant/Machine operatives – is clear to see, as is their complete exclusion from the more desired office based Clerical/Secretarial work. At the other end of the skills scale, less than 1 in 4 women with SCQF Level 5 literacy and 1 in 5 with SCQF Level 5 numeracy worked in these more physically demanding jobs. Around half of women with SCQF Level 5 numeracy worked as a Professional or a Manager/Administrator. As for men, the exclusion of women with SCQF Access Level 2 or 3 literacy from work that requires modern up-to-date skills is apparent by the relatively few who needed to use a computer (PC) at work – 32% compared with 60% of women with SCQF Access Level 2 numeracy and more than 8 in 10 women with SCQF Level 5 skills (81% literacy, 85% numeracy). Figure 7.10 shows that investment by employers in women in terms of training was lower than for men overall, but women with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were the least likely to have been on training course and women with SCQF Level 5 numeracy the most likely. Small numbers restricted looking at promotion among literacy groups, but whereas 29% of women with SCQF Access Level 2 numeracy had been promoted since being in their current job, this increased to 43% for women with SCQF Access Level 3

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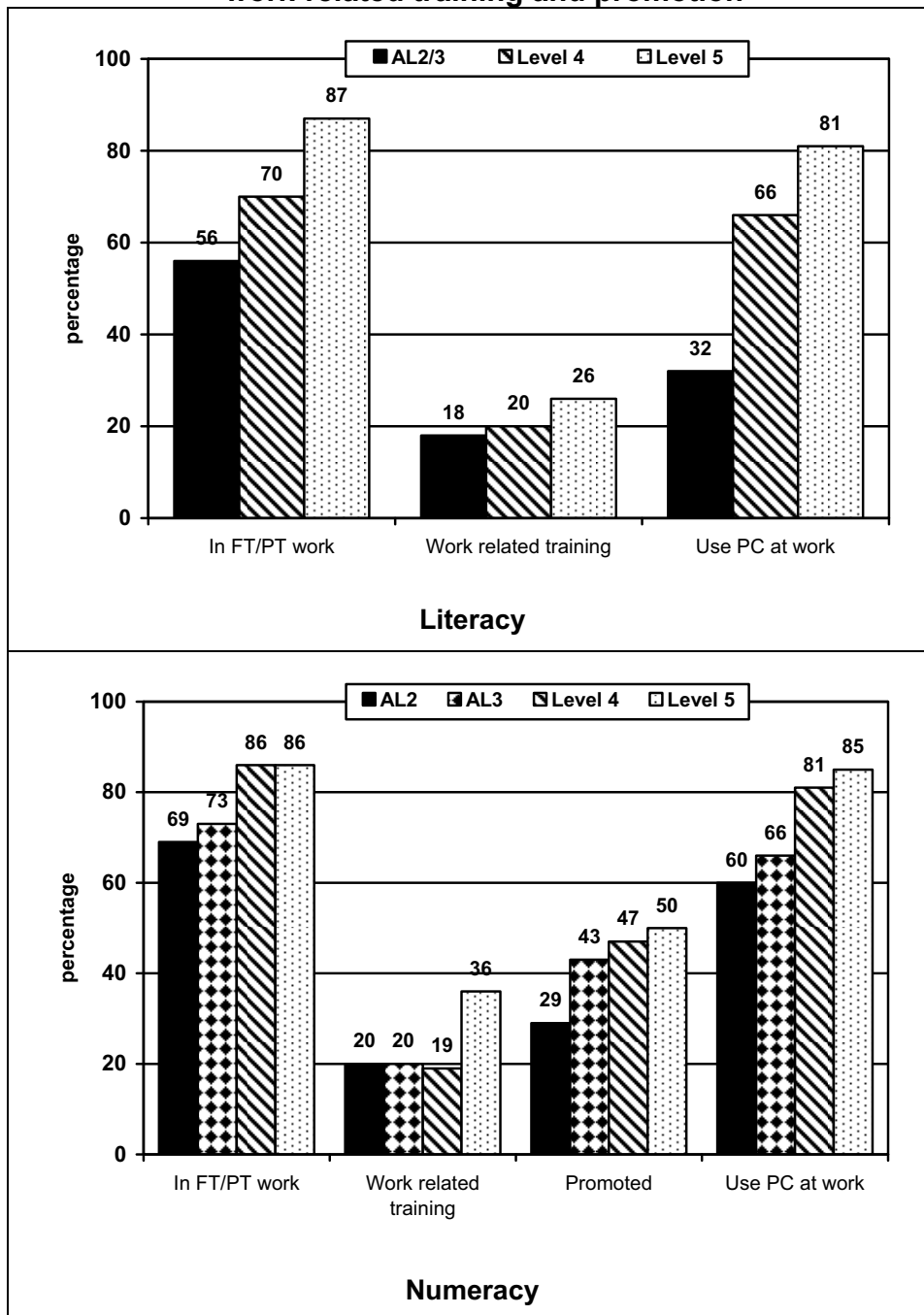
numeracy and around 1 in 2 for women with SCQF Level 4 or higher numeracy skills (47% Level 4, 50% Level 5).

Figure 7.9 Current occupation at age 34 for women by grasp of literacy and numeracy



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 7.10: Women: literacy, numeracy, full-time or part-time work, PC use, work-related training and promotion



Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Financial Circumstances

Men and women with the lowest grasp of literacy or numeracy were most likely to be experiencing economic disadvantage, shown through a variety of measures, some of which are illustrated in Figure 7.11. Men and women with SCQF Access Level 2 or 3 Literacy or SCQF Access Level 2 numeracy, or their partner if they had one, were six times more likely than men and women with SCQF Level 5 or higher skills to receive state benefits (e.g., income support, housing benefit, council tax benefit). Men and women with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were less likely, or less able, to make regular savings from their income, and up to three times less likely to have any investments (14% to 38% literacy, 13% to 46% numeracy). They were more than twice as likely as men and women with SCQF Level 5 skills to have borrowed money from a pawnbroker, moneylender, friends or family members (24% to 13% literacy, 23% to 10% numeracy) and, unsurprisingly, fewer reported that they were 'living comfortably' (21% to 40% literacy, 28% to 48% numeracy).

Men and women with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were also the most likely to be part of a non-working household³⁰, but differences were most apparent for women. 24% of women with SCQF Access Level 2 or 3 literacy and 20% with SCQF Access Level 2 numeracy were part of a non-working household compared with just 4% of women with SCQF Level 5 or higher literacy or numeracy. Men with SCQF Access Level skills were twice as likely as men with SCQF Level 5 skills to be part of a non-working household (11% to 5%).

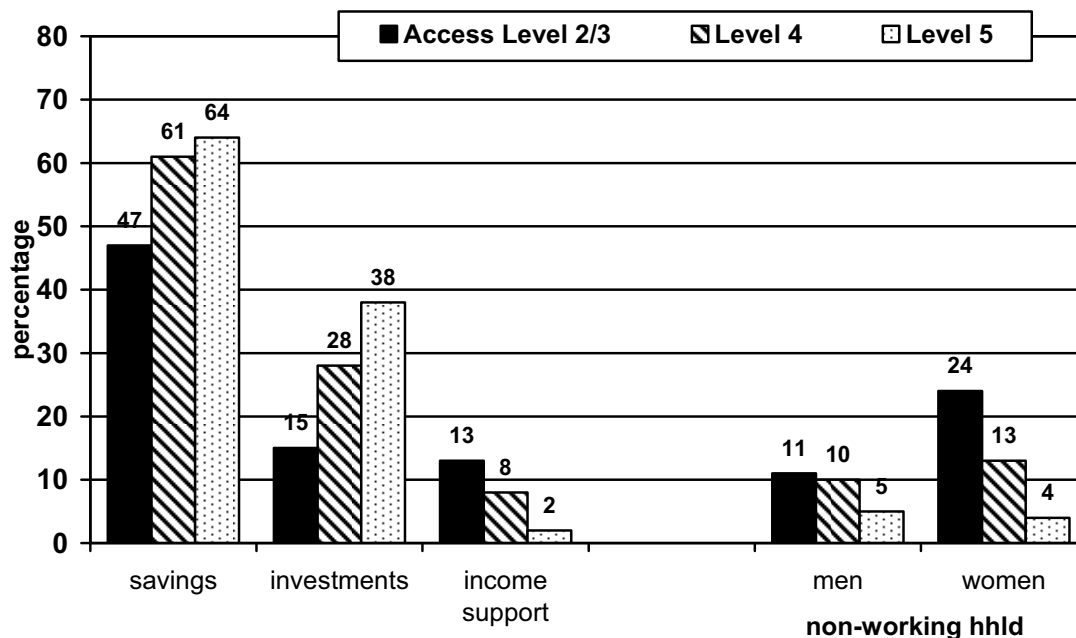
Looking at differences within Scotland, we again find signs that the disadvantage is compounded for men and women living within the Central Belt. Whereas very little – if any – difference was found between the reported financial situation of men and women with a better grasp of literacy or numeracy, men and women with the lowest literacy tended to be worse off across a number of measures compared to those living in other

³⁰ A cohort member was defined as being part of a non-working household if they (or their live-in partner if they had one) were not in full-time or part-time employment at the time of interview.

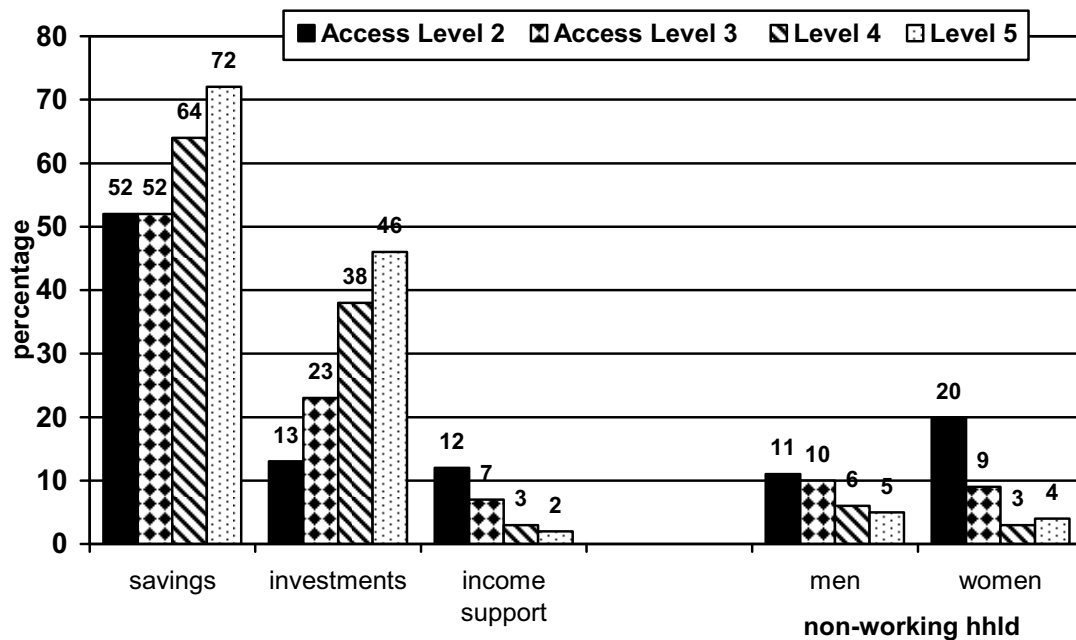
parts of Scotland. For example, 6% of men and women with SCQF Access Level 2 or 3 literacy had investments within the Central Belt, but this increased to 23% among those living elsewhere. Comparable differences for numeracy were 10% to 18%. Men and women with low skills living outside the Central Belt were also less likely to be part of a non-working household, with differences again being widest between those with SCQF Access Level 2 or 3 literacy, (9% living elsewhere, 26% within the Central Belt).

Figure 7.11: savings, investments, income support, non-working households by grasp of literacy and numeracy at age 34

a) Literacy



b) Numeracy



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Summary employment and economic disadvantage

Large numbers of men and women with the poorest skills first entered the workforce at 16, but they had spent the least amount of time in full-time or part-time employment over the following eighteen years. Men with SCQF Access Level skills spent more time unemployed or sick, women in a full-time home-care role. At age 34, men and women in work had very different occupational profiles than men and women with a better grasp of literacy and numeracy, being far more likely to be in labour intensive low skilled jobs, often in the less secure unregulated 'Other' parts of the labour market (19% men and 17% women with SCQF Access Level 2 or 3 literacy compared with just 5% men and 4% women with SCQF Level 5 literacy). Lower levels of training (19% men and 20% women with SCQF Access Level 2 numeracy compared with 42% of men and 36% women with SCQF Level 5 numeracy) and promotion (25% men with SCQF Access Level 2 or 3 literacy compared with 55% of men with SCQF Level 5 literacy) show that their disadvantage had been exacerbated by employers being less likely to have invested in these men and women.

Questions about finances revealed the continuation of the (relative) economic disadvantage, or poverty, which has surrounded men and women with SCQF Access Level skills over their lives. Fewer of them reported being able to make regular savings or to have investments (13% SCQF Access Level 2 to 46% SCQF Level 5 numeracy), but more were in receipt of state benefits and part of a non-working household – particularly women with SCQF Access Level 2 or 3 literacy (24% compared with 4% SCQF Level 5 literacy).

Chapter 8 Home, local environment and community participation

We now turn to the first time Scottish cohort members moved away from their family/parental home to embrace independent living and moving house later on and the reasons behind the move. We conclude this section by looking at their current housing situation, how they feel about where they live, the surrounding local environment and their engagement with it.

Leaving the family home for the first time

8% of men and 9% of women had left the family home by 16 or 17, with women with SCQF Access Level 2 or 3 literacy being the most likely to (15%). 41% of women with SCQF Access Level 2 or 3 literacy had moved away from their parents before they were 20. However, men and women with SCQF Level 5 or higher skills began to move away once they were 18, with the pursuit of tertiary education or training opportunities presumably being behind many of these moves.

Moving On

By the time cohort members were 34, men and women with SCQF Level 5 or higher skills were the most likely to have moved home on a number of occasions. Since age 16, men and women had, on average, lived in four different homes. This was highest at 5 for men and women with SCQF Level 5 or higher literacy or numeracy skills and lowest at 3 for men with SCQF Access Level 2 or 3 literacy. This could either be perceived as men and women with the lowest skills having a relatively stable home environment or that they have not had the financial ability – or opportunity – to take advantage of the economic and lifestyle rewards that moves in the housing market over the last decade or so have generally given.

Looking further into the reasons behind these moves, we found that among cohort members who had ever moved home more than 6 in 10 had moved at least once as

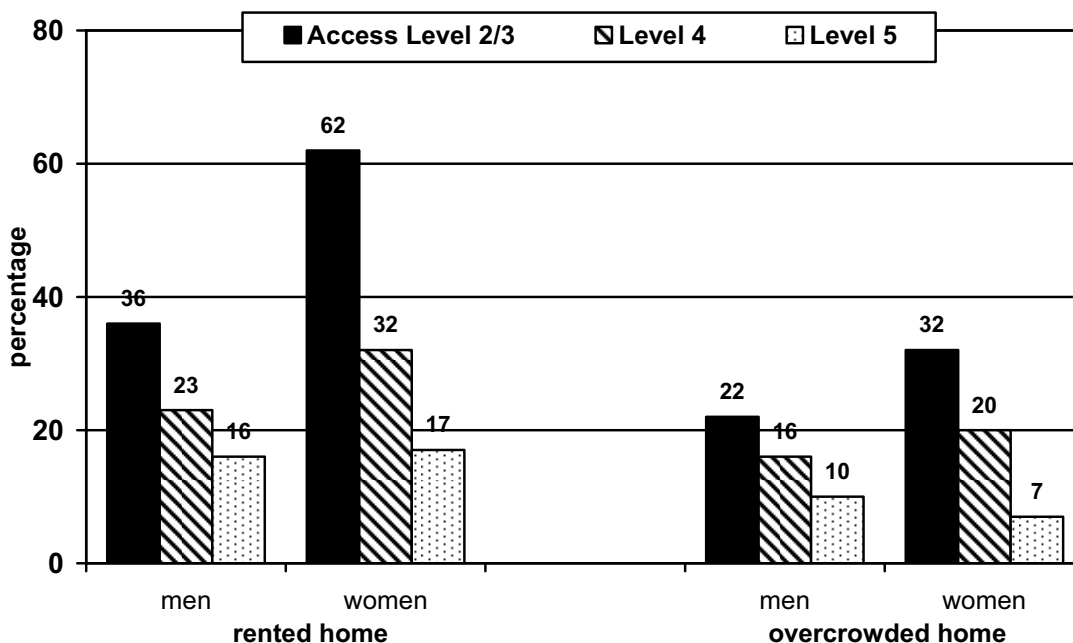
they wanted a better or bigger home, 4 in 10 because of a relationship breakdown and around 3 in 10 men and 1 in 4 women for reasons to do with work. Men with SCQF Access Level 2 or 3 literacy were less likely to have moved because they wanted a bigger or better home, and were three times less likely to have moved twice or more to get a bigger/better home, compared with men with SCQF Level 5 skills (6% to 19% literacy, 7% to 21% numeracy). There were no differences across skills groups for women ever moving to get a bigger or better home, but women with SCQF Access Level 2 or 3 literacy were more likely to have moved on two occasions, reflecting their larger family size. Men and women with SCQF Access Level skills were less likely to have moved for reasons to do with work. Whereas 3% of men and women with SCQF Access Level 2 or 3 literacy and 4% of women with SCQF Access Level 2 numeracy skills had moved at least twice for reasons to do with work, this increased around fivefold among those with Level 2 or higher skills (16% men 14% women SCQF Level 5 literacy, 19% men and women SCQF Level 5 numeracy). There were no differences between skills groups in moving due to a relationship breakdown.

Housing conditions at age 34

As in their childhood, men and women with SCQF Access Level literacy or numeracy were most likely to live in disadvantaged housing conditions (rented and or overcrowded) at age 34, compared with men and women with more accomplished skills. Figure 8.1 shows that as many as 62% of women with SCQF Access Level 2 or 3 literacy rented their home compared with 17% women with SCQF Level 5 literacy. Comparable differences by numeracy were 46% to 11%. 1 in 5 men and 1 in 3 women with SCQF Access Level 2 or 3 literacy lived in overcrowded housing conditions (more than 1 person per room) compared with no more than 1 in 10 men and 1 in 14 women with SCQF Level 5 literacy and just 1 in 33 women with SCQF Level 5 numeracy. Differences between skills groups were much wider within the Central Belt area than in other parts of Scotland, reflecting the higher house prices and far less space that is characteristic of all urban/metropolitan areas in the UK. Within the Central Belt, men and women with SCQF Access Level 2 or 3 literacy were nearly four times more likely to live

in overcrowded accommodation than men and women with SCQF Level 5 skills (34% to 9%). In other areas of Scotland, men and women with SCQF Access Level 2 or 3 literacy were two and a half times more likely to live in overcrowded accommodation than men and women with SCQF Level 5 skills (20% to 8%).

Figure 8.1: Literacy and home life



Homelessness

4% of all men and 6% of all women had experienced at least one spell of homelessness. This was highest among women with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy (13% and 8% respectively) – more than four times the experience of women with SCQF Level 5 or higher skills (3% literacy, 1% numeracy). There were no differences in levels of homelessness across groups for men. When looking at homelessness by where in Scotland men and women currently live, differences between groups was much greater within the Central Belt than elsewhere in Scotland. Among those living in the Central Belt area, 10% of men and women with SCQF Access Level 2 or 3 literacy had been homeless at least once compared with 3% of men and women with SCQF Level 5 of higher literacy.

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Comparable figures for men and women living outside the Central Belt were 6% and 4% respectively.

Local environment and community participation

For the first time, questions were included in the survey about cohort members' local area. These showed that cohort members with poor literacy and numeracy were more conscious of graffiti, were less likely to trust people living nearby and felt less safe living in their area. All of which points to a relatively poor local environment and lowest levels of what is called 'social capital'³¹ for these groups of individuals. Figure 8.2 shows that men and women with SCQF Access Level 2 or 3 literacy and men with SCQF Access Level 2 numeracy were around four times as likely as those with SCQF Level 5 skills to rate graffiti as a 'very big' problem in their area and in Figure 8.3 that they were far more likely to not trust the people who lived around them 'very much' or 'at all'. Men and women with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy were also more likely to report they felt 'very unsafe' going out at night. Women with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy were also most likely to report that they did not go out at all when it was dark (Figure 8.4).

³¹ For example, see Barron, S., Field, J. and Schuller, T. (Eds). (2000). *Social Capital: A Critical Perspective*. Oxford: Oxford University Press.

Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Figure 8.2: men and women reporting graffiti to be a problem in their area by literacy or numeracy

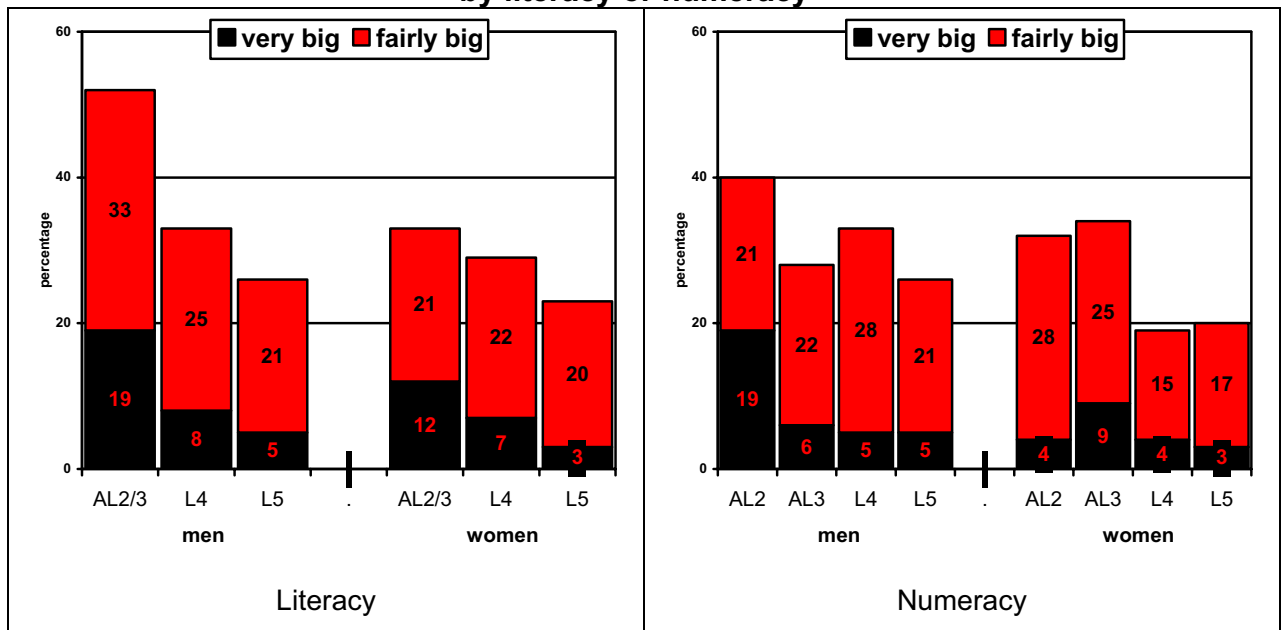


Figure 8.3: men and women reporting they did not trust people in their area by literacy or numeracy

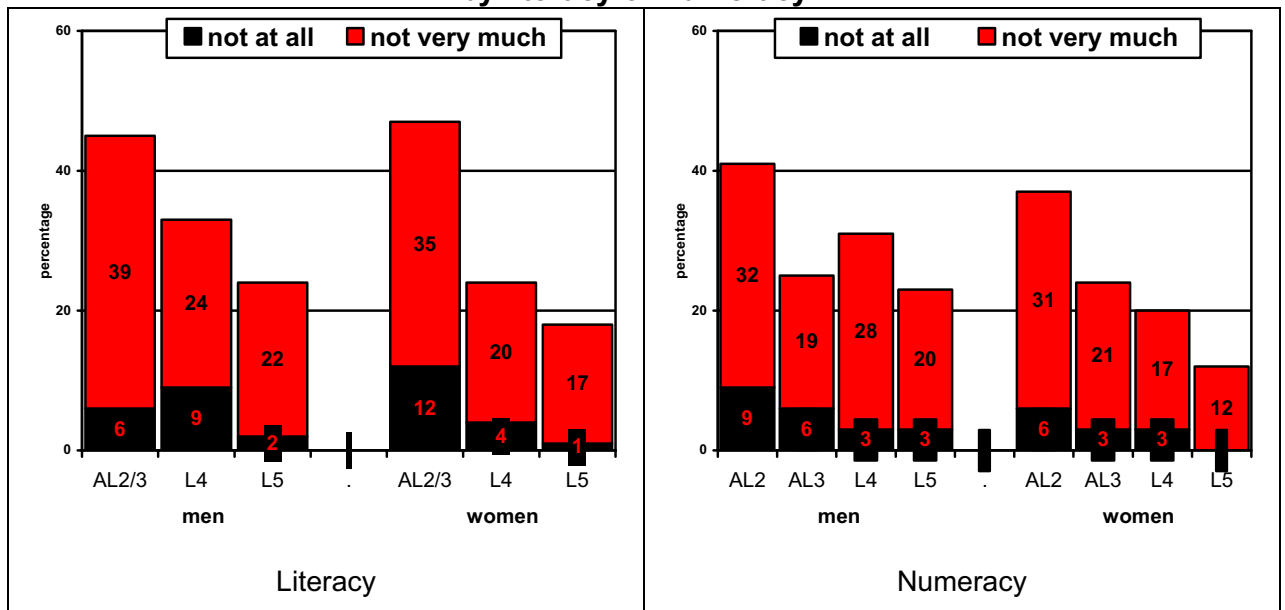
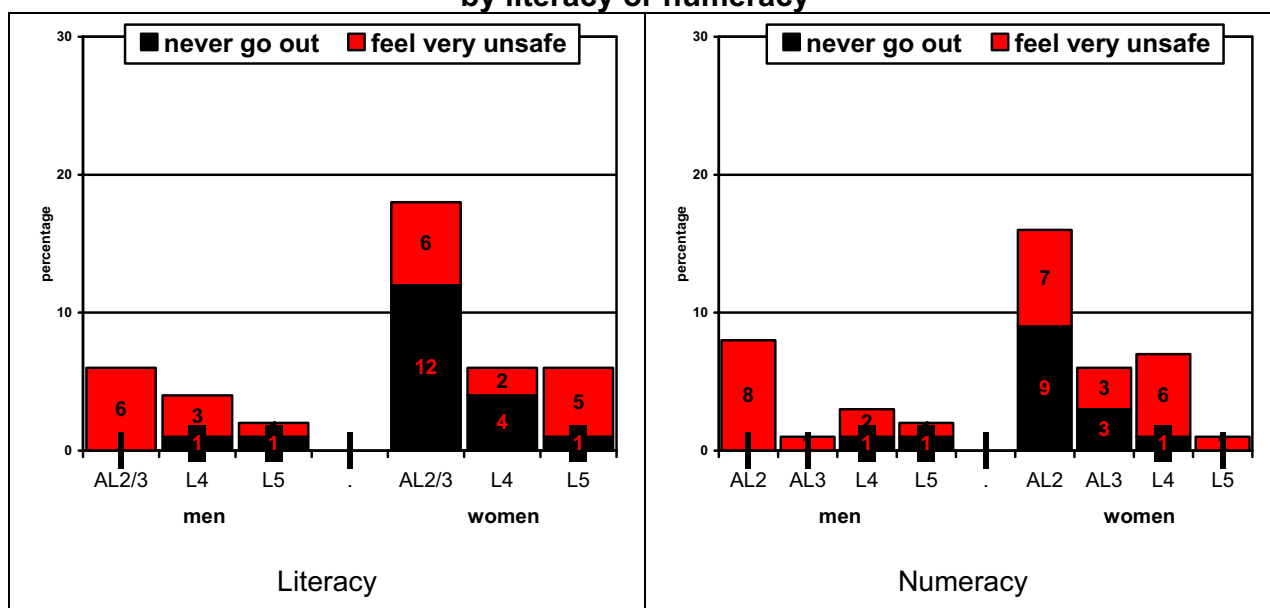


Figure 8.4: men and women reporting they did not feel safe in their area by literacy or numeracy



Community and social participation

Community participation or involvement, measured across a variety of activities such as involvement in some sort of community, charitable, interest or activity club or group, or voting, and/or interest in politics, was lowest among men and women with the poorest grasp of literacy or numeracy and lowest of all among men and women with poor skills living within the Central Belt. Figure 8.5 shows that whereas more than 1 in 2 men and women with SCQF Level 5 skills were a member of some group or another, this fell to around 1 in 4 men and women with SCQF Access Level 2 or 3 literacy. Less than 1 in 5 men and women with SCQF Access Level 2 or 3 literacy living within the Central Belt were a member of a group/club.

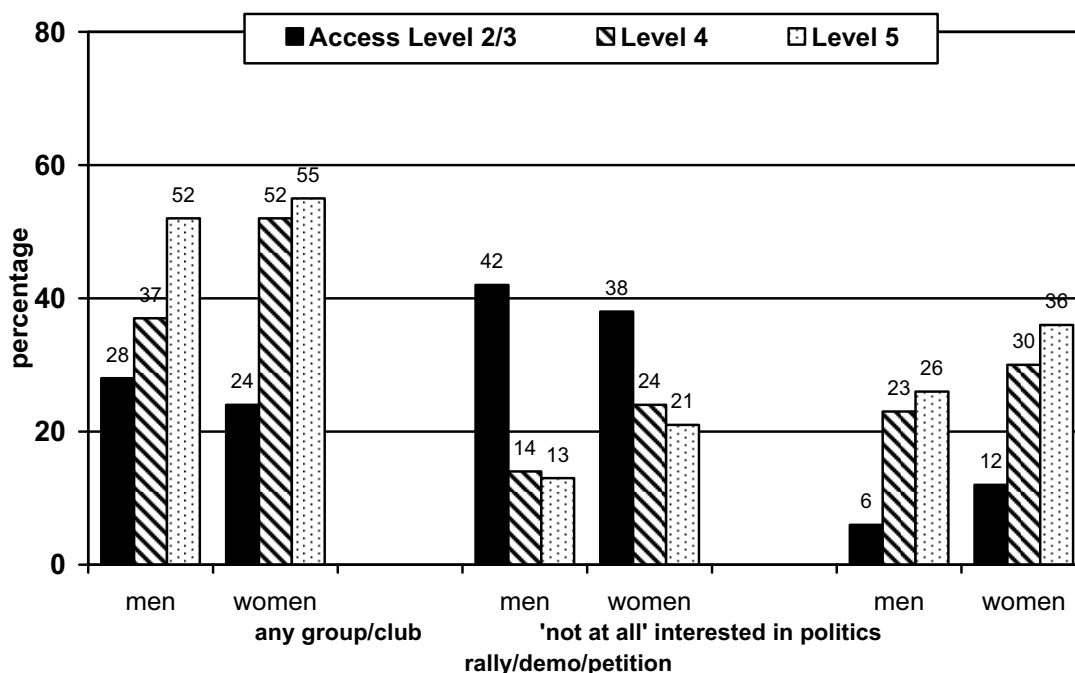
Voting apathy in the overall population in the 2001 General Election was widespread, matching that found in earlier analysis of BCS70³². In 2001, 36% of men and 32% of women in Scotland did not vote, very similar to England. The proportion not voting

³² Bynner, J. and Parsons, S. (2003) in Ferri, E., Bynner, J. and Shepherd, P. (eds) *Changing Britain: Changing Lives*. London : Institute of Education press

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increased to more than 1 in 2 of the men with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy (53%). There were no differences across groups for women, as had been found in the original *New Light* report. However, Figure 8.5 also shows that both men and women with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy were at least twice as likely as men and women with SCQF Level 5 literacy or numeracy skills to be 'not at all' interested in politics. Overall, men and women with the poorest grasp of literacy or numeracy in Scotland seemed to be even less enchanted with the political environment than those in BCS70 overall. Within Scotland, differences between literacy groups were once again wider within the Central Belt than other parts of Scotland. 1 in 5 of all men and 1 in 3 of all women had attended a rally, demonstration or signed a petition but men with SCQF Access Level 2 or 3 literacy were five times less likely to (6% to 32%) and women three times less likely to (12% to 36%) than men and women with SCQF Level 5 skills. Again, it was men and women with SCQF Access Level 2 or 3 literacy within the Central Belt that were the least likely to – another example of the exclusion of men and women with the poorest skills within the built-up urban areas (3% to 32% SCQF Level 5 literacy in the Central belt, 14% to 30% SCQF Level 5 literacy elsewhere in Scotland).

Figure 8.5: Literacy, community activity, political interest, petitions



Summary home, local environment and community participation

Men and women with the poorest literacy and numeracy, again particularly literacy, were less likely to have taken advantage of the recently thriving housing market. As in their childhood, they were most likely to be living in rented, overcrowded housing (62% women with SCQF Access Level 2 or 3 literacy compared with 17% SCQF Level 5 literacy lived in rented housing; 32% to 7% in an overcrowded home). Women with poor skills, and those living within the Central Belt, were more likely to have experienced a spell of homelessness (10% with SCQF Access Level 2 or 3 literacy, 3% with SCQF Level 5 literacy in the Central Belt). Questions on local environment revealed that men and women with SCQF Access Level skills were more likely to feel dissatisfied with their local environment or to not trust others living around them. They were generally less engaged with their community, being less involved in clubs, groups or activities or to hold any political interest. Once again, men and women in the Central Belt region appeared the most excluded.

Chapter 9 Family life and well-being

In this Chapter we look at the average age men and women had their first live-in relationship, their first child and their current family situation at age 34. We also cover physical and mental well-being together with health related practices such as exercise, smoking and alcohol consumption.

Relationships and parenthood

First live-in partnership

To further emphasise the different moves to independent living by men and women in the different skills groups, we look at age of first living with a partner. At age 34, nearly 1 in 5 of all men (19%) and 1 in 7 of all women (14%) had never lived with a partner. For both men and women this was highest amongst those with SCQF Access Level 2 or 3 literacy – 25% men and 21% women.

Early live-in partnerships were more than twice as likely among women as men. For example, 15% of all women and 6% of all men had first lived with a partner while still a teenager. By age 21 this had increased to 38% of women and 21% of men.

For women early live-in partnerships were more commonplace among those with SCQF Access Level skills. For example 24% of women with SCQF Access Level 2 or 3 literacy skills had first moved in with their partner while still a teenager compared with 11% of women with SCQF Level 5 or higher skills. Similar differences were apparent across numeracy groups (20% SCQF Access Level 2, 22% SCQF Access Level 3, 10% SCQF Level 5 or higher skills). There were no differences across literacy groups for men, but men with SCQF Access Level 2 numeracy skills were more than twice as likely as men with SCQF Level 5 or higher numeracy to have first lived with a partner as a teenager (10% to 4%).

Marriage

Two-thirds of men and women were, or had been, married at age 34. Most likely to have married were women with SCQF Level 5 or higher numeracy (75%); least likely were men with SCQF Access Level 2 numeracy (47%) or men and women with SCQF Access Level 2 or 3 literacy (41% men, 42% women).

Family living at age 34

At age 34 around 1 in 6 men with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy lived with their parent(s) compared with less than 1 in 10 men with SCQF Level 5 literacy and 1 in 13 men with SCQF Level 5 numeracy. No more than 1 in 25 women (4%) lived with one or other parent at age 34. Just over half of all men and women (56% men, 58% women) lived with their partner and child/children. 1% of men and 13% of women were living as a single parent. Levels did not differ across groups for men or for women by literacy, but women with SCQF Level 5 numeracy were half as likely as women with SCQF Access Level 2 or 3 numeracy to be bringing up children on their own (15% SCQF Access Level 2, 19% SCQF Access Level 3 and 8% SCQF Level 5).

Becoming a parent

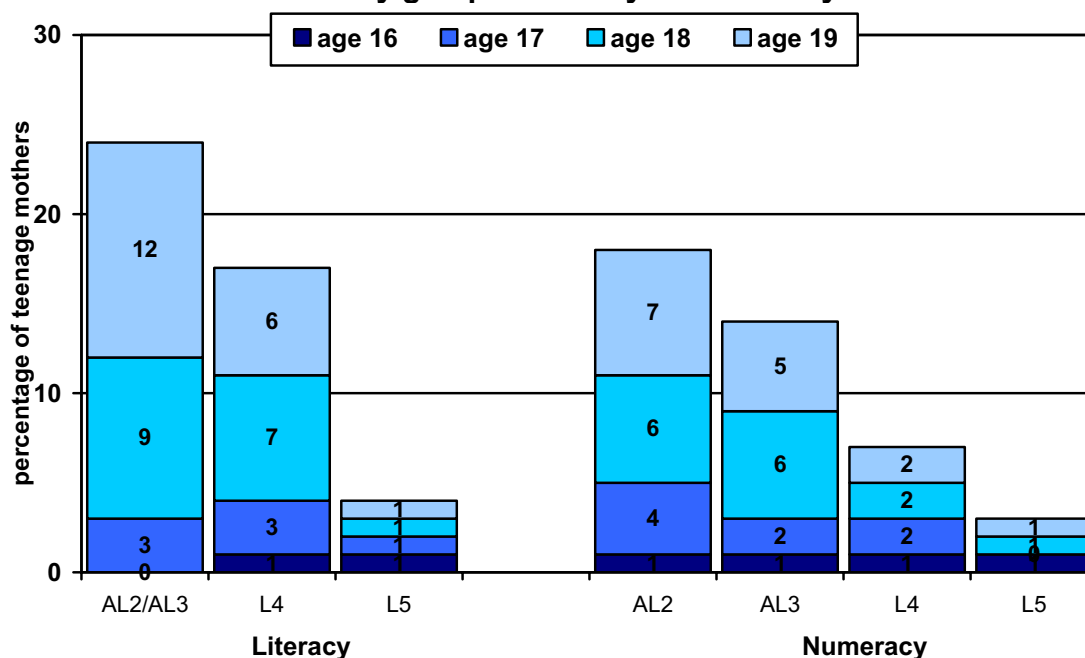
By age 34 44% of men had yet to become a father, with teenage parenthood – or the reporting of being a teenage father – being a relatively rare event at just 2%. However, by age 20, 8% of men with SCQF Access Level 2 or 3 literacy and 6% with SCQF Access Level 2 numeracy had become a father for the first time compared with 4% of men with SCQF Level 5 or higher literacy and 1% with SCQF Level 5 numeracy. By age 34 8% of all men had 3 or more children being only marginally higher for men with SCQF Access Level literacy.

The earlier transition to parenthood is far more apparent for women. Around 1 in 3 of all women had not had a baby by age 34 but women with SCQF Access Level skills were the most likely to have become a mother. Figure 9.1 shows that women with SCQF Access Level 2 or 3 literacy were more than four times more likely to have been a

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teenage mother as women with SCQF Level 5 or higher literacy (24% to 5%). Women with SCQF Access Level 2 numeracy were six times more likely to have been a teenage mother compared with women with SCQF Level 5 or higher numeracy (18% to 3%). By age 21, 9% of women with SCQF Access Level 2 or 3 literacy had two or more children compared with just 1% of women with SCQF Level 5 or higher literacy. No women with SCQF Level 5 or higher numeracy had 2 or more children by age 21 compared with 5% of women with SCQF Access Level 2 numeracy.

Figure 9.1 % women who had their first baby as a teenager by grasp of literacy or numeracy

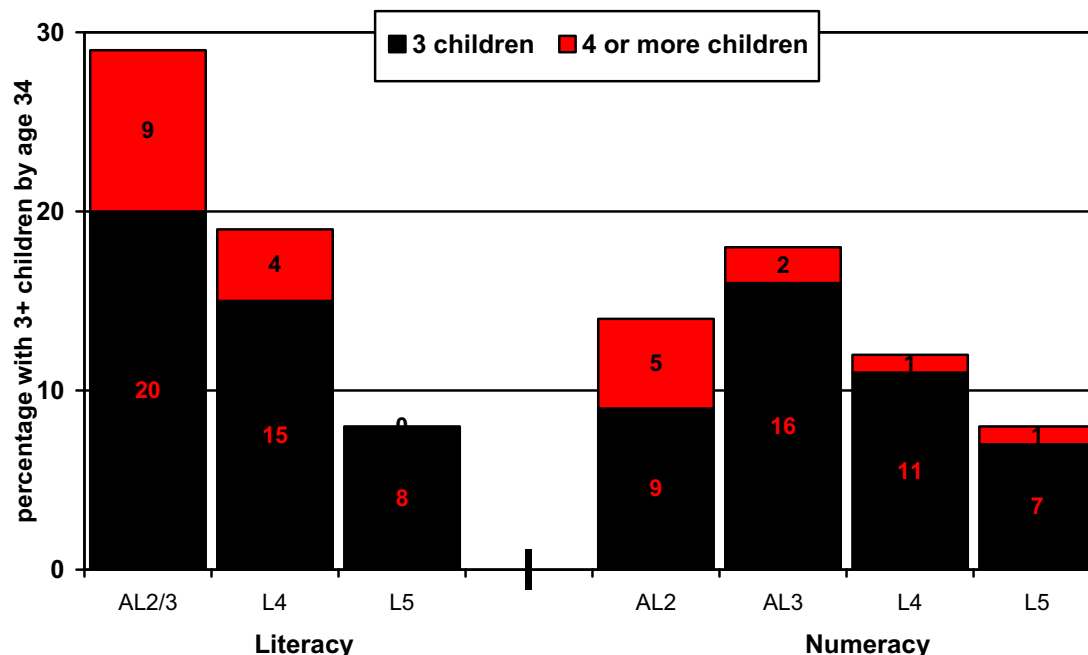


The differences for women across skills groups continued to be very apparent as the cohort grew into their thirties. Figure 9.2 shows that by the time cohort members reached age 34 women with SCQF Access Level 2 or 3 literacy were more than three times as likely as women with SCQF Level 4 or higher skills to have 3 or more children (29% to 8%), with 9% having 4 or more children. 5% of women with SCQF Access Level 2 numeracy also had four or more children compared with no more than 1% of women with SCQF Level 5 or higher skills.

Different partnerships

A possible indicator of a less stable family environment is the number of partners a cohort member has had, or more specifically, how many of their children are a result of different partnership formations. Among men, 5% had children from two different relationships but there were no differences across groups. However, numbers were small, as nearly half of all men had not yet fathered a baby. For women, although those with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were more than twice as likely as women with SCQF Level 5 or higher numeracy skills to have had children with more than one partner, overall levels were low. Just 11% with SCQF Access Level 2 or 3 literacy and SCQF Access Level 2 numeracy skills had children with more than one partner, compared with 7% with SCQF Level 5 or higher literacy and 3% with SCQF Level 5 or higher numeracy. It is likely that the figures will even out later as women with higher level skills entered parenthood at a later age.

Figure 9.2 % women with 3+ children at age 34 by grasp of literacy or numeracy

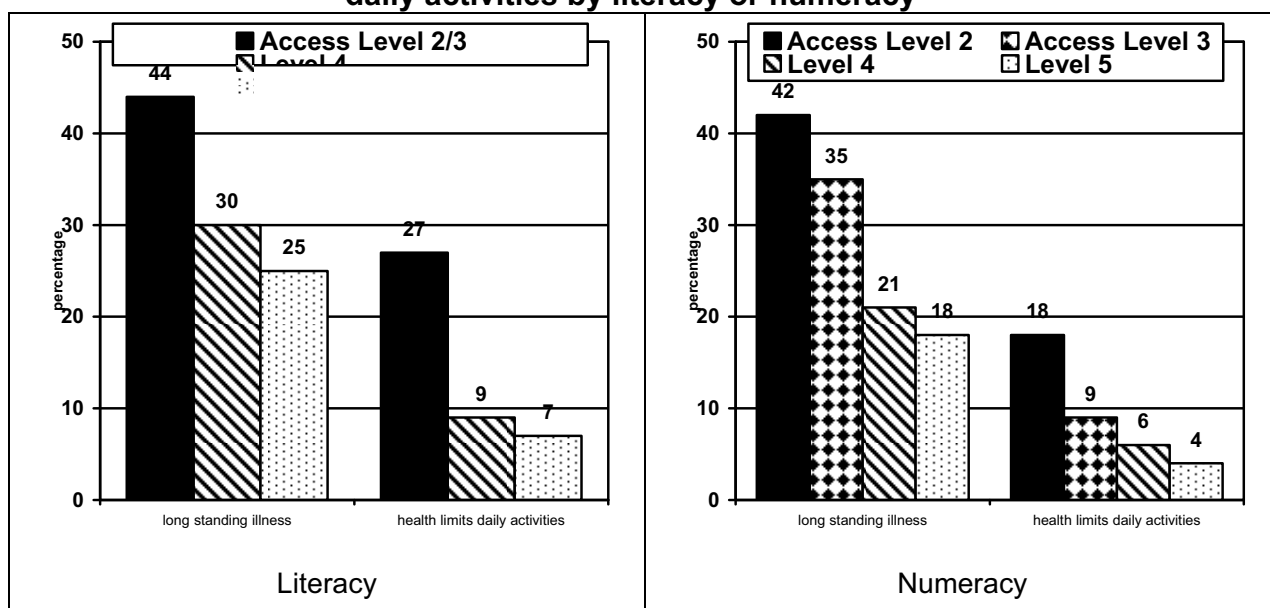


Key to comparison of Levels between Scotland and England. SCQF Access Level 2 (AL2) = NQF Entry Level 2 (or below); SCQF Access Level 3 (AL3) = NQF Entry Level 3; SCQF Level 4 (L4) = NQF Level 1; SCQF Level 5 (L5) = NQF Level 2 (or higher).

Health and well being

Relatively poor physical health and mental well-being were associated with poor literacy and numeracy. Compared to women with SCQF Level 5 skills, Figure 9.3 shows that women with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy were most likely to report having a long standing illness (44% to 25% literacy, 42% to 18% numeracy), and that their general health limited their everyday activities (27% to 7% literacy, 18% to 4% numeracy). Calculation of cohort members Body Mass Index (BMI) placed 6 in 10 men and 4 in 10 women in Scotland as overweight or obese. Compared with men and women with SCQF Level 5 or higher skills, this was *slightly* more likely among men and women with the poorest grasp of literacy (64% to 58% men, 48% to 42%) or numeracy (65% to 57% men, 50% to 42% women).

Figure 9.3: women reporting a long standing illness or that their health limits their daily activities by literacy or numeracy



Health related practices

Low skills were also related to poor health-related practices. Figure 9.4 shows women with SCQF Access Level literacy or numeracy were more than twice as likely as women with SCQF Level 5 skills to smoke every day (47% to 22% literacy, 42% SCQF Access

Level 2, 34% SCQF Access Level 3, 15% SCQF Level 5 numeracy). Similar but less pronounced differences were apparent between men. Consumption of alcohol also differed across groups, particularly for men. Figure 9.5 shows that whereas men (and to a lesser extent women) with better skills were most likely to report drinking alcohol on two or more days a week, men with poor skills, particularly SCQF Access Level 2 or 3 literacy, were more likely to consume more units of alcohol when they drank. As many as 1 in 3 consumed more than 40 units of alcohol in a week compared with 17% of men with SCQF Level 5 of higher skills.

Figure 9.4 % men and women smoking daily by literacy or numeracy

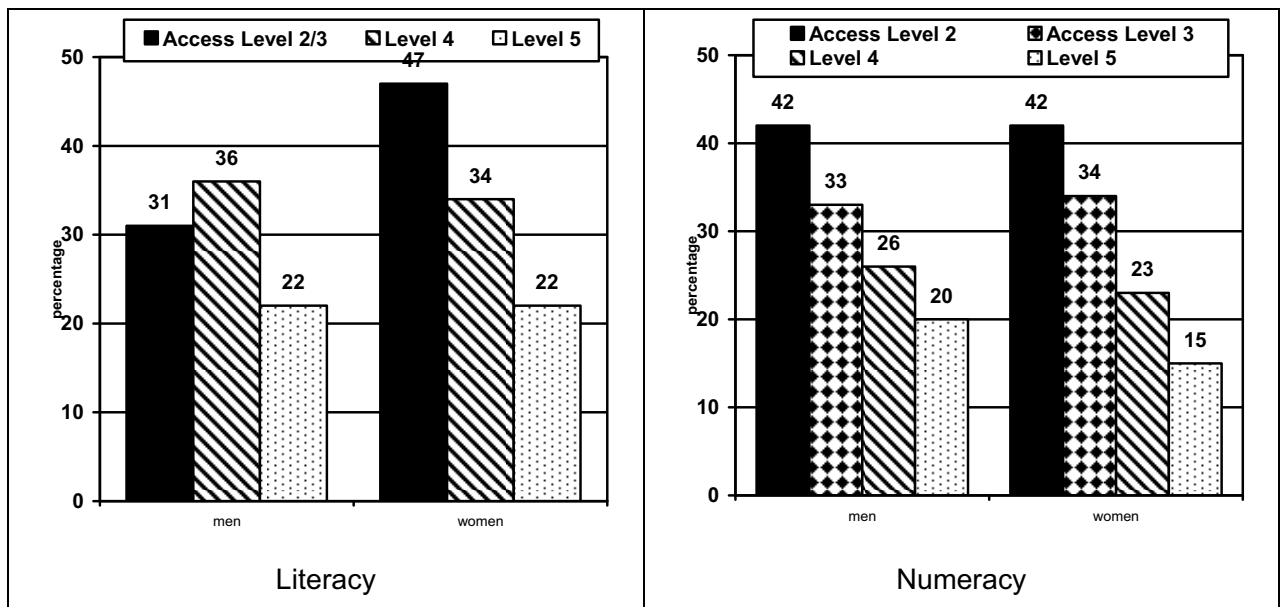
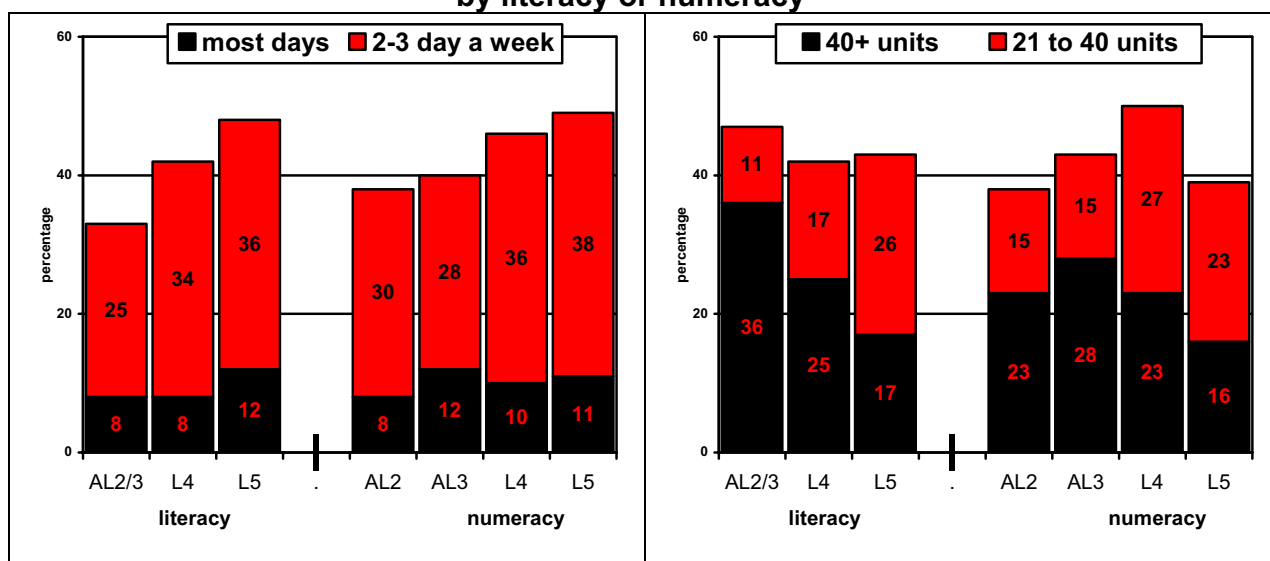


Figure 9.5 how often and how many units men drink in an average week by literacy or numeracy



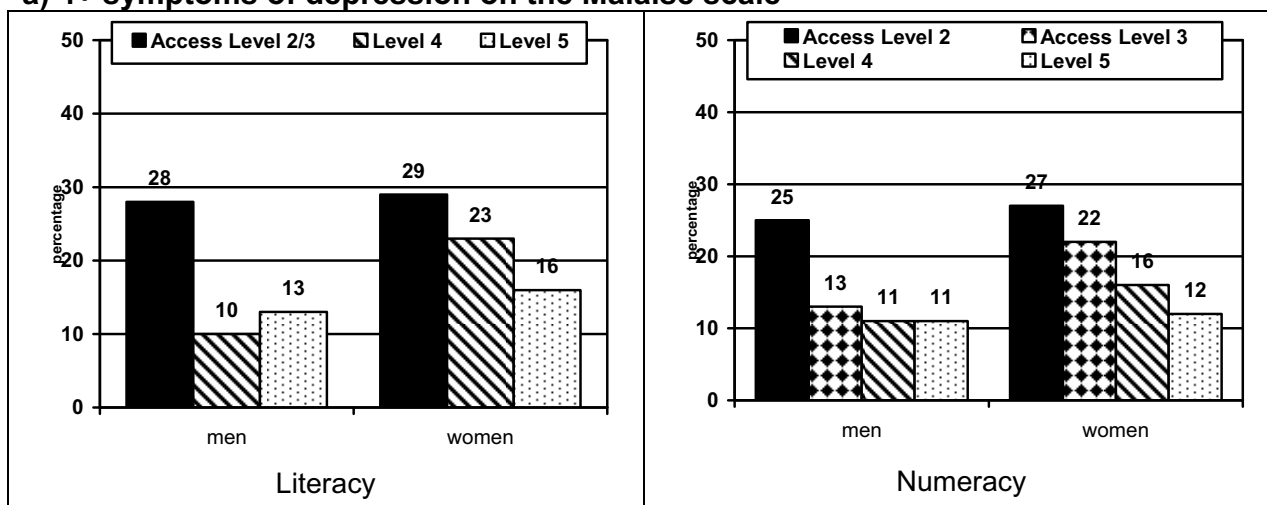
Psychological well-being

Figure 9.6 shows that more than 1 in 4 men and women with SCQF Access Level 2 or 3 literacy or SCQF Access Level 2 numeracy reported four or more symptoms of depression out of a maximum of nine questions that formed a shortened version of the Malaise Inventory³³, around twice that of men and women with SCQF Level 5 skills. From Figure 9.6 we can also see that SCQF Access Level 2 men and women were more than twice as likely to feel that they ‘never got what they wanted from life’ and up to four times as many felt that ‘whatever they did had no effect on what happened to them’ compared with those with SCQF Level 5 skills. Differences were most marked among men, being highest for the men and women with the poorest grasp of literacy.

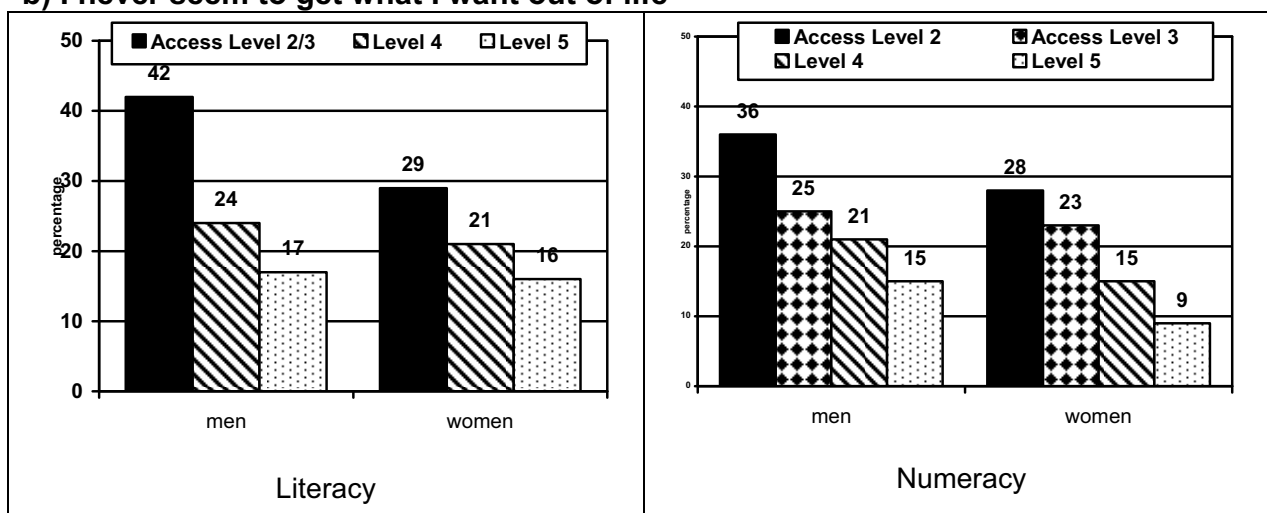
³³ Rutter, M., Tizard, J. and Whitehouse, K. (1970). *Education, Health and Behaviour*. London: Longman.

Figure 9.6 Relationship between literacy, numeracy, depression and psychological well being

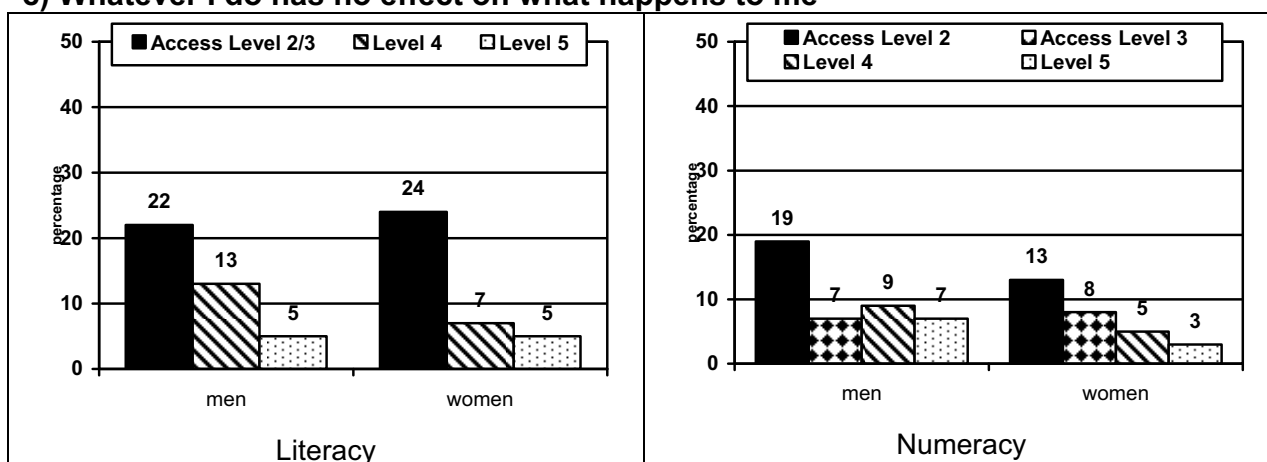
a) 4+ symptoms of depression on the Malaise scale



b) I never seem to get what I want out of life



c) Whatever I do has no effect on what happens to me



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Summary family life and well-being

Men with SCQF Access Level literacy or SCQF Access Level 2 numeracy were the most likely to be living with one or other of their parents at age 34. More of the men and women with SCQF Access Level literacy had never lived with a partner by age 34, but equally, women with poor literacy skills were also the most likely to have first moved in with a partner when still a teenager and to have become a teenage mother (24% to 5% with SCQF Level 5 or higher literacy). They went on to have further children, with three or four children not being uncommon by age 34 (29% to 8% with SCQF Level 5 or higher literacy). It seems that although as many as 1 in 5 women with SCQF Access Level literacy did not form (live-in) partnerships by age 34, the majority began the transition to partnership forming and family life earlier than women with a better grasp of literacy.

Poor physical and mental well-being together with poor health related practices were also associated with men and women with the poorest grasp of literacy or numeracy. More of these men and women had symptoms associated with depression (28% men and 29% women with SCQF Access Level literacy compared with 13% men and 16% women with SCQF Level 5 or higher literacy). They were also more likely to report to never get what they want out of life (42% men and 29% women with SCQF Access Level literacy compared with 17% men and 16% women with SCQF Level 5 or higher literacy), and that their health limited their daily activities in some way. They were more likely to smoke cigarettes every day, and men who drank alcohol were also more likely to consume a higher number of units than men with higher skills.

Chapter 10 Concluding remarks

This separate analysis of levels of literacy and numeracy skills in Scotland using data from the 1970 Birth Cohort Study (BCS70) is a first in cohort studies research. It has enabled us to tease out from some of the immensely rich life course data, going back to birth, the key correlates of adult literacy and numeracy skills difficulties. The profiles that emerge replicate in many places those in Britain as a whole, but in other places depart from them. They also reveal differences within Scotland, more specifically between the Central Belt and other areas. These differences bring to light the more concentrated nature of literacy and numeracy difficulties within the Central Belt and the increase in other disadvantages that often go with living in a more industrialised area. Men and women with low literacy and numeracy skills living within the Central Belt face increased challenges if they are to have a fulfilling life.

These preliminary findings confirm on a much larger scale than ever before in Scotland the level of disadvantage revealed by differences between low literacy and numeracy skills groups and others. Substantial differences in life chances, quality of life and social inclusion are evident between individuals at or below SCQF Access Level literacy or SCQF Access Level 2 numeracy compared with others at higher levels of literacy and numeracy competence. SCQF Access Level skills are associated with lack of qualifications, poor labour market experience and prospects, poor material and financial circumstances, poorer health practices and prospects, and a lack of social and political participation. Gender differences are also marked in some of these relationships including the increased tendency for men in their mid-30s with SCQF Access Level skills to still be living with their parent(s), and leading a solitary (single) life without children with less community participation. Women with SCQF Access Level skills are also more likely to be without a partner but more typically to have made the transition to motherhood at an early age. These differences tend to be consistently larger between the literacy groups than between the numeracy groups though in some cases, such as experience of unemployment, the relative importance of numeracy was stronger.

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The picture we get is one of trajectories of disadvantage, in which low literacy and to a lesser extent low numeracy assessed at SCQF Access Level or below, supply the foundations of the poor educational achievement that lie at their core. Poverty and its consequences ensure that the low-literacy and numeracy, poor-education problem is being re-cycled from one generation to the next. Parents' aspirations for their children's educational success are soon squashed as the means of achieving them through educational support at home is too often lacking. As early as age 5, performance in cognitive assessments was lowest for adults with the poorest grasp of literacy or numeracy. Parents may themselves have a poor grasp of literacy or numeracy – a result of their own poor educational experiences – and thus fail to cope with the increasing demands of the education system. Of particular concern for Scotland are the higher levels of children who were reported by their mothers to not be able to read any words at age 5, compared with the BCS70 cohort overall.

At a time when economists argue that the best, if not only sensible, 'bang for your buck' comes from investment in young children, the critical role of parents in enabling the process to work is an invaluable corrective. Parents need to build their capabilities through literacy and numeracy enhancement to help their children benefit from the interventions directed at them. The maintenance of a high level of community-based adult literacy and numeracy provision directed towards parents, and backed by a range of other forms of community support, thus becomes the key to success. Family literacy initiatives, such as *Countdown East End* and *Challenge Dad*³⁴, need to be encouraged.

But the issue runs much deeper than the needs of families. The broader picture of disadvantage extending from education through employment, housing, family formation, family income, social and political participation, and health and lifestyle repeats the story of marginalisation and exclusion on which criminal careers and poor physical and

³⁴ *Countdown East End* pathfinder was based in Glasgow and involved family literacy learning using a community development approach to develop a programme for recruiting and supporting peer educators. The *Challenge Dad* Pathfinder initiative was based in Aberdeen. It looked to encourage male family members to participate in literacy learning for their own and their family's benefit. Both ran until 2006.

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psychological health often thrive. Of course many adults with low literacy and numeracy manage their lives very well, overcoming adversity to turn a stalled educational and employment career into a life of fulfilment and achievement. Others make use of resources within the family and the community to make good the gaps in their own competencies – hence the relatively rare acknowledgement that there is any literacy or numeracy difficulty. However it is when the personal, social or employment situation changes that the constraints and disabling effects of low literacy and numeracy skills are likely to be felt. Thus the fragility of an employment career characterised by sustained experience of intermittent unemployment and lack of investment by employers makes ‘just getting by’ a poor option compared with the raising of capability. Here the Scottish approach to identification of need and the supply of educational provision has particular appeal.

Levels of self-reported difficulty with reading, writing or numbers are one area that differs for Scotland from the cohort as a whole. Men and women living in Scotland in 2004 were less likely than men and women in BCS70 who had no Scottish heritage to self-report difficulties or to have attended learning to help them improve their reading, writing or number and maths calculations. Men and women living within the Central Belt region were the least likely of all to self-report difficulties. Although cohort members who acknowledged their difficulties were more likely than others to want to improve their skills, the major challenge is that substantial numbers in these groups neither acknowledged they had any difficulties, nor had any desire to do anything to improve their skills. Even among those assessed with the lowest literacy and numeracy competence the proportions acknowledging their difficulties remained relatively low – 17% with SCQF Access Level 2 or 3 literacy reported reading difficulties, 16% with SCQF Access Level 2 numeracy reported difficulties with numbers – as did the proportions wishing to improve these skills. The *Big Plus* campaign obviously stimulated awareness of difficulties in some people, but the unmet need of those with low literacy and numeracy who wanted to improve their skills – particularly number skills – suggests that further campaigns and learning opportunities that better match the specific needs identified by potential learners are required. The strong association between low literacy

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and symptoms associated with dyslexia show the importance of tutors taking into account these learning difficulties when designing and delivering literacy and numeracy provision.

The need to raise consciousness about the significance of low literacy and numeracy in life, as promoted through the Scottish Executive's *Adult Literacy and Numeracy in Scotland* report (July, 2001), has therefore never been more pressing. Notably, the groups whose disadvantage was most apparent had rarely had any exposure to literacy and particularly numeracy courses. This presents a further major policy challenge for the Scottish Government.

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