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Early years, life chances and equality: a literature review

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Frontier Economics

Early years, life chances and equality

A literature review

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EXECUTIVE SUMMARY

The purpose of this report is to review recent literature on how early years experiences may impact on life chances for different groups of the population. Life chances can cover a range of opportunities that people can experience as they become adults and into their later life. These opportunities include, for example, the likelihood of being in employment over individuals' lifetimes, the chances of obtaining educational qualifications and the chances of good physical and mental health.

We identify a large body of academic literature showing there is substantial 'intergenerational persistence', that is, life chances of individuals are closely related to the socio-economic characteristics of their families, such as parental income, socio-economic status (SES) and parental education. It also appears that outcomes and achievements in adulthood are closely linked to cognitive and social competencies developed in childhood. More specifically:

- Good cognitive abilities are associated with educational attainment later in life and indirectly (that is, through education) with higher wages.
- Social skills also contribute to later life outcomes: skills related to attention are associated with higher educational qualifications, while social adjustment is associated with improved labour market participation, higher wages and reduced likelihood of being involved in criminal activity. Also, depression in childhood is linked to mental health problems later in life.

Social scientists find that early years development (both cognitive and social) depends on family characteristics, such as parental SES and education, and on parental behaviour. The quality of the home learning environment (HLE) and parental aspirations are found to be particularly important for children's development. In fact, one study reports that good quality HLE has the strongest impact on children's development and may counteract some of the negative effects of social deprivation. As one would expect, the quality of pre-school and primary school education also matters for the development of cognitive and social competencies.

In this report, we also look at different groups of the population and identify whether their life outcomes differ from those for the rest of the population. We then try to relate any observed differences in outcomes to differences in experiences in early years. Our findings for each group are summarised below.

Ethnic groups

Studies that analyse the impact of ethnicity on life outcomes show that:

- Unadjusted (raw) measures of educational attainment are lower for most ethnic groups compared to those of white British children.

- When socio-economic factors are taken into account, it turns out that, while there are big differences between different ethnic groups, children from other ethnic groups make greater progress than white British children and achieve better than expected educational outcomes (except for Black Caribbean pupils, who underachieve). It appears that parents from many ethnic groups have high aspirations for their children and provide them with a good HLE. These factors partly counteract the negative effects of economic disadvantage.
- It appears that people from ethnic minorities experience 'ethnic penalties' in the labour market, that is, they are more likely to be unemployed and to receive lower wages. These differences are not fully explained by differences in individual characteristics and educational attainment. Although a number of studies on 'ethnic penalties' exist, we were unable to find any evidence linking these penalties to differences in experiences in the early years.

People with disabilities since childhood

We find that academic literature that focuses specifically on the relationship between experiences in early years and later life outcomes for disabled people is relatively sparse and mainly qualitative. Our main findings are:

- Disabled people are more likely to suffer from multiple disadvantage (more likely to live in poverty, less likely to have educational qualifications and more likely to be economically inactive).
- Disabled young people appear to underachieve (both academically and in the labour market) despite having similar aspirations to non-disabled peers. Both these young people and their families would benefit from more support, particularly helping them with the transition to independent living.

Gender

We focus on two specific issues, the gender gap in educational attainment and the gender gap in wages, and try to identify whether differences in the early years experiences of boys and girls contribute to these phenomena.

- The gender gap in education – Girls do better at school at all stages of the National Curriculum. This gender gap is not UK-specific and is replicated across OECD countries. The main explanations of this phenomenon come from two different perspectives, biological and social. The former suggests that boys and girls have different brain structures and, hence, develop gender-differentiated skills and abilities. The latter attributes gender differences in behaviour to socialisation processes. More specifically, children construct gender roles as opposites, that is, what is appropriate and meaningful for girls ('to study hard') is not considered to be appropriate for boys. It appears that both theories have some supporting evidence. We do not draw conclusions as to their relative importance.
- The gender gap in wages – UK statistics show that women's wages are, on average, 20 per cent less than men's wages. There are a number of

explanations for the gender pay gap; some of them relate to experiences and choices made in childhood and adolescence. More specifically, the gender pay gap can be partly explained by occupational segregation, that is, women tend to work predominantly in stereotypical 'female' occupations. These occupational choices are, in turn, linked to the choice of subjects studied at school: boys tend to pursue technical and science-oriented subjects, while girls choose arts, humanities and social sciences. It is believed that these patterns occur because science is considered to be a more 'masculine' subject, while humanities and arts are more feminine (more emotional). There is some evidence that educators may also contribute towards these trends, consciously or unconsciously encouraging boys and girls to pursue 'gender-appropriate' subjects.

Gay and lesbian people

There is very little evidence on the interaction between the experiences in early years and later life outcomes for gay and lesbian people. This is largely because the datasets that contain information both on early years and on life outcomes do not collect information on sexual orientation.

We have identified a number of qualitative studies, particularly indicating that homophobic bullying is a problem in secondary school. However, no comprehensive survey on homophobic bullying and its consequences has yet been undertaken. More data collection and analysis is needed in order to understand the problem fully, that is, to be able to assess the impact on pupils' educational attainment, self-esteem, a decision to stay on in education post-16 and on occupational choices.

Conclusion

Overall, we find that cognitive and social abilities demonstrated in childhood are important for later life outcomes for all groups of individuals. Early years competencies depend on family socio-economic characteristics (parental SES and education) and on parental behaviour (HLE). It appears that life outcomes for some groups (for example high unemployment rates for people from ethnic minorities or the gender gap in attainment) are still not fully explained, while for some other groups (for example gay and lesbian people) there is insufficient data on outcomes and/or early years experiences. Throughout the report we emphasise the issues that require further research and provide some recommendations on the types of data that needs to be collected.

1. INTRODUCTION

The purpose of this report is to review appropriate literature to help understand how early years experiences may impact on equality of life chances for different groups of the population. Life chances are related to individuals' well-being and can cover a range of opportunities that people can experience as they become adults and into their later life. These opportunities include, for example, the likelihood of being in employment over individuals' lifetime, the chances of obtaining educational qualifications and the chances of good physical and mental health.

'Fairness and Freedom: The Final Report of the Equalities Review' (Cabinet Office 2007) identifies ten dimensions of equality which facilitate monitoring progress towards a more equal society. These dimensions include: longevity; physical security; health; education; standard of living; productive and valued activities; individual, family and social life; participation, influence and voice; identity, expression and respect; and legal security. The Report says (p.3):

> *Taken together, these ten dimensions reflect a strong consensus about the bundle of measurable properties that will tell us most clearly whether one group of people enjoys life chances equal to another; and whether, year on year, society, or any group within it, is experiencing greater equality or not.*

Not all these dimensions, and associated outcomes, can be linked to differences in early years experiences. However, where possible, we try to follow the framework developed in the 'Fairness and Freedom' report and to cover the outcomes and sub-groups of the population which are of a particular concern for the Equality and Human Rights Commission.

We identify a large body of academic literature showing that life outcomes are closely related to family characteristics, such as parental income, socio-economic status (SES) and parental education. For example, children from low-income families are more likely to earn below-average wages when they grow up, compared to children from more affluent families. This phenomenon is called 'intergenerational persistence'.

Trying to explain 'intergenerational persistence', social scientists make two striking observations:

- Outcomes and achievements in adulthood are closely linked to cognitive and social competencies developed in childhood.
- Early years development (both cognitive and social) depends on individuals' family background and parental behaviour. Quality of home learning environment (HLE) and parental aspirations are found to be particularly important for children's development.

Below we discuss these findings in more detail. We also examine whether these general observations hold for specific sub-groups of the population, for example people from ethnic minorities, disabled people, men and women, and people with different sexual orientations. If we observe that outcomes for any particular sub-group differ from those for the population as a whole, we try to identify (i) what drives these differences, and (ii) whether there is something specific about the early years experiences of this sub-group that might explain differences in later life outcomes.

The rest of the report is structured as follows:

- Section 2 – In this section we provide evidence on intergenerational persistence and the role of early cognitive and social competencies in intergenerational transmission.
- Section 3 – This section consists of two parts. First, we discuss how early years experiences influence later life outcomes. We then identify the most important drivers of early skills and abilities.
- Section 4 – In this section of the report we focus on various ethnic groups and discuss whether their life outcomes differ from those of the rest of the population. We then try to relate any observed differences in outcomes to differences in experiences in early years.
- Section 5 – In this section we discuss whether there are any systematic differences in the life outcomes of disabled people. As above, we try to identify specific early years experiences that might contribute to differences in life outcomes.
- Section 6 – In this section we focus on two well-known gender gaps – the gender gap in educational attainment and the gender gap in wages. We summarise the literature that attempts to explain these disparities and identify whether early years experiences and abilities might contribute to these gaps.
- Section 7 - There is very little evidence on the interaction between the experiences in early years and later life outcomes for gay and lesbian people. This is largely because the datasets that contain information both on early years and on life outcomes do not collect information on sexual orientation. In this section of the report we review several qualitative studies and make suggestions about the type of information that needs to be collected in order to explore this issue further.
- Section 8 – This section provides the summary and conclusions.

2. INTERGENERATIONAL PERSISTENCE AND THE TRANSMISSION MECHANISM

Over the last two decades, social scientists have been debating whether an individual's economic success and life opportunities more generally are determined by (i) their own ability and effort or by (ii) their parents' socio-economic status. This issue is particularly relevant for the UK, given that the number of children growing up in poverty is still relatively high. According to the DWP 'Working for Children' report (2007), there were 3.4 million children living in poverty in the UK in 1998 / 99. Although this number has been reduced substantially, it is still above 1.7 million (the 2010 target).

In a number of studies, researchers analyse the relationship between the socio-economic outcomes of parents and their children and find that intergenerational persistence in the UK is high by international standards (Jantti et al 2006) and growing over time. For example, Blanden et al (2004) use data that follow two cohorts of children (the National Child Development Study (NCDS) for those born in 1958, and the British Cohort Study (BCS) for those born in 1970) and show that:

- For the 1958 cohort a son from a family with twice as much income as a second family will earn, on average, 12 per cent more in his early 30s than a son from the second family.
- For the 1970 cohort the wage uplift is 25 per cent, that is, the degree of intergenerational transmission has increased by 13 percentage points. Similar patterns are observed in daughters' incomes.

It appears that part of the fall in mobility across generations could be attributed to the fact that the expansion of higher education has disproportionately benefited people from richer families (Blanden et al 2004; Galindo-Rueda and Vignoles 2002; Blanden and Machin 2004). More specifically, it is observed that children from wealthier families are more likely to obtain higher educational qualifications and subsequently earn higher wages. For example, Galindo-Rueda and Vignoles (2002) estimate that for girls in the highest ability quartile the probability of getting a degree:

- goes down from 38 per cent to 29 per cent between the cohorts, if these girls come from a family in the bottom income quintile; and
- goes up from 60 per cent to 77 per cent, if they come from a family in the top income quintile.

For boys, the divergence is even more dramatic (from 40 per cent to 19 per cent in the bottom quintile and from 76 per cent to 85 per cent in the top quintile).

Individuals' income is related to their own educational qualifications and their parents' income. When differences in individuals' educational qualifications (both for boys and girls) are taken into account, the association with parents' income becomes less pronounced, but still increases over time.

While the importance of cognitive abilities had been acknowledged for a long time, an analysis of the role of social skills appeared only recently. Heckman and Rubenstein (2001) first identified the importance of non-cognitive skills when they observe that high school drop-outs in the US who pass the high school equivalence test earn less than high school graduates, despite being smarter. They attribute this to the poor social skills of those who drop out. In order to test the hypothesis that life outcomes are determined by individuals' abilities, Galindo-Rueda and Vignoles (2002) estimate the returns to cognitive and non-cognitive abilities measured at age 10 / 11. They proxy cognitive abilities with a combination of cognitive test scores, while social abilities are assessed based on the Bristol Social Adjustment Guide, which measures the child's capacity to adjust to different social environments. They find that both cognitive and social skills have a significant impact on individuals' earnings (even if individuals' educational qualifications are taken into account). However, this finding is not sufficient to make an inference that life outcomes are based on meritocracy (that is, on individuals' abilities rather than on socio-economic characteristics of the family). One also needs to ensure that individual abilities (as measured at age 10 / 11) are randomly distributed and not correlated with families' socio-economic characteristics.

It turns out that the latter hypothesis is strongly rejected, that is, parental SES and other family characteristics play an important role in determining the ability index at age 10 / 11. This finding is very important as it demonstrates that, even at an early age, differences in cognitive and social skills are not determined purely by nature but, to a large extent, can be explained by differences in the family environment and parental behaviour. In the following section of the report, we look at the role of early years development and its main drivers in more detail. More specifically, we:

- discuss how early cognitive and social skills are related to outcomes and achievements later in life, focusing specifically on those skills or combinations of skills that have the most predictive power; and
- identify the factors contributing towards the development of early skills (for example HLE and parental education) and explain why these factors are important.

3. THE IMPACT OF EARLY YEARS ON INDIVIDUALS' LIFE OUTCOMES

It appears that individuals' outcomes and achievements in adulthood are strongly linked to experiences and abilities in early years. In this section of the report we, first, discuss how early years experiences influence later life outcomes and then identify the most important drivers of early skills and abilities.

The role of early cognitive and non-cognitive skills

In order to understand how early years abilities affect outcomes later in life, one needs to have access to a dataset that tracks individuals over time, from early years into adulthood. In the UK, most of the research that relates outcomes in adulthood to cognitive and social skills in early years is based on the NCDS and BCS. More data is currently collected on children, their experiences and skills (such as in the Millennium Cohort Study (MCS) and Avon Longitudinal Study of Parents and Children (ALSPAC) - see Annex for details of these and other datasets), but these sources so far lack information on final outcomes (because the children surveyed are still young). Hence, these datasets cannot yet be used for this type of analysis.

In this section we review a number of studies based on the BCS and the NCDS. Their findings are based on rigorous analysis and make intuitive sense. However, they should be used with caution for the following reasons:

- The identified relationships hold for two generations, those who are currently 38 years old (the BCS) and 50 years old (the NCDS). Whether the same relationships hold for younger generations needs to be tested. When more information on final outcomes is collected in the ALSPAC and other datasets, the analysis should be repeated using these more recent datasets.
- Although both the BCS and the NCDS contain relevant information on experiences and skills in early years, this information is not exhaustive. There may be other factors which are potentially important but not reflected in the analysis because of the lack of data.
- Finally, while the results based on the NCDS and the BCS are broadly similar, that is, both cognitive and social skills acquired in early years matter for outcomes later in life, a detailed comparison of the findings (for example which skills have the highest predictive power for each outcome) is difficult. This is because the datasets were collected as part of separate studies, which had different research objectives. Hence, the questions asked in the two surveys were not identical.

Despite the limitations, these findings are extremely important for policy-makers and form a basis for future research in this area.

Impact on educational outcomes

Cognitive abilities in childhood are a strong predictor of future educational success. Feinstein and Duckworth (2006) consider a number of different measures of children's cognitive skills and find that the single most predictive measure is the child's ability to accurately copy shapes and patterns at age five (other measures considered are a standard vocabulary test and two further drawing tests - human figure drawing and profile drawing). The link between the copying test scores and later outcomes holds for all groups, except for children who attained high copying scores but came from low-SES families (we will discuss the role of SES in the development of cognitive and social skills in more detail below). Therefore, the copying test could be used as a tool to identify children who are at risk of not developing to their full potential (that is, children with high abilities from low-SES families).

The authors also find that a positive development in copying ability between 42 months and five years is related to gains in reading and maths scores at age 10 and is strongly associated with highest educational qualifications and income at age 30. This implies that those children who are supported in learning and development, and not just those with high innate levels of ability, can show lasting benefits in terms of their educational attainment.

Although cognitive skills are found to be more important for educational outcomes, social skills matter too. Children's social development is assessed on a number of criteria, including attention, co-operation, sociability, openness, pro-social behaviour (versus anti-social behaviour) and self-regulation. The latter criterion refers to children's ability to self-regulate their emotions so as not to become excessively withdrawn (internalising behaviour) or aggressive (externalising behaviour).

Feinstein and Duckworth (2006) find skills related to attention to be the most important for later success in education and in labour market outcomes. Of the other behavioural variables considered, they report that externalising behaviour (for example aggression) in early years has a negative association with the educational attainment of men in adulthood.

Carneiro et al (2006) show that children who demonstrated greater social adjustment at age 11 (measured as a single score that combines 11 behavioural criteria as defined in the Bristol Social Adjustment Guide) were both more likely to stay on at school post-16 and more likely to have a higher education degree, taking into account differences in cognitive ability and other background characteristics.

The researchers also report a strong interaction between cognitive and non-cognitive skills in the 'production' of educational attainment, that is, a marginal improvement in cognitive skills of an individual has a low effect on the probability of staying on at school if social skills are poor, but very high effect if social skills are good.

Impact on labour market outcomes

Clearly, educational attainment is a very important factor influencing labour market outcomes. However, Carneiro et al (2006) find that, even if educational attainment is taken into account, good social skills (as assessed by teachers at age 11) are associated with:

- a higher probability of employment at age 42; and
- having been in work longer between the ages of 23 and 42[1].

No such direct impact is found for wages. If one controls for highest educational attainment, the effects of both cognitive and non-cognitive skills at age 11 become statistically insignificant. Therefore, the impact of social and cognitive skills at age 11 on wages earned later in life is indirect, that is, 'working' through education. This does not mean that cognitive and social skills are not important. Rather, this result indicates that cognitive and social competencies developed in childhood are strongly correlated with individuals' highest educational attainment which, in turn, is a strong predictor of future wages.

Impact on social outcomes

Carneiro et al (2007) also find that poor social and cognitive skills at age 11 impact significantly on adult social outcomes, such as the probability that:

- an individual has been in trouble with the police between ages 33 and 42;
- self-reported health status is fair or poor; and
- individuals are suffering from depression or other mental health problems.

They find that an improvement in social adjustment at age 11 is associated with a significant reduction in the probability of being involved in criminal activity and with an improvement in physical and mental health in later life. [2]

Also, depression in childhood (as reported by the child's teacher) is strongly associated with mental health problems later in life. The authors emphasise the role of this finding for potential health interventions:

> *This is a striking finding, indicating that depression in childhood may persist into later adulthood, thus highlighting the potential importance of mental health interventions for such children.*

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1 A one standard deviation increase in social adjustment (holding everything else constant) is associated with a 2.4 percentage point increase in the likelihood of being in work at age 42 and with an eight-month increase in total work experience between 23 and 42.

2 A one standard deviation increase in social adjustment at age 11 is associated with a seven per cent reduction in the likelihood of being involved in criminal activity between the ages of 33 and 42; and with a 20 per cent reduction in the probability of suffering from mental health problems at the age of 42 (holding all else constant).

All these findings demonstrate that skills and abilities developed in early years contribute to later life outcomes. More specifically, good cognitive abilities are associated with educational attainment later in life and indirectly (that is, through education) with higher wages. Social skills also contribute to later life outcomes: skills related to attention are associated with higher educational qualifications, while social adjustment is associated with improved labour market participation, higher wages and reduced likelihood of being involved in criminal activity. Also, depression in childhood is linked to mental health problems later in life.

Skill formation in early years

There are a number of factors identified in the literature that have a strong impact on children's early development. These are:

- family socio-economic status;
- parental education;
- home learning environment;
- quality of pre-school education; and
- other factors (such as weight at birth, family structure etc).

These factors influence the development of both cognitive and non-cognitive skills. Below we will discuss (i) the role of each factor and (ii) the interaction between factors.

Note that most of these factors are inter-related, for example parents' SES is likely to be correlated with their educational attainment, while HLE may be correlated with both parents' SES and education. Therefore, in order to understand the relative importance of each of these factors, one needs to take them all into account in the analysis. Indeed, if some of the factors are not accounted for, the importance of other factors may be overstated.

One also needs to explore how the role of these factors changes over time (for example some factors may be more important for the development of toddlers, others for the development of primary school children).

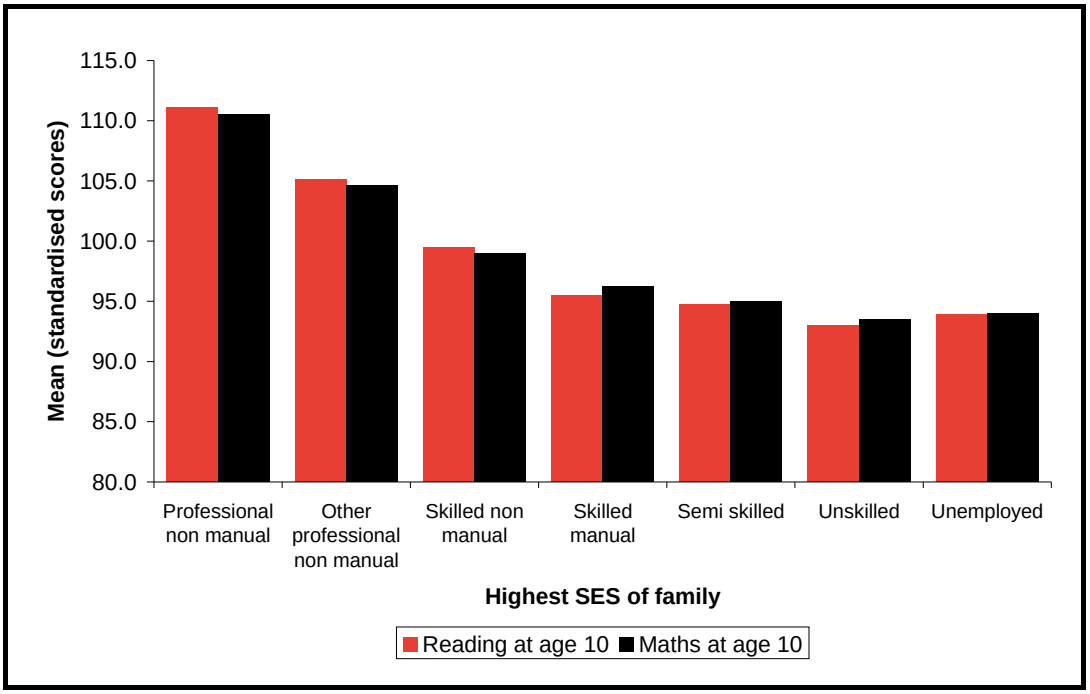
Socio-economic status / income

The role of SES is well-documented in the literature. Using the NCDS and the BCS, Carneiro et al (2007) and Blanden et al (2006) show that there is a strong relationship between children's social and cognitive abilities and their parents' SES. By age seven, children from both professional and non-manual family backgrounds exhibit significantly greater cognitive and non-cognitive skills than children from manual backgrounds (holding everything else constant). Blanden et al (2006) also show that cognitive skills have a stronger association with parental income than non-cognitive skills.

Using the BCS, Feinstein (1999) finds that the relationship between father's SES and child's cognitive ability does not appear until the age of 42 months (assuming that all other factors are controlled for), but is very significant for older children. For example, Feinstein (2003) shows that children from high SES groups who scored poorly in early tests tended to catch up, while children with worse-off parents who initially scored poorly were very unlikely to catch up. Even controlling for other factors, children in the lowest SES groups fall behind children in other SES groups in terms of the development of educational ability.

The results based on the NCDS and the BCS are informative. However, one needs to test whether the same relationship holds for more recent generations. This has been done by Sylva et al (2007), who analysed more recent data collected by the Effective Pre-School and Primary Education (EPPE) programme on children's cognitive attainment in reading and mathematics from age three to the end of Key Stage 2. They find that large attainment differences in reading and mathematics are related to the socio-economic status of the family. Children with parents of high SES have the highest average score, while children whose parents are unemployed or unskilled have the lowest (see Figure 1 below).

Figure 1. Cognitive attainment by family socio-economic status (SES)



Source: Sylva et al (2007)

Propper and Rigg (2007) use the ALSPAC to identify whether there is any relationship between parents' SES and their children's behavioural development. They find that the prevalence of (mother-reported) poor behaviour is highest among children from low SES families (20.6 per cent for the lowest occupational class

versus 12.5 per cent for the highest occupational class). The relationship is particularly strong for the hyperactivity, conduct and peer relations criteria (as defined in the Strengths and Difficulties Questionnaire). However, when differences in home learning environment are taken into account, the relationship between SES and behavioural development becomes less pronounced, but does not disappear altogether (see more on the role of HLE below).

The relationship between educational attainment and SES also holds for secondary school students. Bradley and Taylor (2004) analyse Youth Cohort Studies data and find that young people whose parents are in highly skilled (particularly professional) occupations are more likely to obtain good exam results than young people whose parents have lower skill levels.

Schoon and Parsons (2002) introduce the concept of resilience (defined as above average competencies) in children who have been exposed to socio-economic adversity. They use NCDS and BCS data to compare outcomes for four groups of children:

- advantaged high achievers – those from high SES with above average abilities;
- advantaged underachievers – those from high SES, but with abilities below average;
- resilient children – disadvantaged high achievers; and
- vulnerable children – disadvantaged underachievers.

They find that, while resilient children demonstrate better than average cognitive and social skills initially, their adult life outcomes fall short of those of advantaged underachievers. More specifically:

- In BCS only nine per cent of resilient men and three per cent of resilient women attained a degree versus 23 per cent and 22 per cent respectively of privileged underachieving men and women.
- Resilient women are also more likely to be economically inactive than their more privileged counterparts (both in NCDS and BCS).

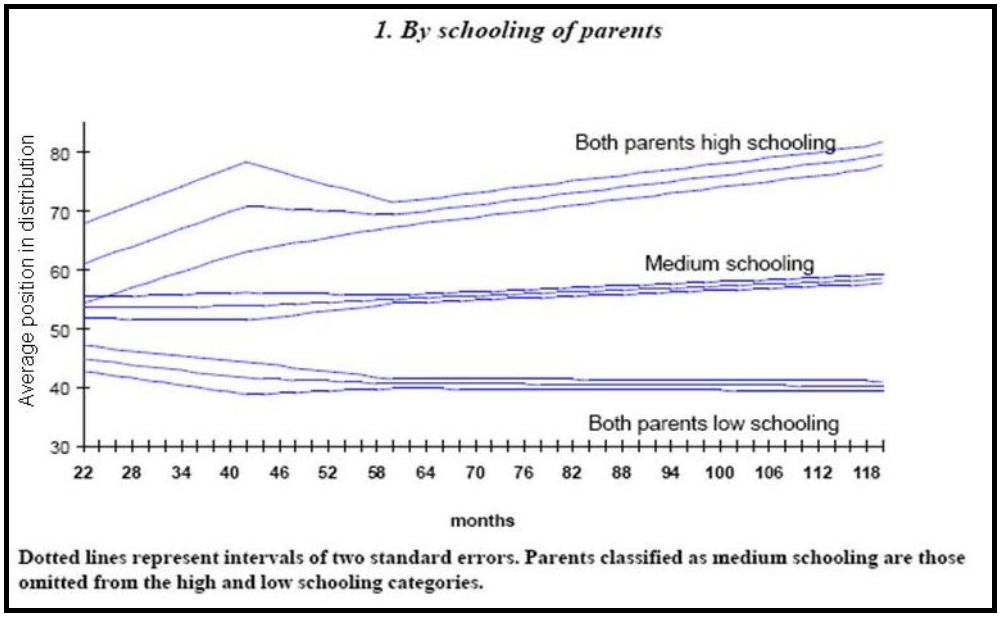
All these findings suggest that SES has a very strong influence both on individuals' early development and on outcomes later in life.

Parental education

There exists significant evidence on the inter-generational effects of parents' education on children. The differences in cognitive development can be observed among very young children, and the gap widens over time. For example, Feinstein (1999) stratifies children based on their parents' educational qualifications and assesses their progress over time. He uses the BCS and finds that:

- Children whose parents both have at least A-levels are 14 percentage points higher in the distribution of test outcomes measured at the age of 22 months than those whose parents have no qualifications, and seven percentage points higher than those whose parents are in the middle education group (who have some qualifications, but do not both have A-Levels or higher).
- When children get older the divergence becomes even more pronounced. As Figure 2 demonstrates, children with better-educated parents start from a higher position and move to a still higher position in later years. The opposite is true for children of less educated parents. (Each group of children is represented by three lines on the graph. The medium line for each group represents the average position, while the other two lines represent the 'boundaries'. For example, at the age of 22 months most children in the 'highly educated parents' group have ranking between 55 per cent and 68 per cent.)

Figure 2. The impact of parents' education on children's cognitive development



Source: Feinstein (1999)

Feinstein (1999) finds that at 22 months children's cognitive abilities are strongly associated with mothers having a degree. Children of mothers with degrees are more than 12 percentage points higher up the distribution of scores than those without. For boys taken separately, this figure is 21 percentage points (and significant at one per cent), whereas for girls the advantage at 22 months of a mother with a degree is only 3.1 per cent (and insignificant). This is an interesting finding, which requires further exploration before any definitive conclusion on gender-related differences in early years development can be made.

At 42 months the association with mother's education is still strong but associations with other factors also become stronger, in particular with SES and the father's education. The same effect is observed for older children: the Key Stage 2 English scores of children with mothers who have a university degree are four points higher, on average, than those whose mothers were only educated to GCSE level (see Gutman and Feinstein 2008).

Sylva et al (2007) also find a relationship between parents' education and children's social / behavioural development at age 10. More specifically, they look at two indicators of social development – hyperactivity and self-regulation – and find that hyperactive behaviour is raised for children whose mothers have no qualifications or only vocational qualifications. Self-regulation, on the other hand, exhibits a positive relationship with mothers' qualifications levels, with self-regulation being highest in children whose mothers have a degree or post-graduate qualifications. These relationships hold for both unadjusted (raw) and adjusted (net) behavioural scores.

Parenting practices such as reading to children, using complex language, responsiveness and warmth in interactions are associated with better developmental outcomes (Bradley 2002; Bradley and Corwyn 1999). Gutman and Feinstein (2007) analysed the ALSPAC and concluded that mothers with higher levels of education and greater family income interacted more with their children, engaged their children in more outside activities, and provided more stimulation and teaching in the home environment. Therefore, it appears that stimulating home learning environment is critical for early years development. The quality of HLE is found to be relatively strongly correlated with parental income and education.

Home learning environment

There is strong evidence indicating the importance of the early Home Learning Environment. Sylva et al (2007) show that, together with other family factors such as parents' education and SES, HLE exerts an independent influence on educational attainment (at different ages). To explore the influence of HLE on children's development, the researchers asked the parents participating in the EPPE study how often they engage their children in the activities that provide learning opportunities, such as playing with numbers, painting and drawing, being taught letters and numbers, reading to their children etc and combine this information into a single HLE indicator.

They find that:

- The HLE is positively associated with SES and parents' educational level, but this association is not perfect (in a statistical sense), that is, there are low SES families who score highly in HLE and high SES families who score poorly.
- HLE has a very powerful effect on children's development at three to four years of age. A better HLE is associated with increased cognitive and social

abilities, including 'cooperation / conformity', 'peer sociability' and 'confidence'. The effect on cognitive development is particularly pronounced.

The persistent effects of HLE are still noticeable at age 10 (Sammons et al 2007).

Carneiro et al (2007) show that parental interest in a child's education has a very strong impact on the development of cognitive and social skills. For example they find that:

> *If mothers who currently show little interest in their child's education were to change their behaviour in this respect, the additional attention would be associated with an increase … in social skills at age 7.*

Desforges and Abouchaar (2003) demonstrate that children's reading ability is associated with the reading environment they receive (that is, whether parents read regularly and whether children are encouraged to read), independent of parental intelligence or education.

Sylva et al (2007) compare the effects of various factors (SES, income, parents' education and HLE) on children's educational outcomes (see Table 1 below) and observe that HLE has the strongest effect. This finding is supported by Sammons et al (2002) who observe that the children of parents who regularly taught / played with the alphabet (one of the components of HLE) had pre-reading scores 4.5 points higher than children whose parents did not do so. The impact of social class, on the other hand, was found to be less pronounced (2.4 point difference between the lowest classification (IV and V) and highest (I)).

Table 1. Effect sizes for socio-economic status, mother's and father's education, and home learning environment on 5, 7 and 10 year outcomes

	5 year olds		7 year olds		10 year olds	
High versus low group	Literacy	Numeracy	Reading	Maths	Reading	Maths
SES	0.29	0.43	0.37	0.39	0.26	0.32
Mother's Education	0.35	0.23	0.33	0.33	0.46	0.27
Father's Education	NS	NS	0.19	0.16	0.25	0.23
Earned income	0.31	0.28	0.15	0.15	0.24	0.23
HLE	0.73	0.65	0.60	0.50	0.49	0.45

Source: Sylva et al (2007)

NS = non significant

Similarly, Desforges and Abouchaar (2003) report that 'parental involvement in the form of 'at-home good parenting' has a significant positive effect on children's achievement and adjustment even after all other factors shaping attainment have been taken out of the equation'. This is a very important finding, which we will discuss later in the context of specific groups of the population (notably, ethnic minority groups and disabled people).

Sylva et al (2007) conducted a number of interviews with families with high HLE and low SES in order to find out which aspects of HLE were particularly important. They found that in all these families:

- parents read to their children in their early years and provided numerous other educational stimulus;
- children were active in maintaining these practices; and
- parents' expectations for their children were extremely high, with all parents suggesting their children should attend higher education and go on to professional careers.

The latter finding suggests that those children who had high-quality HLE in early years also benefit in later years from their parents' continuous support and encouragement. Therefore, it appears that it is both a good early learning environment and high aspirations and support throughout one's childhood and into adolescent years that make a difference to later life outcomes.

The impact of parental involvement is also found to be significant in secondary school. Feinstein and Symons (1999) find that parental interest in their children's education (as assessed by teachers) makes an important contribution to academic achievement at 16, over and above the effects of parental education and SES.

There is evidence that policy interventions can have a positive impact on children's HLE. Research from the evaluation of the Early Head Start program in the US (which provided combinations of home visits and centre-based childcare intervention for disadvantaged families), involving children from birth up to three years of age, found that the intervention increased both the quantity and quality of parents' interactions with children, as well as children's social and cognitive development (Love et al 2005). This suggests that parenting behaviours are learnable, and changes in parenting are associated with improved child development.

A number of programmes and pilots are led by the Department for Children, Schools and Families (DCSF), both universal (for example Bookstart and Parent Support Advisors) and targeted (for example Family Pathfinders and Parents Early Intervention Pilots), which aim at improving HLE and parental skills. While putting an emphasis on HLE is definitely a step forward, a more evidence-based analysis is needed to understand what works better in supporting families and which groups need more help.

Role of pre-school education

Research based on EPPE data (Sammons et al 2002) finds that, regardless of all other factors, children who did not experience any pre-school provision demonstrate lower cognitive abilities and poor social / behavioural development at school entry (especially 'peer sociability' and 'independence and concentration'). For example, it has been found that for those children who attend pre-school for two years, cognitive development at the age of five is four to six months more advanced than for those who have not attended at all.

By age 10, attending a pre-school (a simple indicator that does not take into account duration or the quality of the pre-school) still has some positive impact on attainment in reading and mathematics, but is not statistically significant (Sylva et al 2007). If the quality of pre-school is also taken into account, the effect is positive and significant, that is, children who had attended a pre-school setting of high quality (based on the 'Early Childhood Environment Rating Scale Extension' (Sylva et al 2003)) showed better attainment than children who attended a low quality pre-school. Effects are stronger for mathematics than for reading. For mathematics, even medium quality pre-schools give a child a boost to attainment at age 10, whereas for reading, pre-schools had to be highly effective to have a continued effect. Overall, the study finds that the quality of pre-school is more important than the type of provision (nursery schools versus integrated centres versus local authority day centres). By age 10, the 'type' effect completely disappears, while the effect of 'quality' on children's outcomes remains strong. Whether the 'quality' effect remains significant beyond age 10 still needs to be tested.

The study also finds synergies between the quality of pre-school and the quality of a child's early years HLE. As one would expect, children with high HLE who went to highly-effective pre-schools show the best attainment. More surprisingly, children with medium early years HLE who went to a low-quality pre-school have similar attainments to children who did not go to pre-school at all and had low early years HLE, that is, attending a low-quality pre-school was not beneficial for these children's cognitive development.

Role of primary education

As one would expect, effectiveness of primary school[3] also matters. Sylva et al (2007) show that attending a highly effective primary school is beneficial for cognitive attainment at age 10. They conclude that all three components – early years HLE, quality of pre-school and effectiveness of primary school – contribute towards shaping educational outcomes. No one factor is the key to raising achievement - it is the combination of experiences over time that matters.

[3] The value-added effectiveness measures for primary schools were calculated using national assessment data sets for all primary schools in England linking KS1 and KS2 results, and separate indicators were calculated for the different core curriculum subjects: English, mathematics and science.

Kingdon and Cassen (2007b) find that attending a poor performing school increases the probability of an individual's low achievement. However, when they explore the relationship between free school meal (FSM) status and school quality, it appears that:

- FSM students are more likely to attend poor quality schools; and
- lower achievement is mostly associated with the economic disadvantage that FSM status reflects (although imperfectly), with the additional adversity arising from being in a poorer quality school being relatively modest.

Apart from the direct impact of school quality, there are also peer group effects on individuals' educational attainment. Bradley and Taylor (2004) find that an increase of 10 per cent in the proportion of pupils from low SES (proxied by those eligible for free school meals) is associated with a fall of five per cent in the probability of obtaining of good GCSE grades. A higher proportion of disadvantaged pupils in school also negatively affects individual pupils' well-being. Gutman and Feinstein (2008) show that pupils in schools with a higher proportion of disadvantaged children are more likely to be depressed, experience victimisation, engage in antisocial behaviour and antisocial relationships with peers.

The impact of pupil-teacher ratios appears to be ambiguous. It seems to affect pupils' educational attainment, but not their well-being. Bradley and Taylor (2004) find that an increase in the pupil-teacher ratio of one pupil per teacher is associated with a two per cent reduction in the probability of obtaining a good exam result, while Gutman and Feinstein (2008) do not find it to be a significant predictor of pupils' well-being.

Family size

It appears that the number of siblings in a family may have an impact on individuals' life outcomes, notably educational attainment. Bradley and Taylor (2004) report that an increase in the number of siblings reduces the probability of obtaining good GCSE results. This is consistent with the argument that, as family size increases, parents have less time available for each child, which may affect their performance at school. Moreover, the negative impact of the number of siblings is greater for girls than for boys. This may be because girls are more likely to be asked to help care for their younger siblings.

Iacovou (2001) finds that only children perform worse academically than those from two-child families. She suggests that, as well as inputs from parents, interaction with other children may be important in children's educational development.

Other factors

- Birth weight – Sylva et al (2007) report that children with normal birth weight show better attainment in reading and mathematics at age 10 than children with very low birth weight.
- Carneiro et al (2007) show that other family circumstances, such as alcoholism and mental health problems, were also associated with lower social and cognitive skills at both ages seven and 11. Feinstein (1999) reports that children's cognitive development is affected by their mother's happiness / well-being. At 42 months, a Malaise Score of 10 points, indicating likely psychiatric problems for the mother, was associated with an eight percentage point reduction in the child's rank. This association remains strong even when children become older.

Multiple deprivation

One would expect that multiple risk factors (also called 'multiple deprivation') would have a compounding effect on child's development, that is, the presence of more risk factors is more likely to lead to negative outcomes. Feinstein and Sabates (2006b) use the Millennium Cohort Study (MCS) and Longitudinal Survey of Young People in England (LSYPE) to analyse the prevalence of different types of problems in families, such as financial stress, worklessness and domestic violence. They find strong correlations between most risk factors, for example:

- families reporting violence have a 4.3 times higher probability of reporting depression, and
- being a teenage mother is associated with a 2.7 times higher probability of smoking during pregnancy.

This analysis provides a strong indication that risk factors do not exist in isolation and that children living in families with one risk factor are likely to be exposed to other risk factors. Overall, Feinstein and Sabates (2006b) find that between seven per cent and 12 per cent of all children in the UK live in families with three or more risk factors.

As expected, young people with more than one risk factor are more likely to experience high-cost, high-harm outcomes, with the probability increasing with the number of risk factors for all outcomes but alcohol or cannabis consumption (see the full set of results in Table 2 below).

Table 2. Odds ration for likelihood of outcomes by multiple risks

	One risk	Two risks	Three risks	Four risks	Five+ risks
YP not stay on post 16	1.49	1.53	1.61	1.60	1.30
YP is SEN	1.19	1.32	1.36	1.35	1.23
YP ever in care	1.98	3.49	2.91	2.66	6.55
YP truant frequently	2.05	3.24	3.60	4.66	6.83
YP suspended school	2.31	4.08	6.33	5.28	11.88
YP excluded school	4.63	8.49	7.93	15.41	36.23
YP cigarettes frequently	1.70	2.06	2.30	2.17	2.73
YP drinks alcohol 3xmonth	1.35	1.27	1.66	0.79	0.26
YP has ever tried cannabis	1.30	1.17	1.19	1.14	1.05
YP written on walls with spray	1.45	2.00	2.03	1.62	2.69
YP smashed public property	1.34	1.71	1.55	1.39	2.11
YP stolen goods from shops	1.33	1.55	1.44	1.37	2.28
YP fights	1.58	1.83	1.93	1.89	1.98
Police contact	1.92	2.48	3.97	3.73	6.00

Source: Feinstein and Sabates (2006b) based on Longitudinal Survey of Young People in England

Notes:

YP = young person

Odds ratios are compared against young people living in families without any of these risks. Shaded area indicates that the variable is not significantly different at five per cent level from the comparison group.

Overall, children with multiple risk factors (such as low SES background, parents with no qualifications and poor HLE) are significantly more likely (i) to have below-average cognitive and social skills in childhood and (ii) to experience negative outcomes later in life. Having a good HLE may counteract other risk factors, promoting resilience and enabling children to move in a positive direction. For example, strong parental attitudes and aspirations may override some of the worst effects of poverty and disadvantage.

On the other hand, in order to increase the probability of a positive outcome, one needs a combination of positive factors, such as high SES, educated parents, good HLE, effective pre-school and primary education. Having some positive and some negative factors (for example good HLE, but low-quality pre-school education) does not guarantee a positive outcome.

Moreover, factors such as SES, parental education and HLE are found to be important throughout one's childhood and adolescence. Hence, from a policy perspective, it is important to have some continuity in intervention. An intervention that focuses on a specific age group (say pre-school children) may be less effective than a combination of policies / interventions that follow children through from very early age into adolescence, to ensure a lasting impact on children's development and later life outcomes.

In the following sections, we look at specific sub-groups of the population, in relation to ethnicity, disability, gender and sexual orientation, identify whether life outcomes for these groups are systematically different from those for the population as a whole, and assess whether there are any specific factors or experiences in early years that might explain differences in outcomes.

4. ETHNICITY

In this section of the report we focus on various ethnic groups and discuss whether their life outcomes (mainly, in terms of education and labour market participation) differ from those for the rest of the population. We then try to relate any observed differences in outcomes to differences in experiences in early years. We find that, in general, relationships identified in the previous section (that is, the impact of SES, parental education, HLE, quality of pre-school etc) hold for children from ethnic groups as well as for white children. However, there are also factors that are specific to ethnic groups (for example ethnic segregation in schools), which we will examine below.

Education

We first discuss whether there are any differences in participation and attainment of children from ethnic groups in (i) pre-school education and (ii) primary and secondary school, and try to identify what drives these differences.

Early years education and childcare

There is compelling evidence showing that young children benefit from participating in good quality pre-school education (Sylva et al 2007). These benefits appear to be particularly significant for children from ethnic minorities. For example, Sammons et al (2002), in a longitudinal study of 3,000 pre-school children observe that for certain outcomes, especially pre-reading and early number concepts, children from some ethnic groups, including Black Caribbean and Black African and children for whom English is not their first language, made greater progress during pre-school than White British children or those for whom English is a first language. (This result remains significant even when mothers' education and other socio-economic characteristics are taken into account.)

However, despite this positive impact, fewer children from ethnic groups participate in formal pre-school childcare. Fitzgerald et al (2002) found that 90 per cent of children from ethnic minorities attend formal pre-school childcare compared to 97 per cent for white children. Among ethnic groups, participation was similar among children with black parents (90 per cent) and those with Asian parents (91 per cent). It appears that mothers from ethnic groups are more likely to stay at home to look after their children and to rely more on networks of extended family members, friends and neighbours.

This finding is reinforced by Aston et al (2007) on Pakistani and Bangladeshi women’s attitudes to work and family. This report is based on 60 in-depth interviews with women of different ages. It shows that use of formal childcare is relatively rare, with the cost of childcare being seen as a potential barrier by some women, particularly those in low-paid jobs. But more importantly, it appears that most interviewed women stay at home because they *prefer* to look after their children

themselves. Note that as well as lowering participation in pre-school education, this revealed preference for staying at home and raising children also has implications for women's participation in the labour force (which will be discussed in more detail below).

Although the above report provides a number of insights into the actual choices made by Pakistani and Bangladeshi families regarding pre-school education for their children, more formal statistical analysis is needed to explain the differences in participation. For example, Sylva et al (2007) show that children are less likely to attend pre-school if their mothers have no formal qualifications and if they belong to larger families. Since Asian families, on average, tend to be larger than White families, it may be more cost-effective for the mother to stay at home and look after her children than to pay for childcare. Moreover, there may be other factors that are more difficult to quantify, such as social norms prevailing in a community. For example, if women believe that their extended family and the community as a whole would not approve of their choice of working when their children are still young, they might choose to conform to the 'standards' and to stay at home.

School years

As we discussed in Section 2 above, there are a number of factors that have a strong influence on individuals' educational attainment. These are:

- parents' SES / income - children from richer families perform better than children from poorer families;
- parents' education - children of better educated parents achieve better results; and
- parents' interest in their children's education.

In this section of the report, we will try to identify whether ethnicity also has an impact on educational attainment. We will look at both (i) the absolute levels of educational attainment and (ii) progress made between different stages of education (a measure of 'added value').

The fact that there are differences in educational attainment by ethnicity has been analysed in a number of reports for the former Department for Education and Skills (DfES) and academic papers. For example, Bhattacharyya et al (2003) find that:

- Indian and Chinese pupils are more likely to achieve the expected level compared with other ethnic groups at all Key Stages of the National Curriculum (tests taken at the ages of 7, 11, 14 and 16), while Black, Bangladeshi and Pakistani pupils perform less well than White pupils.
- Black Caribbean and Black African children make relatively greater progress during pre-school than White children.

This is in line with a DfES (2005) report, Bradley and Taylor (2004) and Strand (2007).

Kingdon and Cassen (2007a; 2007b) also identify Black Caribbean children (particularly boys) as a group of underachievers. Indeed, only 59.4 per cent of those who start in the top half of performance at KS2 remain there at KS4. This is significantly lower than for White British pupils (75.7 per cent) and other ethnic groups (76.4 per cent to 87.4 per cent). There are several potential explanations for what might be causing this decline in performance, such as an anti-education culture among boys, low teacher expectations and perceived low returns to educational qualifications in an unfair job market.

However, the fact that these differences in educational attainment exist does not yet prove that ethnicity (on its own) is a significant explanatory factor of attainment. Indeed, many children from ethnic minorities also belong to lower socio-economic groups and share other characteristics with underachieving children from white families. For example, Bhattacharyya et al (2003) report that 30 per cent of Pakistani and Black pupils and over 50 per cent of Bangladeshi, Gypsy / Roma and pupils of Travellers of Irish heritage are eligible for free school meals (a proxy for low SES). Therefore, one needs to control for individual and family characteristics, such as SES, income and parents' education, in order to assess whether ethnicity has any *additional* impact on educational attainment.

This approach has been adopted in a number of studies. For example, Sylva et al (2007) analyse the EPPE data and report that the great majority of differences in attainment between ethnic groups results from their demographic or background characteristics, with relatively little variation being due to specific ethnic group factors. They track the performance of children in primary school and observe that, taking into account these children's socio-economic characteristics:

- At age five, the Indian and Bangladeshi groups achieve better than expected scores for literacy and numeracy. At age 10, the Indian group continues to attain better than expected, while the Bangladeshi children are now attaining lower than expected. The researchers conclude that the latter group does not benefit from primary schooling as much as other ethnic groups do.
- At age five, both the Black Caribbean and the Black African children on average attain higher literacy scores than expected, but do worse than expected for numeracy. By age 10, both Black Caribbean and Black African groups are doing worse than expected for literacy, but the Black Caribbean group shows slightly better than expected attainment for numeracy.

While the attainment of ethnic groups in primary school is somewhat mixed, it appears that most of them catch up in secondary school. Wilson et al (2006) analyse GCSE results using the Pupil Level Annual School Census (PLASC) dataset. They take into account individuals' personal and family characteristics (such as gender, age, FSM, Special Educational Needs and whether a child lives in a deprived area) and show that:

- Black African, Bangladeshi and Pakistani students achieve higher GCSE scores than equivalent Whites, that is, the poor attainment reported earlier for these ethnic groups is fully explained by their low socio-economic status. Only Black Caribbean students still underachieve compared to their White counterparts, when individual and family characteristics are taken into account.
- All ethnic groups make greater progress on average than white students with similar characteristics between ages 11 and 16. During the period of secondary schooling, pupils from all groups are either catching up with White pupils (Black Caribbean and other Black heritage), or overtaking White pupils (Indian, Pakistani, Bangladeshi and Black African) [4].

Kingdon and Cassen (2007a; 2007b) also use the PLASC data and obtain similar results, that is, they find Bangladeshi and Black African students out-perform White British peers if pupils' economic and social background is taken into account. It also appears that initial disadvantage of children of Asian and African origin in primary school is due to the fact that many of them do not speak English at home and therefore do not do so well at primary school. However, this early disadvantage is reduced by KS3 and they are doing better by KS4. This is supported by Sylva et al (2007) who find English as Additional Language (EAL) to be a significant predictor of both cognitive and social / behavioural outcomes at age three and five, but not at age 10.

Research in this area could be enhanced by using a more fine-grained identification of children by their country of origin (or their parents' country of origin). This has been attempted by the English as an Additional Language Association of Wales in an extensive study of ethnic minority pupils living in Wales based on interviews with pupils, parents and teachers (EALAW 2003). For example, the report shows that Yemeni and Somali pupils have the lowest attainment of all ethnic groups. It would be useful to undertake similar fine-grained analysis for the UK as a whole. However, one needs to make sure that the sample size for each ethnic group is reasonably large for the estimates to be robust.

Overall, all the studies discussed in this section support the earlier finding that economic disadvantage has a strong negative impact on the educational attainment of all affected pupils, including those from ethnic minorities. In fact, it appears that children from minority ethnic backgrounds demonstrate greater resilience and achieve better educational outcomes than one would predict based on their socio-economic characteristics alone. For example, Kingdon and Cassen (2007a) test whether economic disadvantage affects students from ethnic minorities in the same way as it affects white British children and conclude that 'poor ethnic minority

[4] The authors observe that pupils from ethnic minorities are more likely to have Special Educational Needs (SEN) and test whether the observed progress is driven by the fact that they 'separate' the effect of SEN from the effect of ethnicity. They re-run the analysis without the SEN variable and confirm that their conclusion that 'pupils of all ethnic groups on average make better progress through schools than whites do' still holds.

students are significantly less susceptible to lower achievement than poor white British students'.

Sylva et al (2007) use the EPPE data to explore the resilience phenomenon, that is, why some children perform significantly better than expected given their socio-economic characteristics. They find, for example, that low-SES Indian and Bangladeshi families have better HLE than comparable White families, which might explain why children from these ethnic groups achieve good results at school. However, they do not identify any specific HLE components that are systematically better in Indian and Bangladeshi families.

Another factor that contributes towards greater resilience (better than expected attainment) at age five and 10 is the level of self-regulation (independence and concentration) at the start of school; but this factor does not vary by ethnicity.

There may be other reasons why children from particular ethnic minorities may appear to be more resilient to economic disadvantage. For example:

- Wilson et al (2006) suggest that this may be driven by 'aspirations and values inculcated by families and reinforced by communities'. Strand (2007) uses the Longitudinal Survey of Young People in England (LSYPE) to analyse parental attitudes towards education and finds that parents' aspirations for their children to continue in full-time education were significantly higher among all minority groups than among White British parents. Indian parents were also most likely to have paid for private tuition for their children and to have a computer at home.
- The result may be driven by some other factors that are not taken into account in the analysis. For example, both Wilson et al (2006) and Kingdon and Cassen (2007a) proxy children's socio-economic characteristics by FSM. However, FSM may mean different things for children of different ethnic background. For example, among whites and blacks, FSM is more likely to be associated with single parenthood than among Asians.

It appears that more analysis is needed to fully explore the phenomenon of resilience among children from ethnic minorities. That analysis would inform new policy initiatives tackling educational underachievement.

Staying on in education

Individuals' labour market outcomes, such as occupational choices, wages and attachment to work, are likely to be affected by the educational qualifications achieved, that is, those who stay on in education achieve, on average, better outcomes (positive returns to education). Bradley and Taylor (2004) use Youth Cohort Studies data to investigate whether the probability of staying on in education depends on pupils' ethnic origin. They find that, after controlling for the exam performance of individuals:

- Non-white youths are more likely to proceed to academic further education than their white counterparts. This is the case for both boys and girls.
- Non-white boys are also more likely than white boys to proceed to vocational education, whereas there is no significant difference between white and non-white girls.

Feinstein (2000) finds that, after controlling for age 10 academic performance, West Indian children are 25 percentage points more likely to get a degree than children from the ethnic majority. He hypothesises that this 'might reflect extra pressure for children to gain qualifications to overcome discrimination or poor contacts in the labour market or, alternatively, a higher degree of educational culture within families'.

Similarly, Strand (2007) analyses pupils' aspirations and attitudes towards education and finds that Indian, Black African, Pakistani and Bangladeshi pupils were more likely than White British pupils to have higher educational aspirations and to have a positive attitude to school.

This is consistent with the view that there are differences between ethnic groups in their attitude towards the benefits of education, with individuals from ethnic minorities valuing further (particularly academic) education higher than their white counterparts.

Ethnic segregation in schools

Social integration of various ethnic groups is considered to be an important issue in Britain, where eight per cent of the population belong to ethnic minorities (based on the 2001 Census). Arguably, if this integration occurs earlier in life, the process of integration should be smoother and faster. Hence, from this perspective, it may be desirable to have an even spread of ethnic groups across schools as that should facilitate the integration process. Clearly, the degree of ethnic segregation in schools is affected by many factors, for example by people's preferences where to live and what distance their children should travel to school, as well as by the number and quality of schools available in each neighbourhood.

Burgess and Wilson (2004) and Burgess et al (2005) measure the level of segregation experienced by secondary school age children at school and in their neighbourhood using the 2001 Annual Schools Census and the 2001 Census of Population. They find that:

- In some areas the degree of segregation is very high, that is, over half of the minority ethnic pupils would have to switch schools to produce an even spread of ethnic groups.
- Segregation is higher for pupils of Indian, Pakistani or Bangladeshi origin than for pupils with Black Caribbean or Black African heritage. Moreover, children are more segregated in schools than in neighbourhoods.

While there is no evidence suggesting that segregation *per se* has an adverse impact on pupils' academic achievement, more research is needed to explore the consequences of ethnic segregation. For example, it would be useful to compare whether the outcomes for pupils from ethnic groups (broadly measured) vary systematically with the degree of segregation at school.

Cline et al (2002) compare the academic performance of students from ethnic minorities in mainly white schools with that of minority students in multiethnic schools. They find that non-white pupils studying in predominantly white schools outperform their peers who study in more ethnically diverse schools. However, the researchers do not control for pupils' socio-economic characteristics or for differences in the schools' quality. Hence, it is not clear whether this result is driven (i) by differences in schools and peer-group effects or (ii) by differences in SES and parental education. It is possible that children attending predominantly white schools are from more well-off families, which is reflected in their performance.

More research is needed to make definitive conclusions on the impact of ethnic segregation in schools on academic performance.

Racism in schools

While representative and quantified evidence seems to be lacking, there is some evidence of tension between white teachers and Afro Caribbean pupils. Amin et al (1997) analyse educational experiences of ethnic minority pupils and report:

- 'African and Caribbean students frequently experience relationships with white teachers which are characterised by relatively high levels of control and criticism'; and
- 'teachers often hold negative and patronising stereotypes about South Asian students, especially concerning the nature of their home communities and linguistic abilities'.

Black students are also more likely to be expelled from school than students from other ethnic groups or White students. Amin et al (1997) suggest that, apart from serious offences, less obvious conflicts with teachers may lead to disproportionate expulsions of Black pupils.

Cline et al (2002) interview pupils in predominantly white schools and find that pupils from ethnic minorities are more likely to experience some form of bullying than their white peers. A quarter of the minority ethnic pupils reported that during the previous week they had experienced racism in the form of unkindness or rudeness because of their accent or the colour of their skin.

This evidence suggests that pupils from ethnic minorities may experience racism. More data collection and analysis is needed to understand the impact of racist bullying on pupils' educational attainment and on a wider set of life outcomes.

Employment

In this section we analyse whether ethnicity has a systematic impact on individuals' employment (probability of being in work), occupation and wages, and whether any observed differences are related to early years experiences.

There are well-documented differences in unemployment rates by ethnicity, which, unlike gaps in educational attainment, are not fully explained by differences in socio-economic characteristics. For example, Berthoud et al (2007) use the Office for National Statistics 1991 Longitudinal Survey data and find:

- Among men, all ethnic minorities, except the Chinese, had lower employment rates than those of White men (84 per cent). The largest gaps were found among Bangladeshi (56 per cent), Pakistani (63 per cent) and Black African men (66 per cent). Individual characteristics (such as gender, age, education and family structure) could explain only some part of the differences.
- Among women, Bangladeshi and Pakistani women had the lowest employment rates (14 per cent and 20 per cent respectively), compared with 66 per cent of White women. Only a minor part of these differences can be explained by differences in other characteristics. Caribbean / Other Black women had the same unadjusted employment rate as White women, or slightly higher rate, when individual characteristics were taken into account.

Apart from the differences in unemployment rates, there are other aspects of the labour market where there have been observed ethnic disadvantages. For example, Heath et al (2006) analyse a wide range of 'ethnic penalties' using the pooled quarterly Labour Force Surveys (LFS) 2001-04, the Sample of Anonymised Records (SARs) from the 2001 Census and the pooled General Household Surveys (GHS) 1973-2001 and find that:

- Men from ethnic minority groups (notably Pakistani, Bangladeshi, Black Caribbean and Black African) have higher unemployment rates, are more likely to be concentrated in manual and semi-manual occupations and receive lower hourly wages compared to white men. These differentials cannot be fully explained by age, education or foreign birth. Even for the second generation, born and educated in Britain, there are significant disadvantages for men from ethnic minority groups in the labour market. These findings are in line with those presented in Carmichael and Woods (2000).
- The patterns for women are broadly similar to those for men, although the magnitude of ethnic penalties for women is smaller than for men.
- There is evidence showing that the first generation (those who were born oversees) experience greater ethnic penalties than the second generation. The report, however, does not identify what drives this outcome (for example

whether it is mainly the language barrier, cultural differences or anything else).

Dustmann and Fabbri (2005) analyse labour market outcomes for the first generation of immigrants, using the LFS (1992 to 2004), and find that, conditional on individual characteristics and region of residence, all non-white immigrant groups have average wages which are more than 10 per cent lower than those of the white British-born population. On the other hand, white immigrants earn similar wages to comparable British-born individuals.

Pakistani and Bangladeshi women

Based on the Fourth National Survey of Ethnic Minorities, Modood et al (1997) showed that Pakistani and Bangladeshi women had the lowest levels of labour market participation. Over 80 per cent of Bangladeshi women and 70 per cent of Pakistani women of working age were economically inactive, compared to 25 per cent for other ethnic groups (including White women). Ten years later, the 2007 Joseph Rowntree Foundation report ‘Ethnic minorities in the labour market: dynamics and diversity’ finds that the employment rates of Pakistani and Bangladeshi women still remain very low, less than 30 per cent.

The DWP report 'Pakistani and Bangladeshi women’s attitudes to work and family' (Aston et al 2007) attempts to identify the main reasons for this gap. It finds that:

- Around half of the interviewed women were in paid employment (that is, a higher proportion than observed previously).
- Those with no or few qualifications and / or with limited English language were more likely to be unemployed or economically inactive. Women with qualifications (particularly those with degrees) were usually in employment.
- Regardless of educational background, the employed women in the study made an effort to fit their work around their childcare responsibilities. They often worked part-time, or worked in roles for which they were over-qualified, in order to be able to balance the demands of work and family.

While some women started to break with the traditional role of women in the home, the employment aspirations of many taking part in the research were in line with stereotypical ‘female’ careers (that is, teaching or working with children or working in the health sector). Younger women and second and third generation women had less traditional views in terms of education and employment.

Overall, studies that analyse the impact of ethnicity on life outcomes show that:

- Unadjusted (raw) measures of educational attainment are lower for most ethnic groups compared to those of white British children.
- When socio-economic factors are taken into account, it turns out that children from all ethnic groups make greater progress and achieve better than expected educational outcomes (except for Black Caribbean pupils, who underachieve). That suggests that ethnicity has a positive impact on individuals' attainment. More specifically, it appears that parents from many ethnic groups have high aspirations for their children and provide them with good HLE. These factors counteract the negative effects of economic disadvantage.
- It appears that despite being relatively well educated, people from ethnic minorities experience ethnic penalties in the labour market, that is, they are more likely to be unemployed and to receive lower wages. These differences are not fully explained by differences in individual characteristics and educational attainment.

5. DISABILITY

In this section, we discuss whether there are any systematic differences in the life outcomes of disabled people. As above, we focus on educational attainment, employment and general well-being, but also consider another outcome which is important for disabled people: independent living. We then try to identify specific early years experiences that might contribute to differences in life outcomes.

Making generalisations about disabled people is difficult, because this is a diverse group of people. A Cabinet Office report in 2005 stated that 'the population of disabled people is distinct from and much larger than the three million people in receipt of disability related benefits'. It estimates that there are about 11 million disabled adults in the UK and 770,000 children.

The Cabinet Office report provides alarming statistics on multiple disadvantages experienced by disabled people in their daily life. For example, disabled people are:

- more likely to live in poverty – the income of disabled people is, on average, less than half of that earned by non-disabled people;
- less likely to have educational qualifications;
- more likely to be economically inactive – only one in two disabled people of working age are currently in employment, compared with four out of five non-disabled people; and
- more likely to experience problems with hate crime or harassment – a quarter of all disabled people say that they have experienced hate crime or harassment, and this number rises to 47 per cent of people with mental health conditions.

Similarly, the DRC 'Disability Briefing' (2007) reports that:

- Disabled people are still only half as likely as non-disabled people to be qualified to degree level and are twice as likely as non-disabled people to have no qualification at all.
- Inequalities in the proportions of disabled and non-disabled people in work persist, with only half of disabled people in work, compared with over four fifths of the non-disabled population being in work.
- At £10.28 per hour, the average gross hourly pay of disabled employees is about 10 per cent less than that of non-disabled employees (£11.30 per hour, based on the LFS 1999 to 2006).

Clearly, disability affects all age groups. However, disabled young people have a different impairment profile from adults – they are more likely to have a learning difficulty and initial onset of mental health problems (Cabinet Office 2005, p.36).

One would expect that individuals' experiences and life outcomes might vary depending on the age at which the individual became disabled. In this report, we will focus specifically on people who had impairments since childhood. We will investigate whether there is any evidence showing that their experiences in early years contribute towards negative outcomes later in life, such as a lack of educational qualifications, poverty and economic inactivity.

Education

There is evidence showing that children with high aspirations tend to achieve better educational outcomes, that is, they are more likely to stay on in post-compulsory education and to attain higher qualifications. Given that disabled young people, on average, do not do as well academically as their non-disabled peers, one would want to assess whether educational aspirations of young people differ. Using the BCS and the Youth Cohort Studies (YCS), Burchardt (2005) compares young people with physical or sensory impairments, and those with mental health problems, with non-disabled peers (young people with learning disabilities are not included in this analysis).

She finds that the aspirations of disabled and non-disabled young people are very similar:

- 62 per cent of disabled 16-year-olds wanted to stay on in education (compared with 60 per cent of non-disabled young people);
- 33 per cent aspired to a professional occupation (compared with 24 per cent for non-disabled counterparts); and
- both groups of individuals had similar expectations about average weekly pay.

However, the level of participation and attainment tends to be lower for disabled students:

- At age 16 / 17, only 62 per cent of disabled young people were in full-time education (compared with 71 per cent of non-disabled counterparts).
- By age 18 / 19, only 50 per cent of disabled young people have their highest qualification above Level 1, while the corresponding figure for non-disabled people is 72 per cent.

Overall, Burchardt finds that young people who are disabled from an early age have lower educational attainment relative to their aspirations than their non-disabled counterparts (after controlling for other factors, such as parental education and SES).

Independent living

Independent living is defined as 'having choice and control over the assistance and / or equipment needed to go about your daily life' and 'having equal access to housing, transport and mobility, health, employment and education and training opportunities' (Office for Disability Issues 2008, p.11). It is an important outcome for disabled young people, something that is taken for granted by their non-disabled peers. This outcome is closely related to other aspects of individuals' lives, such as employment, self-esteem and general well-being. It appears that a successful transition to independent living depends on the aspirations of (i) young people and (ii) their families / parents, who have to support their children in achieving independence.

Hendey and Pascall (2001) interviewed 72 young adults who had impairments since birth or early childhood and were in receipt of the Disability Living Allowance. Some of them had made a successful transition to independent living (defined as being employed and living separately from one's parents), while others had not. The purpose of the study was to identify those factors that contribute towards achieving independence. Similar to Burchardt (2005), the researchers found that the aspirations of disabled young people do not differ significantly from stereotypical aspirations of young people in general, that is, they want to grow up and achieve independence through employment, independent living and social relationships. However, it appears that:

- aspirations among the least independent group were more limited; and
- the most independent respondents were more likely to have parents in higher occupational categories with social and economic resources, and more crucially, with high aspirations for their children.

Hirst and Baldwin (1994) found that disabled young people have lower aspirations about independent living - 23 per cent of them said they did not want to leave their parents' home (compared with 12 per cent of the control group).

It also appears that disabled teenagers, including those with less severe disabilities, are less likely than their non-disabled peers to have domestic responsibilities (for example helping their parents with domestic chores). The researchers hypothesise that encouraging disabled children to have more responsibilities at home would help them with their transition to independent living later in life.

Hussain (2003) explores the interactions between disability, ethnicity and gender and their cumulative effect on young people's transition into adulthood. This study is based on a number of semi-structured interviews with disabled young people of South Asian origin, their parents and siblings, and shows a very complex picture. On the one hand, it reveals that the immediate families of the disabled young people provide them with very strong support, which continues even when the children reach adulthood. But, on the other hand, these disabled young people are not

encouraged by their families to become independent. This is due to a widespread belief that disability makes one unemployable. Hussain notes that:

> *In several of the households, the very thought of their child or sibling working was almost taken as an offensive statement. The family members generally understood that a disability excluded them from the sphere of employment.*

The study also finds that disabled South Asian girls are more likely to get some academic qualifications (some GCSEs or above) than boys, who left school with no qualification.

Self-esteem and identity

The notion of self-esteem encompasses an individual's sense of being valued and accepted. Lack of a close friend or a perception that one does not conform to peer group norms can contribute to lower self-esteem.

Hirst and Baldwin (1994) observe a marked difference in feelings of self-worth between disabled and non-disabled young people. More specifically, disabled teenagers find it more difficult to establish new or close friendships and often feel lonely.

The researchers find that, typically, the self-esteem of non-disabled young people gradually increases with age, though less sharply after age 20. However, among disabled young people self-esteem increases to around age 17 and 18 and then declines. This decline in self-esteem is likely to be explained by poor prospects of finding a job. Indeed, those disabled young people who worked had the same degree of personal control as their peers in the comparison group. For those without a job, having somewhere to go during the week and the possibility to share their experiences with peers made a positive difference. Young people with no regular weekday activities and / or no friends had the lowest self-esteem and least sense of control.

Hirst and Baldwin (1994) also find that self-esteem and locus of control varied less by type of disability than according to its severity: only the least severely disabled young people had self-esteem approaching that of non-disabled young people.

Disability and ethnicity

There is a separate issue facing young disabled people from ethnic minorities in their transition to adulthood, which particularly affects those attending segregated and residential education, that is, these institutions tend to be run by white people who might not always take account of differences in young people's cultures and backgrounds. After spending years with little contact with others from the same cultural background, young people from ethnic minorities may feel that they 'grow apart' from their communities (see Smith 1994; Ahmad et al 1998). This experience of 'involuntary break up with their own culture' may have a negative impact on young people's sense of identity and self-esteem.

Employment

It is well-documented that disability has a negative effect on individuals' labour market outcomes. For example, Rigg (2005) uses the LFS to estimate disability-related wage differentials (in relation to all disabled people, not only those who were disabled from childhood). He finds that:

- Disabled men earn between 10 and 12 per cent less than their non-disabled counterparts, while disabled women earn five to eight per cent less (everything else being the same). The earnings shortfall tends to be larger towards the lower part of the earnings distribution.
- Changes in earnings for disabled people (especially disabled men) lag behind those for non-disabled people.
- The rates of exit from work are higher for disabled people: disabled men are three times more likely to leave work as non-disabled men, while disabled women are more than twice as likely to exit work. Disabled people are also more likely to move from full- to part-time work.

These labour market outcomes are also affected by disability severity. Grundy et al (1999) find that work attachment falls sharply with disability severity, from 44 per cent for the two highest severity categories (out of 10) to just five per cent or less for the lowest two severity categories.

Research that focuses specifically on young disabled people paints a similar picture:

- Hirst and Baldwin (1994) conducted in-depth interviews with over 400 young people with a wide range of disabilities. They matched the sample of young disabled people with a sample of non-disabled young people with similar characteristics and found that only 35 per cent of disabled young people were in paid employment (compared with 67 per cent of the general population of young people), with those more severely disabled being the most disadvantaged. Similar to Rigg (2005), Hirst and Baldwin (1994) found that disabled young people earned less on average than their non-disabled peers.

- Using the YCS data, Burchardt (2005) shows that disabled people are more likely to be unemployed than their non-disabled counterparts and the gap widens with age.
    - At age 16 / 17, disabled young people are twice as likely to be unemployed (13 per cent versus seven per cent).
    - At age 18 / 19, disabled people were almost three times as likely to be unemployed (25 per cent versus nine per cent).
    - At age 26, the probability of being unemployed or ‘sick / disabled’ is four times higher for those who were disabled at age 16 and 26 than for those who were disabled at neither age (14 per cent versus 4 per cent). (This finding is based on the BCS and might not be directly comparable to those based on the YCS.) Disabled young people were also earning 11 per cent less than non-disabled counterparts.

Overall, although aspirations of disabled young people and their non-disabled counterparts are very similar, the outcomes are not: educational attainment and labour market participation of disabled people are significantly lower. Having (i) high aspirations and (ii) supportive families is very important, particularly for a successful transition to independent living, but families should not be the only source of support. More should be done to improve the life chances of disabled young people, both in education and in the labour market.

6. GENDER

In this section of the report we examine whether life outcomes vary by gender (when other individual and socio-economic characteristics are taken into account). We focus on two well-known gender gaps – in educational attainment and wages. We summarise the literature that attempts to explain these disparities and identify whether early years experiences and abilities might contribute to these gaps.

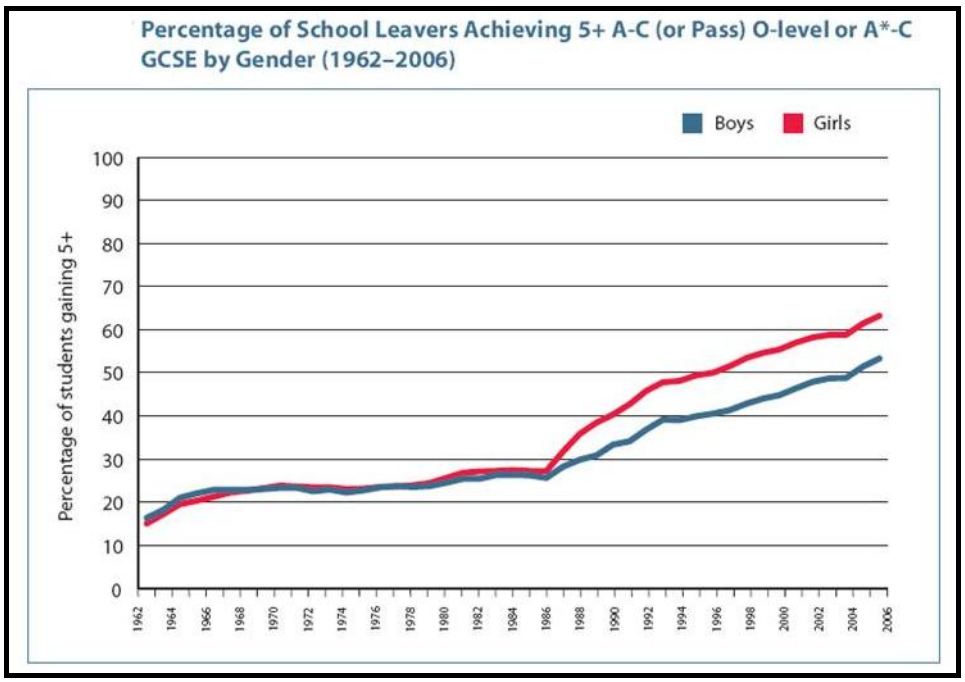
Education

There is a marked difference in the educational attainment of boys and girls. A DfES report (2007) states:

> *Since 1988, on the threshold measure of 5+ A-C GCSEs, a significant gender gap in favour of girls has emerged. This gap quickly increased and subsequently became stable at around ten percentage points difference, with little variation since 1995.*

This is shown in Figure 3.

Figure 3. Gender attainment gap in GCSEs



Source: DfES (2007)

This gender gap is not confined to GCSEs, but is evident at all Key Stages. Moreover, it is not specific to the UK, but is common across most OECD countries (OECD 2004). In contrast to school assessments, no significant gender differences have been found on IQ tests and tests of reasoning (DfES 2007).

The DfES (2007) report investigates the interaction between gender, SES and ethnicity and finds that:

- The gap in attainment at GCSE level between boys and girls is relatively stable across SES groupings, that is, girls from a given social class outperform boys from the same social class.
- Although gender is an independent and significant predictor of attainment, SES has stronger explanatory power.
- The gender gap appears to vary by ethnicity: Black Caribbean and Black Other pupils have wider gender gaps than other ethnic groups.
- The gender gap varies by subject: it is particularly marked in English, literature and humanities, but almost disappears in mathematics and sciences.

Burgess et al (2004) examine whether the gender attainment gap could be explained by school characteristics (that is, certain school systems are more effective for one sex or the other). They use the National Pupil Database (NPD) and compare the gender differential across different types of schools in terms of performance, gender mix, admission policy and percentage of pupils eligible for FSM. They find that the gender gap is not affected by any observable school characteristics.

Skelton et al (2007) review psychological literature which attempts to explain the gender gap. It appears that the main explanations come from two different perspectives:

- Human behaviour is biologically determined – that is, boys and girls have a different brain structure and, hence, gender-differentiated skills and abilities (Geake and Cooper 2003; Baron Cohen 2004).
- Human behaviour is socially constructed. These theories attribute gender differences in behaviour to socialisation processes, which start at birth and continue into adult life. Children are influenced by images and messages from the outside world about how to behave as a boy or a girl. However, they are not just passive recipients of this information: children actively construct their gender identities and adopt different behaviours to express them.

Skelton et al (2007) evaluate evidence supporting each of these theories, and conclude that ‘there is far more evidence pointing to the significance of social factors rather than biological factors’. If applied to educational attainment, the theory of socially constructed gender identities offers the following explanation:

- Children construct gender roles as opposites, that is, what is appropriate and meaningful for girls is not considered to be appropriate for boys. These gender roles and behaviours are modified over time (depending on whether a child is in nursery, in primary or secondary school) and may be affected by SES and ethnicity.

- The peer group effect is found to be very important, that is, friendship groups tend to be composed of the same gender and deviations from the accepted norm are punished. For example, it appears that for many boys in secondary school (particularly for those of lower SES) masculinity is associated with 'laddishness' (disruptive behaviour, not working hard), while discipline and diligence are believed to be 'feminine' traits. These 'laddish' values have a negative effect on academic achievement (Salisbury and Jackson 1996; Francis 2000a; Skelton 2001).

While this theory seems to provide a plausible explanation, there may be a few problems with it:

- It stays silent about differences in attainment by subject (that is, larger gaps in English and literacy and significantly smaller gaps in mathematics and sciences).
- While it may explain differences in attainment in secondary school, it is not clear whether it applies equally to children in primary school.

More fundamentally, it may be very difficult to distinguish between biological and social causes. Indeed, there is evidence demonstrating that gender differences in acquired skills appear at an early age.

- Gutman and Feinstein (2007) find that by age five to seven, boys have higher levels of fine and gross motor development, whereas girls have a higher level of social development. The researchers relate these differences to the types of games children play at this stage of development. Boys tend to focus on outdoor physical games, whereas girls tend to engage in imaginary indoor play involving cooperation and negotiation.
- Sylva et al (2007) compare boys' and girls' social behavioural development and find marked gender differences (not adjusted for other factors) in self-regulation and hyperactivity. Boys tend to show more hyperactive behaviour than girls, and girls tend to show more self-regulating behaviour.

Whether five-year-old boys and girls play different games and behave differently because (i) they have gender 'constructions' which are socially determined, or (ii) these differences are purely biological, is not yet fully resolved.

Note also that the gender gap in attainment first appeared in the UK in the late 1980s (see Figure 3 above); before that, school attainment was more balanced. Machin and McNally (2005) observe that its appearance coincided with the change in the examination system. Since 1988, more weight has been given to coursework (that is, continuous assessment by teachers). Stobart et al (1992) find a direct relationship between the relative improvement in girls' achievement and the weighting and type of coursework required in different subjects. This, however, cannot fully explain the gender gap in attainment because this phenomenon is not UK-specific. The fact that it is observed in most OECD countries suggests that the gender gap in attainment is a real issue that requires further investigation.

Gender stereotyping in subject choice

A number of studies on educational attainment also observe that there are gender differences in subject preferences and uptake. When subject choice is introduced (at Key Stage 4), boys tend to pursue technical and science-oriented subjects, while girls choose arts, humanities and social sciences. It is believed that these patterns occur because science is considered to be a more 'masculine' subject (more important and rigorous), while humanities and arts are considered more feminine (more emotional). There is some evidence that educators may also contribute towards these trends, consciously or unconsciously encouraging boys and girls to pursue 'gender-appropriate' subjects (Benett and Carter 1981; Rolfe 1999).

Note that these gender patterns in the choice of subjects may contribute to occupational segregation and, ultimately, to the gender pay gap later in life – an issue that we discuss below.

Employment

As in education, there is a gender gap in wages, but it has an opposite sign. The UK statistics shows that women's wages are, on average, 20 per cent less than men's wages. Observable characteristics, such as education and labour market experience, account for only half of the gap (Lissenburgh 2000; Swaffield 2000). A large proportion of the remaining gap is explained by educational choices, occupational segregation, work-related motivation and career breaks due to family circumstances.

- **Educational choices** – These have been discussed above. Note also that there is a large variation found in the subsequent financial returns by subject in higher education, with science graduates obtaining the largest returns, while arts, languages and social sciences were the lowest (Chevalier et al 2002; Walker and Zhu 2005). It also appears that the subjects most popular among women (humanities and languages) are associated with a higher risk of unemployment and lower average pay in general (Chevalier 2002; Skelton et al 2007).
- **Occupational segregation** – Women tend to work in a limited number of occupations associated with lower wages. Walby and Olsen (2003) use the British Household Panel Survey (BHPS) and show that occupations that are predominantly male have a higher wage rate than those that are predominantly female (taking other factors into account). They report that occupational segregation explains eight per cent of the observed gender pay gap.
- **Work-related aspirations / career breaks** – Swaffield (2000) uses the BHPS to explore the role of work-oriented (versus home-oriented) motivation, aspirations (proxied by maternal occupation) and household constraints (such as career breaks due to family reasons). He finds that work motivation has a positive effect (+6 per cent) on wages for women but not for men, while household constraints have a permanent negative effect (even after actual work experience is taken into account). Maternal occupation is found to have

a positive effect, but it is not clear whether maternal occupation is a good proxy for individuals' work aspirations. Chevalier (2002) uses other measures of work motivation: financial motivation, an aspiration to do a socially useful job, workaholism etc and finds that they explain a significant proportion of wage variation (up to 30 per cent of the gap). While one would expect work-related motivation to influence individuals' wages, the actual effect of motivation may be overstated. Indeed, women with low wages might claim not to be financially motivated in order to 'justify' their low earnings. In order to rectify this problem, one needs to measure 'permanent' motivation (average over a reasonably long period of time), rather than contemporaneous motivation.

Some, if not all of the factors identified above (that is, educational and occupational choices as well as work-related motivation and priorities), may be related to individuals' early years experiences. For example:

- what children are taught about gender roles and stereotypes; and
- the role models they have (including parents and popular culture).

Occupational choices and aspirations in adolescence

Schoon et al (2007a) use the BCS and NCDS to analyse aspirations and labour market outcomes for those who have chosen science-related careers. They observe that women continue to be under-represented among scientists, engineers and technicians. Indeed, only three per cent of women (versus 10 per cent of men) in either cohort settled for a career involving science-related or technical jobs. Moreover, the number of girls undertaking science, engineering and technology (SET) in schools is falling. This suggests that occupational gender imbalances are likely to persist in the future.

This study adopts a 'contextual-development' model of career development that links experiences during childhood and adolescence to later career-related outcomes. The model assumes that adult occupational status can be predicted based on family socio-economic characteristics, school experiences, individual ability, aspirations and earlier career choices. For example, ability in maths is shown to be a critical factor for entry into science-related fields.

Schoon et al (2007a; 2007b) find that teenage occupational aspirations are a strong predictor for entering a SET-related occupation later in life, especially for women (even after controlling for other factors, such as SES and parental education). The researchers hypothesise that 'men are more likely than women to drift into SET related career without being guided by early aspirations for that domain'. They recommend a number of improvements in primary and secondary schools that should encourage participation and uptake of science subjects. Career advisors may also play a more prominent role by explaining the links between the subject choices made in school and career prospects available later in life.

7. SEXUAL ORIENTATION

There is very little evidence on the interaction between experiences in early years and later life outcomes for gay and lesbian people. This is largely because the datasets that contain information both on early years and on life outcomes, such as the NCDS and the BCS, do not collect information on sexual orientation. Therefore, any evidence in this area is likely to be qualitative.

Stevens et al (2007) analyse the development of the relationships of trust and reciprocity between pupils in two secondary schools in inner London. They find that in these highly culturally diverse schools most students held positive attitudes to ethnic diversity, but much more negative views about diversity in terms of sexual orientation. The way in which students with alternative sexual orientations appear to be received in school ‘suggests a rather hostile reaction from at least part of the school community’.

The researchers report that the word ‘gay’ is used as a synonym of ‘annoying’. They hypothesise that 'being ‘gay’ on the street can constitute a sign of personal weakness and a challenge to other males' and threatens the validity of young boys’ masculine identities. Furthermore, there is some anecdotal evidence that children as young as five use the word ‘gay’ to denote that something is inferior and laughable (Stonewall 2007).

Rivers (2001) collected data from a sample of 190 lesbian, gay and bisexual adults (mean age 28 years) who were victimised at school. The study shows that bullying and harassment is not simply physical or verbal in nature, it can also be indirect or relational. (Note that the following paragraphs relate only to those who were victimised at school.)

The most frequently cited forms of bullying included name-calling (82 per cent) and public ridicule by peers and, in some cases, by teachers (71 per cent). In terms of relational (that is, indirect) aggression, 59 per cent of participants reported having had rumours spread about them while 52 per cent reported having been frightened by their tormentors’ look or stare. Indirect and relational harassment was found to be correlated with frequent absenteeism at school and with pupils’ decision not to stay on at school post-16.

The study also reveals that 53 per cent of survey participants contemplated suicide or self-harm as a result of being bullied at school, with 40 per cent of the total sample attempting at least once. It has also been shown that those participants who were most likely to contemplate suicide or self-harm were also likely to have a history of absenteeism at school because of bullying.

Stonewall's recent survey of gay and lesbian young people included more than 1,000 responses (Hunt and Jensen 2008). The results are similar to Rivers' findings:

- 65 per cent of young gay and lesbian people experience homophobic bullying at school. The figure is even higher for faith schools at 75 per cent.
- Of those who have been bullied, 92 per cent have experienced verbal homophobic bullying, 41 per cent physical bullying and 17 per cent death threats.
- Seven out of 10 pupils who experience homophobic bullying state that this impacts on their school work. Half of those who have experienced homophobic bullying have skipped school because of it.
- Only a quarter of schools say that homophobic bullying is wrong. In those schools that say that homophobic bullying is wrong, gay and lesbian pupils are less likely to be bullied.

According to Warwick et al (2004), pupils do not necessarily have to be lesbian or gay themselves, but might be subject to homophobia if perceived not to fit in with stereotypical ways of being a girl or a boy.

It has also been shown that homophobic attitudes might affect gay and lesbian people's occupational choices. Ryan-Flood (2004) conducted 15 in-depth interviews with homosexual young people and found that some of her respondents had made deliberate choices not to enter certain professions because they perceived them to be homophobic. For example, one participant made a decision not to pursue a law career, 'largely because the work environments associated with a legal career were not, in her view, conducive to being out at work'.

Despite the worrying messages coming from small-scale studies, no comprehensive survey on homophobic attitudes in schools has yet been undertaken. The Stonewall 'Sexual Orientation Research Review' (2007) identifies this as a major gap in research:

> *… there has to date been no national survey of the current climate of homophobia in schools. Policy makers and education professionals would benefit from up-to-date evidence of the scale of the problem, including primary research among current lesbian and gay students about the issues they face.*

More data collection and analysis is needed in order to understand the problem fully, that is, to be able to assess the impact of homophobic bullying on pupils' educational attainment, self-esteem, a decision to stay on in education post-16 and on occupational choices.

Warwick et al (2004) also emphasise the importance of understanding the extent and impact of homophobia on young people from ethnic minorities. They observe that 'little is known about how young people experience discrimination on the grounds of their gender, ethnic background and their sexuality'.

8. CONCLUSIONS

There is a large body of literature showing that early years development and later life outcomes are strongly related to family characteristics such as parental SES and education, and to parental behaviour. The quality of the home learning environment and parental aspirations are found to be particularly important for children's development. In fact, one study finds that good quality HLE has the strongest impact on children's development and may counteract some of the negative effects of social deprivation (Sylva et al 2007).

Table 3 summarises our main findings. It illustrates the extent to which we have an increasingly good understanding of the relationship between such factors as parental income, parental education, home learning environment and outcomes. But it is also evident that careful quantitative analysis, allowing an understanding of the combined impact of these and gender, disability and ethnicity is still required. Overall these findings suggest that:

- Child poverty and social deprivation are among the main explanatory factors for poor life outcomes and tackling these further is likely to be the most effective way of improving equality of lifetime opportunities and outcomes.
- HLE and parental aspirations are critical for children's early development and educational attainment. There are a number of DCSF-led programmes and pilots currently in place, which aim at improving HLE and parental skills. However, more analysis is needed to understand what works better in supporting parents.
- Factors such as SES, parental education and HLE are found to be important throughout childhood and adolescence. Hence, from a policy perspective, it is important to have some continuity in intervention. An intervention that focuses on a specific age group is likely to be less effective than a combination of policies / interventions that follow children through from very early age into adolescence to ensure a lasting impact on their development and later life outcomes.
- Good quality pre-school education is particularly beneficial for children from low socio-economic background, but these children are less likely to have access to it. More effort is needed to improve the quality of pre-school centres and to increase participation among certain ethnic groups (notably among Pakistani and Bangladeshi children).
- Disabled young people appear to underachieve (both academically and in the labour market) despite having similar aspirations to non-disabled peers. Both these young people and their families would benefit from more support, particularly in helping them with the transition to independent living. More data should be collected to improve our understanding of what stops them from achieving their full potential.

There is little evidence on the interaction between experiences in early years and later life outcomes for gay and lesbian people. This is largely because the datasets that contain information on early years and life outcomes do not collect data on sexual orientation. We have identified a number of qualitative studies indicating that homophobic bullying is a problem in secondary school. However, no comprehensive survey of homophobic bullying and its consequences has yet been undertaken. More data collection and analysis is needed in order to understand the problem fully and be able to assess the impact of homophobic bullying on pupils' educational attainment, self-esteem, decisions to stay on in education post-16 and occupational choices.

Table 3. Factors influencing individuals' life outcomes

	Outcomes						
Factors	**Early cognitive skills**	**Early social skills**	**Primary education**	**Secondary education**	**Highest educational qualification**	**Wages**	**Probability of being employed**
Parental SES / income (Chapters 2 and 3)	No effect found for children younger than 42 months, strong effect for older children	Strong effect, particularly for hyperactivity and peer relations	Strong effect	Strong effect	Strong effect	The effect is largely through education	The effect is through both social skills and education
Parental education (Chapter 3)	Strong effect, particularly with mother's having a degree	Strong effect, particularly for hyperactivity and self-regulation	Strong effect	Strong effect	Strong effect	The effect is largely through education	The effect is through both social skills and education
HLE / parents' aspirations (Chapter 3)	Very strong effect	Strong effect on cooperation, peer sociability and confidence	Strong effect	Strong effect, particularly parents' aspirations	Strong effect, particularly parents' aspirations	Needs to be tested	Needs to be tested
Quality of pre-school (Chapter 3)	Strong effect	Strong effect on peer sociability, independence and concentration	Strong effect	Needs to be tested whether the effect is significant when other factors are taken into account			
Quality of primary school (Chapter 3)			Strong effect	Some effect	Needs to be tested whether the effect is significant when other factors are taken into account		
Gender (Chapter 6)			Gender gap in attainment			Gender pay gap	
Disability (Chapter 5)	Aspirations similar to non-disabled young people, but educational attainment is lower					Lower average wage	Lower probability of being employed
Ethnicity (Chapter 4)	Lower participation in formal pre-school education for some ethnic groups, notably Pakistani and Bangladeshi		Most ethnic groups do better academically than expected given their socio-economic characteristics, except Black Caribbean children who underachieve			Lower average wage	Lower probability of being employed

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ANNEX: DATA SETS

- **The National Child Development Study** (NCDS) is a survey of all children born in the UK between 3 and 9 March 1958 with follow-up samples at ages 7, 11, 16, 23, 33 and 42. This dataset provides information on home environment, parental income and social class; on individuals' early age abilities (both cognitive and non-cognitive); educational qualifications and other outcomes (earnings, unemployment etc)

- **The British Cohort Study** (BCS) is a survey of all children born between 5 and 11 April 1970 with follow-up surveys at ages 5, 10, 16, 26 and 30. The type of information collected is similar to the NCDS.

- **The Youth Cohort Studies** (YCS) is a series of longitudinal surveys that contacts a sample of an academic year group or 'cohort' of young people in the spring following completion of compulsory education and usually again one and two years later. This first began in 1985 and the same group were surveyed again in 1986 and 1987. Since then there have been 10 further groups (or cohorts) and on average each cohort has been surveyed three times over the four or five years after their 16th birthday. The survey looks at young people's education and labour market experience, their training and qualifications and a range of other issues, including socio-demographic variables.

- **The Avon Longitudinal Study of Parents and Children** (ALSPAC) – the dataset covers children born in the Avon Health Authority in the early 1990s. Approximately 85 per cent of eligible mothers enrolled, resulting in a cohort of over 12,000 live births. The study started early during pregnancy and collected very detailed data from the mother and her partner before the child was born. From the time of the child's birth many different aspects of the child's environment have been monitored and a wide range of data collected.

- **The Longitudinal Survey of Young People in England** (LSYPE) is a major panel study of young people which brings together data from a number of different sources, including both annual interviews with young people and their parents and administrative sources. The main role of the study is to identify, and enable analysis and understanding of the key factors affecting young people's progress in transition from the later years of compulsory education, through any subsequent education or training, to entry into the labour market or other outcomes. Sample boosts took place for deprivation factors and for ethnicity.

- **The Pupil Level Annual School Census** (PLASC) covers all pupils in primary and secondary education in England and provides information on pupils' gender, ethnicity, FSM status and whether they have special educational needs (SEN). The dataset can be matched with information on students' achievement at Key Stages 2, 3 and 4 and with information on schools and local authorities (area deprivation indices).

- **The Millennium Cohort Study** (MCS) – the survey first took place between June 2001 and January 2003, gathering information from the parents of 18,800 babies born in the UK over a 12-month period. The second sweep took place between September 2003 and April 2005, when the children were approximately three years old. The third sweep started in 2006. Information collected includes families' socio-economic status, the quality of family life, and the health and well-being of parents and infants.

- **The Effective Provision of Pre-school Education** (EPPE) data – a wide range of information collected on 3,000 children. The study looks at background characteristics related to parents, the child's home environment and the pre-school settings children attended. Settings were drawn from a range of providers (local authority day nurseries, integrated centres, playgroups, private day nurseries, nursery schools and nursery classes). A sample of 'home' children (who had no or minimal pre-school experience) were recruited to the study at entry to school for comparison with the pre-school group.

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This report reviews recent literature and research data on the ways that early years experiences impact on life chances. It focuses in particular on life chances associated with ethnicity, gender, disability and sexual orientation.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- Early years development and later life outcomes are related to parental socio-economic status and education.
- The quality of the home learning environment and parental aspirations are important influences on children's development.
- Poverty is a key explanatory factor for poor life outcomes.

WHAT THIS REPORT ADDS

- The report draws together existing knowledge on groups within the population who experience disadvantage in life chances.
- Girls do better at school than boys, disabled students' aspirations are no different from those of non-disabled students, and children from minority ethnic communities generally perform better at school than other children once poverty is controlled for. In employment, however, women, disabled people and people from minority ethnic communities all earn less. The report reviews what is known about the reasons for such differences.
- It also highlights gaps in knowledge and areas where better data are needed, such as the impact of homophobic bullying on educational attainment and future careers.