Young People and School GCSE Attainment: Exploring the 'Middle'

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Abstract

The term 'missing middle' has been used to describe the position of ordinary young people in youth research. There have been recent appeals for youth researchers to concentrate upon the lives of ordinary young people and to better document their educational experiences through the secondary analysis of large-scale social surveys. This paper presents a series of exploratory analyses that attempt to identify the school-level educational attainment and social characteristics of ordinary young people using contemporary survey data.

We undertake a series of exploratory analyses of data from the British Household Panel Survey. These data cover the period directly after General Certificate of Secondary Education (GCSE) qualifications were introduced. The dataset provides measures of school attainment and suitable individual, household and parental measures. We detect gender differences in school GCSE performance, with females outperforming males. There are some effects due to differences in parental education levels and household circumstances. There is a large group of young people who fail to gain any GCSEs, their attainment falls far short of benchmark standards, and has negative consequences. In contrast gaining a moderate level of GCSEs at school has a positive effect in relation to employment in early adulthood.

Our analyses fail to convince us that there are distinctive, or discrete, categories of GCSE attainment. The evidence explored here persuades us that there are no crisp boundaries that mark out a 'middle' category of moderate GCSE attainment. We conclude that there are clear benefits to understanding school attainment as being located upon a continuum, and that measures which reflect the heterogeneity of GCSE performance as fully as possible should be preferred.

Keywords: *Sociology of Youth, Educational Attainment, GCSE, Missing Middle, British Household Panel Survey.*

Introduction

1.1 The concept of studying 'ordinary kids' is not novel within youth research (for example see Brown 1987; Jenkins 1983; Pye 1988). In two recent papers Roberts (2011; 2012) appeals to youth researchers to concentrate upon the lives of ordinary young people, and to better document their educational experiences through the secondary analysis of large-scale social surveys. This paper presents a series of exploratory analyses that attempt to identify the school-level educational attainment and social characteristics of ordinary young people using contemporary survey data.

1.2 Roberts (2011) employs the term 'missing middle' to describe ordinary young people, and he states that they are often neglected within youth research. Our opening position is that a comprehensive meta-analysis of youth research and its neighbouring disciplines would be required to judge whether or not a 'middle' group of young people have been ignored. In this paper we address the more prosaic question 'is there a middle group of ordinary young people that can be characterised by their educational performance at school and their social characteristics?'

1.3 Sociologists of youth are in general agreement that the background against which young people grew up in the closing decades of the twentieth century was transformed substantially by changes in education, employment, unemployment, training and access to welfare benefits (Gayle, Lambert and Murray 2009a). The 1988 Education Reform Act brought dramatic changes to the organisation and management of schools and introduced a revised system of school qualifications. The wider structural changes in economic conditions, coupled with these educational changes may have given rise to a distinctive 'middle' group of young people who achieve moderate qualification levels at school. This 'middle' group of potentially ordinary young people that are neither well qualified nor unqualified are the focus of this paper.

The General Certificate of Secondary Education (GCSE)

2.1 Introduced by the Education Reform Act 1988, the General Certificate of Secondary Education (GCSE) is the standard qualification undertaken at the end of compulsory school (in year 11) by English and

Welsh pupils (Department of Education 1985; Mobley *et al.* 1986; North 1987). GCSEs are usually a mixture of both assessed coursework and examinations (Ashford, Gray and Tranmer 1993). Commonly each subject is assessed separately and a subject specific GCSE is awarded. Courses are ordinarily spread over school years 10 and 11 (age 15-16) and pupils study for about nine GCSE subjects, which will include core subjects (e.g. English, Maths and Science) and non-core subjects. Each GCSE subject is graded using discrete ordered categories. Originally the highest grade was grade A, and the lowest grade G, but in 1994 a higher grade of A* was introduced (Yang and Woodhouse 2001).

2.2 We argue that school GCSE attainment is worthy of sociological attention for a number of reasons. Since the widespread comprehensivisation of secondary schools this diet of examinations marks the first major branching point in a young person's educational career. The progressive structure of the British education system means that poor GCSE attainment is a considerable obstacle which often prevents young people from pursuing more advanced educational courses. GCSEs are the main entry requirement for courses at National Qualification Framework Level 3. This level includes General Certificate of Education Advanced Levels (GCE A'Level), which are a typical entry requirement for university courses. GCSEs are also the minimum educational qualification for many jobs.^[1]

2.3 School GCSE attainment is strongly related to participation in immediate post-compulsory education (Payne 1995; 2000; 2001; 2003). GCSEs are often the only educational qualifications gained by young people who choose to leave education at the minimum age (Leckie and Goldstien 2009). Rice (1999) reports a clear relationship between poor school GCSE performance and unemployment and low participation in further education. Young people's experiences at school and their school qualification level are strong determinants of their future success in both education and employment (Jones *et al.* 2003; Babb 2005; Murray 2011).

The British Household Panel Data

3.1 Roberts (2011) states that 'establishing where such ordinary youth reside, ascertaining social characteristics and how qualified they might be is achievable through secondary analysis of data sets' (p. 22). Although the BHPS is not specifically a youth dataset it offers great potential for studying the lives of young people growing up in Britain. It is particularly appropriate for studying young people growing up in the 1990s after GCSEs were introduced (Gayle 2005). Gayle, Lambert and Murray (2009b) and more recently Murray (2011) have successfully undertaken youth research using BHPS data.

3.2 The BHPS was a nationally representative survey of individuals within households which was conducted from 1991 to 2008, and has been subsumed into *Understanding Society* (The UK Household Longitudinal Study). The BHPS was an annual survey of approximately 10,000 individuals living within over 5,000 households. From 1994 data were also collected on children in the households aged 11-15. At age sixteen a young person enters the adult sample of the BHPS and undertakes the full annual adult interview (Taylor *et al.* 2010). This feature means there is a great potential for following young people through the youth period and into adulthood.

3.3 The sample in the present paper consists of young BHPS members who participated in the youth panel, and subsequently aged into the adult BHPS sample at 16. To present a coherent picture of a contemporary cohort we focus specifically on individuals from England and Wales born in the 1980s. These young people were undertaking their GCSEs from 1996 to 2005^[2]. We link information regarding the young persons' parents and household when they were undertaking their GCSE courses with their school GCSE attainment. Then we link this information to details concerning subsequent educational activities and employment in early adulthood.

Measuring School GCSE Attainment

4.1 The measurement of qualifications raises some interesting issues since there is no agreed standard way of categorising educational qualifications (Prandy *et al.* 2004). The difficulty in measuring GCSE attainment can be expressed simply. Young people study for many GCSEs and the award is for the individual subject (e.g. Maths, English, History, etc.). The grade is alphabetical rather than numerical and there is no obvious method of aggregation, and therefore no single clear indicator of moderate, or ordinary, levels of school GCSE attainment.

4.2 The National Qualifications Framework (NQF) is a framework developed to illustrate the level and category of official qualifications^[3]. Within the framework GCSEs at grades D-G are at level 1 and GCSEs at grades A*-C are at the level above, level 2. The BHPS collects information on the number of school GCSEs attained at grades A*-C and at grades D-G. Because the BHPS is not a specialist education dataset it does not collect finely detailed grade information, or GCSE subject level information.

4.3 Gaining five or more GCSEs at grades A*-C is a standard school benchmark and it is used in official reporting (see Leckie and Goldstein 2009). This benchmark is routinely employed in a wide variety of social science applications (e.g. Gayle *et al.* 2003; Connolly 2006; Tunstall *et al.* 2011; Sullivan *et al.* 2011). In order to operationalise the analysis we begin by constructing a measure of GCSE attainment with a 'middle' group of moderately qualified young people. This 'middle' group are neither well qualified nor completely unqualified. They have obtained some (i.e. 1- 4) GCSEs at grades A*-C, but have not achieved the official benchmark of five or more GCSEs at grades A*-C. In the latter part of the paper we extend our exploration of school attainment and examine the distribution of GCSEs at grades A*-C.

Explanatory Variables

5.1 A strength of using BHPS data is that it contains a wealth of information on the household in which the young person lives, and it contains measures collected directly from their parents and step-parents. We focus upon gender, parental social class, parental education and housing tenure. These explanatory variables are implicated in previous studies of school GCSE attainment (for example Drew *et al.* 1992; Drew 1995; Demack *et al.* 2000; Gayle *et al.* 2003; Connolly 2006; Gayle *et al.* 2009a; Sullivan *et al.* 2011).

5.2 During the 1970s and 1980s the primary focus of research on gender in the field of education was on girls (Warrington and Younger 2000). The overall message was that expectations, aspirations and choices were structured along traditional gender lines to the disadvantage of young women (see for example Sharpe 1976; Deem 1980; Griffin 1985). The situation is now reversed and there is currently growing concern about the under-achievement of boys (Younger and Warrington 2005). Since the introduction of

GCSEs female pupils have out-performed their male counterparts and continue to do so (DfES 2007).

5.3 The differential levels of school attainment achieved by pupils from less advantaged social class backgrounds is persistent and has been well documented (for example see Halsey *et al.* 1980; Blackburn and Marsh 1991; Shavit and Blossfeld 1991; Savage and Egerton 1997; Goldthorpe and Jackson 2008). As Demack *et al.* (2000) note the relationship between school GCSE attainment and social class is striking both in the magnitude of the differences in attainment between pupils from advantaged and disadvantaged backgrounds, and in the rigid and persistent nature of these inequalities. Multivariate analyses of nationally representative youth data highlight that the effects of parental social class on school GCSE attainment are much stronger than gender effects (Drew *et al.* 1992; Gayle *et al.* 2003; Gayle *et al.* 2009a). Housing tenure is included in the analysis to provide additional control for the young person's family circumstances.

5.4 Ethnic differences in school GCSE attainment are well known (see Drew *et al.* 1992; Drew and Gray 1990; Drew 1995; Demack *et al.* 2000; Bhattacharyya *et al.* 2003; Rothon 2007). The overall pattern is not simply one of ethnic discrimination. Pupils from some ethnic groups, for example those of Indian and Chinese origin, outperform their white counterparts. Conversely, pupils of Black, Pakistani and Bangladeshi origins do less well than white pupils. The BHPS is a general nationally representative household dataset, and therefore its coverage of minority ethnic groups is correspondingly low. Consequently in the present research we are unable to undertake statistically meaningful analysis of differences between young people from different ethnic groups because sub-sample sizes are small.

Exploring the Middle

6.1 The characteristics of the sample are outlined in Table 1. There is a significant relationship between school GCSE attainment and the young person's main economic activity at age eighteen (see Table 2). Fifteen percent of pupils with no school GCSEs at grades A*-C were unemployed at age eighteen compared with ten percent of those with 1-4 GCSEs at grades A*-C, and only eight percent of those that had achieved the benchmark of five or more GCSEs at grades A*-C. Sixty two percent of young people with 'middle' levels of GCSE attainment (i.e. 1-4 GCSEs at grades A*-C) were employed. Over fifty percent of young people who attained the benchmark of five or more GCSEs at grades A*-C were in education at age eighteen.

Table 1. Descriptive Statistics.

Variable	Category	All
GCSE Attainment		Frequency (Column %)
	<i>None (No GCSEs)</i>	265(37)
	<i>Middle (Any GCSEs Grade A-C)</i>	131(18)
	<i>Benchmark (5+ GCSEs Grade A-C)</i>	317(44)
Gender	<i>Female</i>	349(49)
	<i>Male</i>	364(51)
Parental Social Class (3 Category NS-SEC)	<i>Routine/Manual</i>	227(32)
	<i>Intermediate</i>	146(20)
	<i>Managerial/Professional</i>	340(48)
Parental Education	<i>None</i>	77(11)
	<i>Sub-Degree (i.e. school level qualifications)</i>	496(69)
	<i>Degree Level</i>	140(20)
Housing Tenure	<i>Renters (Private & Local Authority)</i>	124(17)
	<i>Home Owners</i>	589(83)
Economic Activity at age 17	<i>Not in Education</i>	173(30)
	<i>Education</i>	399
Economic Activity at age 20	<i>Unemployed¹</i>	48(10)
	<i>Employed</i>	134(23)
	<i>Education</i>	399(70)

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data.

¹The 'Unemployed' category also includes sample members who are otherwise out of the labour market.

Table 2. Main Economic Activity (age 18) by School GCSE Attainment.

Main Economic Activity at age 18	All	GCSE Attainment (A*-C)		
		None	Middle	Benchmark
Unemployed ¹	Frequency (Column %) 61(10)	Frequency (Column %) 22(15)	18(10)	21(8)
Employed	258(44)	60(41)	109(62)	99(38)
Education	268(46)	65(44)	50(28)	143(54)
		$\chi^2 = 35.15@ 4d.f., p \leq 0.001$ Cramér's V = 0.17 Gamma = 0.06		

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data, n=587.

¹The 'Unemployed' category includes sample members who are otherwise out of the labour market.

Table 3. Main Economic Activity (age 20) by School GCSE Attainment.

Main Economic Activity at age 20	All	GCSE Attainment (A*-C)		
		None	Middle	Benchmark
Unemployed ¹	Frequency (Column %) 48(10)	Frequency (Column %) 15(12)	21(16)	12(6)
Employed	246(52)	65(54)	94(71)	87(40)
Education	176(37)	41(34)	17(13)	118(54)
		$\chi^2 = 62.96@ 4d.f., p \leq 0.001$ Cramér's V = 0.26 Gamma = 0.16		

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data, n=470.

¹The 'Unemployed' category includes sample members who are otherwise out of the labour market.

6.2 There is also a significant relationship between school GCSE attainment and the young person's main economic activity at age twenty (see Table 3). Seventy one percent of pupils with the 'middle' level of GCSE attainment were employed compared with fifty four percent of young people with no school GCSEs, and forty percent of those with the benchmark. Further exploratory work indicated that a larger proportion of those in education at age eighteen with middle levels of school GCSE attainment had moved into employment by age twenty than those with the benchmark level of school GCSE attainment. Taken together these initial results indicate that having moderate, or 'middle', levels of school GCSE attainment has consequences for a young person's economic and educational activity in early adulthood.

Characterising 'Middle' Level School GCSE Attainment

7.1 In this section we attempt to identify the characteristics of young people who attain 'middle' or moderate levels of the school GCSE attainment. Bivariate relationships between the key explanatory factors and school GCSE attainment are reported in Table 4. Overall female pupils perform better than males, and parental social class, parental education and housing tenure are all significant.

7.2 In the next stage of the analysis we estimate a multinomial logistic regression model. The outcome measure takes the following three levels:

No school GCSEs at grades A*-C (no NQF level 2 GCSEs)

1-4 school GCSEs at grades A*-C (the 'middle' category, or moderate GCSE attainment)

5+ school GCSEs at grades A*-C (the national benchmark for school GCSE attainment)

7.3 The results of the model are reported in Table 5. Overall there is no clear pattern that identifies 'no GCSE' school attainment rather than the 'middle', or moderate, level of attainment. Pupils with managerial/professional parents are significantly less likely not to gain any GCSEs at grades A*-C. There are both gender and parental education effects relating to attaining the benchmark level of 5+ GCSEs at grades A*-C rather than the 'middle' category of 1-4 GCSEs at grades A*-C. Young males are significantly more likely to be in the 'middle' category. Pupils with more educated parents are significantly more likely to achieve the benchmark of 5+ GCSEs at grades A*-C. Whilst a strong pattern fails to be detected these results are broadly consistent with analyses of school GCSE attainment using larger youth datasets (e.g. Gayle *et al.* 2003; Connolly 2006).

Table 4. Exploratory Analysis School GCSE Attainment (Grades A*-C).

Variable	Category	GCSE Attainment (A*-C) ¹		
		None	Middle	Benchmark
Gender		Frequency (Row %)		
	<i>Female</i>	117(34)	56(16)	176(50)
	<i>Male</i>	148(41)	75(21)	141(39)
		$\chi^2 = 9.93 @ 2d.f., p \leq 0.01$ Cramér's V = 0.11		
Parental Social Class (3 Category NS-SEC)				
	<i>Routine/Manual</i>	110(48)	41(18)	76(33)
	<i>Intermediate</i>	60(41)	28(19)	58(40)
	<i>Managerial/Professional</i>	95(28)	62(18)	183(54)
		$\chi^2 = 29.84 @ 4d.f., p \leq 0.001$ Cramér's V = 0.14 Gamma = 0.29		
Parental Education				
	<i>None</i>	41(53)	18(23)	18(23)
	<i>Sub-Degree (i.e. school level qualifications)</i>	185(37)	96(19)	215(43)
	<i>Degree Level</i>	39(28)	17(12)	84(60)
		$\chi^2 = 28.33 @ 4d.f., p \leq 0.001$ Cramér's V = 0.14 Gamma = 0.31		
Housing Tenure				
	<i>Renters (private & Local Authority)</i>	68(55)	22(18)	34(27)
	<i>Home Owners</i>	197(33)	109(19)	283(48)
		$\chi^2 = 22.45 @ 2d.f., p \leq 0.001$ Cramér's V = 0.18		

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data, n=713.

¹None (No GCSEs A*-C), *Middle (those who gain one to four GCSEs at grades A*-C)*, Benchmark (At least 5 GCSEs Grade A*-C).

Table 5. Multinomial Logistic regression on GCSE (A*-C) Attainment Categories.

	None (No GCSEs A*-C) versus Middle (1-4 GCSEs A*-C)		Benchmark (5+ GCSEs Grade A*-C) versus Middle (1-4 GCSEs A*-C)	
	Coefficient	SE	Coefficient	SE
Gender				
Female	0.00	(0.00)	0.00	(0.00)
Male	-0.06	(0.22)	-0.60 **	(0.21)
Parental Social Class				
Routine/Manual	0.00	(0.00)	0.00	(0.00)
Intermediate	-0.21	(0.30)	0.02	(0.31)
Managerial/Professional	-0.61 *	(0.27)	-0.03	(0.27)
School Year	-0.05	(0.04)	-0.04	(0.04)
Parental Education				
None	0.00	(0.00)	0.00	(0.00)
Sub-Degree (e.g. school level qualifications)	0.13	(0.33)	0.82 *	(0.37)
Degree Level	0.59	(0.45)	1.66 ***	(0.47)
Home Owners				
Renters (Private & Local Authority)	0.00	(0.00)	0.00	(0.00)
Home Owners	-0.41	(0.29)	0.32	(0.32)
Constant	1.46 ***	(0.41)	0.23	(0.46)
Log-likelihood	-706.72			
Nagelkerke R ²	0.11			
McFadden's Adjusted R ²	0.01			
Total Number of Observations	713			

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data.

Further Exploring the Middle

8.1 In this section we further explore the concept of a 'middle' category of moderate school GCSE attainment. The benchmark of five or more GCSEs at grades A*-C is widely recognised but is largely an administrative measure. In order to operationalise the analyses we chose 1-4 GCSEs at grades A*-C as a measure of moderate attainment. This is a theoretically defensible measure of 'middle' attainment and it indicates that a pupil is neither unqualified or well qualified. In the spirit of exploratory data analysis we undertake some additional analyses to further test this concept.

8.2 Various analyses have demonstrated that school GCSE attainment is central to participation in post-compulsory education (e.g. Drew *et al.* 1992; Rice 1999; Jones *et al.* 2003; Gayle *et al.* 2000; Gayle *et al.* 2003; Babb 2005; Murray 2011). We estimated a series of logistic regression models with the outcome measure being participation in education at age 17. An overall goodness of fit measure for each model is reported in Table 6. This exercise leads us to conclude that a middle category of 1-4 GCSEs at grades A*-C performs relatively well. Alternative measures that include pupils with either five or six GCSEs at grades A*-C do not have increased explanatory power. There is a very slight increase in the adjusted R² value when the middle category is extended to include pupils with seven GCSEs at grades A*-C. Given the pattern of national attainment we consider that this is too high a level of school GCSE achievement to reasonably constitute a 'middle' or moderate level of attainment.

Table 6. Alternative Measures of the 'Middle' Category School GCSE Attainment and Participation in Education Age 17

			Logistic Regression Model (In Education) Age 17 ¹
Measure of Middle Category			McFadden's Adjusted R ²
None	Middle	High	
0	1-2	3+	0.02
0	1-3	4+	0.04
0	1-4	5+	0.07
0	1-5	6+	0.07
0	1-6	7+	0.07
0	1-7	8+	0.08

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data.

¹ The models contain the measure of GCSE attainment only.

Figure 1.

Table 7. Exploratory Analysis Number of School GCSE Attained (Grades A*-C).

Variable	Category	Mean	Standard Error of the Mean	Median
GCSE Attainment				
	<i>Number of GCSEs (A*-C)</i>	4.25	1.56	3
Gender				
	<i>Female</i>	4.78	0.23	5
	<i>Male</i>	3.74	0.21	2
Parental Social Class (3 Category NS-SEC)				
	<i>Routine/Manual</i>	3.23	0.26	1
	<i>Intermediate</i>	3.66	0.32	3
	<i>Managerial/Professional</i>	5.18	0.23	6
Parental Education				
	<i>None</i>	2.44	0.39	0
	<i>Sub-Degree (i.e. school level qualifications)</i>	4.10	0.18	3
	<i>Degree Level</i>	5.75	0.38	8
Housing Tenure				
	<i>Renters (Private & Local Authority)</i>	2.72	0.35	0
	<i>Home Owners</i>	4.57	0.17	4

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data, n=713.

8.3 There is not a compulsory number of GCSE subjects that a pupil must undertake. The number of GCSE subjects that a pupil studies for is influenced by both the local policy within their school and national policy (an account of the variation is provided by Gill 2011). Figure 1 depicts the number of GCSEs at grades A*-C attained in school year 11. The large group of young people, thirty seven per cent, that obtain no GCSEs at grades A*-C is immediately striking. At the other end of the distribution, seven per cent of pupils obtained eight GCSEs and eleven per cent of pupils obtained nine GCSEs. Overall just under a third of pupils obtained eight or more GCSEs. There is a clear spike at zero GCSEs but there is no obviously detectable cluster of 'middle' or moderate GCSE attainment at grades A*-C. This raises a question mark, and therefore in the next stage of the analysis we will further explore the distribution.

8.4 Table 7 reports exploratory analysis of the number of school GCSEs at grades A*-C attained in year 11. Female pupils out perform their male counterparts and young people with more occupationally advantaged parents achieve more school GCSEs. Pupils with better educated parents and those from families that own their own home also perform better. These descriptive results are in line with other studies of school GCSE attainment (e.g. Gayle *et al.* 2003; Connolly 2006).

8.5 The number of school GCSEs at grades A*-C is a count, and standard linear regression analysis is not suitable for count data (Cameron and Trivedi 1998). Poisson regression models are routinely used but, as we have indicated there is an over-representation of zero counts (i.e. thirty seven per cent of pupils with no GCSEs at grades A*-C). This limitation of a poisson model is elaborated upon by Long (1997). The zero inflated poisson (ZIP) model overcomes this obstacle by modelling a two-state process (see Lambert 1992). In the present context this involves a logistic model which estimates the attainment of no GCSEs at grades A*-C, followed by a poisson model of the number (i.e. the count) of GCSEs at grades A*-C.

8.6 Table 8 reports the results of the ZIP model. The upper panel of Table 8 reports the results of the logistic model estimating zero GCSEs at grades A*-C. Males have higher odds than females of attaining zero GCSEs at grades A*-C. Young people with managerial/professional parents have significantly lower odds of gaining zero GCSEs at grades A*-C. Young people living in homes owned by their parents also have lower odds of attaining no GCSEs at grades A*-C.

8.7 The lower panel of Table 8 reports the results of the poisson model of the number of GCSEs attained at grades A*-C. Given that they have attained at least one GCSE (A*-C) males gain significantly fewer GCSEs than females. Parental education levels are significant. Pupils with more educated parents gain more GCSEs at grades A*-C.

8.8 The message emerging from the model is that the predictors are not common across the two stages. There is clearly a group of young people that do not gain any GCSEs and this group are less likely to be female or from a more advantaged family. The second group attain some GCSEs at grades A*-C and their school GCSE attainment is better understood as a lying along a continuum. Females in this group perform better than males and higher levels of parental education are also positively influential.

Table 8. Exploratory Analysis Number of School GCSE Attained (Grades A*-C).

Variable	Coefficient	Standard Error
Zero GCSE attainment (Logistic estimation)		
Female	0.00	(0.00)
Male	0.34 *	(0.16)
Parental Social Class (3 Category NS-SEC)		
<i>Routine/Manual</i>	0.00	(0.00)
<i>Intermediate</i>	-0.22	(0.22)
<i>Managerial/Professional</i>	-0.64 **	(0.20)
School Year	-0.02	(0.03)
Parental Education		
<i>None</i>	0.00	(0.00)
<i>Sub-Degree (e.g. school level qualifications)</i>	-0.35	(0.26)
<i>Degree Level</i>	-0.51	(0.33)
Home Owners		
<i>Renters (Private & Local Authority)</i>	0.00	(0.00)
<i>Home Owners</i>	-0.62 **	(0.21)
Constant	0.57	(0.32)
Number of Observations	265	

Non-zero GCSE attainment (Poisson estimation)			
Female	0.00		(0.00)
Male	-0.15	***	(0.04)
Parental Social Class (3 Category NS-SEC)			
<i>Routine/Manual</i>	0.00		(0.35)
<i>Intermediate</i>	-0.01		(0.06)
<i>Managerial/Professional</i>	0.05		(0.05)
School Year	0.00		(0.01)
Parental Education			
<i>None</i>	0.00		(0.00)
<i>Sub-Degree (e.g. school level qualifications)</i>	0.22	**	(0.08)
<i>Degree Level</i>	0.40	***	(0.09)
Home Owners			
<i>Renters (Private & Local Authority)</i>	0.00		(0.00)
<i>Home Owners</i>	0.08		(0.06)
Constant	1.62		(0.09)
Number of Observations	448		
Total Number of Observations	713		
Log-likelihood	-1633.65		

Notes: British Household Panel Survey 'rising 16s', England and Wales, unweighted data.

¹We report the results of a Zero Inflated Poisson model (ZIP). We considered alternative models. The estimated zero proportions from the Poisson, Negative Binomial and ZIP models are 3%, 31% and 39% respectively. The observed zero proportion was 39%, and therefore, we contend that the ZIP model is the most appropriate for the present data.

8.9 In the final stage of the analysis we examine the relative explanatory power of some alternative measures of year 11 GCSE attainment in logistic regression models of participation in education at age twenty. Figure 2 reports the adjusted R^2 values for four measures of GCSE attainment, and a Bayesian Information Criterion statistic (BIC) as a measure of parsimony (see Raftery 1995). Model A includes a crude binary measure of attainment (any GCSEs at grades A*-C). Model B uses the familiar benchmark of five or more GCSEs at grades A*-C and is an improvement on Model A. Model C includes a middle category of 1-4 GCSEs at grades A*-C, it offers no improvement in explanatory power and is less parsimonious than Model B. Model D includes the count of GCSEs at grades A*-C, it has increased explanatory power and is more parsimonious than the three previous models. This result is further encouragement that the number of GCSEs at grades A*-C should be preferred in many analyses.

Figure 2.

Conclusion

9.1 In Britain, school attainment plays a central and critical role in young people's educational and employment trajectories. Indeed Noah and Eckstein (1992) state that while particular examinations have come and gone during the past forty years, the underlying social and educational significance of school examinations has been preserved. British young people grew up in changing educational and economic circumstances in the last two decades (Furlong and Cartmel 2007). The post-1990 period is important because it followed structural changes in the British secondary school system, including the introduction of GCSEs in England and Wales.

9.2 This paper has set out the results of a series of explanatory analyses of year 11 GCSE attainment. The analyses were initially motivated by the desire to explore the legitimacy of the theoretical idea of a 'middle' group of ordinary young people with modest qualification levels. A sizeable proportion of young people failed to gain any GCSEs at grades A*-C. This is obviously far short of the benchmark target and is consequential because those without school level qualifications usually have fewer choices and chances than their better qualified counterparts.

9.3 Roberts (2011) rightly contends that a bifurcated conceptualisation of the outcomes and experiences of youth is not adequate. As a solution he argues for the detailed analysis of a third category, comprising ordinary or non-spectacular young people, the 'middle'. However our analyses fail to convince us that there were distinctive, or discrete, categories of GCSE attainment. The evidence explored here persuades us that there are no crisp boundaries that mark out a 'middle' category of moderate GCSE attainment. With the exception of the sharp spike of young people that were unsuccessful in gaining any awards at grades A*-C, we fail to observe the presence of any clusters that indicate clear cohesive GCSE attainment groups. Therefore we suggest that researchers exercise a suitable degree of caution before making additional claims about the GCSE attainment of 'ordinary' young people.

9.4 Our analysis convinces us that there are clear benefits to understanding school attainment as being located upon a continuum, and that measures which reflect the heterogeneity of GCSE performance as fully as possible should be preferred. These include continuous measures such as the number of GCSEs gained at grades A*-C. In many social surveys only crude measures of educational attainment are available. For many analyses a categorical measure of GCSE school attainment will be suitable. In such circumstances we recommend that categorical GCSE attainment measures should not be understood as substantively meaningful categories. Rather they should be considered as coarse groupings of a more continuous measure.

9.5 An obvious constraint of combining results to form an overall measure of GCSE attainment is that an A* in Sociology, a B in Music, and a C in Maths are treated similarly in determining a pupil's level of attainment. This issue is well rehearsed in Gorard and Taylor (2002). Some official documents (e.g. school league tables) have more recently included a measure of the proportion of pupils gaining five or more GCSEs at grades A*-C including Maths and English. This alternative benchmark measure is more refined and we suspect that it is likely to be useful and discerning, as an explanatory measure in some analyses. Unfortunately it cannot be derived from BHPS data.

9.6 Our emerging view is that there is obvious appeal to analysing GCSE attainment at the individual subject level. Playford (2011) provides some promising results. Through latent class models his work identifies two groups of pupils that have moderate levels of GCSE attainment. The first group are characterised by good attainment in science subjects and account for about ten percent of this sample. By contrast the second group are characterised by good attainment in humanities subjects, but poor attainment in maths and science subjects. This second group account for about twenty percent of this sample. These patterns are hidden within more general overall measures of GCSE attainment. Playford (2011) reports results for a single school year cohort, and it would be informative to establish whether or not these patterns of latent classes persist across multiple cohorts. Latent variable analyses are an attractive approach but regrettably, the detail required at the level of individual GCSE awards is not available in BHPS data.

9.7 There was an initial theoretical attraction to the idea of a 'middle' group of ordinary young people. We believe that sociologists of youth should study 'ordinary' young people and moderate, or unspectacular, levels of school attainment. There is much to be gained by understanding the educational experiences, characteristics and qualifications of pupils across the full spectrum. However, our exploratory analyses of the BHPS lead us to conclude that there is no persuasive evidence that there is a distinctive and discrete 'middle' level of school GCSE attainment.

Notes

¹This point is made clearly on the edexcel website <<http://www.edexcel.com/iwantto/Pages/gcse.aspx>>.

²School year is included in the multivariate analyses as a background variable to provide control for the changing distribution of GCSE attainment (DfES 2007).

³See <<http://www.ncfe.org.uk/Qualifications/NationalQualificationsFrameworkNQF.aspx>>.

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