Effective Pre-school, Primary and Secondary Education (EPPSE 3 – 16+) Project

Influences on students' dispositions and well-being in Key Stage 4 at age 16

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Contents

List of Tables

Contents of Figures

Executive Summary

Using data from the longitudinal EPPSE study, this report provides an account of the latest findings on the analysis of students' dispositions in Year 11 of secondary education. It covers *Mental well-being, School enjoyment, Disaffected behaviour, General Academic self-concept* and students' relationships with their peers (*Resistance to Peer Influence*) at the end of Key Stage 4 (KS4, age 16). It also investigates aspects of students' lives and well-being based on their responses to questionnaire surveys on related topics including perceptions of their health, involvement in 'risky' behaviours (such as drug taking, alcohol, smoking, crime), educational and employment aspirations and out of school activities. A companion report investigates the same group of adolescents' views and experiences of their secondary schooling (Sammons et al., 2014a).

The findings on students' dispositions included in this report are part of a wider analysis of EPPSE students' educational outcomes from the final year of compulsory schooling including academic attainment measured by GCSE results and social-behavioural outcomes (from teacher ratings) which are discussed in two companion reports (Sammons et al., 2014b; 2014c). There will also be another report that focuses on these students' post 16 educational, training and employment choices.

The original EPPE study (1996-2003) investigated over 3000 children's intellectual and social-behavioural development between the ages of 3-7 years. It focused on early years experiences and pre-school influences that shaped developmental outcomes up to the end of KS1. The EPPE 3-11 study (2003-2008), followed up the same children to age 11 years investigating both pre-school and primary school influences on children's attainment, progress and social-behavioural development. The EPPSE 3-14 study (2007-2011) provided an additional extension to this longitudinal study in order to follow the same cohort to the end of Key Stage 3 (age 14). The EPPSE 16+ phase of the project followed the sample across KS4 and utilised earlier data on students' outcomes and a wide range of background information. The sample's developmental progress has now been monitored cross eight key time points (ages 3, 5, 6, 7, 10, 11, 14 and 16 years) until the end of compulsory secondary schooling and student self-report measures collected across four time points (ages 7, 10, 14 and 16 years).

The overall aim of the EPPSE 3-16+ analysis of student dispositions was to provide a picture of student life and adolescent behaviours in Year 11 at the end of compulsory schooling based on student questionnaires. The objectives were to:

- Provide a snapshot of student life and adolescent behaviours at the end of compulsory schooling;
- Explore the influence of student characteristics (e.g., gender, ethnicity), family demographics (e.g., parental qualification, family SES), home learning environment and neighbourhood as predictors of students' disposition outcomes at age 16;
- Explore any continuing impact of educational influences on dispositions in terms of the influence of the quality and effectiveness of pre-school, primary school and secondary school attended;
- Explore the impact of secondary school characteristics (e.g., school composition of intake, and students' school experiences) on student dispositions at age 16;
- To investigate the additional impact of student experiences such as family relationships, peer group and out of school activities (e.g., engagement in sports, organised groups) as influences on student dispositions at age 16.

Summary of findings

School life, academic self-concept and aspirations

Students in Year 11 were still very positive about secondary school; four out of five students reported liking school and their lessons (agree or strongly agree) and less than one in ten students reported that they felt out of place at school or that school was a waste of time.

Nonetheless, there was a small drop, from Year 9 to Year 11, in how much students reported they liked being in school although the majority were still very positive (82%). Comparing the views of students in Year 11 with the same students' views in Year 9 it was clear that during Year 11 students were more likely to n Year 11 think their school was a friendly place and less likely to feel out of place or feel school was a waste of time. Reported behaviour in class was also slightly better in Year 11, and students were significantly less likely to say they were bored in class in Year 11 (36% reported being bored in class in Year 11 compared to 41% in Year 9). However, it remains a concern that over a third of students in the sample felt bored by lessons in Year 11.

As a whole, students felt very safe in school in Year 11, with only a tiny minority (less than 5%) reporting feeling unsafe in either lessons or during break times.

Students were generally positive in their perceptions of their academic ability, and two thirds of students felt they had always done well in school subjects. Only a very small proportion (5%) felt 'hopeless' in school subjects. Responses indicate that school attainment was viewed as extremely important for the majority of students. Nearly six out of ten (59%) reported doing at least one hour of homework on an average school day, while a very small percentage (4%) reported doing three or more hours of homework a day.

Nine out of ten (90%) students thought it was very important to gain five good GCSEs (90% believed it was very important and 9% believed it was fairly important). This is a much higher proportion than actual success rates nationally. Around one out of five students (21%) inaccurately predicted that they would achieve 5 A*C GCSEs. Those who incorrectly predicted their results were more likely to have been overly optimistic, than to underestimate their likely attainment.

Over two thirds had similar beliefs about A-levels (72% very important, with another 13% indicating this was fairly important). Just over half felt it very important to get a degree in future (56% very important) while another quarter (24%) thought this fairly important. These findings reflect the high proportion of students (72%) that expected to go to university. The results support earlier findings in KS3 that also showed EPPSE students had high aspirations (see Sammons et al., 2011b, Baker et al., 2014 forthcoming). The EPPSE research findings challenge somewhat simplistic assumptions that attribute the equity gap in attainment and problems of social mobility on 'low aspirations' of young people (for further discussion of this issue see Baker, 2014 forthcoming).

No statistically significant gender differences were found regarding how important students felt qualifications were. Nonetheless, girls were slightly more likely to expect to go to university. Girls also reported spending significantly more time on homework than boys (e.g., 21% of girls but only 12% of boys reported spending more than two hours on a typical school day on homework). Again this trend supports findings on the same group in KS3. Elsewhere we show that over and above students' own background (income, SES, parent's qualifications etc.) important behaviours such as spending time on homework predict better attainment and progress (Sammons et al., 2011a; 2014a; Toth et al., 2012) and are strong predictors of academic attainment, progress and GCSE success. Students' views about whether they would apply to university were relatively stable over time, and only a small minority responded that they didn't know in both Year 9 and Year 11 suggesting students have already begun to make these important career decisions as earlier as Key stage 3, if not before.

Student well-being

Mental well-being

Overall scores on the Warwick-Edinburgh Mental Well-being scale were lower for girls than boys in Year 11, in line with higher *Anxiety* scores for girls found in Year 9. Boys were significantly more positive than girls in their responses to most items in the mental well-being scale, and larger gender differences were found for items such as feeling good about themselves, feeling confident and feeling relaxed. For example, 67% of boys reported feeling good about themselves 'often' or 'all the time' compared to only 43% of girls. Similarly 53% of boys reported feeling relaxed 'often' or 'all the time' compared to only 32% of girls.

Resistance to peer influence

Most students indicated they would be influenced by their peers in some circumstances. A number of survey items provided a measure of peer influence. Only five per cent of students thought it 'sort of true' or 'very true' they would break the law if their friends said they would, but two thirds (64%) thought they would take more risks when with their friends and over a third (34%) thought they would go along with their friends to keep them happy. Girls were more likely to indicate they would be resistant to this kind of peer influence than boys.

Physical Health

The vast majority of students (93%) reported that their health was 'very' or 'fairly' good. However, girls were substantially less likely to report being in good health (39% rated their health as very good compared to 54% of boys). Just over one in ten students (13%) reported that they had a longstanding illness, disability or infirmity during the last year. Of these students, half of them felt that it limited their daily activities (52%) and a slightly smaller proportion thought it made it harder to go to school or college (41%). Perceptions of physical health and mental well-being were found to be closely related.

Out of school activities

Computer use (surfing the net, social network sites) was high (over 95% of students reported using a computer in the last month), and three quarters of students reported playing computer/console games in the last month. There were strong gender differences. Boys were significantly more likely to report computer gaming than girls (58% of boys reporting gaming 6 or more times in the previous month compared to only 29% of girls). In contrast, girls were slightly more likely say they surfed the net or used social network sites.

Nearly two thirds of students reported reading for pleasure, but this figure was lower for boys (approximately half of boys indicated they rarely read for pleasure). Just one in five students had visited a library in the last month.

Approximately four out of five students had gone to a party or attended to at least one cultural event in the previous month (cinema, theatre or concert). In total, a third of students reported going to a pub or club in the last month, and one in ten (9%) reported going at least 3 times a month. Religious activity was less common, with less than one in five students (18%) reporting having gone to a religious activity in the last month.

Peer group and family dynamics

Peer group links were clearly important, with two thirds of students spending their spare time mainly with friends (65%) and over ninety per cent having spent time with friends in the last month. Three quarters of students at this age report having a best friend. However, a minority of students seemed isolated (12% reported spending most of their spare time alone).

Many Year 11 students reported spending time with their family. Two thirds had been on at least one family outing in the previous month and a quarter still chose to spend most of their spare time with their family.

Risky behaviours in Year 11

Students were asked about activities considered as risky to health or as risky anti-social behaviours and responses to these items were then combined to form an overall measure of 'risky' behaviours.

One in ten students reported daily smoking, and girls more likely to be regular smokers than boys (11% of girls compared to 8% of boys smoked daily) and to have ever tried a cigarette (41% compared to 34% of boys).

Approximately one in five students reported having tried Cannabis/other class B or legal drugs, and 3% reported having tried Class A drugs such as Cocaine, Ecstasy or Amphetamines. Very few (less than ten students for each) reported having taking solvents, LSD, Magic mushrooms, Steroids, Crack or Heroin. The most commonly reported drug used by 16 year olds was Cannabis, but only one per cent reported using Cannabis every day.

No gender differences in drug usage were found but students with more highly educated parents were more likely to report having tried any drug. For example approximately 14% of students whose parents had no qualifications reported taking any drugs compared to 26% of students whose parents have a degree or higher degree level qualification.

In total, approximately four out of five students reported that they had drunk alcohol at some point (80%), and approximately one in ten (9%) reported drinking at least once a week. Boys were more likely to indicate they were regular drinkers than girls.

Lack of exercise can also be considered a potential risk indicator for health, although it was not included in our risky index because it was so common it would overwhelm the index. Instead we report this separately. Nearly half of students had not taken part in any sports activity in the previous month in their spare time (42%). Girls were much less likely to report having taken part in Sport activities in their free time in the previous month than boys (43% of girls compared to 69% of boys).

Disadvantaged students (FSM) and students with parents with lower qualifications were more likely to have taken part in some form of sports activity out of school. Students were not asked about involvement in sports activities at school.

A minority (1 in 5) of students said they had truanted at some time during Year 11, although only 1% of the students reported truanting for days at a time. The main reasons given by students for truanting were school-related (61% of truants) although for a large minority personal issues were the drivers (45% mentioned this). The main reasons given were not liking particular lessons (40%), not liking particular teachers (26%), being bored (26%), because they were upset over a personal matter (25%) and not liking school (23%).

Students from more disadvantaged and less qualified families (FSM, parental qualifications) were more likely to report having truanted in Year 11 (e.g., 30% of FSM entitled students compared to 18% of non-FSM students).

An EPPSE 'risky' behaviour index was constructed from six behaviours that could be considered to put students at risk of poorer educational and health outcomes including anti-social behaviours (truanting, antisocial behaviour, having been in trouble with the police/law) and health risk behaviours (smoking, drinking, substance use). Although many of these behaviours did co-occur, the number of risks engaged in ranged from zero (59% of students) to six risky behaviours (<1%). One in five students (19%) engaged in two or more risky behaviours, and one in ten engaged in three or more (11%).

When investigated in combination, boys were more likely to engage in multiple risky behaviours than girls, as were older students in the year group. Characteristics predicting engagement in multiple risky behaviours included being in a single parent or reconstructed family (step parent in house), having high computer use or experiencing lower levels of academic supervision at home. Students for whom English was an Additional Language showed lower levels of multiple risk behaviours than White UK students. Elsewhere we report that these groups also tended to have better academic outcomes in Year 11 and this is in line with national statistics.

Higher levels of engagement in risky behaviours were associated with poorer perceived health, lower attainment, poorer behaviour and less favourable dispositions. These findings point to important interconnections between academic and socio-emotional development and the need to support overall well being of children and young people from the early years to the end of KS4.

Dispositions in Year 11

Five disposition outcomes: Mental well-being, School enjoyment, Disaffected behaviour, Resistance to peer influence and General academic self-concept were created using confirmatory factor analysis.

The impact of student, family and HLE influences on dispositions in Year 11

The following findings relate to the analysis of the net influence of student, family and home learning influences in predicting students' dispositions in Year 11.

Student background

In line with findings elsewhere (Morrison-Gutman and Feinstein 2008, Currie et al., 2008), boys reported higher levels of *Mental well-being* (ES=-0.45). Girls were likely to report lower levels of *Disaffected behaviour* (ES=-0.23), and higher *Resistance to peer influence* than boys (ES=0.34). This is in keeping with the analysis of social/behavioural outcomes in Year 11 where boys showed higher levels of Hyperactivity, and Anti-social behaviours and lower levels of Pro-social behaviour and Self-regulation (Sammons et al., 2014c).

At this age boys and girls reported similar *General Academic self-concept.* At first sight this is surprising as girls significantly out-perform boys in overall GCSE performance[1]. Once GCSE attainment was taken into account in the models, boys reported significantly more favourable beliefs in their general academic ability (*General academic self-concept*) among this age group (ES=0.20). This result fits with earlier findings in Year 9 on subject specific academic self-concept, where boys were found to have higher *Maths Academic self-concept* (Sammons et al., 2011b) even though their actual Maths attainment was no better than girls. Similarly, no gender differences were found for *English academic self-concept* in Year 9 even though girls were significantly out performing boys in terms of attainment.

In line with previous findings in Year 9, no significant gender differences were found for *School Enjoyment in* Year 11 (although gender differences in individual items were found)*.*

Students from different ethnic groups were compared to the majority ethnic group, White UK. In line with findings in Year 9, some ethnic differences were found in reported dispositions:

- Black African heritage students had more positive *Mental well-being* than the White UK group (ES=0.52).
- Pakistani heritage students tended to report more favourable *School enjoyment* (ES=0.59) higher *General academic self-concept* (ES=0.35) and lower levels of *Disaffected behaviour* (ES=-0.56).
- Indian heritage students also reported more favourable *School enjoyment* than White UK students (ES=0.60).
- Students of Mixed race heritage reported poorer *Mental well-being* (ES=-0.27) and lower *School enjoyment* than White UK students (ES=-0.29).

The numbers of students in ethnic minority groups were generally small so results should be treated with caution. However, the findings suggest, in line with earlier time points, that ethnic group heritage predicts some differences in dispositions. In particular, Pakistani students generally show more favourable dispositions and Mixed race students somewhat lower scores for some dispositions.

In line with reports of students in Year 9, older students in the year group (autumn born versus younger summer born) reported higher *General academic self-concept* than younger students (ES=0.17). This maybe a function of attainment differences that still exist at this time as the effect of age was no longer significant once prior attainment in Year 9 was taken into account. It does however show that students who were young for their year remain educationally disadvantaged across a range of outcomes throughout their schooling up to Year 11 (more likely to be identified as having SEN at earlier time points, poorer attainment and social behavioural outcomes and poorer self concepts).

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1 Girls were found to outperform boys in four of the five academic attainment measures collected in Year 11 for EPPSE student: overall GCSE score, % A*-C GCSEs (yes/no), English Baccalaureate (Yes/no), and English GCSE. There was no significant gender difference in GCSE Mathematics performance (See Sammons et al., 2014).

Family background

As previously found in Year 9, only a small number of family demographics predicted students' dispositions. Socio-economic disadvantage, in terms of Free School Meals entitlement (FSM) was not found to be significantly related to dispositions once the effects of other background variables were accounted for in the statistical models.

The employment status of mothers at entry to pre-school was found to predict *School enjoyment*; students whose mothers had been employed full time during pre-school enjoyed school more in Year 11 (ES=0.19). Students of fathers who were not working during pre-school had higher levels of reported *Disaffected behaviour* than students whose fathers had been working full-time (ES=0.21).

Higher parental qualifications predicted higher *General Academic self-concept* (the mother's qualification level; e.g., Degree ES=0.42), greater *School enjoyment* (father's qualification level, e.g., Degree ES=0.31) and lower *Resistance to Peer Influence* (highest parental qualification, e.g., Degree ES=-0.20). Student with relatively young mothers (25 or below at start of the study) had lower *General academic self-concept* than students whose mothers were older when they were recruited to the study (25-36 years old ES=0.19, 36+ ES=0.20).

Students from single parent families (at entry to pre-school) showed poorer *Mental well-being* in Year 11 than those from married households (ES=-0.33). Family structure in Year 11 was also collected from students and found to be associated with some dispositions. Students from households that contained a step-parent reported lower *School enjoyment* (ES=-0.17), lower *General Academic self-concept* (ES=-0.18) and higher levels of *Disaffected behaviour* (ES=0.17).

Home Learning environment (HLE)

Students' past experiences measured by the early years HLE predicted later academic attainment, social/behavioural outcomes and *Enjoyment of school* in both primary and lower secondary school (Sammons et al., 2011a; 2011b; 2011c). At the end of Year 11, students who had received a very good early HLE were found to have more favourable *General academic self-concept* and greater *School enjoyment* (ES=0.26). Higher levels of parent-child interaction in primary school also predicted lower levels of *Disaffected behaviour* (Medium ES=-0.23, High ES=-0.33).

Higher levels of parental academic supervision, as measured in Key stage 3, were associated with greater *Mental well-being* (e.g., High ES=0.43), increased *School enjoyment* (e.g., High ES=0.59), and *General academic self-concept* (e.g., High ES=0.22), increased *Resistance to peer influence* (e.g., High ES=0.48), and lower levels of *Disaffected behaviour* (e.g., High ES=-0.47). Higher levels of enrichment activities (measured in Key stage 3) also predicted more favourable *School enjoyment* (e.g., High ES=0.37), and *General academic self-concept* (e.g., High ES=0.39), as well as lower levels of *Disaffected behaviour* (e.g., High ES=-0.40). These HLE measures also predicted better academic outcomes in Year 9 and Year 11.

Neighbourhood

While administrative data on neighbourhood deprivation showed very little association with dispositions, in line with findings from the previous Year 9 analysis, neighbourhood safety appeared to be important. Students who felt their home neighbourhood was unsafe (feeling safe sometimes or rarely/never going to and from school) had significantly lower *Mental well-being* than students who always felt safe (e.g., Rarely/never felt safe ES=0.60). Similarly students who felt their neighbourhood was unsafe at the weekend had significantly lower *School enjoyment* than students who always felt safe (e.g., Rarely/never felt safe ES=0.53).

Students whose parents had rated their neighbourhood the lowest in terms of safety had greater levels of *Disaffected behaviour* than those whose parents had rated their neighbourhood most favourably for safety (e.g., Low safety ES=0.17).

Special Educational Needs (SEN)

Student classified with a SEN had significantly less favourable dispositions in Year 9 than other students without SEN. By Year 11, the impact of SEN was less pronounced but students on the SEN register (particularly School Action or School Action Plus) had significantly lower *School enjoyment* (e.g., School Action Plus ES=-0.66), lower *General academic self-concept* (e.g., School Action Plus ES=-0.68), and higher levels of *Disaffected behaviour* (e.g., School Action Plus ES=0.54), after controlling for the effects of the other individual family, HLE and neighbourhood influences.

Additional factors associated with reported dispositions in Year 11

Unlike academic attainment and to a lesser extent the social-behavioural outcomes, the contextualised multilevel analyses of dispositions account for only a small proportion of the variance in students' self-reported dispositions. Additional analyses explored the association between a number of other student variables, once student, family and home learning factors had been accounted for ·(contextualised model).

Health status and Year 11 dispositions

The majority of students described their health as good (46% very good, 47% fairly good). However, students who reported their health more negatively had significantly lower reported *Mental well-being* (e.g., Not very good/not good at all ES=-1.37), *General academic self-concept* (e.g., Not very good/not good at all ES=-0.54), and *School enjoyment* (e.g., Not very good/not good at all ES=-0.50). Students with poorer reported health also reported increased *Disaffected behaviour* (e.g., Not very good/not good at all ES=0.34).

Peer relationship and family dynamics for Mental well-being

Additional measures on the quality of family relationships and the experiences of young people were investigated for *Mental well-being*[2]. Some variables taken from parent and student questionnaires were identified as potential key indicators of peer relationships, and family dynamics and investigated in relation to predicting scores for *Mental well-being*.

Family relationships were found to be important. Family discord (ES=-0.27) and regular quarrelling with parents predicted poorer *Mental well-being* (ES=-0.22), although it must be noted that this relationship is likely to be reciprocal. Students who rarely ate an evening meal with their family also reported lower levels of *Mental well-being* (ES=-0.13). There was some evidence that students with stricter boundaries (in terms of set times to return home on an evening) had more favourable *Mental well-being* (ES=0.30).

Friendship groups were important for *Mental well-being*. Students had significantly lower *Mental well-being* if they reported spending most of their time alone in Year 9 (ES=-0.27) or being excluded from a friendship group in Year 9 (ES=-0.32).

Associations with attainment

After controlling for background influences, students with higher attainment tended to have more favourable views of their *General academic self-concept*, greater *School enjoyment*, and reported less *Disaffected behaviour*, as might be expected and in line with findings in Year 9 (Sammons et al., 2011b). In addition, GCSE attainment predicted better *Mental well-being* and higher *Resistance to peer influence*, although the size of the effect is small (Effect size<0.20). Again, it must be recognised that these relationships may well be reciprocal.

Educational influences

Pre-school

Pre-school experience (having attended pre-school versus not attended) did not predict any of the disposition outcomes. The quality of pre-school (as measured by the Caregivers Interaction Scale, ECERS-E and ECERS-R) and its effectiveness was also not significantly associated with most dispositions. However, students who had attended more effective pre-schools promoting 'Independence and concentration' in the pre-school period were found to have more positive dispositions compared to children who had stayed at home for *Resistance to peer influence*.

The net influence of primary school

Attending an academically effective primary school predicted a better *General Academic self-concept* in Year 11, after controlling for other factors. This may be because of improved attainment as attending an academically effective primary school was shown to predict better attainment and progress in KS2, and also later on shaped secondary school outcomes in both KS3 and KS4 and predicted better progress over KS3 and KS4 (see accompanying report on GCSE outcomes).

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[2] Only Mental well-being was explored in these models.

The net influence of secondary school

Attending a more effective secondary school (measured by national Contextualised Valued Added indicators published by the DfE) predicted greater *School enjoyment* and decreased *Disaffected behaviour*, controlling for other influences.

Ofsted judgements of secondary school quality also predicted greater *School enjoyment*, particularly the judgement related to attainment and standards. A similar pattern was found for predicting better *Mental well-being,* although to a lesser extent.

The quality of school and teaching processes, as experienced by students in Year 9 (self-reported measures derived from survey items) were found to be significant predictors of all dispositions, particularly *School enjoyment*, *Disaffected behaviour* and *General academic self-concept*. The extent that students felt their secondary school valued students (*Valuing students*) and their views of the behaviour climate (*Poor behaviour climate*) were predictive of *School enjoyment, and Mental well-being.* Moreover*,* perceptions of the *Emphasis on learning* were predictive of *Disaffected behaviour. Emphasis on learning* and *Learning resources* were the two self report factors found to be most predictive for *General academic self-concept.*

Concurrent views of teaching and school process collected in Year 11 were also predictors of dispositions in Year 11, especially for *School enjoyment* and *Disaffected behaviour*. The extent that students felt there was a positive relationship between teachers and students (*Positive relationships*) and the *Teacher professional focus* were also predictive of more positive dispositions.

These findings on students' dispositions, behaviours and experiences in Year 11 provide important new information about secondary school students' educational and social-emotional outcomes at the end of Key stage 4 of secondary school. They provide evidence on new topics for the EPPSE sample, especially *Mental well-being*, risky behaviours and other related family and health matters.

It can be seen that background influences were only weak predictors of dispositions and of mental health and risky behaviours. Nonetheless, some student groups do show significantly better or poorer outcomes. The self report measures reveal lower mental health and perceived physical health for girls. This is in contrast to their significantly better attainment and social behavioural outcomes in Year 11. The findings also reveal that many features of secondary school experience also predict better outcomes at age 16. Taken together with findings on academic outcomes in terms of GCSE results, and teachers' ratings of social behaviour in Year 11 the results in this report provide evidence about the factors that shape educational experiences, outcomes and life chances across different phases of schooling. It is encouraging that most students have high aspirations and positive self concepts. The results suggest that simple explanations, such as a lack of aspiration is unlikely to account for the educational attainment gap and marked differences in outcomes and future life chances, including differences in social mobility.

Table ES1.1: Summary of background influences on dispositions in Year 11

Characteristics	Mental well-being	School enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
Student Characteristics					
Gender (boys)	-0.45	ns	-0.23	0.34	ns
Age (within the years group)	ns	ns	ns	ns	0.17
Ethnicity (White UK heritage)					
White European heritage	ns	ns	ns	ns	ns
Black Caribbean heritage	ns	ns	ns	0.44	ns
Black African heritage	0.52	ns	ns	ns	ns
Any other ethnic minority	ns	ns	ns	ns	ns
Indian heritage	ns	0.60	ns	ns	ns
Pakistani heritage	ns	0.59	-0.56	ns	0.35
Bangladeshi heritage	ns	ns	ns	ns	ns
Mixed race	-0.27	-0.29	ns	ns	ns
Family Characteristics					
Parent's Highest SES at age3/5 (professional non-manual)					
Other Professional, Non-Manual	ns	ns	ns	ns	ns
Skilled; Manual or Non-manual	ns	ns	ns	ns	-0.17
Semi-skilled	ns	ns	ns	ns	ns
Unskilled	ns	ns	ns	ns	-0.41
Not working/never worked	ns	ns	ns	ns	ns
Mother's employment in the early years (not working)					
Working full-time	ns	0.19	ns	ns	ns
Working part-time	ns	ns	ns	ns	ns
Father's employment in the early years (working full-time)					
Working part-time	ns	ns	ns	ns	ns
Not working	ns	ns	0.21	ns	ns
Father absent	ns	ns	ns	ns	ns
Mother's age (Grouped) (16-25)					
26-35 years old	ns	ns	ns	ns	0.19
36+ years old	ns	ns	ns	ns	0.20

Characteristics	Mental well-being	School enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
Mother's /Father's/Parent's Highest Qualification Level (no qualifications)[3]					
Other Professional/Miscellaneous	ns	ns	ns	ns	ns
Vocational	ns	0.27	ns	ns	ns
16 academic	ns	0.28	ns	ns	ns
18 academic	ns	0.22	ns	ns	ns
Degree or equivalent	ns	0.31	ns	-0.20	0.42
Higher degree	ns	0.33	ns	-0.30	0.44
Family structure in Year 11 (living with both natural parents)					
Living in reconstituted family	ns	-0.17	0.17	ns	-0.18
Living with single parent	ns	ns	ns	ns	ns
Other arrangement	ns	ns	0.57	ns	ns
Marital Status of Parent/Guardian/Carer (married)					
Single	-0.33	ns	ns	ns	ns
Separated/Divorced	ns	ns	ns	ns	ns
Living with partner	ns	ns	ns	ns	ns
Widow/Widower	ns	ns	ns	ns	ns
Free School Meals (No)	ns	ns	ns	ns	ns
Home Learning Environment					
Early Years Home Learning Environment Index (Grouped) (Very low)					
Low (Index values: 14-19)	ns	ns	ns	ns	ns
Average (Index values: 20-24)	ns	ns	ns	ns	ns
High (Index values: 25-32)	ns	ns	ns	ns	ns
Very high (Index values: 33-45)	ns	0.26	ns	ns	0.26
KS2 Parent-child interaction (grouped) (low)					
Medium	ns	ns	-0.23	ns	ns
High	ns	ns	-0.33	ns	ns
KS3 Academic supervision (Grouped) (Low)					
Medium	ns	0.23	-0.15	0.33	ns
High	0.43	0.59	-0.47	0.48	0.22
KS3 Academic enrichment (Grouped) (Low)					
Medium	ns	0.18	-0.17	ns	0.16
High	ns	0.37	-0.40	ns	0.39

N.B. Table displays significant effects at the p<0.05 level or above

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[3] Father's highest qualification level predicted School enjoyment; Mother's highest qualification level predicted General academic self-concept; and highest qualification of either parent predicted Resistance to peer influence.

Introduction

Background to the EPPSE 3-16+ project

There is a growing recognition of need to investigate both academic and non-cognitive outcomes of schooling (Gray 2011). Non-cognitive skills such as *Self-regulation* are increasingly being recognised as important learning behaviours that can influence on other education outcomes (Sammons et al., 2011c) and student attitudes are valued as an integral part of the Ofsted inspection process. But beyond this there is a move towards a broader view of education that sees student well-being as incorporating not just academic outcomes but positive behavioural outcomes as well as favourable dispositions and aspirations. In a recent report by UNICEF (2007) the UK came bottom out of league table of 21 western countries in a six dimension measure of subjective well-being covering young people's subjective rating their own health, enjoyment of school and life satisfaction.

Many aspects of the National Curriculum being used in schools when EPPSE students were in KS3 and KS4 cover student well-being that goes beyond academic attainment such as Personal, Social, Health and Economic Education (PHSE) that addresses personal identities, healthy lifestyles, risk, Relationships, and Diversity, and Social and Emotional Aspects of Learning (SEAL).

The Effective Pre-school, Primary and Secondary Education 3-16+ (EPPSE 3-16+) project is a longitudinal, mixed methods study, commissioned by the Department for Education and Skills (now Department for Education). A nationally representative sample from five English regions and a range of pre-school provision type (private day nurseries, nursery schools, nursery classes, playgroups and integrated centres) were selected (Sammons et al., 1999). The project has tracked 3172 students across three phases of schooling (pre-school, primary and secondary school) up to the end of Key stage 4 and is now tracking their post 16 destinations. The original sample comprised of 2857 children who attended 141 pre-schools plus an additional approximately 315 children who had not attended pre-school, who entered the project at the start of primary school.

This initial phase of the project investigated what aspects of pre-school provision, in terms of aspects such as type, quality and quantity of provision that were the most effective in promoting children's academic and social-behavioural outcomes at the up to the end of Key stage 1 (Sylva et al., 2004). Utilising an educational effectiveness design, the study explored the impact of child, family and home learning environment on children's outcomes, as well as the additional impact of pre-school.

A second phase of the study (EPPE 3-11) extended the original EPPE study, to investigate the continuing impact of pre-school across primary schooling up to the end of Key stage 2 (Sylva et al., 2008) on academic and social-behavioural outcomes as well as pupil's self-perceptions, collected through self-report questionnaires (Sammons et al., 2008). For the first time the combined impact of pre-school and primary school academic effectiveness was explored.

The third phase of the project (EPPSE 3-14) continued to investigate the impact of pre-school up to the end of Key stage 3 (KS3) in secondary school on academic, social-behavioural development and student dispositions. Additional educational influences from the primary school and secondary school attended were also explored as well as the relative impact of child, family and home learning background over time (Sylva et al., 2012). Neighbourhood influences were also explored.

The fourth and final phase of the project (EPPSE 3-16+), reported here, continues to investigate the influences on student outcomes, such as student characteristics (such as gender, ethnicity), family demographics and socio-economic status (e.g., employment, family salary, home learning), to outside influences such as educational experiences, neighbourhood and peer group. Reported here are the findings from the analysis of student dispositions at the end of Year 11. A companion report investigates the same students' views of their school experiences at the end of compulsory schooling (Sammons et al., 2014a). Separate reports cover students' academic attainment and social-behavioural outcomes (Sammons et al., 2014b; 2014c).

Research Aims

The aims of the EPPSE 3-16+ analysis of student dispositions were to:

- Provide a snapshot of student life and adolescent behaviours at the end of compulsory schooling;
- Explore the influence of student characteristics (e.g., gender, ethnicity), family demographics (e.g., parental qualification, family SES), home learning environment and neighbourhood as predictors of student's disposition outcomes at age 16;
- Explore any continuing impact of educational influences on dispositions in terms of the influence of the quality and effectiveness of pre-school, primary school and secondary school attended;
- Explore the impact of secondary school characteristics (e.g., school type, school composition of intake, and students' school experiences) on student dispositions at age 16;
- To investigate the additional impact of student experiences such as family relationships, peer group and out of school activities (e.g., engagement in sports, organised groups) as influences on student dispositions at age 16.

Analytical strategy

Statistical techniques

The EPPSE 3-16+ project is a longitudinal study that links data on children's cognitive, social-behavioural and affective development from pre-school through to adolescence. A range of statistical techniques were used to analyse students' questionnaire responses and identify what factors helped to predict the variation in views. In addition to simple descriptive analyses, exploratory and confirmatory factor analyses identified five measures of student dispositions based on survey data collected in Year 11, as well as to identify and create measures of school processes and experiences.

Multilevel (hierarchical) regression (Goldstein, 2010; Raudenbush & Bryk, 2002) was used to investigate the influence of student, family and home learning characteristics on student dispositions. Background information was obtained through parent interview at entry to the study and subsequently through parent questionnaire during KS1, KS2 and KS3. The response rate for the initial parent interview was 97% and 81% for the KS1 parent questionnaire[4]. Response rates were lower for the KS2 and KS3 parent questionnaires[5].

Educational influences were measured via observation and analysis of student progress. Value added estimates (residuals) were calculated for aspects of pre-school effectiveness (examining children's progress across the pre-school period) and used to test the continuing impact of pre-school on later outcomes (Sammons et al., 2002a; 2002b). In addition, multilevel (hierarchical) regression analysis was used to create value added scores for all English primary schools (combined across three years, 2002-2004) measuring student progress across KS2 from national data sets (Melhuish et al., 2006a; 2006b). DfE contextualised valued added measures (CVA) and Ofsted inspection judgements were also used to provide measures of secondary school quality and effectiveness. These were used to explore the impact of secondary school on students' outcomes, as well as students' own experiences of various aspects of school and classroom life.

Estimates from the multilevel (hierarchical) models are displayed in the form of model estimates and also in effect sizes. Effect sizes are a measure of the strength of an influence on the outcome of interest (for more details see Elliot & Sammons, 2004) and the EPPSE research utilises the formulae outlined in Tymms et al., (1997; for full details see Sammons et al., 2011a). Coe (2002) presents different ways of interpreting effect sizes, such as in terms of a z score (from a normal distribution).

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4 This figure is based on a corrected sample of 3032, taking into account 139 children who dropped out of the study during the pre-school period.

5 Response rates for KS2 parent questionnaire were 71% and 56% for the KS3 parent questionnaire (based on the corrected sample).

So for example, an effect size of 0.6 for the predictor group (e.g., girls) could be interpreted as 0.6 standard deviations above that of the control group (e.g., boys). Girls, on average, would score higher than 73% of boys in the sample (for a full explanation and other interpretations see Coe, 2002).

It should be noted that a statistically significant estimate shows the strength of the influence of a predictor on an outcome but cannot infer causality. Cohen (1969) argued that an effect size of 0.2 could be considered small, an effect size of 0.5 'medium' and an effect size of 0.8 was 'large' and '*grossly perceptible'*.

The use of subjective well-being measures

The measures of student dispositions and experiences differ from the academic and social/behavioural data that have been analysed in the companion reports (Sammons et al., 2014a; 2014b) in that rather than externally marked GCSE examination results or teacher judgements the students themselves rated how they felt about different aspects of their life and experiences. These 'dispositions' are also commonly referred to as indicators of 'subjective well-being' (Diener, 1984; 1994; 1999).

"Subjective well-being is an attitude consisting of the two basic aspects of cognition and affect. 'Affect' is the label attached to moods and emotions. Affect reflects people's instant evaluation of the events that occur in their lives. The cognitive component refers to the rational or intellectual aspects of subjective well-being. It is usually assessed with measures of satisfaction"

(Frey and Stutzer, 2002)

Diener (1984; 1994) and colleagues (Diener et al., 1999) identify subjective well-being somewhere closer to general views of happiness, having three main parts: 1) frequent and positive affect 2) high life satisfaction 3) infrequent negative affect.

Student opinions, attitudes and dispositions are being been increasing used in educational research as feedback on educational processes but also as indicators of student well-being and other non-cognitive outcomes (e.g., Gray, 2011; Gibbons & Silva, 2009; Gibbons, Silva & Weinhardt, 2010; Morrison-Gutman & Feinstein, 2008). The reliability and validity of these student responses is still being debated (Gibbons and Silva, 2009). There is evidence that responses by younger children may be less reliable than those from older students due to their lack of cognitive maturity. Nonetheless, evidence suggests that children as young as seven are capable of completing simple self-report questionnaires (De Leeuw et al., 2004) and with formal cognitive functioning, which develops around the age of 10 or 11 (Piaget, 1948; Kholberg, 1976) that their cognitive skills have developed sufficiently to report accurately on their attitudes and feelings (De Leeuw et al., 2004; Fuchs 2005). In EPPSE student self-report surveys have been conducted at age 7, 10, 14 and 16.

Others (Tymms, 1997) feel that student self-report measures are transitory in nature, potentially unreliable but maybe useful to collect descriptive information and feelings. Although this is a challenge for quantitative research, there is a definite move towards both acknowledging the importance of student well-being and non-cognitive outcomes, and the development of robust measures to capture these aspects of young people's experiences.

Structure of the report

This report consists seven sections.

Section 1 reports the characteristics of the student sample who returned the Year 11 questionnaires, in terms of selected demographics. Characteristics of both the missing and non-missing sample are described and compared.

Section 2 describes how students responses to individual questions in the Life in Year 11 questionnaire and gives a snapshot of how students feel about themselves, their school experiences and important out of school activities such as peer group interaction, time with families and engagement in risky behaviours

Section 3 describes the development of the five disposition outcomes from the original student survey items and investigates the variations between particular student groups in these dispositions including differences between girls and boys, groupings based on social class and SEN.

Section 4 examines the net impact of individual, family and home learning environment as predictors of dispositional outcomes at the end of KS4. This is based on multilevel (hierarchical) modelling to examine the net impact of individual variables whilst controlling for other significant influences on dispositions. In this way the strength and unique contribution of individual variables that are known to be related, such as parent's social class, income and education can be examined.

Section 5 explores the net impact of a number of potential educational influences. Building on the multilevel models developed in Section four (controlling for differences in intake), the continuing impact of Pre-school, Primary School, and Secondary School on dispositional outcomes at the end of Key stage 4 is explored, following the strategy used in reports of outcomes at younger ages (KS2 and KS3).

Section 6 explores the relationships between students' academic attainment and social-behavioural development and their dispositional outcomes in Year 11. In addition, additional measures of students' experiences of their classroom and school environment are examined as predictors of dispositions.

Section 7 presents the results of analyses exploring change in dispositions across Key Stage 4, from the end of Year 9 to the end of Year 11, allowing the examination of the impact of prior dispositions. The last section summarizes the key findings, conclusions and policy implications.

Section 1: Characteristics of the sample at the end of Key Stage 4

Key Findings

- In total 1675 students (60%) returned completed questionnaires in Year 11.
- The proportion of boys in the sample who returned the Year 11 survey was somewhat lower than the girls in the sample (46% compared to 54%).
- Students from ethnic minority backgrounds, students who had been identified with behavioural problems (in the early years), and Special Educational Needs students were less likely to have returned the Year 11 questionnaire.
- Disadvantaged students (in terms of family poverty, family salary, family Socio-Economic Status) were also less likely to have returned the Year 11 questionnaire.
- However, due to initial over-sampling of students from specific demographic groups the sample returning *Life in Year 11* questionnaires was broadly in line with the national picture for FSM, ethnicity and SEN status.
- Generally response rates for individual questions in the student surveys were good, with a 95%+ response rate for most questions. However, one question 'Have you tried any of the following drugs?' was not answered by 10 percent of students.

The EPPSE original sample was just over three thousand (n=3172). Due to attrition not all students were followed up to the end of Year 11 and of those still in the sample not all returned questionnaires on each occasion data were collected. In total 1675 students returned completed questionnaires in Year 11, a response rate of 60% out of the 2810 students still in the study. This section compares students with and without disposition data.

1.1   Student level characteristics of the sample

Table 1.1 describes the student characteristics for the complete and missing sample[6]. Girls, White UK heritage students and students with no specific problems at entry to the study were more likely to have complete data. In terms of gender, the proportion of boys in the sample who returned the Year 11 survey was somewhat lower than the girls in the sample (46% compared to 54%). In all, 77% of the complete sample was White UK heritage, compared to 67% of the missing sample for which survey data were missing. Most of the minority ethnic groups were small in number. The largest non-White UK heritage groups were Pakistani heritage (5%) and Mixed race heritage (6%).

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[6] The missing sample includes students who have elected to drop out of the study and students who did not reply to the questionnaire request.

Details of the child's developmental, behavioural and health history were also collected at entry to the study. In total, 11% of the complete sample had one or more behavioural problems at entry to the sample, slightly lower than the missing sample (14%). A similar pattern was found for developmental problems. For health history, 33% of the complete sample had a record of problems at entry to the study compared to 35% of the missing sample.

Students on the Special Educational Needs register (School Action, School Action plus, full statement) were less likely to returned the Year 11 questionnaire than those students with no special provision. In total, 84% of the complete sample had no special SEN provision, compared to 70% of the missing sample.

<p align="center">Table 1.1: Selected student and pre-school characteristics of the sample in Year 11</p>

Characteristics	COMPLETE DATA N=1675		MISSING DATA N=1497	
	N	%	N	%
Gender	1675	100.0	1497	100
Male	764	45.6	872	58.2
Female	911	54.4	625	41.8
Ethnicity	1674	100.0	1494	100.0
White UK Heritage	1291	77.1	1004	67.2
White European Heritage	59	3.5	63	4.2
Black Caribbean Heritage	42	2.5	74	5.0
Black African Heritage	24	1.4	42	2.8
Any other ethnic minority	28	1.7	65	4.4
Indian Heritage	38	2.3	29	1.9
Pakistani Heritage	79	4.7	98	6.6
Bangladeshi Heritage	18	1.1	22	1.5
Mixed race	95	5.7	97	6.5
Child Developmental History	1648	100.0	1419	100.0
No developmental problems	1464	88.8	1226	86.4
1 developmental problem	164	10.0	178	12.5
2+ developmental problems	20	1.2	15	1.1
Child Behavioural History	1648	100.0	1419	100.0
No behavioural problems	1474	89.4	1221	86.0
1 behavioural problem	147	8.9	163	11.5
2+ behavioural problems	27	1.6	35	2.5
Child Health History	1648	100.0	1419	100.0
No health problems	1107	67.2	919	64.8
1 health problem	415	25.2	370	26.1
2 health problems	106	6.4	107	7.5
3+ health problems	20	1.2	23	1.6
SEN status in Year 11	1595	100.0	1196	100.0
Not on SEN Register	1337	83.8	838	70.1
School Action	146	9.2	174	14.5
School Action +	66	4.1	126	10.5
Full Statement	46	2.9	58	4.8

1.2 Pre-school characteristics of the sample

Table 1.2 displays a selection of variables related to the pre-school the student previously attended. Of the original sample (n=3172), the largest number of children sampled came from Playgroups (19%), Nursery classes (19%), Nursery schools (16%) and private day nurseries (16%) followed by Local authority establishments (14%), and Integrated (combined) centres (6%). In addition, 10% of the sample did not attend pre-school. Those with missing disposition data in Year 11 were more likely to come from Local Authority day nurseries integrated (combined) centres. Children who had previously attended Private Day Nurseries were more likely to have disposition data.

There were differences in observed measures of pre-school quality by the type of pre-school in the sample, with integrated centres and nursery schools showing the highest observed quality (in ECERS-E and ECERS-R rating scales) and Playgroups and Private Day nurseries the lowest observed quality (Sylva et al., 1999).

Table 1.2: Selected student and pre-school characteristics of the sample in Year 11

Pre-school	COMPLETE DATA N=1675		MISSING DATA N=1497	
	N	%	N	%
Type of pre-school	1675	100.0	1497	100.0
Nursery class	339	20.2	249	16.6
Playgroup	322	19.2	287	19.2
Private day nursery	341	20.4	175	11.7
Local authority day nursery	185	11.0	248	16.6
Nursery schools	254	15.2	265	17.7
Integrated (combined) centers	87	5.2	105	7.0
Home (no pre-school)	147	8.8	168	11.2
Pre-school quality - ECERS-E	1675	100.0	1497	100.0
No quality (i.e. no pre-school the 'home' children)	147	8.8	168	11.2
Low quality (Lowest 20%)	230	13.7	223	14.9
Medium Quality (Middle 60%)	966	57.7	732	48.9
High Quality (Highest 20%)	332	19.8	374	25.0

1.3 Family level characteristics of the sample

Selected family demographics and home learning characteristics are presented in Table 1.3. In terms of early years home learning environment (measured at entry to the study), students with missing survey data had lower early HLE scores than students with complete data sample. Measures of family income (total family earned salary in KS1) and a measure of social disadvantage based on low income (eligibility for Free School Meals in Year 11) are shown[7].

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[7] Eligibility for Free school Meals information is taken from the National Pupil Database (PLASC data), collected in Year 11 and the pupil profile sent to schools (pupil profile given precedence). Eligibility for Free School Meals (FSM) signifies the student has made a successful application for FSM has been made to the Local Authority.

Table 1.3: Selected family and home learning characteristics of the sample in Year 11

Characteristics	COMPLETE DATA N=1675		MISSING DATA N=1497	
	N	%	N	%
Early Years HLE	1618	100.0	1388	100.0
Lowest 0 – 13	122	7.5	186	13.4
14 – 19	320	19.8	345	24.9
20 – 24	359	22.2	368	26.5
25 – 32	573	35.4	387	27.9
Highest 33 – 45	244	15.1	102	7.3
Free School Meals (FSM) status	1618	100.0	1256	100.0
Eligible for FSM in Year 11	209	12.9	321	25.6
Family Earned Income (KS1)	1453	100.0	926	100.0
No Salary	261	18.0	308	33.3
£ 2,500 – 17,499	263	18.1	222	24.0
£ 17,500 – 29,999	270	18.6	141	15.2
£ 30,000 – 37,499	185	12.7	86	9.3
£ 37,500 – 67,499	335	23.1	135	14.6
£ 67,500+	139	9.6	34	3.7
Highest parental qualification	1647	100.0	1420	100.0
No qualifications	186	11.3	305	21.5
Vocational	168	10.2	175	12.3
16 Academic	589	35.8	540	38.0
18 Academic	194	11.8	141	9.9
Other professional/miscellaneous	29	1.8	19	1.3
Degree or equivalent	317	19.2	166	11.7
Higher degree	152	9.2	68	4.8
Father absent	12	0.7	6	0.4
Highest Family SES	1645	100.0	1411	100.0
Never worked	36	2.2	52	3.7
Unskilled	30	1.8	49	3.5
Semi-Skilled	174	10.6	232	16.4
Skilled Manual	207	12.6	245	17.4
Skilled, Non-Manual	531	32.3	443	31.4
Other Professional, Non-Manual	465	28.3	311	22.0
Professional, Non-manual	202	12.3	79	5.6
Marital Status of Parent (PI)	1647	100.0	1419	100.0
Single, never married	155	9.4	262	18.5
Married, living with spouse	1093	66.4	756	53.3
Never married, Living with partner	227	13.8	217	15.3
Separated/divorced	158	9.6	169	11.9
Widow/ Widower/other	14	0.9	15	1.1

Just over a third of students (33%) with complete data came from affluent families (family earned salary of £37,500 or above), compared to only 18% of students with missing data. This difference in the proportion of students in the available data from more affluent backgrounds was also noticeable in the proportion of students eligible for FSM (13% eligible in the complete sample compared to 26% in the missing sample). Thus the Year 11 questionnaire sample is relatively les disadvantaged compared with the original EPPSE sample. However, the percentage of students with complete data eligible for FSM is in line with the national picture.

In terms of qualifications, just under a third of students with complete data had at least one parent with a degree or higher, compared to a much lower 16% of students with missing data. Students from higher SES groups were more likely to have complete data than the lower SES groups.

Marital status of the main carer was collected at multiple time points from entry to the study up to KS3. Using KS2 marital status as an indicator of family structure during secondary school (due to a higher response rate than KS3) students with missing data are twice as likely as those with complete data to come from a single parent family (19% compared to 9%). Likewise, students with complete data are also more likely to be from married household than those with missing data.

Table 1.4 compares the multiple disadvantage levels for the complete and missing samples. Students with missing data were much more likely to be multiply disadvantaged than students with complete data. It should be noted that the original EPPSE sample sought to over sample from disadvantaged areas recognising that attrition is higher and response rates from disadvantaged children and families are typically lower. See glossary for full details on the creation of the multiple disadvantage index.

Table 1.4: Levels of multiple disadvantage in the sample in Year 11

IMD	COMPLETE DATA N=1675		MISSING DATA N=1497	
	N	%	N	%
Index of Multiple Disadvantage	1567	100.0	1332	100.0
0 Risk Factors	432	27.6	212	15.9
1-2 Risk Factor	805	51.4	589	44.2
3-4 Risk Factors	251	16.0	417	29.8
5+ Risk Factors	79	5.0	134	10.1

1.4 Comparison with the national picture

It is clear that there has been some degree of non-random attrition of data for this sample, but analyses of the remaining sample (students who returned surveys[8]) in comparison to the national picture show it to be largely representative of students in secondary maintained schooling in England. Table 1.5 compares national deprivation levels with the EPPSE disposition sample. The two were roughly the same, with Free School Meals entitlement (FSM) at around thirteen percent. As noted earlier the project over-sampled for particular disadvantaged and ethnic minority groups to help compensate for attrition in these groups.

Table 1.5: Comparison of levels of deprivation for the EPPSE sample and England[9]

Deprivation	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	%	N	%	N	%
Free School Meals eligibility in England10:										
FSM eligibility (age 15)11	71,200	12.3	74,260	13.0	76,015	13.6	76,635	13.9	298110	13.2
EPPE (Original sample):										
FSM eligibility, Year 11* , n=3172	33	17.6	218	18.7	260	17.9	19	29.2	530	18.4
EPPSE (Disposition sample):										
FSM eligibility, Year 11, n=1675	17	13.8	93	13.2	87	11.7	11	16.7	208	12.7

The original EPPE sample had a slightly higher proportion of ethnic minority students than the national picture; made up of 18 percent ethnic minority heritage groups compared to 12 percent nationally (Table 1.6). Due to higher attrition from ethnic minority heritage groups the sample included in the disposition analysis were broadly in line with the national picture (23% compared to 22% nationally).

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8 The data for social/behavioural outcomes and academic attainment have larger available samples as the data comes directly from schools and the NPD so are not subject to the same patterns of attrition.

9 Figures for EPPE & EPPSE samples exclude missing data. Missing FSM data was 8.3% (n=263) for the original EPPE sample and 2.4% for the EPPSE disposition sample (n=40).

10 Statistics are for English state secondary schools from: DfE: Schools, Pupils and their Characteristics, January 2012, first statistical release SFR10/2012; DfE: Special Educational Needs in England, January 2012.

11 Number and % of pupils known to be eligible for, and claiming, Free School Meals from performance tables in state secondary schools in England. Number of pupils known to be eligible for free school meals as a % of number (headcount) of pupils in each age group.

Table 1.6: Comparison of ethnic minorities for the EPPSE sample and England

England (secondary): 12	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	%	N	%	N	%
Ethnicity: White British	2,550,370	79.1	2,511,190	78.3	2,497,315	77.5	2,444,425	76.5	10,000,330	77.9
Indian	80,980	2.5	80,850	2.5	81,895	2.5	82,305	2.6	298110	2.5
Pakistani	93,690	2.9	96,580	3.0	101,715	3.2	106,480	3.3	398465	3.1
Bangladeshi	38,420	1.2	40,580	1.3	42,980	1.3	44,820	1.4	166800	1.3
Black Caribbean	44,820	1.4	44,790	1.4	44,790	1.4	44,045	1.4	178445	1.4
Black African	79,120	2.5	83,290	2.6	89,000	2.8	93,210	2.9	344620	2.7
Mixed	106,540	3.3	113,380	3.5	113,318	3.5	125,415	3.9	458653	3.6
Total classified pupils	3,224,660		3,206,800		3,220,920		3,194,295		12,846,675	

EPPE (Original sample):	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	N	%	N	%	N
Ethnicity: White British	176	87.1	950	75.0	1101	69.5	68	59.1	2295	72.4
Indian	5	2.5	25	2.0	31	2.0	6	5.2	67	2.1
Pakistani	6	3.0	75	5.9	96	6.1	0	0.0	177	5.6
Bangladeshi	1	0.5	14	1.1	24	1.5	1	0.9	40	1.3
Black Caribbean	1	0.5	36	2.8	72	4.5	7	6.1	116	3.7
Black African	1	0.5	27	2.1	32	2.0	6	5.2	66	2.1
Mixed	5	2.5	73	5.8	104	6.6	10	8.7	192	6.1
Total classified pupils	202		1267		1584		115		3168	

EPPSE (Disposition sample):	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	N	%	N	%	N
Ethnicity: White British	111	87.4	563	78.4	573	75.4	45	64.3	1291	77.1
Indian	2	1.6	16	2.2	15	2.0	5	7.1	38	2.3
Pakistani	6	4.7	38	5.3	35	4.6	0	0.0	79	4.7
Bangladeshi	1	0.8	9	1.3	8	1.1	0	0.0	18	1.1
Black Caribbean	1	0.8	14	1.9	23	3.0	4	5.7	42	2.5
Black African	0	0.0	11	1.5	10	1.3	3	4.3	24	1.4
Mixed	2	1.6	40	5.6	45	5.9	8	11.4	95	5.7
Total classified pupils	127		718		759		70		1674	

Figures for SEN for England are only available for all students combined and not seperate for Year 11 and stood at 20 percent on the SEN register which is broadly in line with the EPPE and EPPSE disposition samples (Table 1.7).

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[12] Percentage based on proportion of students with ethnicity information, re-calculated from the original figures.

Table 1.7: Comparison of Special Educational Needs (SEN) for the EPPSE sample and England[13]

England (secondary):	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	%	N	%	N	%
Statements of SEN	65,890	2.0	64,605	2.0	63,720	2.0	62,630	1.9	156,845	2.0
School Action Plus	206,555	6.3	217,085	6.6	212,480	6.5	200,535	6.2	836,655	6.4
School Action	419,810	12.8	428,835	13.1	418,935	12.8	391,455	12.1	1,659,035	12.7
No identified SEN	2,585875	76.7	2,567960	78.3	2,567,500	78.7	2,580,255	79.8	10,401,590	79.9
Total classified pupils	3,278,130		3,278,485		3,262,635		3,234,875		13,054,125	
EPPSE **(Original sample)***	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	N	%	N	%	N
Statements of SEN	8	4.2	43	3.9	49	3.5	4	3.9	104	3.7
School Action Plus	15	7.9	78	7.0	93	6.6	13	12.7	199	7.1
School Action	24	12.7	129	11.6	159	11.3	16	15.7	328	11.6
No identified SEN	142	75.1	866	77.6	1108	78.6	69	67.6	2185	77.6
EPPSE **(Disposition sample)***	2008/09		2009/10		2010/11		2011/12		All	
	N	%	N	%	N	N	%	N	%	N
Statements of SEN	4	3.3	21	3.1	17	2.3	4	5.9	46	2.9
School Action Plus	4	3.3	33	4.9	28	3.8	4	5.9	69	4.3
School Action	13	10.6	64	9.4	64	9.4	9	13.2	150	9.4
No identified SEN	102	82.9	562	82.6	623	85.1	51	75.0	1338	83.5

*NPD and Pupil profile combined. Pupil profile information given precedent

1.5 Non-response for individual questions

Response rates for individual questions in the surveys were good, with less than 5% missing overall. Questions related to anti-social and risky behaviours were less likely to be answered along with: 'Have you tried any of the following drugs?'- not answered by 10 per cent, and one anti-social question[14] was not answered by 5.5% of students.

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[13] The figures for EPPE & EPPSE samples exclude missing data. Missing SEN data was11.2% (n=356) for the original EPPE sample and 4.3% for the EPPSE disposition sample (n=72).

[14] Questions that asked if students had: spray canned walls, smashed/damaged property, joy riding or been involved in a car crime, carried a knife/weapon, stolen from a shop or person or beaten somebody up.

Section 2: Student life at the end of Year 11

Key findings

Measures of well-being and school enjoyment

- Most students reported fairly positively about their Mental well-being. They were most positive about feeling loved, feeling cheerful and cheerful and feeling close to others. For example 73% of students felt loved, 62% felt cheerful, and 63% felt close to others 'often' or 'all of the time'. However, a minority expressed negative views. The areas where students felt the least positive were having energy to spare, feeling relaxed and feeling useful.

- Gender differences in response were identified for many of the items. The largest differences were found for: feeling good about themselves, feeling confident and feeling relaxed. For example, 67% of boys reported feeling good about themselves 'often' or 'all the time' compared to 43% of girls. Similarly 52% of boys reported feeling relaxed 'often' or 'all the time' compared to just 32% of girls.

- The majority of students reported their health to be 'very' or 'fairly' good over the last 12 months (47% rated their health as 'fairly good' and 46% as 'very good'). Again there were significantly gender differences (e.g., 54% of boys reported their health to be 'Very good' compared to 39% of girls).

- In Year 11 four out of five (82%) of the EPPSE sample reported they liked being at school (18% Strongly agree, 64% Agree) and 84% liked most of their lessons (17% strongly agree, 67% agree). Girls were also less likely to report feeling school is a waste of time, 'mess around in lessons' (13% compared to 21%) or report bullying other students. Enjoyment of, and engagement with school reduced only slightly from Year 9 to Year 11, and reported boredom decreased.

- In general students were positive about their general ability. Approximately two thirds of students felt they have always done well in school subjects (40% 'quite a lot like me', 27% 'definitely like me'), they got good marks (43% 'quite a lot like me', 23% 'definitely like me') and were satisfied with their school work (42% 'quite a lot like me', 24% 'definitely like me'). Only a tiny minority of students (5%) felt they were hopeless at most school subjects (quite a lot like me/definitely like me).

  Risky Behaviours

- Information on 'risky' behaviours was also collected. Among Year 11 students, 38% reported ever having smoked a cigarette, 19% were current smokers (smoking at least 'very occasionally') and 9% were daily smokers. The prevalence of smoking was higher amongst girls than boys (e.g., 34% of boys had smoked a cigarette compared to 41% of girls), and smoking was higher for FSM students.

- Most students reported that they had drunk alcohol at some point (80%), and approximately one in ten (9%) reported drinking at least once a week. Boys were slightly more likely to be regular drinkers than girls (11% of boys drank at least once a week compared to 7% of girls).

- One in five students had tried any kind of recreational drug. The most commonly reported drug used by 16 year olds was Cannabis. In total 18% of students reported having ever tried Cannabis but just one per cent reported using Cannabis every day.
- Students from families with higher parental qualifications were more likely to report taking any drug (e.g., 14% of students with parents who had no qualifications reported taking any drugs compared to 26% of students with parents who have higher education qualifications).
- In total, one in five students (20%) reported that they had truanted whilst being in Year 11. Girls and boys were equally likely to report truanting but students from more deprived families (FSM) were almost twice as likely to report having truanted in Year 11 (30% compared to 18% of non-FSM students), and conversely students from families with higher parental qualifications were significantly less likely to truant.
- One in ten students reported having been involved in criminal behaviours in the last 12 months (10%) and a similar proportion (9%) had been involved with the police or legal criminal proceedings. Boys were significantly more likely to report involvement in anti-social behaviours (13% compared to 7% of girls) and to have had some kind of legal intervention (11% compared to 6% of girls).
- Approximately 42% of students had not taken part in any kind of sports or team games in the last month, and there were marked gender differences (55% of girls had not engaged in sports compared to 27% of boys).
- A 'risky' behaviour index was constructed from six behaviours that could be considered to put students at risk of poorer educational and health outcomes including anti-social behaviours (truanting, antisocial behaviour, having been in trouble with the police/law) and health risk behaviours (smoking, drinking, substance use). One in five students (19%) engaged in two or more risky behaviours (multiple risky behaviours). Boys, students from single parent and reconstructed families (step parent in house), and students from lower SES families were more likely to report multiple risky behaviours (two or more risky behaviours). Higher computer use in KS3 was also predictive of multiple risky behaviours.
- Younger students in the year group, students with English as an Additional Language (measured in the early years) and students with higher levels of parental Academic supervision were less like to report engaging in multiple risky behaviours.

Aspirations

- Students were also very optimistic about their GCSE exam performance. Less than one in ten students (9% not very likely/not at all likely) believed that they would not get five good GCSEs at the end of Year 11, and 60% felt it was very likely (60% 'very', 30% 'fairly likely'). When students responses were linked to their actual GCSE results four out of five students were accurate in their prediction (79%).

- Nine out of ten students (90%) reported feeling it was very important to get five good GCSEs. Nearly three quarters of students stated it was very important to get A levels (72%) and just over half felt it was very important to get a degree. However, vocational qualifications were not seen as important qualifications with only one in five students (21%) feeling they were very important.

- The majority of students want to continue in full-time education (90%), and 72% of students felt it was likely they would apply to university (very or fairly likely), and the majority (69%) of students felt they would go to university within the next five years (by the age of 21).

2.1 Students' health, behaviours out of school activities in Year 11

The student surveys covered a range of topics related to mental and physical health, out of school activities and behaviours. This section explores survey responses and patterns for the whole sample, and by gender.

2.1.1 Mental well-being in Year 11

In order to asses mental well-being items from the Warwick-Edinburgh Mental Well-Being scale (WEMWB; Tennant et al., 2007) were included in the survey (see Table 2.1). Students were most positive about feeling loved, with nearly three quarters (73%) feeling loved often or all of the time and only under one in ten (7%) feeling loved rarely or none of the time. Students were also fairly cheerful and felt close to others with approximately just under two thirds feeling cheerful/felt close to others often or all of the time and only one in ten students reporting feeling cheerful or close to others rarely or none of the time.

The areas where students felt the least positive were having energy to spare, feeling relaxed and feeling useful. This is broadly in line with the general population (Tennant et al., 2007), but with EPPSE students feeling slightly less likely to feel relaxed. EPPSE students were also slightly less likely than a general population sample to report positive feelings (in terms of feeling optimistic, confident, or good about themselves) and reported issues with mental abilities such as thinking clearly, dealing with problems well, and being able to make up their mind.

It is estimated that around ten percent of young people are suffering from a mental disorder of some kind (Gray et al., 2011; Colechin, 2011), and this figure fits the proportion responding negatively to many of the items in the WEMWB for the EPPSE sample. The overall mental well-being scale was created and used in later analyses as an outcome.

Table 2.1: Aspects of mental well-being in Year 11

I have been have been feeling...	None of the time		Rarely		Some of the time		Often		All of the time	
	n	%	n	%	n	%	n	%	n	%
optimistic about the future	38	2.3	185	11.2	585	35.5	618	37.5	221	13.4
useful	51	3.1	220	13.3	654	39.5	621	37.5	109	6.6
relaxed	74	4.5	354	21.4	541	32.6	545	32.9	144	8.7
interested in other people	61	3.7	216	13.0	551	33.3	695	41.9	134	8.1
good about myself	67	4.0	215	13.0	482	29.0	677	40.8	219	13.2
close to other people	38	2.3	158	9.5	416	25.1	733	44.3	310	18.7
confident	59	3.6	196	11.8	474	28.6	687	41.4	244	14.7
loved	34	2.1	90	5.4	325	19.7	619	37.4	585	35.4
cheerful	39	2.3	124	7.5	472	28.4	738	44.5	287	17.3
I have…	None of the time		Rarely		Some of the time		Often		All of the time	
	n	%	n	%	n	n	%	n	%	n
had energy to spare	101	6.1	396	23.9	494	29.8	507	30.6	158	9.5
been dealing with problems well	52	3.1	170	10.2	565	34.0	689	41.5	184	11.1
been thinking clearly	34	2.0	166	10.0	530	31.9	727	43.8	204	12.3
been able to make up my mind about things	40	2.4	167	10.1	481	29.0	719	43.3	254	15.3
been interested in new things	46	2.8	194	11.7	481	29.0	655	39.4	285	17.2

Figure 2.1: Summary of response patterns for Mental well-being in Year 11
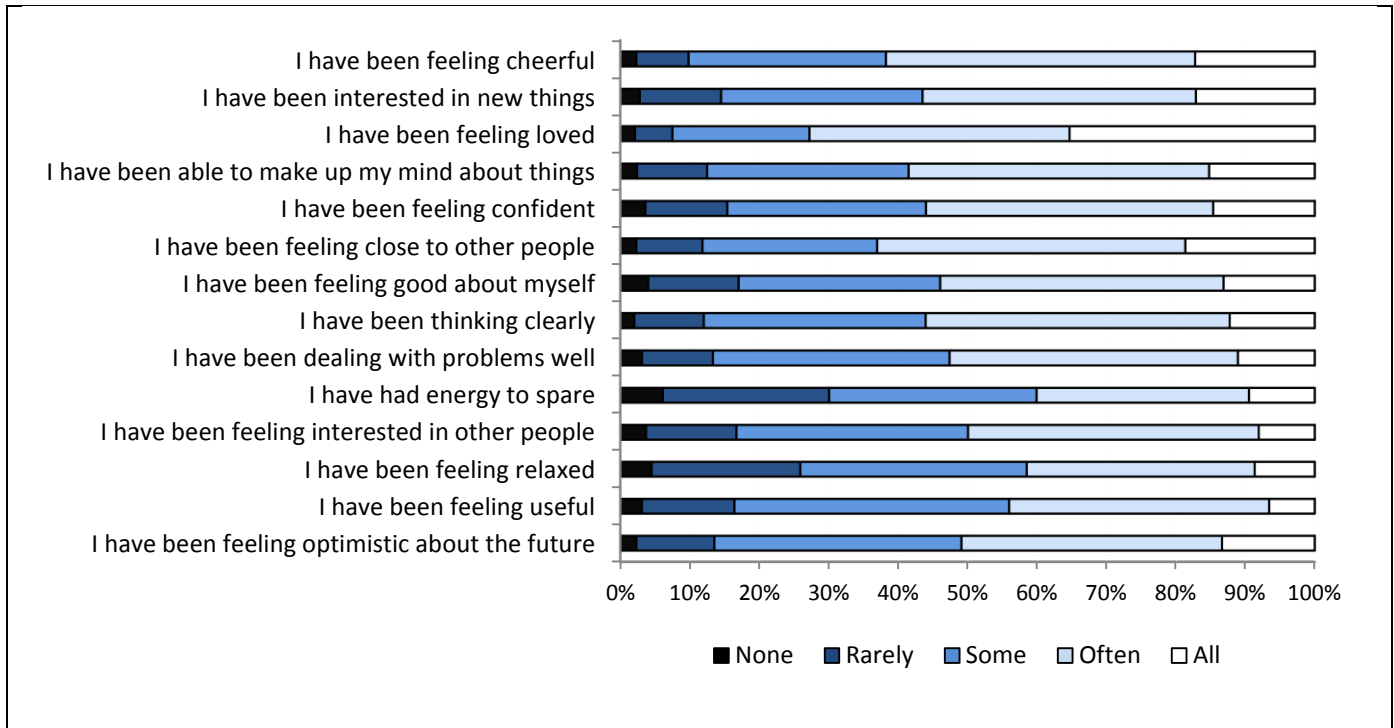
2.1.1.1 Gender differences in Mental well-being

Gender differences were found for ten of the 14 items, in line with findings in past research on subjective well-being and some emotional disorders (Collishaw et al., 2004; Currie et al., 2008; Currie et al., 2012; Rutter et al., 2003). There were no significant differences between boys and girls for feeling optimistic about the future, being interested in other people, feeling close to other people and being interested in new things; items related more to 'Eudaemonic' happiness. But for all the other items, boys were significantly more positive than girls (see Appendix 2 for full details).

Boys and girls differed most in their responses to the items: feeling good about themselves, feeling confident and feeling relaxed. For example, 67% of boys reported feeling good about themselves 'often' or 'all the time' compared to 43% of girls. Similarly 53% of boys reported feeling relaxed 'often' or 'all the time' compared to 32% of girls. See Figure 2.2.

Figure 2.2: Reported mental well-being by gender

'I have been feeling confident'

	None of the time	Rarely	Some of the time	Often	All of the time
Boys	0.9	7.0	26.8	46.2	19.2
Girls	5.8	15.9	30.1	37.3	10.9

■ Boys □ Girls

'I have been feeling good about myself'

	None of the time	Rarely	Some of the time	Often	All of the time
Boys	1.3	7.2	24.3	50.0	17.1
Girls	6.3	17.8	33.0	33.0	9.9

■ Boys □ Girls

'I have been feeling relaxed'

	None of the time	Rarely	Some of the time	Often	All of the time
Boys	2.6	14.6	30.1	39.7	12.9
Girls	6.0	27.1	34.7	27.1	5.1

■ Boys □ Girls

2.1.2 General health in Year 11

The majority of students reported their health to be 'very' or 'fairly' good over the last 12 months (over 90% of students), and just under half rated their health as very good (46%). During the last year just over one in ten students (13%) reported that they had a longstanding illness, disability or infirmity. Of these students, half felt that it limited their daily activities (52%) and a slightly smaller proportion thought it made it harder to attend school or college (41%). The proportion of students in poor health or with a disability and the self-reported impact on their education is in line with findings by Brooks et al., (2011).

Table 2.2: Self-reported health status in Year 11

Health status	Very good		Fairly good		Not very good		Not good at all	
	n	%	n	%	n	%	n	%
How would you describe your health in the last 12 months?	756	45.8	771	46.7	105	6.4	20	1.2

Girls were significantly more likely to report being in poor health than boys (see Figure 2.3). For example, over half of boys (54%) reported their health to be 'Very good' compared to 39% of girls. Nearly twice as many girls than boys reported their health to be 'Not very' or 'Not at all' good (10% compared to 5% of boys), in line with international studies (WHO, 2004; Wiklund et al., 2012; Ravens-Sieberer et al., 2009). There is evidence in the literature that the health gap between girls and boys has also been found to widen over time throughout childhood and adolescence (Michel et al., 2009) and has also been found in early adulthood (Manor et al., 2001). In contrast, girls were not more likely to report longstanding illness, which suggests there may be a psychological element to the perception of health status which is not present when details of specific illnesses are elicited. This could be linked to mental well-being findings noted earlier.

Figure 2.3: Reported health status by gender
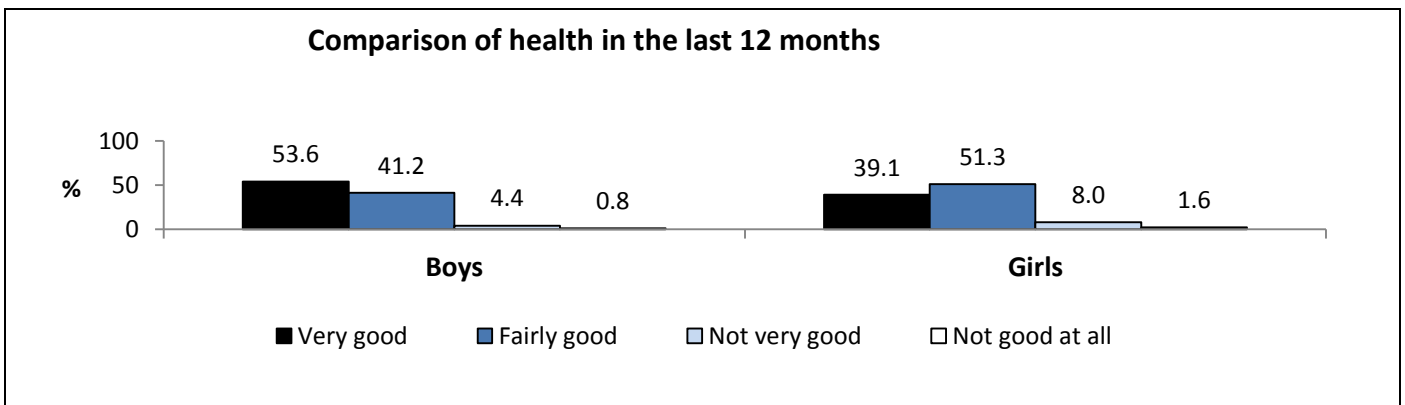
Health status was found to be strongly associated with Mental well-being (See Figure 2.4).

Figure 2.4: Reported health status and mental well-being
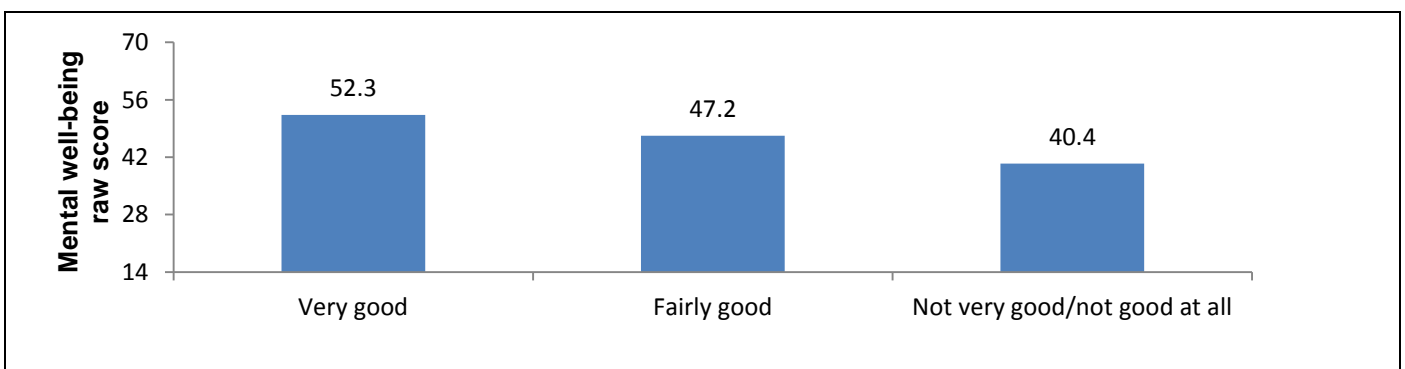
2.1.3 Truanting and risky behaviours in Year 11

The OECD describe a risky behaviour in children as actions '*undertaken by children that are normally considered adult behaviours and which can negatively affect their lives*' (OECD 2008). These can include excessive drinking, regular smoking and non-use of condoms*.*

2.1.3.1   Truanting in Year 11

In total, one in five students (20%) reported that they had truanted whilst being in Year 11. This was most commonly for the odd lesson (47% of those who reported truanting, representing 9% of total sample) or the odd day (39%, 8% of total sample). One in ten students who truanted reported regularly truanting for particular lessons (14%, representing 3% of the overall sample) and also for particular days (12%, 2% of the overall sample). Only a tiny minority of students reported truanting for days at a time (6% of those that truanted, 1% of overall sample) or weeks at a time (3% of those that truanted, <1% of overall sample). This is somewhat lower than national figures that put persistent truanting (those missing around 15% of sessions) at 8% in 2010/11 (DfE 2011[15]). It is also possible that those who have truanted more often have been less likely to respond to the survey. Girls and boys were equally likely to report truanting. Students from more deprived families (FSM) were almost twice as likely to report having truanted in Year 11 (30% compared to 18% of non-FSM students), and students from families with higher parental qualifications were significantly less likely to truant. For example, over a quarter of students with parents who have no qualifications reported truanting in the last twelve months compared to fourteen per cent of students whose parents had a degree or higher.

The main reasons given by students for truanting were school-related (61% of truants, 12% of full sample). One reason given was that they didn't like particular lessons (40%, 8% of total sample). A quarter of students who truanted also gave their reasons as not liking particular teachers (26%, 5% of total sample), being bored (26%, 5% of total sample), being upset over a personal matter (25%, 5% of total sample) and 'just not liking school' (23%, 4% of total sample).

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[15] It should be noted that the measurement of persistent truanting is not the same measure to our own measurement of longer term truanting so direct comparisons are not possible.

Table 2.3: Reasons students reported truanting in Year 11

School	N	% of truants	% of total sample
Don't like particular lessons	128	39.6	7.7
Don't like particular teachers	85	26.3	5.1
Bored	85	26.3	5.1
Just don't like school	74	22.9	4.5
Any school-related reason	198	61.3	11.9
Family	**N**	**% of truants**	**% of total sample**
Parent kept me off school	24	7.4	1.4
Had to care for someone at home	18	5.6	1.1
Any family-related reason	39	12.1	2.4
Personal	**N**	**% of truants**	**% of total sample**
Upset over a personal matter	81	25.1	4.9
To be with friends	59	18.3	1.1
To be on my own	37	11.5	2.2
Bullied	21	6.5	1.3
Any personal-related reason	147	45.5	8.9

N.B. Does not total 100% as multiple responses were allowed

2.1.3.2 Smoking prevalence in Year 11

Among Year 11 students (16 year olds), 38% reported ever having smoked a cigarette, 19% were current smokers (smoking very occasionally/daily) and 9% were daily smokers. This is similar to the proportions identified by a recent NatCen/NFER study (Gunny et al., 2010), which found a quarter of 15 year olds were regular or occasional smokers. In contrast, Perra et al., (2012) found higher levels of smoking in the Northern Ireland context, where 20% of 15/16 year olds smoked daily, and indicated 45% had smoked in the last year, higher than in our own sample.

Table 2.4: Self-reported smoking in Year 11

Smoking prevalence	n	%
Never smoked	1035	62.4
Have smoked in past	301	18.1
Smoke very occasionally	168	10.1
Smoke daily	155	9.4
Total	1659	100.0

* Combined 'used to smoke' and smoked 'once or twice ever'

The prevalence of smoking was higher amongst girls than boys (34% of boys having ever smoked a cigarette compared to 41% of girls). In total, 11% of girls responded that they smoked daily compared to 8% of boys. Cornaglia et al., (2012) found similar gender differences and this has been noted elsewhere (Brooks et al., 2011). See Figure 2.5.

Although there was no significant difference students in smoking prevalence by parental qualifications, students who were eligible for FSM were significantly more likely to smoke regularly than those not eligible (15% compared to 8%).

Figure 2.5: Reported smoking prevalence by gender
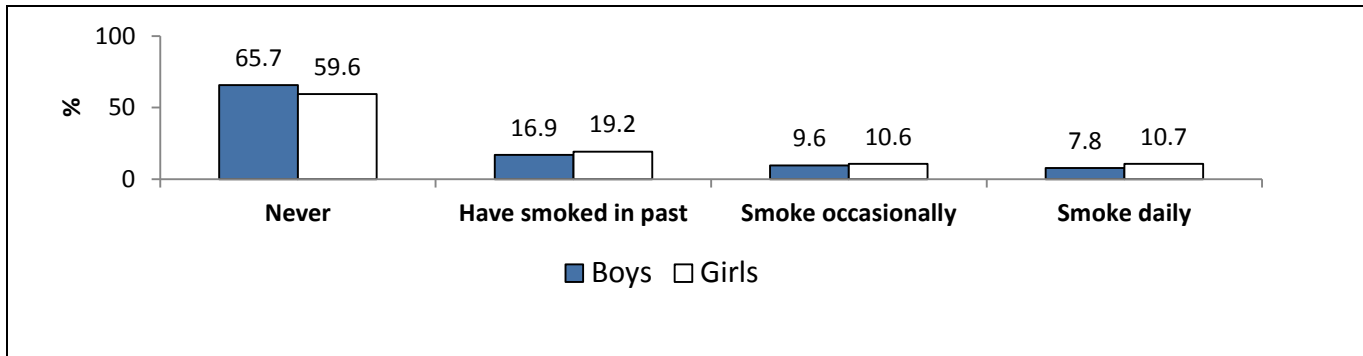
Students who smoked regularly (daily) were more than twice as likely to report being in poorer health than non-regular smokers, as shown in Figure 2.6 below.

Figure 2.6: Reported health status and regular smoking
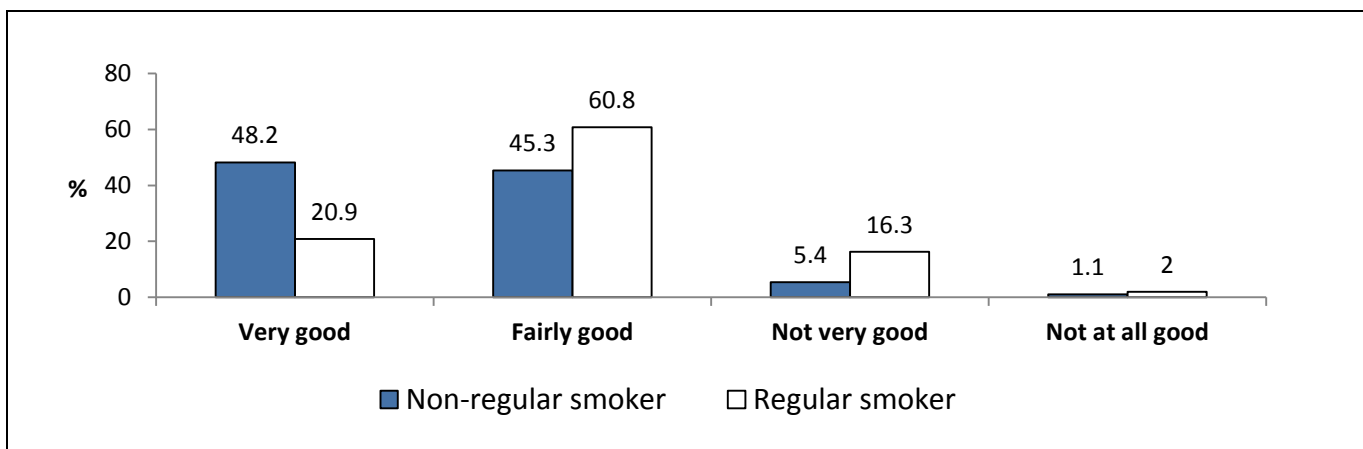
2.1.3.3 Drinking prevalence in Year 11

In total, approximately four out of five students reported that they had drunk alcohol (see Table 2.5) at some point (80%), and approximately one in ten (9%) reported drinking at least once a week. Again this is in line with recent findings from NatCEN/NFER (Gunny et al.,. 2011).

Table 2.5: Self-reported alcohol consumption in Year 11

Drinking prevalence	n	%
Never	325	19.8
Only once or twice ever	293	17.8
Once every couple of months	372	22.6
Once a month	190	11.6
2-3 times a month	317	19.3
At least once a week*	148	9.0
Total	1645	100.0

* Only three students (0.2%) reported drinking every day

Students who drank regularly (weekly or more) reported being in poorer health than non-regular drinkers, although the difference just failed to reach statistical significance (p<0.10; 10% reported their health to be not good or not good at all compared to 7% of non-regular drinkers). Boys were slightly more likely to be regular drinkers than girls (11% of boys drank at least once a week compared to 7% of girls).

2.1.3.4   Drug usage in Year 11

Students were asked if they used or had ever used a number of different Class A, Class B and legally available drugs. Very few (less than ten students for each) reported having taking solvents, LSD, Magic mushrooms, Steroids, Crack or Heroin. The most commonly reported drug used by 16 year olds was Cannabis, with 18% reporting having ever tried it and one per cent reported using Cannabis every day.

Table 2.6: Self-reported Cannabis use in Year 11

Self-reported Cannabis use	n	%
Never	1340	82.0
Only once or twice ever	161	9.9
Once every couple of months	50	3.1
Once a month	22	1.3
2-3 times a month	31	1.9
At least once a week*	30	1.8
Total	1634	100.0

* Seventeen students (0.5%) reported smoking Cannabis every day

Table 2.7 shows the percentage of students who have ever tried each of the drugs other than Cannabis covered in the self-report questionnaire (who replied to the question).

Table 2.7: Self-reported drug use in Year 11

Type of drug: % of students reporting use					
Class A	n	%	Class B/Class C/legal	n	%
Ecstasy	26	1.7	Poppers	40	2.6
Cocaine	16	1.1	Ketamine	20	1.3
Amphetamines	12	0.8	Solvents or glue	19	1.2
Magic mushrooms	7	0.5	Aerosol or gas	13	0.9
LSD	7	0.5	Steroids	4	0.3
Crack	3	0.2			
Total n =1511					

Slightly more boys reported smoking cannabis than girls (20% compared to 17% of girls) but the difference was not statistically significant. Cornaglia et al., (2012) found similar levels of cannabis use (25% of boys and 21% of girls reported ever trying cannabis). Table 2.8 shows the proportion of student drug use by drug classification. No gender effects were found for the use of any drug (all drugs combined), Class A or Class B/legal drugs.

Table 2.8: Combination of drug use in Year 11

Combination of drug use	n	%
None	1196	79.8
Just Class B/legal	255	17.0
Just Class A	3	0.2
Class A and Class B	44	2.9
Total	1498	100.0

N.B. 10.6% of the sample students did not respond to this question and were omitted.

When parental qualification was investigated, students from families with higher parental qualifications were more likely to report taking any drug, Cannabis, any class B/legal drug or Class A drugs (see Figure 2.7). For example approximately 14% of students with parents who had no qualifications reported taking any drugs compared to 26% of students with parents who have higher education qualifications. However, it should also be noted that students whose parents were more highly educated were also less likely to respond to this question. Thus the interpretation of the result is not clear cut.

Figure 2.7: Drug usage and parental qualifications
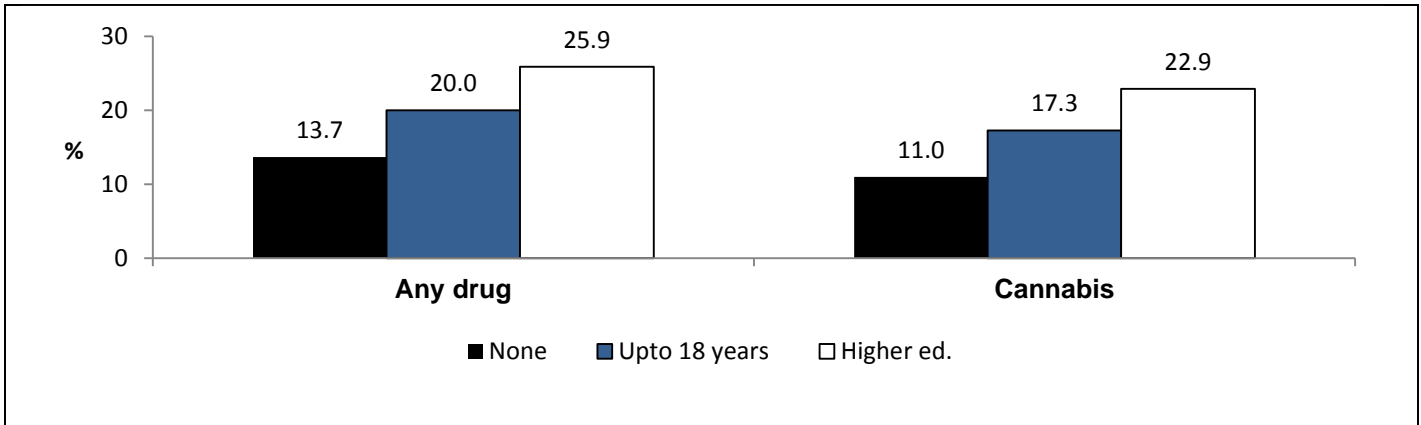
Students who reported having taken drugs were more likely to report being in poorer health than other students (12% reported their health to be not good or not good at all compared to 6% of non-drug users).

2.1.3.5 Anti-social criminal behaviours and legal intervention

In total one in ten students reported having been involved in criminal behaviours in the last 12 months (10%) and a smaller proportion (9%) had been involved with the police or legal criminal proceedings. Only six students (<1%) reported having received an Anti-Social Behaviour Order (ASBO).

Table 2.9: Self-reported anti-social behaviours in Year 11

Criminal behaviours	n	%	Legal intervention	n	%
Stolen from a shop	66	4.2	Been involved with the police	114	7.2
Beaten somebody up	56	3.5	Been cautioned	52	3.3
Written on walls with a spray can	47	3.0	Got a criminal record	19	1.2
Smashed or damaged public property	42	2.7	Been convicted of a crime	18	1.1
Stolen something from a person	26	1.6	Got an ASBO	6	0.4
Gone joy riding or been involved in a car crime	14	0.9			
Carried a knife or weapon	13	0.8			
Any criminal behaviour	158	10.0	Any legal intervention	137	8.7

Boys were significantly more likely to report involvement in anti-social behaviours (13% compared to 7% of girls) and to have had some kind of legal intervention (11% compared to 6% of girls).

2.1.3.6 Physical activity in Year 11

Lack of physical activity has been considered a risk factor elsewhere (Hair et al., 2009) and Brooks et al., (2011) noted that only a small proportion of young people meet the recommended daily level of activity, especially girls (28% of boys and 15% of girls). Of the EPPSE sample over half of the EPPSE sample of girls in Year 11 (55%) had not taken part in any kind of sports or team games in the last month compared to just under a third of boys (27%). Students from families with higher qualifications and lower disadvantage (non FSM students) were also less likely to report they had been involved in sports[16].

Table 2.10: Self-reported physical activity in Year 11

Taken part in any kind of sport or team games	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
All students	689	41.9	319	19.4	234	14.2	402	24.5
Girls	487	54.5	156	18.2	109	12.2	135	15.1
Boys	202	26.9	163	20.8	125	16.7	267	35.6

Involvement in sports was found to be significantly related to self-reported health status. For example, over half of students who took part in sports activities (any amount) reported being in very good health compared to 35% of students not involved.

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[16] For example, 54% of students with parents who held no qualifications took part in sports in the last month compared to 35% of students whose parents held a degree or higher.

Figure 2.8: Sports involvement and health status
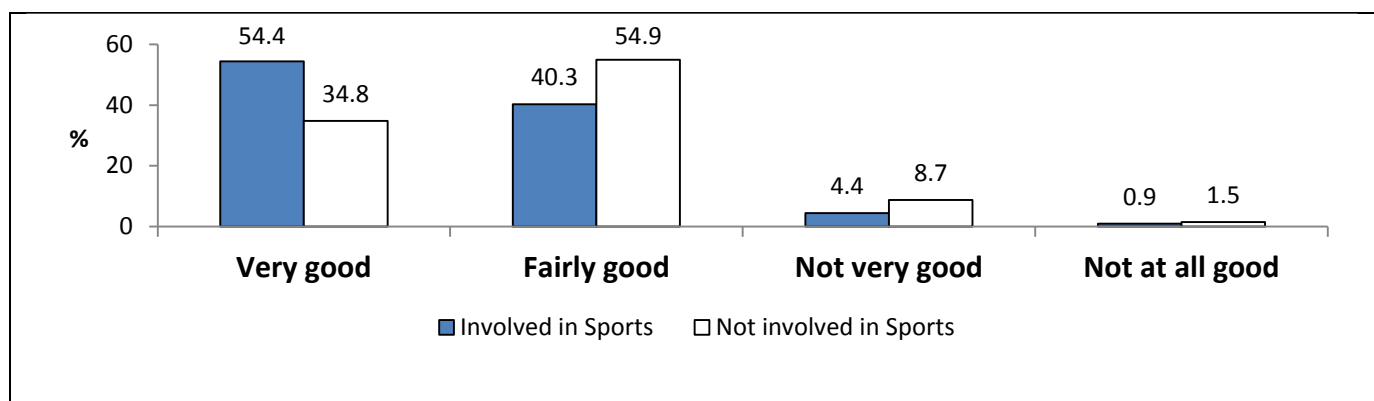
A summary of the relationship between selected background (gender, FSM entitlement and parental qualifications[17]) and risk taking is displayed in Table 2.11. Gender effects are mixed, but FSM students were more likely to engage in a range of risky behaviours. Students from higher qualified households were more likely to have taken a range of drugs indicating greater tendency towards experimental drug taking and possible reflecting access to more resources.

Table 2.11: The relationship between risky behaviours and key background influences in Year 11

Risky behaviours / Background influences	Regular smoker	Regular drinker	Taken drugs	Anti-social behaviour	In trouble with police/law	Truanted in Year 11	No Sports
Gender	Girls +	Boys +	ns	Boys +	Boys +	ns	Girls +
FSM	FSM students +	ns	ns	FSM students +	FSM students +	FSM students +	FSM students -
Highest parental qualification	ns	ns	Students with higher qualified +	ns	ns	Students with higher qualified -	Students with higher qualified +

+ Higher risk   Lower risk

2.1.3.7 Multiple risk behaviours

Hair et al., (2009), in an American study, found that students in their 'high risk' behaviour group (multiple risky behaviours) were more likely to be White, lower achievers, from single parent families, have fewer family routines and maternal monitoring and are more likely to associate with peers who also had negative behaviours.

An index of risk was created from the EPPSE data that incorporated six risky behaviours (see below) based on indicators of risk from the literature (Brooks et al., 2011; Hair et al., 2008; Tomlinson et al., 2008; Perra et al., 2012; Cornaglia et al., 2008). Although lack of engagement in sports activities has been considered a risk factor elsewhere (Hair et al., 2009) it was not included in the risk index here.

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[17] For descriptive purposes only three background variables were investigated here. The net influence of a larger number of variables is investigated in a later section.

Table 2.12: Prevalence of risky behaviours in Year 11

Prevalence of risky behaviours	Individual risk behaviours	Combined health risks	Combined behaviour risks
Smokes regularly (daily)	9.4%	28.9%	
Drinks regularly (weekly or more)	9.0%		
Has taken any drug (Class A/Class B/ Legal)	20.2%		
Involved in any kind of anti-social behaviour	10.0%		22.8%
Has been in trouble with the police/law	8.7%		
Has truanted in Year 11	19.6%		
No risk behaviours	59.4%		
One or more risk behaviours	40.6%		
Two or more risk behaviours	19.1%		
Three or more risk behaviours	10.5%		

More than half (59%) of students had not engaged in any of the risky behaviours displayed above., and just over one in ten had been involved in three or more (10%).

Figure 2.9: Number of risky behaviours reported in Year 11
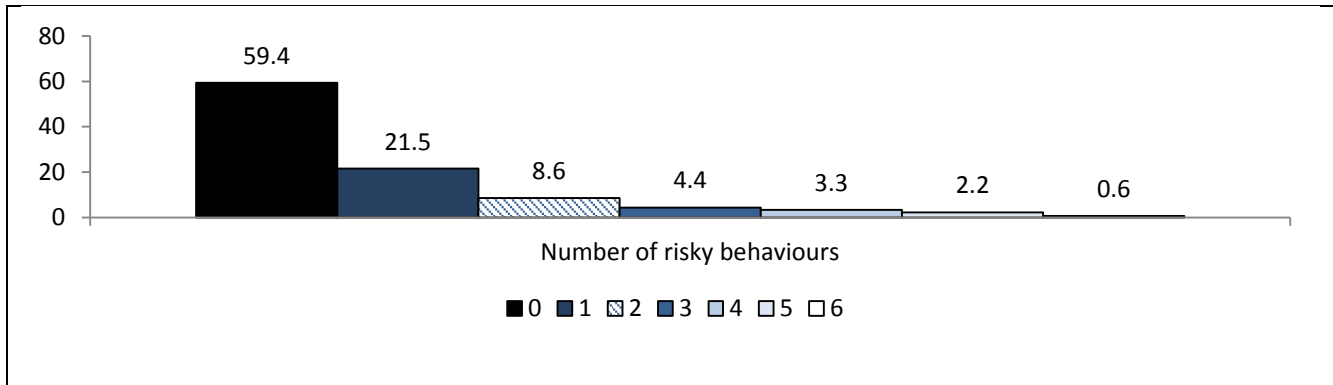
When investigated individually, boys were involved in a significantly higher number of risk behaviours than girls, although not by a large margin. For example 43% of boys reported at least one risky behaviour compared to 38% of girls[18]. There were also differences for ethnicity with students from White UK, Black Caribbean and Mixed race heritage groups reporting more risky behaviours. Students from Indian, Pakistani, Bangladeshi and Black African ethnic heritage groups reported the lowest levels of multiple risk[19]. FSM status and parental qualification level did not predict multiple risk.

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18 T-test statistic Boys mean=0.87 risky behaviours, Girls mean=0.73 risky behaviours; t=2.002, p<0.05.

19 It should be noted that many of the ethnic minority heritage groups were small so the results should be treated with some caution.

Marital status at entry to the study and family structure in Year 11 were also investigated, to see whether there was any relationship with multiple risk behaviours, as has been suggested elsewhere (Hair et al., 2008). Students with married parents at entry to the study had the lowest levels of reported multiple risk behaviours and those from single parent families the highest. Similarly students from married families had the lowest levels of all the individual risks except regular drinking and engagement in sports, where there were no significant differences were found for marital status. For example 16% of students from single parent families smoke regularly compared to 7% of students from married families. Table 2.13 displays the figures for individual risky behaviours.

Table 2.13: Self-reported risky behaviours in Year 11 and family structure

Pre-school marital status	Risk behaviours													
	Smoking		Drink		Drugs		Anti-social		Police/law		Truancy		Physical*	
	n	%	n	%	N	%	n	%	N	%	n	%	n	%
Married	75	6.9	96	8.9	178	18.1	86	8.4	75	7.3	176	16.2	468	43.1
Single parent	24	15.9	12	8.0	39	27.3	20	13.6	16	10.9	44	28.4	81	53.3
Separated/ Divorced	20	12.7	13	8.3	35	24.5	20	13.5	20	13.5	38	24.2	78	49.7
Living with partner	29	12.8	22	9.9	59	28.4	27	12.3	20	9.3	57	25.4	96	42.7
Family structure in Year 11	Risk behaviours													
	Smoking		Smoking		Smoking		Smoking		Smoking		Smoking		Smoking	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Both natural parents	68	6.6	93	9.0	168	17.9	79	8.0	72	7.3	156	15.0	414	40.2
Single parent	47	12.9	28	7.7	89	26.2	43	12.1	43	12.1	102	27.8	195	53.4
Natural parent + step parent	33	15.1	19	8.8	48	24.2	29	14.1	17	8.3	52	24.0	112	51.4
Other	6	18.2	8	25.0	10	32.3	4	12.5	4	12.5	13	38.2	15	45.5

* Lack of physical activity was not part of the risk index

Logistic regression of multiple risk behaviours (2 or more versus 0-1, binary response) was also carried out to investigate the combined influence of student, family and home learning factors on the likelihood of taking part in multiple risk behaviours. The results are displayed in Table 2.14. Girls were found to be less likely than boys to engage in multiple risk behaviours (odds ratio[20]=0.569) as were students with EAL at entry to the study (OR=0.16), and younger students within the year group (summer versus autumn born, OR=0.69).

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20 The Odds Ratio (OR) is a measure of association between the predictor variable (e.g., gender) and the outcomes binary measure (e.g., engages in multiple risky behaviours Yes/No). An odds ratio of 1 can be interpreted as no association between predictor and outcome. An odds ratio above 1 means the predictor is associated with greater likelihood of the outcome occurring (e.g., multiple risky behaviours), and less than 1 is less likelihood. As is the case with non binary outcomes, such as dispositions, the significance of the OR also needs to be used in the interpretation.

Family background was less predictive, once child influences were modelled. However, students from semi or unskilled families were more likely to engage in multiple risk behaviours than students from professional SES families (OR=1.68). Family structure proved to be a powerful predictor of multiple risk behaviours. Students from families with a step parent in the house or from single parent families and students in other family situations in Year 11 were more likely than students living with both natural parents in the house to engage in multiple risk behaviours). Students with older mothers (26 year old or above at time of first parent interview) were the less likely to engage in multiple risk behaviours than younger mothers (25 years or less).

Home learning environment at different phases was also tested and two aspects of home learning in KS3 were found to be significant when tested in combination. High and medium computer use was found to be associated with multiple risk behaviour compared to low computer use (High OR=3.70, medium OR=2.53). In contrast, students with higher 'parental academic supervision' were less likely to engage in multiple risk behaviours (High OR=0.25, medium OR=0.60). See Appendix 4 for full details.

Table 2.14: Logistic regression analysis engagement in multiple risky behaviours in Year 11

Child	Child		Child & family		Child, family & HLE	
	OR	p	OR	p	OR	P
Gender: female	0.66	***	0.60	***	0.57	***
English as an Additional Language (non-EAL)	0.17	***	0.14	***	0.16	***
Age in year group: Summer (Autumn born)	0.66	*	0.67	*	0.69	*
Family	OR	p	OR	p	OR	P
Highest SES pre-school entry: Semi-skilled/unskilled (prof)			1.84	*	1.68	*
Family structure Yr 11: Step parent in family (both parents)			1.77	*	1.68	*
Family structure Yr 11: Single parent family			1.70	*	1.53	*
Family structure Yr 11: Other family structure			2.86	*	3.00	*
Mother's age: 26-35 years old (compared to 25 or below)			0.54	**	0.53	**
Home learning	OR	p	OR	p	OR	P
KS3 computer use: High (compared to low)					3.70	***
KS3 computer use: Medium (compared to low)					2.53	**
KS3 academic supervision: High (compared to low)					0.25	***
KS3 academic supervision: Medium (compared to low)					0.60	*
Student n		1429		1429		1429

*p<0.05   **p<0.01   ***p<0.001   #p<0.10

OR - Odds Ratio

( ) Comparison group shown in brackets

Once background had been controlled, there was some evidence that multiple risk behaviour (two or more risk behaviours) still varied across schools, but not for higher levels of risk (three or more risk behaviours). Risk taking behaviour is strongly related to current attainment in Year 11. Elsewhere, significant school differences in GCSE outcomes are identified for the EPPSE sample. The relationship between behaviour and attainment may be reciprocal.

When current GCSE results are controlled no significant school differences in risk behaviours were found. In addition, models were run predicting engagement in the individual risk behaviours (see Appendix 4), and only substance use (any drug) was found to vary at the school level after accounting for student, family and home learning. Accounting additionally for academic attainment in Year 11 interestingly does not remove the variation in substance use across schools. It should be noted that the number of students per school was very small, making the estimation of school effects on dichotomous outcomes difficult. It is recommended that these findings are treated with caution. Elsewhere school level effects have been found for health related outcomes (Bonell et al., 2013, Hale et al., 2013).

Risk-taking behaviours were also significantly associated with Year 11 outcomes. Students who took risks had significantly poorer outcomes across all dispositions, academic and social/behavioural outcomes.

Figure 2.10 : Year 11 risk taking and academic outcomes
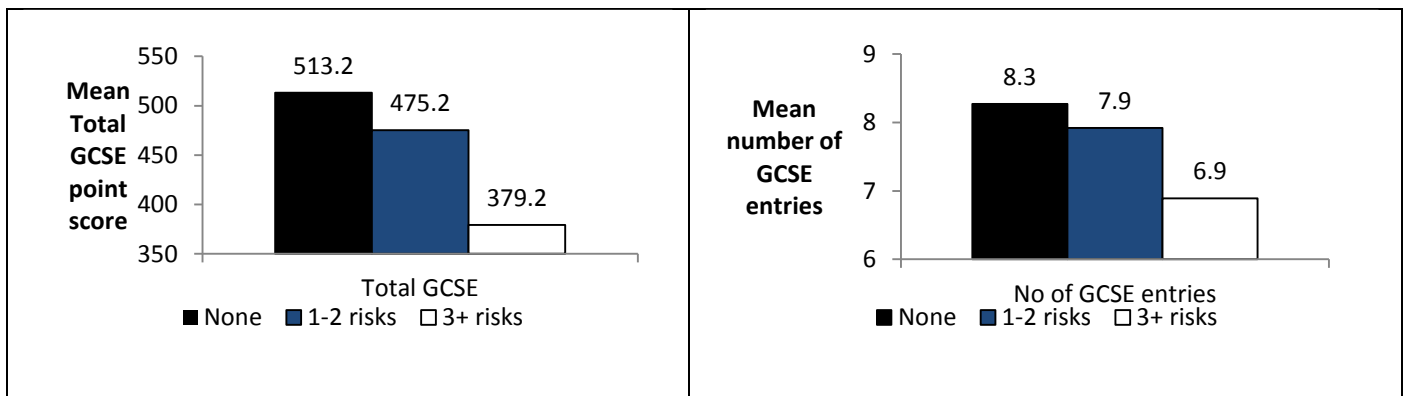
When tested in combination, attainment, hyperactivity and Resistance to peer influence (RPI) were all still found to be significantly related to increased risky behaviours. For example, having low GCSE performance (bottom 20% of students) was associated with three times the likelihood of engaging in multiple risk behaviours (OR=3.40, p<0.001), even after Hyperactivity and RPI levels had been accounted for. Similarly having low self-reported resistance to peer influence (scoring in the bottom 20% for students in the sample) was associated with more than twice the likelihood of being engaged in risk behaviours (compared to students with high resistance), even after attainment and social/behaviour had been accounted for (OR=2.48, p<0.001).

Table 2.15: Additional influences on multiple risky behaviours

Logistic regression	Tested together				Tested separately			
Child	**OR**	**p**	**OR**	**p**	**OR**	**p**	**OR**	**p**
Gender: female	0.82	ns	0.60	***	0.76	#	0.63	**
English as an Additional Language	0.16	***	0.15	***	0.15	***	0.17	***
Age in year group: Summer	0.59	*	0.63	*	0.62	*	0.69	*
Family	**OR**	**p**	**OR**	**p**	**OR**	**p**	**OR**	**p**
Highest SES pre-school entry: Semi skilled/unskilled	1.40	ns	1.43	ns	1.38	#	1.87	*
Family structure Yr 11: Step parent	1.37	ns	1.50	#	1.41	*	1.74	**
Family structure Yr 11: Single parent	1.41	*	1.45	*	1.45	*	1.57	*
Family structure Yr 11: Other	2.84	*	2.69	*	2.53	*	3.53	**
Mother's age: 26-35 years old	0.62	#	0.56	**	0.60	*	0.55	*
Home learning	**OR**	**p**	**OR**	**p**	**OR**	**p**	**OR**	**p**
KS3 computer use: High	4.17	***	4.32	***	3.77	***	3.74	***
KS3 computer use: Medium	2.72	**	2.81	**	2.63	**	2.52	**
KS3 academic supervision: High	0.27	***	0.22	***	0.25	***	0.30	**
KS3 academic supervision: Medium	0.58	*	0.57	**	0.53	**	0.66	#
Year 11 GCSE attainment: Low	**3.40**	*	**6.68**	**				
Year 11 GCSE attainment: Medium	**1.67**	***	**2.16**	***				
Year 11 Hyperactivity: score of 1-2	3.17	***			3.54	***		
Year 11 Hyperactivity: score of 3-4	4.74	***			5.84	***		
Year 11 Hyperactivity: score of 5-6	4.99	***			7.01	***		
Year 11 Hyperactivity: score of 7-8	9.79	***			12.74	***		
Year 11 Hyperactivity: score of 9-10	10.48	***			16.95	***		
Year 11 RPI: Medium	1.67	*					1.74	**
Year 11 RPI: Low	2.48	***					2.87	***
Student n		1429		1429		1429		1429

*p<0.05   **p<0.01   ***p<0.001   #p<0.10

OR - Odds Ratio

In summary, engagement in multiple risky behaviours tends to be associated with:

- Boys, older students, and non-EAL students
- Non-traditional family structure and students from lower skilled backgrounds (parental SES)
- Students with lower levels of Academic supervision in the home and high levels of computer use
- Students with higher hyperactivity levels and lower attainment

2.2 Peer influence, peer group affiliation and leisure activities in Year 11

2.2.1 Who do students spend time with in their free time?

When asked how students 'mostly' spent their spare time (between friends, family or alone), two thirds of students said they spent it mostly with friends (65%), and a quarter spent it mostly with family (23%). The remaining students spent it mostly alone (12%).[21]. The most common activity reported was spending it with friends, with over 90% reporting spending some time with friends in the last month. Going shopping with friends or going to a party was also something that four out of five students reported doing at least once in the previous month, and partying was significantly related to regular drinking.

Girls were more likely to report spending time with friends, going shopping with friends and spending time with their boyfriend/girlfriend than boys.

Almost two thirds of students in Year 11 (63%) reported going on family outings at least once in the last month. This did not differ by gender. There is evidence to suggest young people value both friendships and family, and three quarters of students report having a best friend. Girls were more likely to report having a best friend than boys (80% of girls compared to 70% of boys).

Table 2.16: Self-reported social activities in Year 11

| Self-reported social activities | Frequency in the last month | | | | | | | |
| | None | | Once or twice | | 3-5 times | | 6+ times | |
	n	%	n	%	n	%	n	%
Spent time hanging around with friends	95	5.8	235	14.4	364	22.2	942	57.6
Spent time with boyfriend, girlfriend	928	57.5	142	8.8	109	6.8	434	26.9
Gone shopping with friends	310	18.8	587	35.5	486	29.4	270	16.3
Family outings	613	37.3	638	38.8	279	17.0	115	7.0

Students were also asked if they had been the victim of physical or psychological abuse during KS4. A third reported having been verbally bullied (35%) and a similar proportion reported having had something stolen from the (32%). Just under a quarter had been injured by force (23%) and just over a quarter threatened with violence (27%).

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[21] Almost all students (94%, n=1544) reported having a group of friends to 'hang out with'.

Table 2.17: Prevalence of bullying during Key Stage 4

Prevalence of bullying	Frequency since Year 9							
	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
Had something stolen from you	1137	68.2	452	27.1	52	3.1	26	1.6
Had someone threaten you with force	1205	72.5	343	20.6	62	3.7	55	3.3
Been physically injured by force	1282	77.0	311	18.7	39	2.3	34	2.0
Been bullied by someone calling you names, swearing at you	1088	65.3	368	22.1	89	5.3	120	7.2
Someone been rude to you because of your skin colour, race, ethnic background or religion	1436	86.2	145	8.7	34	2.0	50	3.0

2.2.2 What activities are young people doing in their free time?

Young people in Year 11 reported taking part in a range of activities in their free time.

2.2.2.1 Sports activities

Just over half of students were involved in sports (58%) in the last month and just under half of students had gone to see a sports event, as displayed in Table 2.18. Boys were significantly more likely to do both of these activities[22].

Table 2.18: Physical activities in Year 11

Sports and hobbies	Frequency in the last month							
	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
Taken part in any kind of sport or team games	689	41.9	319	19.4	234	14.2	402	24.5
Taken part in any kind of sport or team games (including Dance)	670	40.7	317	19.3	236	14.3	422	25.7
Gone to see sports events	963	58.3	480	29.1	130	7.9	79	4.8

Reading, the arts and library visits

Out of school learning or educational activities were also reported. In total 59% of students reported reading for pleasure, 18% more than six times a month. However, less than one in five students reported going to a non-school library in the last month (17%).

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[22] In total 53% of boys went to see a sports event in the last month compared to 32% of girls.

Table 2.19: Enrichment activities in Year 11

Enrichment activities	Frequency in the last month							
	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
Read on your own for pleasure	674	40.7	440	26.6	239	14.4	301	18.2
Music, singing, art, dance, drama, lessons, groups	1042	66.8	141	9.0	161	10.3	215	13.8
Gone to the library	1328	80.3	220	13.3	71	4.3	34	2.1

Girls were more likely to report reading for pleasure (66% compared to 52% of boys), more likely to go to the library and more likely to be involved in music and drama.

Figure 2.11: Gender differences in reading in Year 11
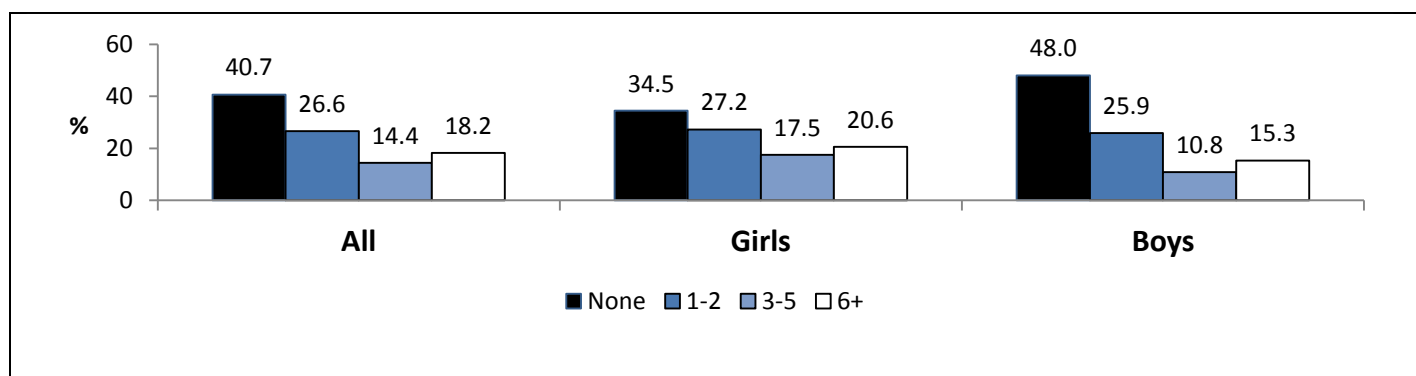
2.2.2.2   Computer-based activities

The majority of students had spent time on the computer in the last month, and three quarters had been on the computer for both surfing the net and social network sites six or more times in the last month. A slightly lower percentage had spent time on a games console (88%).

Table 2.20: Computer based activities in Year 11

Computer based activities	Frequency in the last month							
	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
Gone on social network sites e.g. MySpace, Facebook, MSN	99	6.0	120	7.3	181	11.0	1239	75.6
Surfed the net	47	2.9	160	9.8	250	15.3	1178	72.0
Played games on games console or computer	293	17.8	376	22.9	283	17.2	692	42.1

Significantly more boys than girls reported gaming (58% in the top category compared to 29% of girls), and slightly more surfed the net (73% in top category compared to 71% of girls). Girls were slightly more likely to use social network sites (79% in top category compared to 71% of boys).

Figure 2.12: Gender differences in gaming activities in Year 11
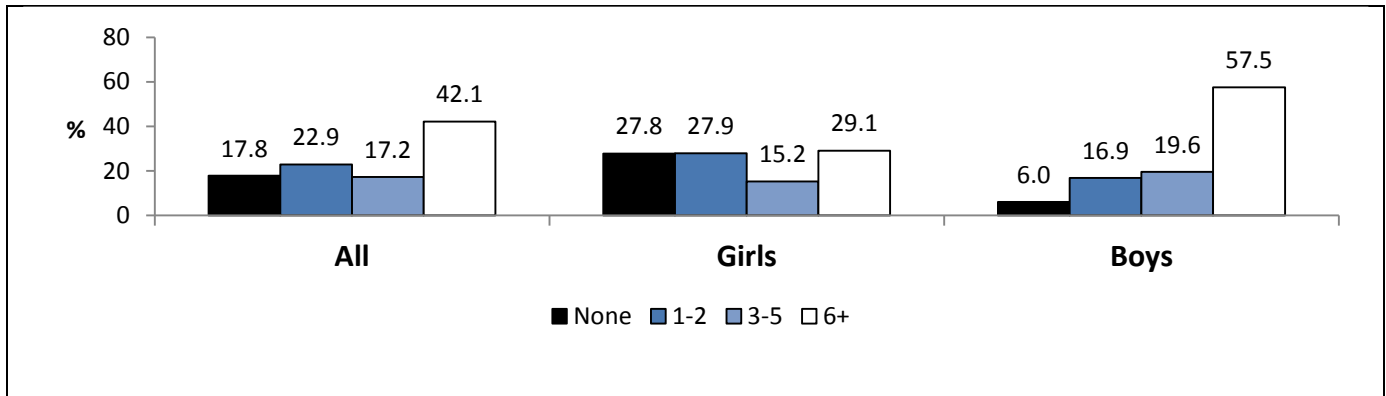
2.2.2.3   Entertainment activities

Approximately four out of five students had been to a party or cultural event in the previous month. Just under a third (30%) had been to three or more parties in the previous month. Boys were significantly more likely to go to an amusement arcade than girls.

Table 2.21: Entertainment activities in Year 11

Entertainment activities	Frequency in the last month							
	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
Gone to a party	374	22.6	782	47.3	344	20.8	152	9.2
Gone to a cinema, theatre or concert	370	22.3	859	51.9	317	19.1	110	6.6
Gone to a pub, bar, clubbing	1142	69.2	356	21.6	99	6.0	53	3.2
Gone to an amusement arcade	1149	69.8	415	25.2	65	3.9	18	1.1

2.2.2.4   Group involvement and affiliation

Less than one in five students reported involvement in religious activities (18%), voluntary/ community work (17%) or attending a youth club (16%). Less than one in ten reported being involved in a political activity (5%) or other groups. No statistically significant gender differences were found in these activities.

Table 2.22: Group involvement and affiliation activities in Year 11

Group involvement and affiliation activities	Frequency in the last month							
	None		Once or twice		3-5 times		6+ times	
	n	%	n	%	n	%	n	%
Gone to a religious activity	1361	82.4	126	7.6	81	4.9	84	5.1
Voluntary, community work	1371	82.8	145	8.8	84	5.1	56	3.4
Gone to a political meeting, march	1566	94.9	63	3.8	12	0.7	10	0.6
Participation in groups								
Gone to a youth club	1304	83.6	135	8.7	64	4.1	56	3.6
Scouts, guides or environmental group	1407	90.3	48	3.1	59	3.8	44	2.8
Religious classes for church, mosque	1413	90.6	65	4.2	38	2.4	43	2.8
Youth group linked to place of worship	1446	92.7	51	3.3	35	2.2	28	1.8
School for culture e.g., Greek, Chinese school	1535	98.8	11	0.7	1	0.1	6	0.4

2.2.3 Resistance to Peer Influence in Year 11

The items in Table 2.23 have been adapted from the Resistance to Peer Influence scale (Sternberg 2007). The majority of students valued their individuality, with 94% reporting that it was more important to be themselves than fit in with a crowd (sort of true/very true). However approximately one third of students also reported they would not act the same when alone than with friends (30% sort of true/very true) and would go along with friends to keep them happy (34% sort of true/very true).

Fewer students felt that they would be willing to misbehave to fit in or go against their true opinions/beliefs. Nonetheless, the majority of Year 11 students reported they would take more risks when with friends (64% sort of true/very true). However, only one in ten (11% sort of true/very true) thought they would do something that is wrong and even less reported they would be willing to break the law (5% sort of true/very true) to fit in. Only a small proportion (approximately one in ten) thought they wouldn't say their true opinion (13%) or would say things they don't believe (10%).

Table 2.23: Resistance to Peer Influence in Year 11

Resistance to Peer Influence	Not at all true		Not very true		Sort of true		Very true	
	n	%	n	%	n	%	n	%
I think it's more important to be who I am than to fit in with the crowd	36	2.2	71	4.3	494	29.7	1060	63.8
I would say my true opinion in front of my friends, even if I know they would make fun of me because of it	68	4.1	148	8.9	620	37.4	823	49.6
I would act the same way when I am alone as I would when I am with my friends	113	6.8	389	23.5	614	37.2	536	32.4
It would be pretty hard for my friends to get me to change my mind	53	3.2	300	18.1	859	51.8	445	26.9
I would...	**Not at all true**		**Not very true**		**Sort of true**		**Very true**	
	n	%	n	%	n	%	n	%
break the law if my friends said they would	1241	74.8	337	20.3	71	4.3	9	0.5
say things I don't really believe because I think it would make my friends respect me more	987	59.6	502	30.3	134	8.1	33	2.0
do something that I know is wrong just to stay on my friend's good side	884	53.3	588	35.5	166	10.0	20	1.2
go along with my friends just to keep them happy	501	30.2	595	35.8	500	30.1	65	3.9
take more risks when I am with my friends than I would when I am alone	292	17.6	304	18.4	753	45.5	307	18.5

Girls reported higher resistance to peer influence for six of the items. The largest gender differences were found for doing something wrong to stay on a friend's good side (60% of girls said this was not at all true of them compared to 45% of boys), saying things they don't believe (66% of girls said this was not at all true of them compared to 52% of boys) and being willing to break the law (81% of girls said this was not at all true of them compared to 68% of boys). Girls were also more likely to say they would 'act the same way when I am alone as I would when I am with my friends' (38% of girls said this was very true of them compared to 26% of boys), less likely to go 'along with my friends just to keep them happy' (34% of girls said going along with friends was not at all true of them compared to 25% of boys), and more likely to feel it is important to 'be who I am than fit in with the crowd' (68% of girls said going along with friends was very true of them compared to 59% of boys).

Figure 2.13: Resistance to Peer Influence in Year 11
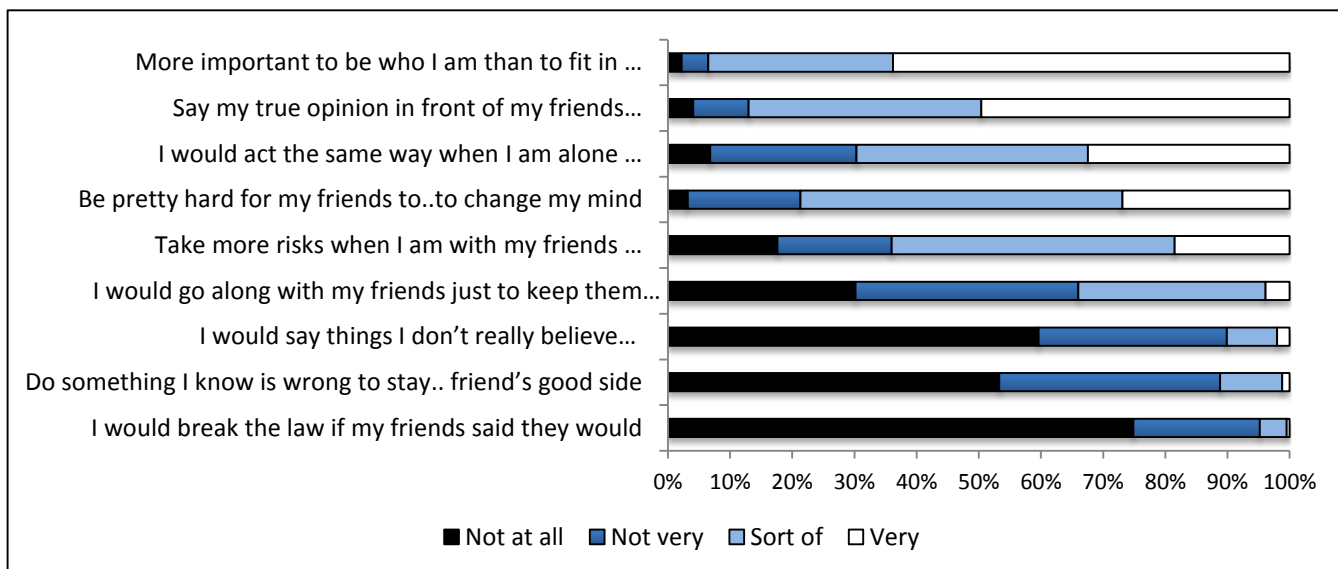
2.3   School work and life in Year 11

2.3.1 Academic Self-concept in Year 11

In general students were positive about their general ability (see Table 2.24 below), and the findings are in line with their views in Year 9 when they were asked about their English and maths ability (Sammons et al., 2011a). Approximately two thirds of students felt they have always done well in school subjects, they got good marks and they were satisfied with their school work. Over a third of students felt the school work was relatively easy for them (40% quite a lot like me or definitively like me/ 13% think this is not like me). Only a tiny minority of students (5%) felt they were hopeless at most school subjects. The majority of students (87%) felt that it was important to do well in school subjects.

Table 2.24: General Academic self-concept in Year 11

General Academic self-concept	Not at all like me		A bit like me		Quite a lot like me		Definitively like me	
	n	%	n	%	n	%	n	%
I have always done well in most subjects	68	4.1	480	28.9	669	40.3	445	26.8
Compared to others my age I am good at most school subjects	134	8.1	558	33.6	642	38.7	326	19.6
I get good marks in most school subjects	91	5.5	468	28.2	714	43.0	387	23.3
Work in most school subjects is easy	223	13.4	767	46.2	524	31.6	145	8.7
I learn things quickly in most subjects	220	13.3	567	34.3	630	38.1	238	14.4
It is important to me to do well in most subjects	29	1.7	189	11.4	516	31.1	927	55.8
I am satisfied with how well I do in most subjects	140	8.4	427	25.7	696	41.9	398	24.0
I am hopeless when it comes to most subjects	1343	80.9	227	13.7	62	3.7	28	1.7

Girls and boys responded similarly for most items related to overall General academic self-concept. Where differences were found, boys were more likely to feel school subjects were easy for them (despite their lower GCSE performance) and to report they learn things quickly in most schools subjects. In contrast, girls were more likely achieve it was important to do well in school subjects.

Students were also very optimistic about their GCSE exam performance. Less than one in ten students (9%) believed that they would not get five good GCSEs at the end of Year 11, and 60% felt it was very likely (see Table 2.25). This is higher than the national figures for 5 A*C results when comparing national GCSEs for individual years[23]. When students responses were linked to their actual GCSE results four out of five students were accurate in their prediction (79%). The majority of those who were inaccurate (68%) had been overly optimistic, failing to get the five A*-C GCSEs they expected.

Table 2.25: Self-reported prediction of GCSE performance in Year 11

How likely is it that you will get...?	Very likely		Fairly likely		Not very likely		Not at all likely		Don't know	
	n	%	n	%	n	%	n	%	n	%
5 GCSEs at level A*-C this summer?	993	59.9	492	29.7	101	6.1	49	3.0	22	1.3

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[23] Cohort 1 took their GCSEs in 2009 when the proportion of students at the end of Key Stage 4 (KS4) gaining 5 A*-C GCSEs stood at 70%; Cohort 2 completed KS4 in 2010 when national statistics were 75%, Cohort 3 completed KS4 in 2011 when national figures were 80%, Cohort 4 completed KS4 in 2012 when national figures were 81% (DfE 2011, 2012).

2.3.2 School engagement and enjoyment in Year 11

In Year 11 four out of five (82%) of the EPPSE sample reported they liked being at school (18% strongly agree, 64% Agree) and 84% liked most of their lessons (17% strongly agree, 67% agree). This is somewhat higher than reported elsewhere when enjoyment of schooling was elicited from students (Brooks et al., 2011; Ofsted, 2007; Gorard & Huet, 2011) although very much in line with the recent PISA findings that found 84% of Year 11 students to be satisfied with school (agree/strongly agree) and 83% to be happy at school (Wheater et al., 2013). For example Gorard & Huet (2011) found only 44% of students at the end of compulsory schooling (Year 11) reported they enjoyed school and only 38% said they found the lessons interesting[24]. Ofsted (2007) findings from the TellUs2 survey of 10-15 year olds, found that 58% of students enjoyed school always or most of the time, 34% enjoyed school sometimes and just 9% never enjoyed school.

Nearly all students reported they felt safe in school (over 97%); either in their lessons and during break time, and this did not differ by gender.

In line with the international PISA study only a tiny percentage (7%) felt that school was a waste of time (PISA analysis of English students found 6% agreed/strongly agreed that school had been a waste of time). Students were least positive about boredom in lessons (36% reported being bored) and over half of students reported talking when they should have been working (55%).

Table 2.26: School engagement and school enjoyment in Year 11

Positively worded items	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%
I feel safe during break and lunch times	950	56.8	676	40.4	38	2.3	9	0.5
I feel safe in lessons	975	58.3	665	39.7	29	1.7	4	0.2
This school is a friendly place	506	30.4	960	57.8	165	9.9	31	1.9
On the whole I like being at school	300	18.1	1056	63.6	227	13.7	77	4.6
I like most of the lessons	289	17.3	1116	67.0	235	14.1	26	1.6
I never bully other pupils	890	53.3	540	32.4	99	5.9	140	8.4
I behave in class	411	24.7	1123	67.6	114	6.9	13	0.8
Negatively worded items	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%
I feel out of place at school	45	2.7	149	9.0	704	42.4	764	46.0
I am bored in lessons	111	6.7	487	29.4	942	56.9	116	7.0
School is a waste of time for me	38	2.3	71	4.3	678	40.7	879	52.8
I mess about in lessons	32	1.9	245	14.8	895	54.1	483	29.2
I talk to my friends when I should be doing my work	105	6.4	797	48.4	675	41.0	68	4.1

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[24] It should be noted there were also differences between our own and Gorard and Huet See's sample in terms of demographics and sample size, which may explain the differing responses and also different measure. Gorard asked if students enjoyed school in a dichotomous approach. The option responses were: All of the time, Sometimes/never Never.

When gender differences were examined for individual questions, girls were found to like lessons more than boys (87% compared to 81%[25]) and were more likely to report behaving well in class (95% compared to 90% of boys). Girls were also less likely to report feeling school is a waste of time, 'mess around in lessons' (13% compared to 21%) or report bullying other students. See Appendix 2 for more details.

Students' views of school life seemed to stay relatively stable from Year 9 to Year 11, although there were some small differences between students of different ages. For example, 83% of students like being at school compared to 90% in Year 9. In contrast, boredom had reduced slightly with 36% of Year 11 students reporting they were bored in lessons compared to 41% of Year 9 students.

By Year 11 students were also more likely to be engaged with school, i.e. they were more likely to believe their school was a friendly place, less likely to feel out of place or feel that school is a waste of time, and less likely to mess around in class. See Appendix 3 for full details.

2.3.3 Homework in Year 11

The majority of students reported doing either up to one hour a day (31%) or one to two hours (42%). Approximately one in ten students (10%) reported not doing any homework on an average school day, and a very small minority of students (4%) reported doing three or more hours homework a day. Girls reported doing significantly more homework than boys. For example, nearly half of boys reported doing less than an hour or no homework on a typical school day (49%), compared to approximately a third of girls (34%).

Figure 2.14: Gender differences in amount of time spent on homework

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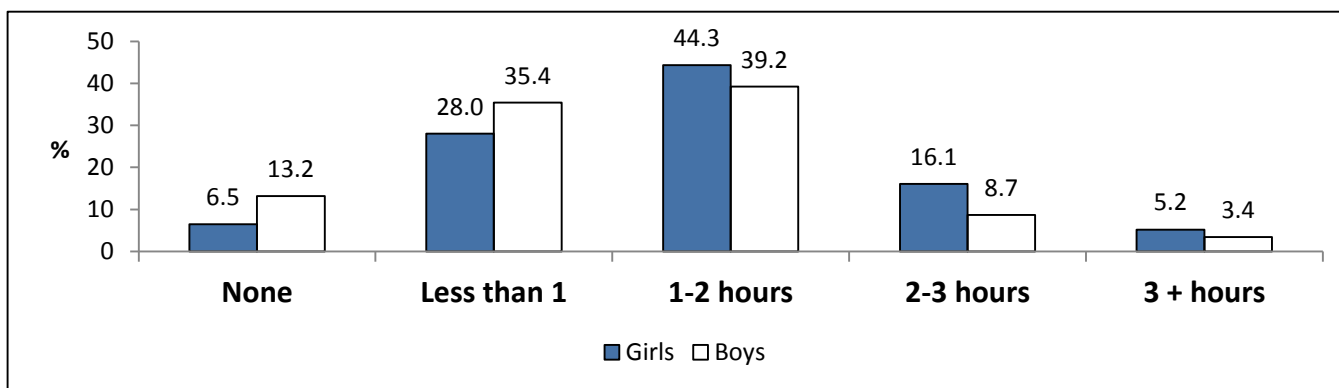
[25] The percentage that agree or strongly agree with the statement.

The amount of time spent on homework after school had increased from Year 9 to Year 11, almost certainly a reflection of increased curriculum requirements and GCSE examination preparation. When a sample completing the survey in both Year 9 and 11 was analysed approximately a third of students in Year 9 reported they spent at least an hour a day on homework after school (37%) compared to nearly two thirds (61%) in Year 11 (see Appendix 3). Similarly, the proportion of students reporting spending two or more hours a day on homework in Year 11 was double the amount reported in Year 9 although still only a minority (17% in Year 11 compared to 8% in Year 9).

In addition, the majority of students were taking part in extra revision classes for their Year 11 exams (84%), and just under half were taking part in extra English or maths activities or extra lessons in some other subject (40% English, 46% Maths, 46% Other subject). One in five students (19%) was taking part in Gifted and talented activities.

Table 2.27 : Additional study activities in Year 11

Additional study activities	Never		Every Day		At least once a week		Few times a term		None at school	
	n	%	n	%	n	%	n	%	n	%
Revision classes for exams	241	14.5	170	10.3	724	43.7	492	9.7	31	1.9
Extra English	831	50.3	39	2.4	313	18.9	310	18.8	160	9.7
Extra Maths	752	45.5	42	2.5	391	23.6	328	19.8	141	8.5
Other extra lessons (school subject)	745	45.2	45	2.7	408	24.8	311	18.9	138	8.4
Extra activities for gifted/talented	1066	64.6	14	0.8	71	4.3	224	13.6	274	16.6

Girls were more likely to report going to revision classes for Year 11 exams and extra Maths classes.

2.3.4 Aspirations in Year 11

The majority of students (87%) felt that it was important to do well in school subjects, and this is reflected in the levels of participation in additional study in Year 11 as described above.

2.3.4.1   The importance of qualifications

Students were also asked how important they felt it was to gain different qualifications, and the responses were similar for both girls and boys. Whilst students answered very positively about most of the qualification types, GCSE qualifications were considered the most important. Nine out of ten students (90%) reported feeling it was very important to get five good GCSEs[26]. Nearly three quarters of students stated it was very important to get A levels (72%) and just over half felt it was very important to get a degree. However, vocational qualifications were not seen as important qualifications with only one in five students (21%) feeling they were very important.

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[26] Five good GCSEs (A*-C including English & maths) or equivalent.

Figure 2.15: Importance of qualifications in Year 11

How important is it for you to get......

	Very	Fairly	Not very	Not at all
Degree	56.3	23.7	13.3	6.6
A levels	72.2	13.1	10.3	4.4
Vocational	21.1	21.9	29.5	27.5
5 good GCSEs	89.9	7.9	1.7	0.4
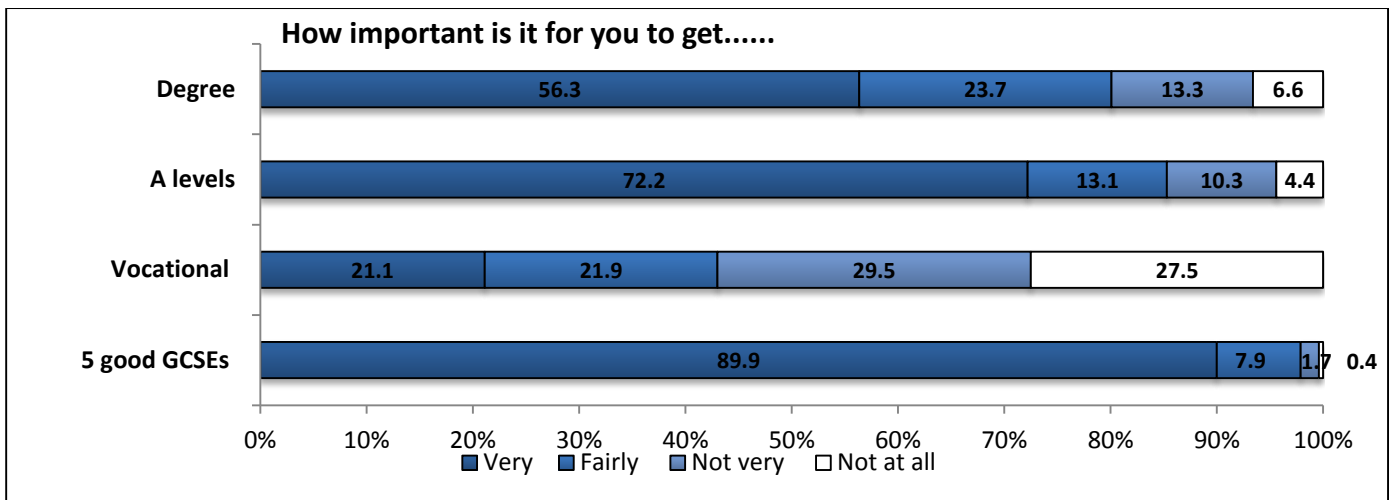
There was some change from two years previously when they were asked the same questions, particularly in the importance attached to Vocational qualifications. In Year 9 nearly two thirds of students felt vocational qualifications were very important compared to approximately one in five of students in Year 11 (see Appendix 3).

Student's belief in the importance of GCSEs was extremely stable over time. Nearly all (98% of students) felt GCSEs were important in Year 9 and Year 11, the proportion thinking they were very important increasing slightly from 86% in Year 9 to 92% in Year 11. The belief in the importance of A levels increased slightly and from Year 9 to Year 11 (85% to 88% for the matched sample), and decreased slightly for a Degree (87% compared to 82% for the matched sample).In contrast, only 40% of students in the matched sample in Year 11 felt Vocational qualifications were important compared to 87% in Year 9. This may reflect the fact that the students were coming to the end of compulsory schooling and many will have made the choice not to taken vocational courses. It may also reflect the options available and uncertainty about the job market during the economic recession from 2007 onwards.

2.3.4.2   Post 16 destinations

In terms of post 16 plans, by far the majority of students want to continue in full-time education (90%), as shown in Table 2.28. Views on the Educational Maintenance Allowance, and its replacement the Learning Support Fund were also sought. In total, 86% of Cohorts 1 and 2 had heard of the EMA and just over half (55%) were planning on applying for it. A small minority of students (13%) who no longer had access to the EMA (cohorts 3 and 4) felt that the scrapping of the allowance had made it less likely they would stay on in education Post 16. The majority of these students had also not heard of the Learning Support Fund (74% of cohort 3, 63% of cohort 4).

Table 2.28: Students' view on their post 16 destinations in Year 112.28[27]

Students' view on their post 16 destinations	n	%
Carry on in full-time education	1441	90.1
Work full-time/job	21	1.3
Combine a job with part-time study	44	2.8
Part-time study at College	15	0.9
Learn a trade/start work-based training or Apprenticeship	44	2.8
Look after someone at home/family	2	0.1
Not sure yet	17	1.1
Something else	15	0.9
Total n/%	1599	100.0

The majority of students (97%) who thought they would go to 6th form or college post 16 when asked at the end of Year 9 reported the same plans at the end of Year 11. When asked what qualifications they planned to study after Year 11 just over two thirds of students stated they were intended planning to study A or AS level qualifications (68%)[28]. Three quarters of students were taking just one type of qualification (81%).

Table 2.29: Students' view on their post 16 course choice in Year 11

Students' view on their post 16 course choice	End of Year 11	
	n	%
A levels , AS levels	1119	68.2
BTEC	258	15.7
Diploma	209	12.7
NVQ	143	8.7
GCSE subjects	110	6.7
GCE Applied A Levels	65	4.0
Basic Skills qualification	34	2.1
Key Skills qualification	31	1.9
OCR qualifications	29	1.8
City and Guilds	23	1.4
None	32	2.0

N.B. Percentage does not add up to 100 as students can take multiple qualification types

By Year 11, 72% of students felt it was likely they would apply to university (very or fairly likely), and the majority (69%) of students felt they would go to university within the next five years (by the age of 21). Similarly, Smith and Brzyska (2012) found three quarters of Year 10-12 students thought they would apply for university. This is much higher than actual participation rates (DfBIS, 2013). Girls were slightly more likely to think they will go to university than boys (74% of boys compared to 68% of boys)[29].

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[27] This variable originally included multiple responses and was recoded. Any student who said full-time education with other categories was treated as full-time education. Similarly work full-time and other categories were treated as full-time work.

[28] This figure represents the proportion of students as a whole, so does not add up to 100%.

[29] Similar figures for going to university in the next five years: 71% of girls compared to 66% of boys.

Table 2.30: Students' university aspirations in Year 11

How likely is it...?	Very likely		Fairly likely		Not very likely		Not at all likely		Don't know	
	n	%	n	%	n	%	n	%	n	%
That you will go to University within the next 5 years or so?	568	34.2	574	34.6	222	13.4	196	11.8	101	6.1
That you will ever apply to go to University to do a degree?	713	43.2	467	28.3	182	11.0	169	10.2	119	7.2

Students' views about whether they would apply to university were relatively stable over time. In total, 87% of students who felt that it was likely (very/fairly) they would ever apply to university when asked in Year 9 still thought this in Year 11. Those students who did not think it was likely they would apply to university in Year 9 approximately half (58%) felt the same in Year 11. These findings suggest students have already begun to make these important education/career decisions during Key stage 3.

Section 3: Dispositional outcomes at the end of Key stage 4 (Year 11, age 16)

Key findings

- Five dispositions outcomes were identified from exploratory and confirmatory factor analysis of the student questionnaire: *Mental well-being*, *General Academic self-concept*, *Resistance to Peer Influence*, *School enjoyment* and *Disaffected behaviour*.
- Differences in raw scores for gender, family demographics (FSM status, family SES status, highest parental qualification), SEN and HLE were investigated individually. Many of these may be inter-related but give an indication in real differences in reported dispositions.

Gender differences in raw disposition scores
- Girls were found to be significantly less positive than boys in their *Mental well-being* scores, but had slightly higher scores for *Resistance to peer influence* and lower levels of reported *Disaffected behaviour*.
- There were no significant differences between girls and boys in their reported levels of *School enjoyment*.

Parental qualifications and home learning environment as predictors of raw scores
- Students whose parents had higher qualifications showed more favourable responses for *School enjoyment* and reported higher *General academic self-concept*. For example, one in five students (22%) with parents who held no qualifications felt the statement 'Compared to others my age I am good at most school subjects' was definitely like them compared to nearly twice as many (38%) of students with parent holding a degree or higher.
- Higher parental education level was, in contrast related to lower levels of *Resistance to Peer Influence*.
- The early years Home Learning Environment (HLE) was found have a strong positive association with *School enjoyment* in Year 11. Similarly, the higher early years HLE was positively associated with higher *General academic Self-Concept*.

Family SES and family poverty as predictors of raw disposition scores
- Higher family SES was found to be associated with increased *Mental well-being*, *School enjoyment* and *General academic self-concept*; and lower levels of *Disaffected behaviour*.
- In line with socio economic status, family economic disadvantage (measured by FSM entitlement) was associated with lower *School enjoyment* and lower *General academic self-concept*.

Special educational needs as predictors of raw disposition scores
- SEN students reported lower School enjoyment, poorer Mental well-being, lower General academic self-concept and higher reported Disaffected behaviour.

This section outlines the development of dispositional measures in Year 11 and examines overall differences between student groups in these outcomes.

3.1 The student questionnaire

A student questionnaire (Life in Year 11) was sent out to students in the spring term of Year 11. Students had the option to complete a paper version or complete the questionnaire online. It has been suggested that students at this age are more susceptible to peer influence and the setting of the survey (De Leeuw et al., 2004), so it is hoped that the impact of this kind of measurement error has been reduced by allowing the students to complete the survey at home. However it should be born in mind that students may still be comparing themselves to members of their specific peer/school groupings for some items[30]. Questions in the survey explored; students' views/dispositions, aspirations, extended and out of school activities, friendship, behaviour, and experiences of school and classroom life. Full details of the questionnaire are shown in Appendix 1. Similar self report questionnaires were administered at different time points throughout the study (aged 7, 10 and 14) and analyses carried out on the data.

In total 1675 students completed the questionnaire in Year 11.

3.1.1 Creating the measures dispositional measures in Year 11

The questionnaire was developed from existing scales and survey items, and many of the items used in Year 11 were also used at previous time points. The Life in Year 11 questionnaire incorporated the following scales:

- The Warwick-Edinburgh Mental Well-being scale (Stewart-Brown & Janmohamed, 2008)
- The General Academic self-concept scale (Marsh 1999)
- The Resistance to Peer Influence scale (Steinberg & Monahan 2007)

In addition, items were adapted from the following surveys:

- The School Climate Assessment Instrument (Grosin and McNamara 2001),
- The Louisiana ABC+ model (Teddlie and Stringfield, 1993)

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[30] This effect has been identified in research into Academic self-concept (Marsh and Hau 2003).

3.2 Theoretical background to the dispositions in adolescence

The three disposition factors based upon existing scales have robust theoretical underpinnings.

3.2.1 Mental well-being

Gray et al., (2011) distinguished between 'problem' cases (psychiatric or mental health cases) and broader measures of 'attitudes, dispositions, self-esteem and frames of mind', measured largely through self report. It is this broader measure, specifically positive mental well being that we report here. Subjective well-being in older children has been found to be reliable (Gibbons & Silva 2009) and moderately stable over time (Frey and Stutzer 2002).

The Goodman's teacher reported strengths and difficulties is perhaps the most well known measure of mental health in children and adolescents and is designed to capture behaviours that would be considered severe enough to be labelled psychiatric and has been collected at different time points throughout the study and is reported on separately (Sammons et al., 2014).

The *Mental well-being* scale includes aspects of cognitive functioning (e.g., thinking clearly), relationships with others and positive emotion. The mental well-being of English students has been seen as relatively good in comparison to other European countries for end of secondary schooling students, with 15 year students reporting slightly higher than the European average on the life satisfaction (Currie et al., 2008). Measurement of well being and dispositional indicators is possibly more sensitive to the exact items included in the measurement construct than for other outcomes and this is outlined in the findings that from UNICEF (2007) that seem to be at odds with the HSBC survey (Currie et al., 2008, shown above). The UK scored bottom out of a 21 country sample of industrialised nations (UNICEF 2007) in a measure of subjective well-being that utilised the HSBC data as one aspect of the indicator. Additional indicators were subjective health and school satisfaction. It may well be that we performs adequately compared to more similar countries on measures of life satisfaction, but the UK worse in terms of the other areas measured.

The WEMWBS users guide (Stewart-Brown & Janmohamed 2008) notes that this mental well-being scale covers two areas:

- A person's own perception of happiness and satisfaction with life (hedonic well-being)
- A person's capacity for 'positive psychological functioning', which would include relationships with others and capacity for development (eudaemonic well-being)

Stewart-Brown and Janmohamed (2008) state:

"Mental well-being relates to a person's psychological functioning, life-satisfaction and ability to develop and maintain mutually benefiting relationships. Psychological wellbeing includes the ability to maintain a sense of autonomy, self acceptance, personal growth, purpose in life and self esteem" (Stewart-Brown & Janmohamed, 2008).

For a more extensive description of the area, see Ryan and Deci (2001). Stewart-Brown & Janmohamed (2008) found that two other well-being measures (the General Health questionnaire 12: GHQ12 and the Satisfaction with life scale) were associated with the WEMWBS. The General Health Questionnaire and the shorter GHQ12 (Goldberg, 1972; Goldberg and Williams, 1988) are well established and well regarded measures (Argyle 1989) used to identify symptom of negative mental health (Goldberg, 1972). The Satisfaction with Life scale (Deiner, 1985) is a five item measure containing just positive life satisfaction items. Stewart-Brown & Janmohamed (2008) found differences between groups in WEMWBS were found for housing tenure, employment status, illness and marital status. Box 3.1 displays the items that make up the *Mental well-being* scale.

Box 3.1: Items included in the Mental well-being weighted measure, Year 11

I have been feeling optimistic about the future
I have been feeling useful
I have been feeling relaxed
I have been feeling interested in other people
I have been feeling good about myself
I have been feeling close to other people
I have been feeling confident
I have been feeling loved
I have been feeling cheerful
I have had energy to spare
I have been dealing with problems well
I have been thinking clearly
I have been able to make up my mind about things
I have been interested in new things
Cronbach's α =0.90

In addition to the weighted scale, the original un-weighted scale for *Mental well-being* was also calculated and analysed, and can be seen in Appendix 5 to allow for comparison with non-EPPSE samples. The weighted and un-weighted scales were highly correlated (r=0.97, p<0.001).

3.2.2 School Enjoyment

Currie et al., (2008) view enjoyment of school as an indicator of life satisfaction within the school setting. Vignoles & Meschi (2010) in their research created three measures of school enjoyment: a) whether the child enjoys school, b) whether the child is bored at school and c) whether the child dislikes his other teachers. Gibbon & Stutzer (2009) also suggest that happiness at school could be a measure of more general life satisfaction or happiness. Hascher (2007) prefers to see Enjoyment of school as a more global construct that include attitudes and emotions, enjoyment, academic self-concept, and absence of physical complaints, social problems and worries about school.

Within our definition of School Enjoyment is an 'emotional' dimension of 'school engagement' (Fredricks et al., 2004). The items that make up the weighted measure are shown in Box 3.2.

Box 3.2: Items included in the School Enjoyment weighted measure, Year 11

This school is a friendly place On the whole I like being at school I like most of the lessons I am bored in lessons[31]
Cronbach's α =0.77

As with other disposition and behavioural outcomes, the scale is positively skewed, in line with the individual items that make up the scale, suggesting that students are generally quite positive about school in Year 11. Within this though, there is still quite sizeable variation in response.

3.2.3 Disaffected behaviour

Disaffected behaviour is the term we have used to reflect negative and positive behaviours/attitudes that indicate the extent of school engagement (behaviour within class and a more general item covering perceptions of the worth of schooling). Fredericks et al., (2004) view School engagement as multi-dimensional covering 'behavioural engagement', 'emotional engagement' and 'cognitive engagement'. Our own measure, Disaffected behaviour fits well into Fredrick's definition of 'behavioural engagement', measuring academic participation in terms of aspects such as attendance and effort. Dee and West's (2008) definition of school engagement is subject specific but covers three items from the student's perspective (whether the subject is useful for their future, if they look forward to subject, and if they were afraid to ask questions in subject class). In addition whether the child is frequently disruptive, consistently inattentive and frequency of trying hard in subject was also collected from their teachers.

Box 3.3: Items included in the Disaffected behaviour weighted measure, Year 11

School is a waste of time for me I mess about in lessons I behave in class
Cronbach's α =0.70

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[31] Reverse code for School enjoyment scale.

3.2.4 Resistance to Peer Influence

The *Resistance to Peer Influence* scale (RPI) is intended to be a more general scale of RPI than many previous scales developed as part of the 'Pathways to Desistance project' (Steinberg, 2006; Steinberg and Silverberg, 1986; Steinberg & Monahan, 2007). It examines a students' ability to resist the influence of their peers in more than just anti-social scenarios, ranging from wanting to fit in with the crowd to being willing to break the law to fit in with friends. Two main theories for the increased importance of peers predominate in the literature. The first account describes the importance of a peer group identity fosters the increase in conformity to fit with the peer group, a process known as '*normative regulation'* (Steinberg & Monahan 2007). The second theory sees the adolescent becoming more susceptible to peer influence as they distance themselves from the influence of the family. Peers serve as a stepping stone to autonomy: the child moves away from the family towards their own autonomy via the peer group (Steinberg & Silverberg 1986).

RPI scores have been found to be weakly but significantly correlated with a measure of impulse control and to be significantly negatively related to antisocial risk taking (Sternberg & Monahan 2007). Resistance to Peer Influence has also been found to lead to lower levels of anti-social behaviour (Monahan et al., 2009) particularly when the peer group is 'deviant' (Steinberg, & Monahan 2007) and when the peer group was present (Gardner & Steinberg 2005). Late childhood is a time when adolescents are more highly susceptibility to peer influence (Berndt 1979, Sternberg & Monahan 2007). Resistance to peer influence has been found to increase between the ages of 14 and 18 years (Sternberg & Monahan 2007).

Evidence suggests that positive and involving relationships with parents can protect against negative peer influence (Steinberg & Silverberg, 1986; Savin-Williams & Berndt, 1990) as can more authoritative parenting styles (Mounts & Steinberg, 1995).

Box 3.4: Items included in the Resistance to peer influence weighted measure, Year 11

I think it's more important to be who I am than to fit in with the crowd
I would say my true opinion in front of my friends, even if I know they would make fun of me because of it
I would act the same way when I am alone as I would when I am with my friends
It would be pretty hard for my friends to get me to change my mind
Cronbach's α =0.51

Confirmatory Factor analysis of the five disposition measures with the inclusion of the full RPI was not an acceptable fit, so the scale was reduced. The scale derived from the Confirmatory Factor Analysis had a somewhat lower Cronbach's Alpha than the full scale and was now measuring the positive aspects *Resistance to peer influence* so an additional analysis of the original un-weighted scale was also conducted (see Appendix 5).

3.2.5 General Academic self-concept

In the literature (Marsh et al., 1995, Marsh 2004, Marsh 2005) Academic self-concept has been postulated to be a subjective judgement of a student's own academic attainment in specific academic subjects or general ability. Marsh's work in this area is highly influential and builds on the work by Shavelson et al., (1976) that evaluated existing measures of Self Concept and reviewed the research at the time. From this work a model of self-concept was developed that saw self-concept as a multifaceted construct, an idea supported by research elsewhere (Bong and Skaalvik, 2003). Marsh et al., (2005) found evidence for a multi-dimensional Self-Concept in children as young as five.

This has a normative aspect where the students' of their academic ability that can is affected by the standard of ability of the peer group (i.e. the class). This has been labelled the 'big-fish-little-pond effect' (BFLPE) by Marsh and colleagues (Marsh (1984a, 1984b; Marsh & Parker 1984). In line with this theory research suggests that when students are put into a higher ability environment, their academic self-concept declines (Marsh et al., 1995). In the previous analysis of EPPSE students' Academic self-concept in Year 9, English and mathematical self-concepts were found to be poorly correlated, in accordance with the literature (e.g., Marsh 1990b). Academic self-concept and attainment are postulated to be reciprocal in their relationship (Marsh and Craven 2006).

In addition, Marsh (1992, 1999) has also extended the concept to include item that are not purely evaluative but also include aspects of emotion and values. For example in the ASDQII the following items were included in the General academic self-concept scale:

- I am satisfied with how well I do in most school subjects
- It is important to me to do well in most school subjects

These ASDQII items were dropped from the scale as they were found to have a weaker relationship in the Confirmatory factor analysis. This also allowed a direct comparison with Year 9 academic self-concept measures in English and maths that used the same items, specific to individual subjects.

Box 3.6: Items included in the General academic self-concept weighted measure, Year 11

I have always done well in most school subjects
Compared to others my age I am good at most school subjects
I get good marks in most school subjects
Work in most school subjects is easy for me
I learn things quickly in most school subjects
I am satisfied with how well I do in most school subjects
Cronbach's α =0.89

The original un-weighted eight item scale for General academic self-concept was also analysed and can be seen in Appendix 5.

3.3   Variations between students in dispositions

3.3.1 Distribution of Year 11 disposition outcomes

The latent factor scores for Year 11 dispositions were weighted and have been transformed into IQ-standardised scales, with a mean of 100 (representing the average student) and a standard deviation of 15. In addition, the three scales related to *Mental well-being*, *General academic self-concept* and *Resistance to peer influence* were created in their original form as well as standardised weighted measures.

3.3.2 Relationship between dispositions and other outcomes and in Year 11

Correlations between dispositions in Year 11 were calculated to assess the strength of association between the latent factors. A moderately strong negative association was found between *School Enjoyment* and *Disaffected behaviour* (r=-0.46). *School Enjoyment* was also positively correlated with *General Academic Self-Concept* (r=0.41), suggesting that students who enjoy school more also tend to have higher *General Academic Self-Concept*, although the relationship is likely to be reciprocal. *Mental Well-being* and *School Enjoyment* were also moderately positively correlated (r=0.32).

Table 3.1: Correlations between disposition outcomes in Year 11

Disposition outcomes in Year 11	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to Peer Influence	General Academic Self-Concept
Mental Well-being	1	0.32** (n=1661)	-0.18** (n=1659)	0.12** (n=1656)	0.30** (n=1659)
School Enjoyment		1	-0.46** (n=1671)	0.18** (n=1662)	0.41** (n=1664)
Disaffected behaviour			1	-0.31** (n=1661)	-0.31** (n=1658)
Resistance to Peers				1	0.06* (n=1658)

** Significant at the p<0.01 level   * Significant at the p<0.05 level

Correlations between Year 11 disposition outcomes and dispositions measured at younger ages are generally lower than are found for other outcomes. Only *School enjoyment* and *General Academic self-concept* had been measured at previous time points, and it should be noted that identical items were not used[32]. However, the strongest correlation was found for Year 9 *Enjoyment of school* and Year 11 *School Enjoyment* (r=0.50). A moderate positive correlation was also found between Year 9 *Enjoyment of school* and Year 11 *Disaffected behaviour* (r=-0.31). *General Academic Self-Concept* in Year 11 showed a stronger association with previous Year 9 *Maths Academic Self-Concept* (r=0.42) than *English Academic Self-Concept* (r=0.31).

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[32] Year 9 *Enjoyment of school* and Year 11 *School Enjoyment* were given different construct names to remind readers that the measures were not identical. Similarly, Year 11 *General Academic self-concept* measured overall academic self-concept whereas in Year 9 two subject-specific measures were used.

Table 3.2: Correlations between standardised disposition outcomes in Year 9 and Year 11

Standardised disposition outcomes in Year 9 and Year 11	Year 11 disposition outcomes				
	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to Peers	General Academic Self-concept
Year 9 English Academic SC	0.11** (n=1327)	0.16** (n=1333)	-0.17** (n=1332)	0.06* (n=1325)	0.31** (n=1329)
Year 9 Maths Academic SC	0.23** (n=1327)	0.21** (n=1333)	-0.13** (n=1332)	0.02 (n=1325)	0.42** (n=1329)
Year 9 Anxiety	-0.34** (n=1327)	-0.21** (n=1333)	0.07** (n=1332)	0.11* (n=1325)	-0.15** (n=1329)
Year 9 Citizenship values	0.08** (n=1327)	0.20** (n=1333)	-0.27** (n=1332)	0.15** (n=1325)	0.09** (n=1329)
Year 9 Popularity	0.20** (n=1324)	0.13** (n=1330)	-0.01** (n=1329)	0.07** (n=1322)	0.10** (n=1326)
Year 9 Enjoyment of school	0.23** (n=1336)	0.50** (n=1342)	-0.31** (n=1341)	0.11** (n=1334)	0.28** (n=1338)

* Significant at the $p<0.05$ level ** Significant at the $p<0.01$ level

3.3.3 Differences between pupil groups in Year 11 disposition outcomes

The section reports raw differences between various groups of students in their dispositions in Year 11. The differences reflect real patterns of response by the EPPSE sample, and therefore do not take into account the influence of other variables on dispositions that may be related. The 'net' effect of individual student, family, home learning and wider variables influences will be covered in Section 3. Simple descriptive statistics showing mean differences related to gender, parental qualification, family Socio-Economic Status, Free School Meals entitlement, Special Educational Needs, and Home Learning Environment classification will be examined here.

3.3.3.1   Gender

In line with previous findings in Year 9, no significant gender differences were found in Year 11 in students' *School Enjoyment.* In contrast, boys were significantly more likely to report feelings of *Disaffected behaviour* than girls.

Girls were found to be significantly less positive than boys in their *Mental well-being* scores. Small but significant gender effects have been found for the adult population elsewhere (Stewart-Brown & Janmohamed 2008) and findings from the 'HeadsupScotland' initiative also found boys to be more positive in terms of life satisfaction scores than girls (Levin et al., 2007). Research also has highlighted a higher prevalence of depression in girls than boys (Hankin et al., 1998; Nolan-Hoeksema, 1994; 2001). In international studies of life satisfaction at age 15 girls were found to have lower life satisfaction scores than boys in England and UK and elsewhere (Currie et al., 2008; WHO, 2004). On the un-weighted scale boys scored 50.8 compared to 47.5 for girls. The size of the difference is small but significant, although as reported earlier, differences for some items on the scale are substantial.

Girls reported higher levels of *Resistance to peer influence* than boys for both the weighted and un-weighted scales, although the difference was small.

No gender differences were found for *General Academic Self-Concept*, on the weighted or un-weighted scales. This is in contrast to findings in Year 9 when a multi-dimensional approach to Self-Concept was used with separate Self-Concept measures for Maths and English. In Year 9 girls were found to have significantly lower *Maths Academic Self-Concept* than boys (girls in Year 9 had slightly higher *English Academic Self-Concept* than boys but the difference was not statistically significant).

Table 3.3: Gender differences in disposition outcomes

Gender differences in disposition outcomes	Gender	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	Boys	103.55	13.48	762	t=9.10, df=1661;
	Girls	97.00	15.56	901	p<0.001
Year 11 School enjoyment	Boys	99.43	15.15	766	ns
	Girls	100.48	14.86	907	
Year 11 Disaffected behaviour	Boys	102.06	15.27	764	t=5.19, df=1669;
	Girls	98.27	14.56	907	p<0.001
Year 11 Resistance to Peer Influence	Boys	97.15	15.07	762	t=-7.24, df=1662;
	Girls	102.41	14.51	902	p<0.001
Year 11 General Academic self-concept	Boys	100.32	15.23	764	ns
	Girls	99.73	14.81	902	

3.3.3.2   Parents' qualification level

Students whose parents had higher qualifications showed more favourable responses for *School enjoyment* and reported higher *General academic self-concept*. For example, one in five students (22%) with parents who held no qualifications felt the statement 'Compared to others my age I am good at most school subjects' was definitely like them compared to nearly twice as many (38%) of students with parent holding a degree or higher.

Higher parental education level was, in contrast related to lower levels of *Resistance to Peer Influence*[33].

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[33] This was also tested on the full *Resistance to peer influence scale* as it included a number of more extreme items and the same pattern of results was found with the greatest resistance to peer influence reported for students from parents with lower qualifications.

Table 3.4: Family qualifications (early years) and disposition outcomes in Year 11

Family qualifications and disposition outcomes	Highest parental qualification	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	No qualifications	98.19	17.47	183	Ns
	Vocational	100.07	13.83	166	
	Academic age 16	99.43	15.23	586	
	Academic age 18	100.98	15.18	192	
	Other professional	105.80	10.08	29	
	Degree	100.39	14.56	316	
	Higher degree	101.53	13.66	152	
Year 11 School enjoyment	No qualifications	98.08	16.37	186	F=5.49, df=1627, p<0.001
	Vocational	97.80	15.55	168	
	Academic age 16	98.88	14.59	589	
	Academic age 18	101.53	12.91	194	
	Other professional	98.42	18.64	29	
	Degree	101.66	14.76	316	
	Higher degree	104.89	14.78	152	
Year 11 Disaffected behaviour	No qualifications	99.93	16.22	186	Ns
	Vocational	100.87	16.32	168	
	Academic age 16	100.95	14.97	588	
	Academic age 18	99.27	13.77	193	
	Other professional	97.57	16.88	29	
	Degree	98.71	14.65	316	
	Higher degree	99.06	13.49	152	
Year 11 Resistance to Peer Influence	No qualifications	101.50	17.19	165	F=5.39, df=1618, p<0.001
	Vocational	102.00	15.55	168	
	Academic age 16	101.33	15.17	548	
	Academic age 18	99.46	14.04	194	
	Other professional	97.71	16.01	29	
	Degree	97.43	14.25	316	
	Higher degree	95.68	13.49	152	
Year 11 General Academic self-concept	No qualifications	98.02	14.58	184	F=14.83, df=1620, p<0.001
	Vocational	97.45	14.04	166	
	Academic age 16	97.32	14.62	585	
	Academic age 18	100.33	14.96	194	
	Other professional	103.56	14.92	29	
	Degree	103.46	15.15	317	
	Higher degree	107.67	14.13	152	

N.B. Absent father group was excluded from this analysis as was a very small group

3.3.3.3   Family Socio-Economic Status and Free School Meals entitlement

Higher family SES is positively associated with better *Mental well-being* and increased *General academic self-concept*; students from higher social class families reporting higher levels of *Mental well-being* and *General Academic self-concept*. Pupils from the professional classes also show lower levels of *Disaffected behaviour* than other groups, but are also more susceptible to peer influence than other groups. The relationship with *School enjoyment* is less clear, but suggests that both students from the professional classes and never worked households enjoy school more than students from skilled and semi-skilled households.

Table 3.5: Family SES (early years) and disposition outcomes in Year 11

Family SES and disposition outcomes	Family SES	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	Professional Non Manual	100.72	13.31	202	F=2.23, df=1626; p<0.05
	Other Professional Non Manual	101.20	14.71	463	
	Skilled Non Manual	99.89	15.03	528	
	Skilled Manual	98.79	14.82	205	
	Semi Skilled	98.47	16.87	171	
	Unskilled	93.44	18.40	30	
	Never Worked	102.74	16.40	34	
Year 11 School enjoyment	Professional Non Manual	102.18	15.12	202	F=6.43, df=1637; p<0.001
	Other Professional Non Manual	102.77	14.19	464	
	Skilled Non Manual	98.74	14.31	531	
	Skilled Manual	97.77	15.28	207	
	Semi Skilled	96.81	16.80	174	
	Unskilled	99.01	17.68	30	
	Never Worked	102.83	12.98	36	
Year 11 Disaffected behaviour	Professional Non Manual	99.18	14.94	202	Ns
	Other Professional Non Manual	99.09	13.98	463	
	Skilled Non Manual	100.42	14.72	531	
	Skilled Manual	101.35	16.96	207	
	Semi Skilled	99.93	15.75	173	
	Unskilled	98.05	20.52	30	
	Never Worked	99.99	13.54	36	
Year 11 Resistance to Peer Influence	Professional Non Manual	95.94	14.33	202	F=4.46, df=1627; p<0.001
	Other Professional Non Manual	99.09	14.45	462	
	Skilled Non Manual	101.37	14.10	529	
	Skilled Manual	101.04	16.01	206	
	Semi Skilled	101.60	16.92	170	
	Unskilled	101.02	20.43	30	
	Never Worked	101.52	14.79	35	
Year 11 General Academic self-concept	Professional Non Manual	106.00	14.21	202	F=12.91, df=1629; p<0.001
	Other Professional Non Manual	102.32	15.10	464	
	Skilled Non Manual	98.32	14.84	529	
	Skilled Manual	96.08	14.16	207	
	Semi Skilled	98.20	14.30	169	
	Unskilled	92.61	15.24	30	
	Never Worked	101.76	14.52	35	

In line with socio economic status, family economic disadvantage (measured by FSM entitlement) was weakly associated with lower *Mental well-being* (p<0.08), lower *School enjoyment* and lower *General academic self-concept*. Free school meals entitlement has not associated with *Resistance to peer influence* or *Disaffected behaviour*.

Table 3.6: Free School Meals entitlement and disposition outcomes in Year 11

FSM entitlement and disposition outcomes	FSM entitlement	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	Not entitled Entitled to FSM	100.30 97.70	14.79 16.09	1423 200	t=-3.43, df=1621, P<0.08
Year 11 School enjoyment	Not entitled Entitled to FSM	100.38 97.54	14.84 15.74	1425 208	t=-1.76, df=1631, P<0.05
Year 11 Disaffected behaviour	Not entitled Entitled to FSM	99.79 101.17	14.78 16.29	1423 208	ns
Year 11 Resistance to Peer Influence	Not entitled Entitled to FSM	99.81 100.58	14.83 15.99	1402 209	ns
Year 11 General Academic self-concept	Not entitled Entitled to FSM	100.43 97.58	14.84 15.77	1422 204	t=-3.80, df=1624, P<0.05

3.3.3.4 Special Educational Needs

In Year 9 students on the SEN register reported less favourable dispositions across most outcomes. In Year 11, SEN students also showed lower *School enjoyment*, poorer *Mental well-being*, lower *General academic self-concept* and higher reported *Disaffected behaviour*.

Table 3.7: Special Educational Needs and disposition outcomes in Year 11

SEN and disposition outcomes	SEN Status	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	No special provision SEN	100.31 98.32	14.73 16.11	258 1333	t=-1.96, df=1584, p<0.07
Year 11 School enjoyment	No special provision SEN	101.12 94.58	14.41 16.06	264 1338	t=-6.61, df=1600, P<0.001
Year 11 Disaffected behaviour	No special provision SEN	99.19 103.40	14.14 17.14	263 1337	t=4.19, df=1598, P<0.001
Year 11 Resistance to Peer Influence	No special provision SEN	100.38 98.83	17.23 14.46	261 1332	Ns
Year 11 General Academic self-concept	No special provision SEN	101.79 90.97	14.38 14.57	262 1332	t=-11.12, df=1592, p<0.001

3.3.3.5 Home Learning Environment

The early years Home Learning Environment (HLE) was found have a strong association with *School enjoyment* in Year 11. At the end of Year 9 a similar pattern emerged in terms of unadjusted *Enjoyment of school* (raw scores before taking into account contextual variables). Early Years home learning was found to be positively related to *School Enjoyment* in Year 11. Similarly, the higher early years HLE was positively associated with higher *General academic Self-Concept*.

Table 3.8: Home Learning Environment (early years) and disposition outcomes in Year 11

Early years HLE and disposition outcomes	HLE group	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	0-13 (lowest)	100.43	16.31	121	Ns
	14-19	99.09	15.72	316	
	20-24	99.75	14.30	356	
	25-32	101.13	14.52	569	
	33-45 (highest)	98.73	15.09	244	
Year 11 School enjoyment	0-13 (lowest)	97.36	14.09	122	F=2.77, df=1612, p<0.05
	14-19	99.15	15.10	320	
	20-24	99.95	14.39	359	
	25-32	100.32	14.98	573	
	33-45 (highest)	102.30	14.65	243	
Year 11 Disaffected behaviour	0-13 (lowest)	98.96	15.95	122	F=2.39, df=1610, p<0.05
	14-19	100.99	16.03	319	
	20-24	100.07	14.13	359	
	25-32	100.59	15.00	572	
	33-45 (highest)	97.52	14.04	243	
Year 11 Resistance to Peer Influence	0-13 (lowest)	101.45	15.64	120	Ns
	14-19	99.95	14.79	317	
	20-24	101.01	14.439	357	
	25-32	99.41	15.169	570	
	33-45 (highest)	98.89	14.599	243	
Year 11 General Academic self-concept	0-13 (lowest)	97.82	14.44	120	F=8.22, df=1604, p<0.01
	14-19	97.27	15.77	319	
	20-24	100.42	14.62	358	
	25-32	100.21	14.94	569	
	33-45 (highest)	104.19	14.12	243	

3.3.3.6 Multiple disadvantage and Year 11 dispositions

Students with higher levels of multiple disadvantage reported lower *Mental well-being* and lower *General academic self-concept.* The relationship between *School enjoyment* and multiple disadvantage was more complex. Although *School enjoyment* was highest for the least disadvantaged students, and declined with higher disadvantage, the small group who experienced very high disadvantage also had high levels of *School enjoyment.*

Table 3.9: Multiple disadvantage and disposition outcomes in Year 11

Multiple disadvantage and disposition outcomes	MD group	Mean	Std Dev.	n	Significance
Year 11 Mental well-being	None	100.72	13.66	431	F=2.95, df=1552, P<0.05
	1-2	100.57	14.75	802	
	3-4	97.64	16.32	245	
	5+	98.69	18.35	78	
Year 11 School enjoyment	None	102.73	13.51	432	F=8.08, df=1562, P<0.001
	1-2	99.47	14.73	804	
	3-4	97.29	17.00	251	
	5+	100.46	14.12	79	
Year 11 Disaffected behaviour	None	99.03	12.57	432	ns
	1-2	100.55	15.44	803	
	3-4	99.59	16.64	250	
	5+	99.51	15.41	79	
Year 11 Resistance to Peer Influence	None	98.84	14.09	431	ns
	1-2	99.94	14.59	800	
	3-4	100.84	16.16	249	
	5+	102.53	16.32	77	
Year 11 General Academic self-concept	None	102.35	14.54	432	F=6.20, df=1555, P<0.001
	1-2	99.90	15.16	802	
	3-4	98.15	15.23	248	
	5+	96.49	13.90	77	

3.3.3.7 Risk taking and Year 11 dispositions

Within the EPPSE sample all disposition measures were statistically significantly associated with risk taking (risky behaviour index), particularly *Disaffected behaviour* (r=0.43) and *School enjoyment* (r=-0.31). Risk taking was also significantly related to *Resistance to peer influence* (r=-0.23), *General academic self-concept* (r=-0.19) and *Mental well-being* (r=-0.11).

Section 4: The Impact of Individual, Family, HLE and neighbourhood characteristics on dispositional outcomes at the end of Key stage 4 (Year 11)

Key findings

Student influences

- Once other characteristics were accounted for, girls reported lower levels of *Mental well-being*, but also lower levels of *Disaffected behaviour*, and higher *Resistance to peer influence* than boys.
- Girls in Year 11 reported similar *General Academic self-concept* to boys despite out-performing boys in overall GCSE performance.
- Older students in the year group (autumn born versus younger summer born) reported higher *General academic self-concept* than younger students.

Family influences

- Higher parental qualifications predicted higher General Academic self-concept, greater School enjoyment and lower Resistance to Peer Influence.
- Students from single parent families (at entry to pre-school) showed poorer *Mental well-being* in Year 11 than those from married households.
- Family structure in Year 11 was also associated with *School enjoyment* and *Disaffected behaviour*. Students from households that contained a step-parent reported lower *School enjoyment* and higher levels of *Disaffected behaviour*.

Home learning influences

- Students who had a very good early HLE had a more favourable *General academic self-concept* and greater *School enjoyment* in Year 11.
- Higher levels of parental Academic supervision and Academic enrichment activities, (in KS3) were associated with increased *School enjoyment* and a more favourable *General academic self-concept*, as well as lower levels of *Disaffected behaviour*. Higher levels of parental Academic supervision predicted greater *Mental well-being* and increased *Resistance to peer influence.*

Neighbourhood influences

- Students who felt their neighbourhood unsafe had lower Mental well-being and School enjoyment than other students. In addition, students whose parents had rated their neighbourhood the lowest in terms of safety had greater levels of Disaffected behaviour than those whose parents had rated their neighbourhood most favourably for safety.

Perceived health status, SEN and risky behaviours influences

- Poor health was associated with poorer disposition outcomes (all except *Resistance to Peer Influence*). In particular, poor health still strongly predicted lower *Mental well-being.*
- Students with SEN had poorer dispositions, especially for *General academic self-concept* and *School enjoyment*.
- Engaging in risky behaviours predicted less favourable dispositions, lower levels of *School enjoyment*, higher levels of *Disaffected behaviour* and lower *Resistance to peer influence*.

This section presents the results of contextualised multilevel analyses establishing the links between individual student, family, home learning environment and neighbourhood characteristics and disposition outcomes (factors described in Section 3) at the end of Year 11. The analyses follow the methodology used at previous time points (Sammons et al., 2008, 2011b), allowing comparisons over time.

Background characteristics for this analysis were selected from the details collected earlier in the project through parent interview, and subsequent parent questionnaires[34]. Details on students' FSM and SEN status were collected from the National Pupil Database and the Year 11 pupil profile[35].

The following measures have been modelled for potential influence on Year 11 dispositions:

- individual student factors (e.g., gender, birth weight, ethnicity, mother tongue);
- family factors (e.g., eligibility for Free School Meals, family, socio-economic status, parental qualifications, family income);
- home Learning Environment in the early years, KS1, KS2 and KS3;
- school student composition;
- neighbourhood characteristics based on students' home postcode.

The net effects of particular individual, family and HLE are presented form a multilevel model that clusters students within the secondary school they attended. It should be noted that the number of students per secondary school was small (due children from the original 141 pre-school establishments spreading out into over 500 different secondary schools across the country). This small number of students per secondary school makes estimates of school level variation difficult and potentially unreliable, and as such any estimates should be treated with caution. Where school level variation could not be modelled (due to extremely small estimates), multiple regression was used as the analysis method rather than hierarchical (multilevel) regression.

The original estimates of net effects are shown alongside their effect sizes. As explained earlier, and effect size is a statistical measure representing the strength of the effect of a predictor on a particular outcome. See Sammons et al., 2011a for technical details on how the effect sizes were calculated.

Individual student factors tested included gender, student's age within cohort, ethnic heritage, birth weight, problems in the early years (behavioural, developmental, health) and SEN status. The majority of these predictors were collected from parent interviews at entry to the study and had an extremely high response rate (95-97% response rate).

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[34] The main carer completed a parent interview at entry to the study, and subsequently completed postal questionnaires whilst their EPPSE child was in KS1, KS2 and KS3.

[35] The pupil profile was completed by the class teacher of the student (form tutor in secondary school) and comprised of details such as FSM status, attendance, ability setting, exclusion, additional support for learning difficulties or gifted status, general behaviour and a detailed social-behavioural profile.

Family factors included family structure, economic status and wider measures of cultural capital (parental education level). Family annual earned income was collected in KS1 and again during KS2. In addition, measures of FSM were available at different time points. FSM entitlement can be seen as a proxy measure of social disadvantage/low income as eligibility is mean tested and is considered to be a reasonable measure of very low income or unemployment (Hobbs and Vignoles, 2009). Where similar measures were collected, measures were tested separately and the strongest predictor included in the models.

A number of measures were collected related to the parent's socio-economic status and employment status. Employment status and highest socio-economic status between the mother's or father's SES was collected at entry to the study and proved to be the best predictor of disposition outcomes than similar measures collected later in the study.

Family structure and marital status has been shown to be a significant predictor of academic attainment, social-behavioural development and disposition outcomes (Sammons et al., 2011a; Sammons et al., 20011b; 2011c). Marital status of parent/guardian/carer was collected at multiple time points (entry to the study, KS1 and KS2 and each were tested separately in the contextualised model to avoid multicollinearity. The best predictor of dispositions was then used in the final model. Family size (in terms of number of siblings) was taken from the entry to study parent interview. Even though for many of the EPPSE students the number of siblings would increase, the earlier measure proved to be most robust.

In total, of those students returning surveys in Year 11, nearly two thirds (63%) were living with both natural parents. The most common alternative living arrangement was living with a single mother (20%), followed by mother and step parent (12%). Only a tiny minority of lived with their single father (2%) and father and step parent (1%). An additional two percent of the sample lived either with extended family or other arrangements such as social service care or foster care.

The frequency of selected parent-child learning activities was also collected at entry to the study, KS1, KS2 and KS3. As the students grew older the focus of activities changed. Earlier analyses have shown the continuing positive impact of early years home learning activities on outcomes (Sammons et al., 2011a; Sammons et al., 20011b; 2011c). The early years Home Learning Environment index (Melhuish et al., 2001; 2006) is made up of the following items:

- Reading with child
- Painting and drawing
- Library visits
- Playing with letters/numbers
- Teaching alphabet
- Playing or teaching numbers/shapes
- Playing with songs/nursery rhymes.

From the KS1 Home Learning items collected from parents, four HLE factors were derived: Home computing, One-to-one interaction, Expressive play, and Enrichment activities[36]. As children got older, the number of measures of lone activities increased. From the KS2 Home Learning items collected from parents five HLE factors were derived, including a mix of lone and parent-child activities: Parent-Child Educational Computing, Parent-Child Interactive Learning Processes, Parent-Child Reading Activities, Individual Child Activities and Computer Games[37].

During KS3 parents were asked again about the learning activities that went on within the home. Five factors were derived from the data:

1. Learning support and resources
2. Computer use
3. Parental interest in school
4. Academic enrichment
5. Parental academic supervision

The Multiple Disadvantage Index is made up of 10 'entry to study' indicators related individually to low baseline scores (see Appendix 6 for full details).

In addition, indicators of neighbourhood deprivation were available from the Index of Multiple Deprivation (IMD) collected in 2004, census details taken from the 2001 census, parents' views on their neighbourhood and students own views about the neighbourhood in aspects of neighbourhood deprivation were investigated:

- Index of Multiple Deprivation (IMD)
- Index of Deprivation Affecting children (IDAC)
- Percent White British residents (Census records, 2001)
- Neighbourhood employment score (Census records, 2001)
- Neighbourhood crime score (Census records, 2001)
- Percent residents with long-term limiting illness (Census records, 2001)
- Neighbourhood safety (Parent survey KS3, student survey Year 9).

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[36] The following items make up the KS1 HLE factors: *Home Computing:* X plays on computer by themselves; adult plays computer games X; adult uses computer with X in educational ways. *Parent-Child Enrichment outings/activity outside home:* adult visits library with the X; adult does sport/physical activity with X; adult goes on educational visits with the X. *Parent-child one-to-one interactions at home:* adult plays with the X using toys/games/puzzles; adult reads to X; adult listens to the X read. *Expressive play:* X plays 'make believe' or pretend games; X paints/draws/makes models; X enjoys dance music and movement.

[37] The following items make up the KS2 HLE factors: *Parent-Child Educational Computing:* adult & X together: use the internet for learning; use the internet for play / recreation, use a computer in educational ways. X alone: uses the internet, uses the computer for activities related to learning. *Parent-Child Interactive Learning Processes:* Adult and X together: do sport, dance or physical activities, go on educational visits to museums, nature parks, farm etc. visit the library. Adult joins in with X during games or play. Adult teachers X a school subject e.g., geography, science, English; *Individual Child Activities:* X on their own: reads; paints, draws or makes models, enjoys dance, music, movement. *Computer Games*: Adult and X together play computer games i.e. Play Station, X-Box etc. X plays computer games i.e., Play Station, X-Box etc. on their own.

4.1.1 The Null models

Generally, measures of mental health and well-being show much smaller school level variation than cognitive outcomes, but have been found to be significant but generally small in some studies of student outcomes for areas such as well being in school, enjoyment of school, motivation, attitude to homework (Gibbons & Silva, 2008; Opendakker & Van-Damme, 2000; Vignoles & Meschi, 2010) and aspects of mental health (Morrison-Gutman & Feinstein 2008). As can be seen below, only *General Academic self-concept* showed sizable secondary school effects, before background measures had been controlled for[38].

Table 4.1: Null models for disposition outcomes in Year 11

	Standardised outcomes									
	Mental well-being		School Enjoyment		Disaffected behaviour		Resistance to Peer Influence		General Academic Self-Concept	
No. of students	1662		1672		1670		1663		1665	
No. of schools	570		571		571		570		569	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
School variance	2.01	3.33	7.15	4.25	6.28	4.05	6.63	4.19	12.91	5.34
Student variance	223.13	8.35	218.09	8.33	218.90	8.32	218.55	8.36	212.72	8.39
Intra-school correlation	0.009 (ns)		0.032 (ns)		0.028 (ns)		0.029 (ns)		0.057	

4.1.2 Individual measures

4.1.2.1   Gender

Girls showed poorer *Mental well-being* than boys (ES=-0.45) but also lower scores for the *Disaffected behaviour* scale (ES=-0.23). This is in line with finding in Year 9, where girls reported higher levels of *Anxiety*. Girls and boys have similar levels of *School enjoyment*, as was found in Year 9. Girls were significantly more *Resistant to peer influence* than boys (ES=0.34).

No gender differences were found for *General academic self-concept*, in contrast to Year 9 where girls had significantly lower *Maths academic self-concept* than boys. This may be because the scale measures self-concept across all school subjects. Girls were outperforming boys academically in Year 11, and have been doing so consistently at different previous time points, suggesting girls may be underestimating their ability. In additional analyses , attainment was also added to the model as a predictor, so that students of similar attainment were compared. In this analysis, girls showed significantly lower *General academic self-concept* than boys, given their attainment levels (ES=-0.20).

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38 In addition the Null models for un-weighted Mental well-being, General academic self-concept and Resistance to peer influence scales were also analyzed (See Appendix 5 for full contextualized models for these outcomes). The student variance for Mental well-being null model was 77.093 (se=2.879), school variance=0.536 (se=1.116), intra-school correlation=0.007 (ns); General academic self-concept student variance = 22.399 (se=0.877), school variance=1.052 (se=0.517); intra-school correlation=0.045 (ns); Resistance to peer influence student variance=14.324 (se=0.551) School variance = 0.454 (se=0.285); intra-school correlation=0.031 (ns).

4.1.2.2   Age

Age was found to be significantly associated with academic self-concept in Year 9 (*Maths Academic self-concept*), and age within the year group was a small but significant predictor of *General academic self-concept* (ES=0.17), with older students in the year group reporting higher *General academic self-concept* than younger students. This maybe a reflection of differing ability levels as age has been found to have a significant effect on EPPSE students' attainment and has been found at this age range (Strand et al., 2007).

4.1.2.3   Ethnicity

The size of the sample for many of the ethnic heritage groups was small so should be treated with caution. However, students of Black African heritage reported higher *Mental well-being* than White UK heritage students (*Mental well-being* ES=0.52). Students of Black Caribbean heritage reported greater *Resistance to peer influence* (ES=0.44).

Students of Mixed Race heritage reported lower *Mental well-being* and lower *School Enjoyment* than White UK heritage (*Mental well-being* ES=-0.27, *School enjoyment* ES=-0.29). No significant disposition effects were found in Year 9 for Mixed race students.

Positive effects for Pakistani heritage students were found across all disposition outcomes in Year 9 and for other Asian ethnic heritage groups. Students of Pakistani heritage showed the most favourable dispositions, reporting higher *School enjoyment* less *Disaffected behaviour* and higher *General academic self-concept* than White UK heritage students (*School enjoyment* ES=0.59, *Disaffected behaviour* ES=-0.56, *General academic self-concept*=0.35). Indian heritage students also showed higher *School enjoyment* than White UK heritage (ES=0.60).

4.1.3 Family measures

4.1.3.1   Mother's age

Students with older mothers (26-35 years/36 years plus old at entry to the study) reported lower *General academic self-concept* than students with younger mothers in (25 or below, ES 25-35 years=0.19; ES 36 years plus=0.20).

4.1.3.2   Marital status and family structure

Students who were in a single parent family at entry to pre-school report lower levels of Mental well-being than those from married families at that time (ES=-0.33). Marital status in the early years and was a better predictor of Mental well-being than later measures of family structure. Family structure was also collected in Year 11 and found to significantly predict School enjoyment, Disaffected behaviour and General academic self-concept. Compared to households that had both natural parents, students living with step parents in the household had lower School enjoyment (ES=-0.17), greater Disaffected behaviour (ES=0.17) and lower General academic self-concept (ES=-0.18)[39].

4.1.3.3   Parent's highest qualification level

Mother's, father's, and highest parental qualification (combined mother and father indicator), were tested as predictors of dispositions and the best measure used in the model. Father's education, in terms of highest qualification achieved, was found to significantly predict *School enjoyment*, with higher educated father's (compared to no qualifications) predicting greater *School enjoyment* (Vocational ES=0.27, 16 academic ES=0.28, 18 academic ES=0.22, Degree ES=0.31, Higher degree ES=0.33).

Students with at least one parent with higher academic qualifications (Degree or Higher degree) reported lower *Resistance to peer influence* (Degree ES= -0.20, Higher degree ES=-0.30).

Having a mother with a higher degree or other professional qualification (compared to no qualifications) predicted *General academic self-concept* (Higher Degree ES=0.42, other professional qualification ES=0.44).

4.1.3.4   Parent's employment

Students with mothers working full time in the early years (compared to not working) predicted greater *School enjoyment* (ES=0.19), but there were no differences where mothers had worked part-time. Students with fathers not working in the early years (compared to working full-time) predicted greater *Disaffected behaviour* (ES=0.21).

4.1.3.5   Family Socio-Economic Status

Lower family SES (Skilled and Unskilled occupations) predicted lower *General Academic self-concept* (compared to professional, Skilled ES=-0.17, Unskilled ES=-0.41).

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[39] Students in 'other' family structures (living with relatives or in care) also had significantly higher levels of reported Disaffected behaviour (ES=0.57), although this is a very small group so findings should be treated with caution. Similarly, students form single parent families had lower School Enjoyment, lower General Academic self-concept and higher Disaffected behaviour but this did not reach statistical significance.

4.1.4 Home Learning Environment measures

Early years - The early years HLE index is made up of the frequency of home learning activities such as library visits, reading, teaching the alphabet etc. Higher HLE was found to predict higher *General academic self-concept* (Very High ES=0.26) and *School Enjoyment* (Very High ES=0.26).

Key Stage 2 Home Learning Environment (KS2 HLE) - Greater Parent/child interaction was associated with lower *Disaffected behaviour* (High interaction ES=-0.33, Medium ES=-0.23).

Key Stage 3 Home Learning Environment (KS2 HLE) - Higher levels of Academic enrichment activities (compared to low) predicted higher *General academic self-concept* (Medium ES=0.16, High ES=0.39), *School enjoyment* (Medium ES=0.18, High ES=0.37), and lower *Disaffected behaviour* (Medium ES=-0.17, High ES=-0.40). Higher levels of Academic supervision activities (compared to low) also predicted higher *Mental well-being* (Medium ES=0.11, High ES=0.43), *School enjoyment* (Medium ES=0.23, High ES=0.59), *General academic self-concept* (High ES=0.22), lower *Disaffected behaviour* (Medium ES=-0.15, High ES=-0.47) and higher *Resistance to peer influence* (Medium ES=0.33, High ES=0.48).

4.1.5 Summary of contextualised models for Year 11 disposition outcomes

The proportion of total variance explained by the background measures shown in Table 4.2 was only 7.2%. This is in line with models for the Year 9 dispositions, and much lower than that found for academic attainment and social/behavioural outcomes (Sammons et al., 2011b; 2011c).

Table 4.2: Significant 'net' effects for Mental Well-being in Year 11

Characteristic	Effect Size	Description
Gender	-0.45	Females have lower mental well-being than males.
Ethnicity	0.52	Black African heritage higher mental well-being than White UK heritage.
	-0.27	Mixed Race heritage lower mental well-being than White UK heritage.
Marital status	-0.33	Students from single parent families report lower levels of mental well-being than from married families.
Academic supervision	0.43	High supervision (vs. low) associated with higher mental well-being.

These findings on subjective well-being are similar to those found by Rees et al., (2010), and well-being measures are similar to Morrison-Gutman and Feinstein (2008), see also Rutter & Maughan 2002. Rees et al., (2010) found a number of background effects in common with our analysis and also low levels of variance explained.[40]

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[40] Adjust r=0.067 in Multiple regression that found combined negative influence of gender (girls-), disability, learning difficulties, ethnic heritage (other-), single parent household, not living with siblings, none or just one adult in paid job, and positive influence of Christian religious affiliation.

Table 4.3: Significant 'net' effects for School enjoyment in Year 11

Characteristic	Effect Size	Description
Ethnicity	0.60	Indian heritage higher school enjoyment than White UK heritage
	0.59	Pakistani heritage higher school enjoyment than White UK heritage
	-0.29	Mixed Race heritage lower school enjoyment than White UK heritage
Father's qualifications	0.27	Father's vocational qualifications higher school enjoyment (vs. no qualifications)
	0.28	Father's 16 academic qualifications predict greater school enjoyment
		Father's 18 academic qualifications predict greater school enjoyment
	0.22	Father's degree predicts greater school enjoyment
		Father's higher degree predicts greater school enjoyment
	0.31	
	0.33	
Mother's employment	0.19	Full time working mother (pre-school) predicts greater school enjoyment.
Family structure	-0.17	Step parent in the house predicts lower school enjoyment.
Early years HLE	0.26	Highest HLE group (vs. lowest) has greater school enjoyment.
Academic supervision	0.59	High supervision (vs. low) associated with greater school enjoyment.
	0.23	Medium supervision (vs. low) associated with greater school enjoyment.
Academic enrichment	0.37	High enrichment (vs. low) associated with greater school enjoyment.
	0.18	Medium enrichment (vs. low) associated with greater school enjoyment.

The proportion of variance explained for *School enjoyment* by the background measures shown in Table 4.3 was 9.1%. Secondary school level variation, once student, family and home learning environment had been accounted for was not statistically significant, as was found by Gorard & Huet See (2011). Similar measures have found evidence of very small school level variation (Vignoles & Meschi, Gibbons and Silva, 2008; Opdenakker and Van Damme, 2000) when average number of students per school was higher. In Year 9, school level variation was found for *Enjoyment of 11ahool* amongst EPPSE students in the null models (Sammons et al., 2011a), but was only slightly larger in size to that found in Year 11.

Background showed some moderate influence on *School enjoyment*, especially factors related to academic support and expectations. Father's qualification level was particular associated with enjoyment of school, with any level of qualification better than no qualifications. Family SES was not predictive as has been found in other research (Vyverman & Vettenburg, 2009). Parental supervision (in terms of student reports of parental monitoring of homework and checking how they were getting on at school) was related to higher enjoyment of school, as was the level of enrichment activities the student takes part in (reading, educational visits. Library visits).

The proportion of variance explained for *Disaffected behaviour* by the background measures shown in Table 4.4 was 8.1%. Lack of positive home learning experiences and instability in the family structure appear to be the main drivers of *Disaffected behaviour*.

Table 4.4: Significant 'net' effects for Disaffected behaviour in Year 11

Characteristic	Effect Size	Description
Gender	-0.23	Girls less disaffected behaviour than boys
Ethnicity	-0.56	Pakistani heritage less disaffected than White UK heritage
Father's employment	0.21	Father not working associated with greater disaffected behaviour
Family structure	0.17	Step parent in the house predicts greater disaffected behaviour
	0.57	Other family structure predicts greater disaffected behaviour
KS2 parent -child interaction	-0.33	Highest HLE group (vs. low) has less disaffected behaviour
	-0.23	Middle HLE group (vs. low) has less disaffected behaviour
Academic supervision	-0.47	High supervision (vs. low) has less disaffected behaviour
	-0.15	Medium supervision (vs. low) has less disaffected behaviour
Academic enrichment	-0.40	High enrichment (vs. low) has less disaffected behaviour
	-0.17	Medium enrichment (vs. low) has less disaffected behaviour

The proportion of variance explained for *Resistance to Peer Influence by* the background measures shown in Table 4.5 was 7.0%. Few individual, family or home learning influences were found for RPI, but higher levels of academic supervision were shown to be important. Lower levels of RPI were found in students with parents educated to degree level or higher.

Table 4.5: Significant 'net' effects for Resistance to Peer Influence in Year 11

Characteristic	Effect Size	Description
Gender	0.34	Girls more resistant to peer influence than boys.
Ethnicity	0.44	Black Caribbean heritage associated with higher resistance to peers
Parent's highest qualification	-0.20	Family degree associated with lower resistance to peer influence
	-0.30	Family higher degree associated with lower resistance to peers
Academic supervision	0.48	High supervision (vs. low) higher resistance to peer influence
	0.33	Medium supervision (vs. low) higher resistance to peer influence

The proportion of variance explained for *General Academic self-concept* by the background measures shown in Table 4.6 was 11.1%. Social and educational capital (in terms of parental SES, parental qualifications and home learning experiences) was the strongest influences on *General Academic self-concept.* In addition, mother's qualifications proved to be a better predictor than father's qualification level or a combined measure. For academic outcomes (Sammons et al., 2104) the combined qualification measure proved to be the best predictor of actual attainment, although mother's qualifications proved to be stronger than fathers.

Table 4.6: Significant 'net' effects for General Academic self-concept in Year 11

Characteristic	Effect Size	Description
Age	0.17	Older students have higher academic self-concept.
Ethnicity	0.35	Pakistani heritage higher academic self-concept than White UK heritage
Mother's qualifications	0.42	Mother's higher degree higher academic self-concept (vs. no qualifications).
	0.44	Mother's professional qualifications higher academic self-concept (vs. no qualifications).
Family SES	-0.17	Family in skilled and
	-0.41	unskilled occupation predicts lower academic self-concept (compared to professional)
Mother's age	0.19	Older mothers; (26-35 years) and
	0.20	(36+ years) higher academic self-concept (compared to 16-25 yr olds)
Family structure	-0.18	Step parent in the house predicts lower academic self-concept
Early years HLE	0.26	Highest HLE group predicts higher academic self-concept (vs. low).
Academic supervision	0.22	High supervision (vs. low) associated with higher academic self-concept.
Academic enrichment	0.39	High enrichment (vs. low) associated with higher academic self-concept.
	0.16	Medium enrichment (vs. low) associated with higher academic self-concept.

Background variables explained the greatest amount of variance in student dispositions for *General academic self-concept* (11.1%), although the proportion of variance explained was low for all outcomes, in line with findings in Year 9.

Table 4.7: Contextualised models for disposition outcomes in Year 11

	Standardised outcomes									
	Mental well-being		School Enjoyment		Disaffected behaviour		Resistance to Peers		General Acad S-Concept	
No of students	1662		1672		1670		1663		1665	
No of schools	570		571		571		570		569	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
School variance	0.000	0.000	1.41	3.04	1.38	2.93	3.74	3.53	6.30	4.16
Student variance	208.93	7.29	203.28	7.67	205.60	7.70	205.78	7.85	195.47	7.68
Intra-school correlation	0.000 (ns)		0.007 (ns)		0.007 (ns)		0.016 (ns)		0.031 (ns)	
% Reducton in total variance	7.2%		9.1%		8.1%		7.0%		11.1%	
% Reducton in student variance	Not calculated		6.8%		6.1%		5.8%		8.3%	
% Reducton in school variance	Not calculated*		80.3%		78.0%		43.6%		57.9%	

See Appendix 7 for the full models.

4.1.6 The influence of Neighbourhood characteristics

In line with findings elsewhere related to dispositions (Gibbons, Silva and Weinhardt (2010) there was very little evidence of neighbourhood effects when looking at measures of neighbourhood deprivation from the Index of Multiple Deprivation (IMD) and census measures[41]. After individual, family and HLE taken into account, students from areas with higher proportion of White British heritage were less resistant to peer influence (ES=-0.11).

Table 4.8: Neighbourhood indicators tested as predictors of disposition outcomes in Year 11

		Description
IMD 2004	Total IMD	Based on 37 indicators from seven domains 1. Income; 2. Employment; 3. Health Deprivation & Disability; 4. Education, Skills & Training; 5. Barriers to Housing & Services; 6. Crime; 7. Living environment
	IDACI	The IDACI measures income deprivation specifically likely to affect children. It measures the % of children that are income deprived families.
	Employment	Individual IMD domain related to the level of employment in the area such as proportion on job seekers allowance, income support, Severe Disablement Allowance or New Deal.
	Crime	Individual IMD domain to the level of crime in the area such as burglary, theft, violence and criminal damage.
Census 2001	% White British	Proportion of people in the area who are classified as White British
	% Illness	Proportion of people in the area who are classified as having a long term limiting illness
Parent's KS3	Neighbourhood safety	Parent's perception of the safety of their neighbourhood
Students KS3	Neighbourhood Safety: to/from school	Student's view of how safe they feel in their neighbourhood going to and from school (Year 9)
	Neighbourhood Safety: weekends	Student's view of how safe they feel in their neighbourhood at weekends (Year 9)
	Neighbourhood Safety: evenings	Student's view of how safe they feel in their neighbourhood at weekends (Year 9)

However, students own perceptions of their neighbourhood were found predict their dispositions in a number of areas. Students who felt the neighbourhood was unsafe (sometimes or rarely/never safe going to and from school compared) had significantly lower *Mental well-being* than students who always felt safe (Sometimes ES=0.20; Rarely/never ES=0.60). Similarly students who felt their neighbourhood was unsafe at the weekend had significantly lower *School enjoyment* than students who always felt safe (Sometimes ES=0.24; Rarely/never ES=0.53).

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[41] The IMD from 2004 for Lower Super Output Area (LSOA) was linked to each child's postcode at entry to the study.

Parents' rating of neighbourhood safety also predicted *Disaffected behaviour* in their children. Students whose parents had rated their neighbourhood the lowest in terms of safety had greater levels of Disaffected behaviour than those whose parents had rated their neighbourhood highest for safety (Low safety ES=0.17).

4.1.7 The influence of Special Educational Needs, student's health status and risk behaviours

4.1.7.1   Special Educational Needs status and dispositions in Year 11

SEN status was a strong related predictor of *General academic self-concept* as might be expected (School Action ES=-0.66, School Action + ES=-0.68, Statement ES=-0.52). Students at the School Action plus stage were also less likely to enjoy school (ES=-0.66) and have higher reported *Disaffected behaviour* (ES=0.54). These findings are in line with those found for SEN students in Year 9 (Sammons et al., 2011a), particularly for *Anxiety* and Academic self-concept in English and Maths.

Table 4.9: Special educational needs (SEN) as predictors disposition outcomes in Year 11

Special Educational Needs (no SEN)**	Mental Well-being	School Enjoyment	Disaffected behaviour	General Academic Self-concept
	Effect size	Effect size	Effect size	Effect size
School Action	-0.18	-0.27	ns	-0.66
School Action plus	ns	-0.66	0.54	-0.68
Full statement	ns	ns	ns	-0.52

*** p <0.05*

4.1.7.2   Perceived health status and dispositions in Year 11

Once student, family and HLE had been accounted for, health status was associated with poorer disposition outcomes. In particular, poor health still strongly predicted lower *Mental well-being* (Fairly good health ES=-0.49, not very good/not good at all health ES=-1.37).

Table 4.10: Self-reported health status as predictors of disposition outcomes in Year 11

Health in Year 11 (Compared to Very good)	Mental well-being	School Enjoyment	Dissaffected behaviour	General Academic Self-Concept
	Effect size	Effect size	Effect size	Effect size
Failrly good	-0.49	-0.24	0.24	-0.31
Not very good/Not at all good	-1.37	-0.50	0.34	-0.54

4.1.7.3 Risky behaviours and dispositions in Year 11

The association of risk-taking with Year 11 dispositions was also investigated. Once student, family and HLE variables were taken into account, higher levels of reported risk-taking in Year 11 predicted less favourable dispositions. In particular, students who engaged in multiple risky behaviours had higher levels of *Disaffected behaviour* (1-2 risky behaviours ES=0.53, 3+ ES=1.30; compared to none), lower *School enjoyment* (1-2 risky behaviours ES=-0.32, 3+ ES=-0.79), and lower *Resistance to peer influence* (1-2 risky behaviours ES=-0.38, 3+ ES=-0.73). Multiple risky behaviours also moderately predicted lower *General academic self-concept* ((1-2 risky behaviours ES=-0.23, 3+ ES=-0.48), and weakly predicted lower *Mental well-being* (1-2 risky behaviours ES=-0.26, 3+ ES=-0.25).

There was a small gender interaction found for *School enjoyment*. The association between risky behaviours and *School enjoyment* was higher for boys than girls, resulting in lower *School enjoyment* in boys than girls for student who engaged in three or more risky behaviours (ES=-0.37).

4.1.7.4 Peer relationships, family dynamics and Mental well-being in Year 11

Additional measures on the quality of family relationships and the experiences of young people were investigated for *Mental well-being*. Some variables taken from parent and student questionnaires were identified as potential key indicators of peer relationships, and family dynamics and investigated in relation to predicting scores for *Mental well-being*.

Family relationships were found to be important. Regular quarrelling with parents (ES=-0.22) and family discord predicted poorer *Mental well-being* (ES=-0.27) although it must be noted that this relationship is likely to be reciprocal. Students who rarely ate an evening meal with their family also reported lower levels of *Mental well-being* (ES=-0.13). There was some evidence that students with stricter boundaries (in terms of set times to return home on an evening) had more favourable *Mental well-being* (Always had a set time ES=0.30).

Friendship groups were important for *Mental well-being*. Students had significantly lower *Mental well-being* if they reported spending most of their time alone in Year 9 (ES=-0.27) or being excluded from a friendship group in Year 9 (ES=-0.32). Whether the student was also found to predict *Mental well-being* but was less predictive than being excluded from a friendship group. As the two were closely related only one was used in the final regression model.

Table 4.11: Extended regression model for Year 11 Mental well-being

Mental well-being contextualised models extended	Coefficient	Sig.	Std. Error	Effect size
Gender (Girls compared to Boys)	-5.98	***	0.72	-0.42
Ethnicity (compared to White UK)				
White European	0.28		1.95	0.02
Black Caribbean	-2.65		2.28	-0.19
Black African	9.33	**	3.03	0.66
Any other ethnic group	1.13		2.79	0.08
Indian	2.32		2.36	0.16
Pakistani	1.42		1.71	0.01
Bangladeshi	-3.19		3.42	-0.23
Mixed Race	-3.40	*	4.08	-0.24
Marital status at entry to pre-school (compared to married)				
Missing	-1.59		2.82	-0.11
Single parent/Never married	-4.47	***	1.27	-0.32
Living with partner	-0.12		1.06	0.01
Separated/divorced	0.63		1.23	0.04
Widow/widower	-7.39	#	3.97	-0.52
Key stage 3 HLE: supervision (compared to low)				
Missing	-2.25		4.08	-0.16
High	3.40	*	1.45	0.24
Medium	-0.37		1.12	-0.03
Family process: quarrel with parents - student's view (compared to quarrel sometimes or never)				
Missing	1.40		3.37	0.16
Often	-3.23	**	1.14	-0.22
Family process: severe family discord - student's view (compared to No discord reported)				
Missing	0.79		5.06	0.10
Discord in family	-3.81	**	1.13	-0.27
Family process: Eat meals together - students view (compared to 6-7 times a week)				
Missing	1.68		4.43	0.12
0-2 times a week	-1.74	#	1.04	-0.13
3-5 times a week	-1.24		0.93	-0.09
Family process: A time set for coming in on week day - parents' view (compared to never/sometimes)				
Missing	3.58		2.19	0.25
Always	4.21	*	1.96	0.30
Never goes out	2.18		2.06	0.15
Family process: Feel under pressure to do well - student's view (compared to strongly agree)				
Missing	-3.56		3.16	-0.25
Agree	-0.09		1.29	0.01
Disagree	0.27		1.24	0.02
Strongly disagree	3.03	*	1.45	0.21
Peer group: excluded from friendship group (compared to not excluded in Year 9)				
Missing	-2.73		3.42	-0.19
Excluded	-4.56	**	1.40	-0.32

$^{\#}$p<0.10   *p<0.05   **p<0.01   ***p<0.001

Peer group: Mostly spend free time in Year 9 (compared to 'with friends')				
Missing	2.44		2.15	0.17
Spend it with family	0.75		0.93	0.05
Spend it alone	-3.84	**	1.34	-0.27
Intercept	102.16	***	2.56	
Residual, Mean square	200.204			
Number of students	1661			
R square	0.130			
Adjusted R square	0.111			
Std. Error of the Estimate	14.149			
F	6.744	***		***

$^{\#}p<0.10$ $^{*}p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$

Section 5: The Impact of Educational Influences (Pre-school, Primary School, and Secondary School) on dispositional outcomes at the end of Key stage 4 (Year 11)

Key findings

Pre-school influences

- There was little evidence of any continuing influence of pre-school in predicting dispositions in Year 11.

Primary school influences

- Primary academic school effectiveness was a positive predictor of *General Academic self-concept* in Year 11. Students who had attended a more academically effective primary school (for *English or Maths)* were found to have a more favourable *General academic self-concept.*

Secondary school influences

- Attending a more academically effective secondary school (measured by national Contextualised Valued Added indicators, CVA) predicted higher levels of *School enjoyment* and decreased *Disaffected behaviour*, controlling for other influences.
- Ofsted judgements of secondary school quality consistently predicted greater *School enjoyment.* Quality judgements related to attainment and standards and overall effectiveness showed the strongest associations with *School enjoyment.*
- Students own experiences of school predicted dispositions, and the largest effects were for *School enjoyment.*
- Students enjoyed school more in schools where perceived Teacher professional focus was higher and where they felt the relationships between teachers and students was better (*Positive relationships*). In addition, they also enjoyed school more in schools that emphasised learning more, and where they believed the school had a stronger *Academic ethos* and a better *behavioural climate*.
- The factors *Valuing students* obtained in Year 9*,* and *Positive relationships* in Year 11 predicted *School enjoyment* and school behaviour climate in year 9 also predicted greater student *School enjoyment.*
- More positive reports of learning processes with the school (in terms of *Teacher professional focus* and higher levels of *Formative feedback*) were also predictive of greater *School enjoyment.*
- Students' views of *Teachers' professional focus* and *Positive relationships* between staff and students were consistent predictors of all five the dispositions studied.
- More positive views of school, as reported by students, also showed weaker but still significant associations with more favourable *Mental well-being,* lower levels of *Disaffected behaviour* and higher *General academic self-concept.*

This section presents results from analyses that explore the impact of educational influences from earlier experiences of pre-school, through primary school to their present secondary school. Section four explored the influence of individual, family and HLE characteristics as predictors of dispositions, and the present section builds on these contextualised models. By controlling for significant contextual variables the impact of educational influences can be separated from the other characteristics. There was strong evidence of the effects of secondary school quality on *Enjoyment of school* in Year 9 in terms of a number of Ofsted quality judgements.

5.1 The influence of pre-school experience on dispositions in Year 11

Earlier analyses in Year 9 found very little evidence of any continuing impact of pre-school in predicting dispositions, although there was some evidence that the quality of care in pre-school (measured by Caregiver's Interaction Scale, Arnett 1989) predicted later dispositions (Sammons et al., 2011b). In contrast, pre-school has been shown to have a continuing impact of both academic attainment and social-behavioural development up to the end of Year 9 in secondary school and in academic outcomes in Year 11 (Sammons et al., 2011b; 2011c).

Detailed observations of the pre-school settings were carried out using three observational schedules: the Early Childhood Environment Rating Scale – English (ECERS-E), Early Childhood Environment Rating Scale – Revised (ECERS-R), and the Caregiver Interaction Scale (CIS). The ECERS-R (Harms et al., 1998) consists of seven sub-scales and measures child-centred pedagogy and resources for play[42], while the ECERS-E was devised specifically for the project to cover the Desirable Learning Goals set by the DfES at the time[43] (Sylva et al., 1999).

In addition six measures of pre-school effectiveness, measuring the progress across the pre-school period from age 3 to entry to reception class were also created (see Sammons et al., 2002a; 2002b). These included progress in academic domains (Early number concepts; Pre-reading) as well as social-behavioural areas of development (co-operation & conformity; independence & concentration; peer sociability; anti-social/worried/upset).

There was little evidence of any continuing influence of pre-school in predicting dispositions in Year 11. Compared to students with no pre-school experience students who had attended pre-school of any quality (ECERS E, ECERS R) did not have significantly different dispositions in Year 11. In addition, the effectiveness of the pre-school attended also did not predict dispositions in Year 11. Only one statistically significant finding emerged. Students who had attended a low pre-school classed as of low effectiveness for promoting the social/behavioural measure of Independence and concentration had lower scores for *Resistance to peer influence* than students who had not attended pre-school (the home group; ES=-0.21, P<0.06).

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[42] Sub-scales: Space and Furnishings, Personal Care Routines, Language and Reasoning, Activities, Social Interaction, Programme structure and Parents and Staff (adults working together).
[43] Subscales: Literacy, Numeracy, Science and Diversity.

5.2 The influence of primary school experience on dispositions in Year 11

National assessment data for all schools in England was used to calculate Value Added measures of progress across Key Stage 2 for all schools in England. Three years of data (2002-2004) were combined to create a three year measure for the core subjects: English, Maths and Science (See Melhuish et al., 2006). Previously (in Year 9) there was no strong evidence of a positive relationship between the academic effectiveness of the primary school and dispositions.

In Year 11 primary school effectiveness also did not predict dispositions except for one outcome. Primary academic school effectiveness in English and Maths was a positive predictor of *General Academic self-concept* in Year 11. Students who had attended a high academic effectiveness primary school for *English or Maths* were found to have a more favourable *General academic self-concept* than those who had attended a low effectiveness primary school[44] (English ES High=0.23, Maths ES=-0.30). This finding is likely to reflect the positive impact of attending a more academically effective primary school had on attainment and progress in primary school and that still predicted attainment in KS3 and GCSE in Year 11 (Sammons et al., 2014a).

5.3 The influence of secondary school experience on dispositions in Year 11

The Contextualised Value Added measure (CVA) is a school measures tracking the progress of students from Year 7 to Year 11. The measure represents the school's effect on student progress compared to similar schools, controlling for intake differences[45]. Higher secondary school academic effectiveness (CVA) predicted increased *School enjoyment* (ES=0.18) and decreased *Disaffected behaviours* (ES=-0.14). Similarly, Gibbons & Silva (2009) found secondary school Value Added to be weak but significant predictor of *School enjoyment*, but not other aspects of school satisfaction such as liking teachers and boredom at school. Elsewhere we show that secondary school academic effectiveness measures by the CVA indicator also predicts academic attainment and progress across KS3 and KS4 and certain Pro-social behaviours (Sammons et al., 2014a; 2014b).

In line with this, Ofsted judgements of better school quality in many areas also significantly predicted greater *School enjoyment*, particularly in attainment and standards.

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[44] In addition, students who had attended a high effectiveness primary school for *Science* had lower resistance to peer influence than those who had attended a low effectiveness primary school. This is an unusual finding and not consistent across primary subjects so should be treated with caution.

[45] Secondary CVA controls for prior attainment as well as nine student characteristics: gender, SEN, FSM eligibility, First language, student mobility, ethnicity, age within the year group, whether students are in or have ever been in care, and IDACI deprivation level of students home address. Our own measure was based on three consecutive years of CVA data for each school.

Table 5.1: The impact of school quality (Ofsted judgements) on School enjoyment in Year 11

Comparing 'Outstanding' and 'Inadequate' (tested individually)	
Overall effectiveness	**Effect size**
How effective, efficient and inclusive is the provision of education, integrated care and any extended services in meeting the needs of learners?	0.32
The capacity to make any necessary improvements school level	0.51
Achievement and standards	**Effect size**
How well do learners achieve?	0.39
The standards reached by learners	0.33
How well learners make progress, taking account of any significant variations between groups of learners	0.41
How well learners with learning difficulties and disabilities make progress	0.45
Personal development and well-being	**Effect size**
How well learners develop workplace and other skills that will contribute to their future economic well-being	0.63
Quality of provision	**Effect size**
How well do the curriculum and other activities meet the range of needs and interests of learners?	0.34[#]
How well are learners cared for, guided and supported?	0.43[#]

[#]$p < 0.10$; All other effect sizes shown are at least $p < 0.05$

Attending a secondary school judged by to be 'outstanding' or 'good' school quality in three areas significantly predicted greater *Mental well-being* than 'Inadequate' schools. These were:

- How effective, efficient and inclusive is the provision of education, integrated care and any extended services in meeting the needs of learners? ('Outstanding' ES=0.28, Good ES=0.27)
- How well do learners achieve? ('Outstanding' ES=0.27, Good ES=0.27)
- How well learners develop workplace and other skills that will contribute to their future economic well-being ('Outstanding' ES=0.44).

These findings are consistent with results in Year 9, where three of the aspects of school quality were predictive of *Enjoyment of school*.

5.4   The influence of secondary school composition on dispositions in Year 11

The net influence of school composition was also tested to assess whether it predicted Disposition outcomes in Year 11. The proportion of students in the school who were eligible for FSM, had Special Educational Needs, and of White British heritage was investigated. The only compositional measure that was found to be predictive of dispositions was FSM. Students from schools with a higher proportion of students eligible for Free School meals were found to have significantly higher *General Academic Self-concept* (ES=0.17). This is in line with the Big Fish theory (Marsh and Hau 2003) of academic self-concept, where student's self-concept is relative to those students in their peer group.

5.5 The influence of secondary school and teaching processes on dispositions in Year 11

Students were asked to complete surveys in 9 and 11 that covered aspects of their secondary school environment and teaching processes. From their survey responses, individual items were combined into eight robust weighted factors (using Exploratory and Confirmatory Factor Analysis) were created in Year 9 and a further six factors from their Year 11 responses. The Year 9 factors, from students KS3 experiences were (See Appendix 8 for further details):

- Teacher support
- School environment
- Valuing students
- Headteacher qualities
- Poor behaviour climate
- Emphasis on learning
- Teacher discipline
- Learning resources

The Year 11 factors, based on students KS4 experiences were (See Appendix 8 for further details):

- Teacher professional focus
- Positive relationships
- Monitoring students
- Formative feedback
- Academic ethos

The Year 9 and Year 11 factors were tested separately and in combination and a number were found to be strongly correlated with the various disposition outcomes (see Table 5.2). Associations are strongest for concurrent views of school, as might be expected. The strongest associations were found between *School enjoyment* and views of school, in particular measures of *Positive relationships* between teachers and students (r=0.57) and *Teacher professional focus* (r=0.52). By contrast, *Resistance to peer influence* was only very weakly associated with the views of school factors.

Table 5.2: Associations between self-reported views of school and dispositions in Year 11

Pearson's r correlations	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
Year 9 views of school	*r*	*r*	*r*	*r*	*r*
Teacher support	0.20**	0.30**	-0.21**	0.04	0.15**
Teacher discipline	0.11**	0.22**	-0.18**	0.08**	0.07*
Emphasis on learning	0.16**	0.30**	-0.23**	0.11**	0.21**
Headteacher qualities	0.16**	0.19**	-0.10**	0.03	0.09**
Valuing students	0.21**	0.39**	-0.27**	0.06*	0.16**
Poor behaviour climate	-0.18**	-0.38**	0.18**	-0.02	-0.20**
School environment	0.19**	0.33**	-0.14**	-0.04	0.13**
Learning resources	0.14**	0.25**	-0.14**	0.00	0.18**
Year 11 views of school					
Teacher professional focus	0.26**	0.52**	-0.35**	0.13**	0.22**
Positive Relationships	0.28**	0.57**	-0.30**	0.07**	0.25**
Monitoring students	0.24**	0.39**	-0.24**	0.12**	0.16**
Formative feedback	0.24**	0.47**	-0.29**	0.13**	0.21**
Academic ethos	0.15**	0.33**	-0.18**	0.06*	0.10**

* Statistically significant at p<0.05   **statistically significant at p<0.01   all other correlations not significant

5.6   Views of school in Year 9 as predictors of dispositions

Once the influence of significant individual, student, family and home learning factors had been taken into account a number of aspects of the school and teaching environment were found to be significant predictors of later dispositions. Of particular importance for *Mental well-being* appears to be the extent that schools value students (ES=0.27), the behavioural climate of the school (ES=-0.18) and *Headteacher qualities* (ES=0.16), measured in Year 9.

Table 5.3: Prior views of school as predictors of Mental well-being in Year 11

Only significant findings reported	Mental Well-being					
	Tested individually			Tested together		
	ES	Sig	Coef	SE	ES	Sig
Emphasis on Learning	0.30	***				
Poor behaviour climate	0.32	***	-0.08	0.03	-0.18	**
Headteacher qualities	0.29	***	0.07	0.03	0.16	**
School environment	0.30	***				
Valuing students	0.41	***	0.12	0.05	0.27	***
Learning resources	0.23	***				
Teacher discipline	0.17	***				
Teacher support	0.35	***				

ES   Effect size   Coef Coefficient   SE Standard Error

Sig Significance   * p<0.05** p<0.01*** p<0.001

Poor behaviour climate in KS3 (ES=-0.44) and the extent students are valued (ES=0.41) were also moderately strong predictors of later *School enjoyment* in Year 11. In addition, a better *Emphasis on learning* (ES=0.17) and School environment (ES=0.15) were also associated with increased

Table 5.4: Prior views of school as predictors of School enjoyment in Year 11

Only significant findings reported	School Enjoyment					
	Tested individually		Tested together			
	ES	Sig	Coef	SE	ES	Sig
Emphasis on Learning	0.53	***	0.10	0.04	0.17	*
Poor behaviour climate	0.73	***	-0.19	0.03	-0.44	***
Headteacher qualities	0.32	***				
School environment	0.61	***	0.06	0.03	0.15	*
Valuing students	0.74	***	0.18	0.03	0.41	***
Learning resources	0.47	***				
Teacher discipline	0.37	***				
Teacher support	0.55	***				

ES Effect size   Coef Coefficient SE Standard Error
Sig Significance   * p<0.05** p<0.01*** p<0.001

Fewer aspects of self–reported views of school were significantly predictive of *Disaffected behaviour*, but *Valuing students* was. Students who felt their school valued students had lower levels of *Disaffected behaviour* (ES=-0.36). In addition, higher levels of *Emphasis on learning* predicted

Table 5.5: Prior views of school as predictors of Disaffected behaviour in Year 11

Only significant findings reported	Disaffected behaviour					
	Tested individually		Tested together			
	ES	Sig	Coef	SE	ES	Sig
Emphasis on Learning	0.34	***	-0.08	0.03	-0.17	*
Poor behaviour climate	0.27	***				
Headteacher qualities	0.11	#				
School environment	0.22	***				
Valuing students	0.44	***	-0.17	0.03	-0.36	***
Learning resources	0.20	***				
Teacher discipline	0.27	***				
Teacher support	0.31	***				

ES Effect size   Coef Coefficient   SE Standard Error
Sig Significance   * p<0.05** p<0.01*** p<0.001

Once background factors had been accounted for only the measure of *Emphasis on learning* predicted higher *Resistance to peer influence* (ES=0.17), and this was weak.

Table 5.6: Prior views of school as predictors of Resistance to peer influence in Year 11

Only significant findings reported	Resistance to peer Influence					
	Tested individually		Tested together			
	ES	Sig	Coef	SE	ES	Sig
Emphasis on Learning	0.17	**	0.08	0.03	0.17	**
Poor behaviour climate	0.12	*				
Teacher discipline	0.12	*				

ES Effect size   Coef Coefficient   SE Standard Error
Sig Significance   * p<0.05** p<0.01*** p<0.001

Although all the views of school in Year 9 factors were found to be significant predictors of *General academic self-concept* in Year 11 when tested individually, *Emphasis on learning* proved to be the most important aspect of school and teaching process to be related to *General academic self-concept* when tested together (ES=0.29)[46]. Students who felt their school had better *Learning resources* also had higher *General academic self-concept* (ES=0.15).

Table 5.7: Prior views of school as predictors of General academic self-concept in Year 11

Only significant findings reported	General academic self-concept					
	Tested individually		Tested together			
	ES	Sig	Coef	SE	ES	Sig
Emphasis on Learning	0.35	***	0.12	0.03	0.29	***
Poor behaviour climate	0.19	**				
Headteacher qualities	0.15	**				
School environment	0.15	*				
Valuing students	0.25	***				
Learning resources	0.26	***	0.07	0.03	0.15	*
Teacher support	0.24	***				

ES Effect size   Coef Coefficient   SE Standard Error
Sig Significance   * p<0.05** p<0.01*** p<0.001

5.7 Concurrent views of school as predictors of Year 11 dispositions

Once student, family and home learning factors had been taken into account a number of aspects of school and teaching, as reported by students in Year 11, were found to be significant predictors of dispositions.

Mental well-being was higher for students who felt that the relationship between teachers and students was better (*Positive relationships*, ES=0.32) and also where students reported higher levels of *Monitoring students* (ES=0.26) and to a lesser extent higher levels of *Teacher professional focus* was associated with higher *Mental well-being* (ES=0.16).

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[46] The possibility of collinearity between Views of school factors was taken into account when factors were tested together.

Table 5.8: Concurrent views of school as predictors of Mental well-being in Year 11

Only significant findings reported	Mental Well-being					
	Tested individually			Tested together		
	ES	Sig	Coef	SE	ES	Sig
Teacher professional focus	0.48	***	0.07	0.03	0.16	*
Positive relationships	0.53	***	0.15	0.03	0.32	***
Monitoring students	0.48	***	0.12	0.03	0.26	***
Formative feedback	0.45	***				
Academic ethos	0.31	***				

Positive relationships with students (ES=0.88), higher *Teacher professional focus* (ES=0.48) and higher levels of *Formative feedback* (ES=0.44) predicted increased *School enjoyment*. In addition, *Academic ethos* was also weakly predicted for increased *School enjoyment* (ES=0.14).

Table 5.9: Concurrent views of school as predictors of School enjoyment in Year 11

Only significant findings reported	School enjoyment					
	Tested individually			Tested together		
	ES	Sig	Coef	SE	ES	Sig
Teacher professional focus	1.19	***	0.21	0.03	0.48	***
Positive relationships	1.27	***	0.33	0.03	0.88	***
Monitoring students	0.84	***				
Formative feedback	1.04	***	0.16	0.02	0.44	***
Academic ethos	0.66	***	0.05	0.02	0.14	*

Students who reported higher *Teacher professional focus* in their secondary schools had lower scores for *Disaffected behaviour* (ES=-0.46). In addition, higher levels of *Formative feedback* (ES=-0.24) and where students who felt that the relationship between teachers and students was better also predicted lower scores for *Disaffected behaviour* (ES=-0.21).

Table 5.10: Concurrent views of school as predictors of Disaffected behaviour in Year 11

Only significant findings reported	Disaffected behaviour					
	Tested individually			Tested together		
	ES	Sig	Coef	SE	ES	Sig
Teacher professional focus	-0.72	***	-0.20	0.03	-0.46	***
Positive relationships	-0.60	***	-0.09	0.03	-0.21	***
Monitoring students	-0.44	***				
Formative feedback	-0.58	***	-0.11	0.03	-0.24	***
Academic ethos	-0.32	***				

Once background had been accounted for only *Teacher professional focus* was associated with higher *Resistance to peer influence* (ES=0.17).

Table 5.11: Concurrent views of school as predictors of Resistance to peer influence in Year 11

Only significant findings reported	Resistance to peer influence					
	Tested individually		Tested together			
	ES	Sig	Coef	SE	ES	Sig
Teacher professional focus	0.28	***	0.10	0.03	0.17	**
Positive relationships	0.19	***				
Monitoring students	0.20	***				
Formative feedback	0.28	***				
Academic ethos	0.14	**				

Although all the views of school in Year 11 were significant predictors of *General academic self-concept* in Year 11 when tested individually, *Positive relationships*, *Teacher professional focus*, and *Formative feedback* proved to be the most important aspects of school and teaching process to be related to *General academic self-concept* when tested together (ES=0.24; 0.22; 0.21)[47]. In addition, students attending a secondary school that had a stronger *Academic ethos* predicted a slightly less favourable *General academic self-concept* (ES=0.12).

Table 5.12: Concurrent views of school as predictors of General academic self-concept in Year 11

Only significant findings reported	General academic self-concept					
	Tested individually		Tested together			
	ES	Sig	Coef	SE	ES	Sig
Teacher professional focus	0.42	***	0.16	0.05	0.21	*
Positive relationships	0.44	***	0.17	0.05	0.24	**
Monitoring students	0.31	***				
Formative feedback	0.41	***	0.14	0.04	0.22	***
Academic ethos	0.12	*	-0.09	0.04	-0.12	*

When Year 9 and Year 11 student self reports on school measures were tested together, concurrent views proved to be the strongest predictors on dispositions in Year 11. Nonetheless, earlier behavioural climate remained an additional predictor of *Mental well-being* and *School enjoyment*. *Emphasis on Learning* in Year 9 still predicted *School enjoyment* and *General academic self-concept*. *Valuing students* in Year 9 was also predicted decreased *Disaffected behaviour*. Table 5.13 displays the size of effects for both Year 9 and Year 11 experiences of school factors when tested in combination. Positive relationships and teacher professional focus show consistent positive effects across most disposition outcomes.

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[47] The possibility of collinearity between Views of school factors was taken into account when factors were tested together.

Table 5.13: Combined views of school predictors of dispositions in Year 11

Views of school predictors of dispositions	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
Teacher professional focus (Y11)	+	+++	--	+	++
Positive relationships (Y11)	++	++++	-		++
Monitoring students (Y11)	++				
Formative feedback (Y11)		+++			
Academic ethos (Y11)					-
Emphasis on learning (Y9)		++			++
Poor behaviour climate (Y9)	+				
Valuing students (Y9)			-		

+/- Very small Effect size (>0.2) ++ /-- Small effect size (0.2-3.99)   +++/--- Moderate effect size (0.4-5.99)

++++ /----Large effect size (0.6+)

Section 6: Relationships between students' academic attainment and dispositional outcomes at the end of Key stage 4 (Year 11)

Key findings

- Of all the dispositions General academic self-concept showed the strongest association with attainment measures (e.g., Total GCSE score; r=0.47).
- Students attaining higher scores at GCSE also reported higher levels of School enjoyment (e.g., Total GCSE score; r=0.31) and lower levels of Disaffected behaviour (e.g., Total GCSE score; r=-0.25).
- By contrast, Mental well-being and Resistance to Peer influence was showed very weak associations with attainment.
- Once background had been accounted for attainment was still a powerful predictor of General academic self-concept (ES=0.98 for Total GCSE score; ES=1.22 for English; ES=1.29 for Maths).
- Once background had been accounted for attainment was still a moderate to strong predictor of School enjoyment and Disaffected behaviour.
- The number of GCSE entries was a poorer predictor of dispositions than other attainment outcomes.

Analyses of academic are reported elsewhere (Sammons et al., 2013a; 2013b). This section reports on the predictive strength of Year 11 academic attainment on Year 11 dispositions.

Academic measures consisted of GCSE outcomes for English and Maths, as well as their overall total GCSE score and the number of GCSE entries. As might be expected, *General academic self-concept* was the most strongly associated with attainment measures (e.g., Total GCSE score; r=0.47, Maths GCSE r=0.54, English r=0.52). Students attaining higher scores at GCSE also reported higher levels of *School enjoyment* (e.g., Total GCSE score: r=0.31, Maths GCSE r=0.29, English r=0.31) and lower levels of *Disaffected behaviour* (Total GCSE score; r=-0.25, Maths GCSE r=-0.20, English r=-0.23). The number of GCSE entries showed a poorer relationship to dispositions for all outcomes, but particularly *General academic self-concept*.

By contrast, *Mental well-being* and *Resistance to Peer influence* was found to have very weak or non-significant associations with attainment.

Table 6.1: Correlation between concurrent views of school and dispositions in Year 11

Academic attainment	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
	r	r	r	r	r
Total GCSE score	0.06*	0.31**	-0.25**	0.07*	0.47**
English	0.08*	0.31**	-0.23**	0.02	0.52**
Maths	0.08*	0.29**	-0.20**	-0.03	0.54**
No or GCSE entries	0.05	0.26**	-0.14**	-0.03	0.37**

* Statistically significant at p<0.05   **statistically significant at p<0.01   all other correlations not significant

Academic attainment measures were added separately to previous contextualised models (see Section 4). Once individual, family and home learning influences were controlled, students' GCSE attainment was a powerful predictive of *School enjoyment, Disaffected behaviour* and *General academic self-concept* (see Table 6.2). Academic acheivement strongly predicted *General academic self-concept* (Total GCSE score ES=0.98), and was also moderately associated with *School enjoyment* (Total GCSE score ES=0.55), *Disaffected behaviour* (Total GCSE score ES=-0.43). In contrast, academic acheivement only weakly predicted *Mental well-being* (Total GCSE score ES=0.14) and *Resistance to Peer influence* (Total GCSE score ES=0.16).

Table 6.2: Academic measures as predictors of dispositions in Year 11[48]

Academic measures	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
Attainment Yr 11	*Effect size*	*Effect size*	*Effect size*	*Effect size*	*Effect size*
Total GCSE score	0.14**	0.55***	-0.43***	0.16**	0.98***
English	0.19***	0.61***	-0.38***	0.14*	1.22***
Maths	0.12*	0.55***	-0.37***	ns	1.29***
No or GCSE entries	ns	0.46***	-0.19**	ns	0.68***

*Statistically significant at p<0.05   ** p<0.01   ***p<0.001   #p<0.10

Effect sizes for measures tested separately

It should be noted that although they are included as predictors in these models there are likely to be reciprocal relationships between attainment, and students' dispositions so causality should not be inferred from these results.

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[48] Academic attainment measures were tested individually.

Section 7: Exploring dispositions across secondary schooling

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Key findings

- Dispositional measures could not be measured in an identical way across different time points, but it is possible to assess earlier dispositions on Year 11 disposition outcomes, taking into account also significant individual, family and home learning environment.
- The strongest association was between Year 5 *Academic self-concept* and Year 11 *General academic self-concept* (r=0.31), followed by Year 5 *Behaviour self-image* and Year 11 *Disaffected behaviour* (r=-0.23).
- The strongest association was between Year 5 *Academic self-concept* and Year 11 *General academic self-concept* (r=0.31), followed by Year 5 *Behaviour self-image* and Year 11 *Disaffected behaviour* (r=-0.23). The strongest effect size was for Academic self-mage in Year 5 and General Academic self-concept in Year 11 (moderate), followed by Behaviour self-image and Disaffected behaviour (weak).
- Overall the findings suggest that students' dispositions vary quite markedly across different phases of education. This in part may reflect real change but also measurement difficulties because it was not always possible to use identical items at different time points due to differences in students' ages.

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Although dispositional measures could not be measured in an identical way across different time points, it is possible to assess the predictive influence of earlier dispositions on Year 11 disposition outcomes, taking into account also significant individual, family and home learning environment. These *contextualised value added* models have been studied previously, examining the influence of background and earlier Year 2 dispositions on Years 5 dispositions (Sammons et al., 2008) and Year 5 to Year 9 models (Sammons et al., 2011a).

7.1   Associations between disposition outcomes over time

Table 7.1 shows the strength of relationship between dispositions towards the end of primary schooling (Year 5) and Year 11 dispositions. The strongest association was between Year 5 *Academic self-concept* and Year 11 *General academic self-concept* (r=0.31), followed by Year 5 *Behaviour self-image* and Year 11 *Disaffected behaviour* (r=-0.23).

Year 5	Year 11 disposition outcomes				
	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to Peer Influence	General Academic Self-Concept
	r	r	r	r	r
Enjoyment of school	0.11**	0.20**	-0.16**	0.13**	0.14**
	n=1502	n=1509	n=1507	n=1502	n=1506
Anxiety and Isolation	-0.15**	0.14**	-0.10**	0.07**	0.10**
	n=1502	n=1509	n=1507	n=1502	n=1506
Academic self image	0.12**	0.19**	-0.13**	0.05	0.31**
	n=1495	n=1502	n=1500	n=1495	n=1499
Behaviour self image	0.03	0.20**	-0.23**	0.13**	0.18**
	n=1502	n=1509	n=1507	n=1502	n=1506

** Significant at the $p < 0.01$ level

However, stronger relationships were found between Year 9 and Year 11 correlations were found, as shown in Table 7.2.

Table 7.2: Correlations between Year 9 dispositions and dispositions in Year 11

Year 9	Year 11 disposition outcomes				
	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to Peer Influence	General Academic Self-Concept
Maths ASC	0.23**	0.21**	-0.13**	0.02	0.42**
	n=1327	n=1333	n=1332	n=1325	n=1329
English ASC	0.11**	0.16**	-0.17**	0.06*	0.31**
	n=1327	n=1333	n=1332	n=1325	n=1329
Enjoyment of school	0.23**	0.50**	-0.31**	0.11**	0.28**
	n=1336	n=1342	n=1341	n=1334	n=1338
Popularity	0.20**	0.13**	-0.01	0.07**	0.10**
	n=1324	n=1330	n=1329	n=1322	(n=1326
Citizenship values	0.08**	0.20**	-0.27**	0.15**	0.09**
	n=1327	n=1333	n=1332	n=1325	n=1329
Anxiety	-0.34**	-0.21**	0.07**	0.11*	-0.15**
	n=1327	n=1333	n=1332	n=1325	n=1329

** Significant at the $p < 0.01$ level

Full models can be found in Appendix 10, but Table 7.3 below shows which Year 5 dispositions predict later dispositions in Year 11.

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[49] Academic attainment measures were tested individually.

Table 7.3: Year 5 dispositions as predictors of dispositions in Year 11 (effect sizes)

Year 5	Year 11 disposition outcomes				
	Mental Well-being	School Enjoyment	Disaffected behaviour	Resistance to Peer Influence	General Academic Self-Concept
Enjoyment of school		0.26***	-0.18**	0.19***	
Anxiety and Isolation	-0.27***	-0.13*			
Academic self image	0.16**	0.20*			0.56***
Behaviour self image		0.20*	-0.30***	0.13*	0.16*

<div align="right">* p<0.05   ** p<0.01   *** p<0.001</div>

7.1.1 Individual measures

7.1.1.1 Gender

In line with the contextualised models, outlined in section four, girls showed poorer *Mental well-being* than boys (ES=-0.47) and were significantly more *Resistant to peer influence* than boys (ES=0.31), even after prior dispositions were taken into account. Girls were also less likely to report *Disaffected behaviour*, although taking account of prior dispositions reduced this to a weak effect (ES=-0.14).

7.1.1.2 Age

Age remained a stable predictor of *General academic self-concept* (ES=0.14) in the Contextualised Value Added model.

7.1.1.3 Ethnicity

Students of Black African heritage reported higher *Mental well-being* and greater *Resistance to peer influence* than White UK heritage students greater (*Mental well-being* ES=0.53, *Resistance to peer influence* ES=0.47). Students of Black Caribbean heritage reported greater *Resistance to peer influence* (ES=0.59).

Students of Mixed Race heritage reported lower *Mental well-being* and lower *School Enjoyment* than White UK heritage (*Mental well-being* ES=-0.25, *School enjoyment* ES=-0.25).

Students of Pakistani heritage showed more positive dispositions than the White UK group, even after prior dispositions were taken into account (*School enjoyment* ES=0.52, *Disaffected behaviour* ES=-0.56, *General academic self-concept*=0.29). Indian heritage students also showed higher *School enjoyment* than White UK heritage (ES=0.55).

7.1.2 Family measures

7.1.2.1 Marital status and family structure

Students who were in a single parent family at entry to pre-school report lower levels of *Mental well-being* than those from married families at that time (ES=-0.43), even after Year 5 dispositions were controlled for.

Compared to households that had both natural parents, students living with step parents in the household had lower *School enjoyment* (ES=-0.17), after controlling for prior dispositions. Family structure weakened for most outcomes when account was taken of dispositions at the end of primary school (Year 5).

7.1.2.2   Parent's highest qualification level

The predictive power of parental qualifications was less evident in the contextualised value added models, suggesting that there is less additional impact of parental educational level across the secondary school years. Father's education, was still found to significantly predict increases in *School enjoyment* for a few student groups (Vocational ES=0.23, 16 academic ES=0.25), although the effect was weaker.

Students with at least one parent with higher academic qualifications (Degree or Higher degree) reported lower *Resistance to peer influence* (Degree ES= -0.26, Higher degree ES=-0.33). Having a mother with a higher degree or other professional qualification (compared to no qualifications) predicted increases in *General academic self-concept* (Higher Degree ES=0.33) from Year 5 to Year 11.

7.1.2.3   Parent's employment

Students with fathers not working in the early years (compared to working full-time) predicted greater *Disaffected behaviour* (ES=0.32).

7.1.2.4   Family Socio-Economic Status

Lower family SES (Skilled and Unskilled occupations) predicted lower *General Academic self-concept* for some student groups (compared to professional, Skilled ES=-0.17, Unskilled ES=-0.41). The effect was less consistent than found in the contextualised models, suggesting the additional impact over secondary schooling is weak.

7.1.3 Home Learning Environment measures

The early years HLE was found to predict increases in *General academic self-concept* (Very High ES=0.24). Greater Parent/child interaction (KS2) was associated with lower *Disaffected behaviour* (High interaction ES=-0.37, Medium ES=-0.24).

Higher levels of Academic enrichment activities (compared to low) predicted higher *General academic self-concept* (Medium ES=0.19, High ES=0.41), *School enjoyment* (Medium ES=0.21, High ES=0.38), and lower *Disaffected behaviour* (High ES=-0.39).Higher levels of Academic supervision activities (compared to low) also predicted higher *Mental well-being* (High ES=0.19), *School enjoyment* (Medium ES=0.19, High ES=0.55), *General academic self-concept* (High ES=0.22), lower *Disaffected behaviour* (High ES=-0.44) and higher *Resistance to peer influence* (Medium ES=0.27, High ES=0.39).

Overall the findings suggest that dispositions vary quite markedly across different phases of education. This in part may reflect real change but also measurement difficulties because it was not always possible to use identical items at different time points due to ages.

Section 8: Summary and conclusions

This report on student dispositions complements the analyses of academic GCSE and social-behavioural outcomes also carried out for EPPSE students in Year 11 that are presented elsewhere (Sammons et al., 2013a, 2013b). The results indicate that questionnaire survey items on dispositions at the end of compulsory schooling form robust dimensions that are distinct from other measures. Dispositions data have been collected from student surveys in Year 2, Year 5, Year 9 and now in Year 11, expanding in depth and complexity over the phases of education. The measures collected at different time points are not identical, and where similar measures exist they have been found to be more variable over time than other outcomes.

As a snapshot of their experiences of life in Year 11, students have been shown to remain largely positive about life and schooling, with three quarters still enjoying school. Qualifications were clearly highly valued; nearly all students thought getting good GCSEs was important and well over half of Year 11 students thought getting a degree was very important. Nine out of ten students indicated they intended would carry on in full-time education after Year 11.

Students' reports of their engagement in risky behaviours such as smoking and drinking were in line with figures reported in larger scale health and well-being surveys (Currie et al., 2008). One in ten students smoked daily or drank alcohol at least a week. One in five students in Year 11 reported that they had tried Cannabis, but only a tiny proportion (approximately 1%) used it daily. Few students (3%) reporting having tried a class A drug. One in five students took part in multiple risky behaviours (two or more).

The mental health of adolescents was seen to be declining in the latter part of the twentieth century (Maughan et al., 2008), when measures of conduct problems, and emotional difficulties were investigated. However, the reports of *Mental well-being* and other dispositions here suggest that the EPPSE students were still relatively positive about their lives at the end of Year 11. As in Year 9 and earlier time points, gender differences were found for some areas. Girls had a tendency to report lower *Mental well-being*, in accordance with findings elsewhere (Cornaglia et al., 2012, Currie et al., 2008, Brooks et al., 2011, Green et al., 2004) and also in line with our own findings in Year 9 where girls reported higher levels of *Anxiety*. *General academic self-concept* was also lower in girls than boys when account was taken of their ability, so girls with similar attainment level to boys perceived themselves as less able. These differences are well documented and have been found to extend to feelings of *Popularity* in our own study when measured in Year 9 (Sammons et al., 2012).

Particularly large differences between girls and boys were found for aspects of Mental well-being related to eudaemonic happiness, with boys reporting substantially more positively about how confident they felt, how good they felt about themselves and how relaxed they were. In addition girls were much less positive about their health status. These findings are of relevance to the PHSE and Citizenship curriculum.

In contrast, girls were less likely to report *Disaffected behaviour* or report being influenced by their peers (*Resistance to Peer Influence*). They were likely to spend more time doing homework in Year 11 (again in line with past findings in Year 9). Spending time on homework is found to be a strong predictor of better GCSE attainment as well as progress from Year 6 to Year 11, showing the interrelationships between behaviours and other outcomes.

Information about their perceptions of their own health was collected from students for the first time in Year 11. Once student, family and HLE had been accounted for, health status was associated with poorer *Mental well-being*, and also lower *School enjoyment, General academic self-concept* and higher scores for *Disaffected behaviour*.

Family structure proved to be a significant predictor of dispositions in a number of areas. Students from single parent family (measured in the early years at entry to the pre-school study) report significantly lower levels of *Mental well-being* than students from families where parents were married in the early years. Current family structure in Year 11 also predicted *Mental well-being*, *School enjoyment*, *Disaffected behaviour* and *General academic self-concept*, mainly with students from families with a step parent having poorer dispositions than students living in families with both natural parents present.

The home learning environment continued to have an influence on student dispositions. As in Year 9, a good HLE in the early years predicts more favourable dispositions, specifically greater *School enjoyment* and a higher *General academic self-concept*. This is a period of childhood where there is likely to be more opportunity to engage in important educational activities with the child, and the long term benefits appear to be greater for attainment and social-behavioural outcomes. HLE activities that the student reported in Year 9 related to Supervision and Enrichment activities proved to be powerful predictors of dispositions in Year 11, as well as shaping academic outcomes (see accompanying reports Sammons et al.,, 2014). This may be an important period of adolescent development for students, when parental guidance and encouragement is again influential.

In Year 9, clear links between features of the secondary school experience (based on students' own views of school) and dispositions were found. Similar associations were again identified in the Year 11 survey, and were particularly strong for *Teacher professional Focus*, *Positive Relationships* and *Formative Feedback*. The strongest links between dispositions and views of school were for *School enjoyment*.

In addition to students' perspectives on their own schooling, Ofsted inspection judgements also provided external measures of school quality on a number of areas. Similar results were found for the quality based on the Ofsted measures of the quality of provision, and Personal development and well-being). Attending a secondary school judged as higher quality positively predicted *School enjoyment* for the EPPSE students.

Pupil background has been found to only have a relatively small influence in predicting dispositions over a number of time points (Sammons et al., 2011, Sammons et al., 2012), especially in comparison to other kinds of educational outcomes (Sammons et al., 20013a, 2013b). These findings are in line with current theories on the determinants of subjective well-being that suggest that circumstances are only a small influence and genetic inheritance and actual activities account for more variation (Lyubomirsky et al., 2005). In Year 11, additional aspects of student experience were available for analysis, more closely related to personal experience such as family dynamics and activities.

Family relationships were found to shape educational outcomes in this research. Family discord predicted poorer disposition outcomes across the board, while students who report they spend their spare time with their family have better *Mental well-being* and higher *School enjoyment*. In addition, *Mental well-being* is lower for students who report quarrelling regularly with their parents. Social activities and enrichment activities seem to be important in promoting *Mental well-being* and *School enjoyment*. These additional aspects of student experiences account for more variation in *Mental well-being* and *School enjoyment*.

In Year 11, dispositions were found to relate to attainment and social-behavioural measures. In particular, current GCSE attainment strongly predicted *General academic self-concept* and *School enjoyment,* suggesting more able students have more positive experiences of schooling, as found in Year 9. Lower attainment also predicted higher *Disaffected behaviour* and lower *Mental well-being*. However, it should be recognised that these relationships are also likely to be reciprocal and mutually reinforcing over time.

This report has examined a set of measures that could be considered to reflect students' wider 'well-being'. Well-being has been operationalised in many different ways within the literature (UNICEF 2007, Hood 2007, Opendakker and Van Damme (2000), often related to specific dimensions of well-being such as mental well-being, well-being at school, behavioural adjustment, or educational attainment, and is a concept open to interpretation (for further discussion see Camfield et al., 2008). It is widely seen as a combination of positive child and adolescent outcomes and opportunities in terms of economic factors and family structure during childhood and also factors that hinder this that could contribute to present well–being and future 'well-becoming', where early experiences and opportunities can be seen as indicators of future opportunities (Ben-Arieh, 2006).

The disposition findings and those in students school experiences, combined with social-behaviour and academic outcomes, and the links with individual, family, HLE and neighbourhood influences help to illuminate the interconnectedness and nature of well-being for children as they move through different phases of education and into adolescence up to the end of KS4.

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Appendix 1: Life in Year 11 questionnaire

A. Being in Year 11

1. Teachers in my school How much do you agree or disagree with the following statements?	Strongly agree	Agree	Disagree	Strongly disagree
Teachers in this school treat the pupils fairly				
My teachers are interested in me as a person				
Teachers in this school show respect for the pupils				
The teachers and pupils get on well in this school				
If a pupil is bullied, they would feel able to tell a teacher about it				
If a pupil needs extra help with learning, most teachers will give it				
Teachers spend all of the time in lessons teaching us or making sure we are working				
Teachers have the same rules about behaviour				
Teachers in this school come to their lessons on time				
Teachers mark and return homework promptly				
Teachers make sure that it is quiet and orderly during lessons				
Teachers in this school believe that learning is important				
Teachers at this school really believe that all pupils can achieve				
Teachers are only interested in pupils who do well in exams				
Teachers in this school seem to like teaching				
2. Me in my school **How much do you agree or disagree with the following statements?**	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**
a I feel safe during break and lunch times				
b I feel safe in lessons				
c This school is a friendly place				
d I feel out of place at school				
e On the whole I like being at school				
f I like most of the lessons				
g I am bored in lessons				
h School is a waste of time for me				
i I mess about in lessons				
j I never bully other pupils				
k I behave in class				
l I talk to my friends when I should be doing my work				

3. Home and school How often in Yr 11……	Never	1-3 times	4-10 times	More than 10 times
has your parent been into school to discuss your work (apart from the regular parents evening/day)				
has your parent discussed your behaviour with teachers (apart from the regular parents evening/day)				
do you have a homework/communication diary?	Yes		No	

If YES, how often in Yr 11……	Never	1-3 times	4-10 times	More than 10 times
has your parent written a comment in your homework diary for a teacher				
does your teacher check that your parents have seen your homework diary				

4. How much do you agree or disagree with the following statements?	Strongly agree	Agree	Disagree	Strongly disagree
Most pupils at this school want to do well in exams				
Most pupils at this school want to continue their education after GCSEs				
Most pupils at this school are interested in learning				
I am set targets for my learning by my teachers which are individual to me and not for the whole class				
The school has rewards for pupils who work hard or make good progress even if they do not get high grades				
A pupil who works hard or makes good progress is noticed and praised				
Teachers notice those pupils who are not working as well as they could and try to make them work harder				
Many pupils don't do as well as they could because they are afraid that other pupils won't like them as much				
Pupils who get good marks and work hard get teased by the other pupils				
Most pupils at this school want to leave as soon as they can				

5A. Since being in Year 11 have you bunked/skived off (truanted) from school?	Yes	No

b. If YES, how often did you miss school? Tick AS MANY AS APPLY.

For particular lessons regularly	For particular days	For days at a time
For the odd lesson	For the odd day	For weeks at a time

c. If YES, why? Tick AS MANY AS APPLY.

Parent kept me off school	Bullied	Bored
Just don't like school	To be on my own	Had to care for someone at home
To be with friends	Upset over a personal matter	Don't like particular teachers
Don't like particular lessons	What other reason ………………………………………………………………………………	

6. On an ordinary school day how much time, after school, do you spend doing homework?

None	Less than 1 hour	1-2 hour	2-3hrs	Over 3 hours

7. Extended school activities How often do YOU use the following activities in school?	Never	Every Day	At least once a week	Few times a term	School does not provide this activity
Breakfast club					
Before school form room					
Homework room					
Sports clubs/groups					
Arts clubs/groups					
Music/drama/dance clubs/groups					
Other clubs/societies/groups e.g., chess etc.					
Revision classes for Year 11 exams					
Extra English activities					
Extra Maths activities					
Other extra lessons (in a school subject)					
Extra activities to help with my behaviour					
Extra activities for gifted/talented					

8. Please tick the box that best describe how much *like you* or *not like you*, each statement is.	Not at all like me	A bit like me	Quite a lot like me	Definitively like me
I have always done well in most school subjects.				
Compared to others my age I am good at most school subjects.				
I get good marks in most school subjects.				
Work in most school subjects is easy for me.				
I learn things quickly in most school subjects.				
I am hopeless when it comes to most school subjects.				
It is important to me to do well in most school subjects.				
I am satisfied with how well I do in most school subjects.				

9. Me and My teachers

Answer these questions thinking about your teachers. So the answer is for MOST teachers…	Strongly agree	Agree	Disagree	Strongly disagree
Teachers help me when I am stuck				
Teachers make helpful comments on my work				
Teachers tell me how to make my work better				

B. What next?

1. When you finish Year 11 what do you plan to do? Tick as MANY AS APPLY.		
Carry on in full-time education (either 6th Form, College)	Work full-time	Combine a job with part-time study
Part-time study at College	Learn a trade/start work-based training	Apprenticeship
Look after someone at home/family	Do nothing	Not sure yet
Something else – What?……………………………………………………………………………		

2. Do you think most of your friends will carry on in full-time education when they finish Year 11?	Yes	No

3. What type of qualification do you plan to study next year? Tick as MANY AS APPLY.		
None	A/AS levels	GCE Applied A Levels
GCSE subjects	'Key Skills' qualification	'Basic Skills' qualification
BTEC	OCR qualifications	NVQ(s)
Diploma	City and Guilds	Something else – What?..............

**4. Who have you talked to about your plans for future training, study or work?
Tick AS MANY AS APPLY.**

Form Tutor	Careers Adviser or careers teacher at your school	Any other teacher at your school
Connexions Personal Adviser	Someone else at Connexions	Parents
Grandparents	Brothers or sisters	Other relatives
Friends	Boyfriend/Girlfriend/Partner	Anyone else. WHO? ……………………………………………

5. How important are the following people in making decisions about your future plans?	Not at all important	Not very important	Quite important	Very important
a Form Tutor				
b Careers Adviser or careers teacher at your school				
c Any other teacher at your school				
d Connexions Personal Adviser				
e Someone else at Connexions				
f Parents				
g Grandparents				
h Brothers or sisters				
i Other relatives				
j Friends				
k Boyfriend/Girlfriend/Partner				
l Others? Please write who?				

6* There is a Government payment called the Educational Maintenance Allowance (EMA) to help young people stay on in education after they're 16 by giving them a weekly income.		
Have you heard of the **EMA grant** before today	Yes	No
Are you or your parents planning to apply for an EMA grant	Yes	No

*Questions asked of cohort 1 and 2 only as EMA was then replaced with the Learners Support Fund.

6**. There was a Government payment called the Educational Maintenance Allowance (EMA) for students staying on in education/training after 16. This has been scrapped but some students can claim a grant from the new Learners Support Fund for staying on.		
Have you heard of the **Learners Support Fund** before today?	Yes	No
Are you or your parents planning to apply for a grant from this fund?	Yes	No
Has the scrapping of the EMA grant made a difference to your plans for staying on?		
Much less likely to stay on	Less likely to stay on	No difference to my plans

** Questions asked of cohort 3 only following the EMA being replaced with the Learners Support Fund.

6***. There was a Government payment called the Educational Maintenance Allowance (EMA) for students staying on in education/training after 16. This has been scrapped but some students can claim a grant from the new 16-19 Bursary/Learners Support Fund for staying on.		
Had you heard of the **16-19 Bursary/Learner Support Fund** before today?	Yes	No
Are you or your parents planning to apply for a grant from this fund?	Yes	No
Has the scrapping of the EMA grant made a difference to your plans for staying on?		
Much less likely to stay on	Less likely to stay on	No difference to my plans

*** Questions asked of cohort 4 only following the EMA being replaced with the 16-19 Bursary / Learners Support Fund.

7. How important is it to you to get…	Very important	Fairly important	Not very important	Not at all important
5 good GCSEs (A*-C inc. Maths/Eng) or equivalent				
Vocational Qualification for a particular job e.g., car mechanic				
'A' levels				
A university degree				

8. How likely is it…		Very likely	Fairly likely	Not very likely	Not at all likely	Don't know
	That you will get 5 GCSEs at level A*-C this summer?					
	That you will go to University within the next 5 years or so?					
	That you will ever apply to go to University to do a degree?					

C. All about me

1. How I sometimes feel….. Please tick the box that best describe your experiences OVER THE LAST TWO WEEKS.	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future					
I've been feeling useful					
I've been feeling relaxed					
I've been feeling interested in other people					
I've had energy to spare					
I've been dealing with problems well					
I've been thinking clearly					
I've been feeling good about myself					
I've been feeling close to other people					
I've been feeling confident					
I've been able to make up my mind about things					
I've been feeling loved					
I've been interested in new things					
I've been feeling cheerful					

2. Since you were in Year 9 how often has the following happened to you?	Never	Once or Twice	Three to Five times	More than five times
a. Had something stolen from you (include from your locker at school)				
b. Had someone threaten you with force (include threat of violence in the street)				
c. Been physically injured by someone (include punched etc.)				
d. Been bullied by someone calling you names, swearing at you				
e. Someone been rude to you because of your skin colour, race, ethnic background or religion				

Since you were in Year 9 has any of the following happened to you? Tick the box on the left if it has happened and use the scale on the right to say how it affected you.	Very unpleasant	A bit unpleasant	A bit pleasant	Very pleasant
2f. Became pregnant				
2g. Became a parent				

3a How would you describe your health in the last 12 months?			
Very good	Fairly good	Not very good	Not good at all

b During the last year have you had any longstanding illness, disability or infirmity?	Yes	No

c What sort(s) of illness, disability or infirmity do you have?..

d Does this problem limit your daily activities compared to other people your age?	Yes	No

e Does this problem make it harder for you to go to school or college?	Yes	No

Remember, this questionnaire is CONFIDENTIAL AND NO-ONE will know your answers

4a Have you smoked a cigarette (including roll ups)?		Yes	No
b If YES tick which best describes how often you smoke			
Only once or twice ever	Used to but don't smoke now	Smoke only very occasionally	
Smoke every day	10 or less a day	10 or more a day	
c If you smoke how old were you when you started smoking?			
11 or under	12 - 14	15+	
5a Have you drunk alcohol?		Yes	No
b If YES tick which best describes how often you drink			
Only once or twice ever	Once every couple of months	Once a month	
2-3 times a month	Once or twice a week	Most days	
c If you drink how old were you when you started drinking?			
11 or under	12 - 14	15+	
6a Have you tried cannabis?		Yes	No
b If YES tick which best describes how often you use cannabis			
Only once or twice ever	Once every couple of months	Once a month	
2-3 times a month	Once or twice a week	Most days	
c If you smoke cannabis how old were you when you started smoking cannabis?			
11 or under	12 - 14	15+	
6d Have you tried any of the following drugs more than once?			
None	Aerosols or gas (lighter refills)	Amphetamines (speed, uppers, billy, crystal meths)	
Poppers (amyl, liquid gold, rush)	Solvents (petrol, paint thinners)	Ecstasy ('E', MDMA)	
LSD (acid, tabs, trips, dots)	Magic mushrooms (shrooms)	Spanglers (spangs)	
Cocaine (Charlie, 'C', coke)	Crack (rock, stone)	Heroin (smack, junk, 'H')	
Ketamine (Green, 'k')	Steroids (not prescribed by Dr.)	Glue	
Other? What?........................			

D. How you spend your free time (not organised by school)

1. What have you done IN THE LAST MONTH?	None	Once or twice	3-5 times	6+ times?	Don't know
Taken part in any kind of sport or team games					
Gone to see sports events					
Gone to an amusement arcade					
Gone to a party					
Spent time with boyfriend/girlfriend					
Spent time hanging around with friends/jammin					
Stayed at home					
Played games on games consol or computer					
Surfed the net					
Gone on social network sites e.g., MySpace/Facebook/MSN					
Gone to a pub/bar/clubbing					
Gone to a cinema, theatre or concert					
Gone to a political meeting/march/rally/demo					
Read on your own for pleasure					
Sat around doing nothing in particular					
Voluntary/community work (not run by school)					
Gone to the library (not school library)					
Gone to a religious activity e.g., mosque, church					
Family outings (e.g., museum visit)					
Gone shopping with friends					
Done a hobby e.g., fishing, horse riding					
n If you have a hobby what is your hobby:					

2. Participation in Groups					
Music/singing/art/dance/drama lessons/groups (tick if you do any of the above)					
b Gone to a youth club					
c Scouts/guides (or similar) or environmental group or St John Ambulance					
d Religious classes for church, mosque etc.					
e Youth group linked to place of worship					
f School for culture e.g., Greek, Chinese school					

3. When you have free time, do you MOSTLY… (Tick ONE ONLY)	Hang around with 1 or a group of friends	Spend it with family	Spend it alone

4. Have you done any of the following in the past 12 months? Tick ANY THAT APPLY.

Written on walls with a spray can (graffiti)	Smashed or damaged public property
Gone 'joy riding' or been involved in a car crime	Carried a knife or weapon

Stolen from a shop	Stolen something from a person	Beaten somebody up
Got an ASBO	Been involved with the police	Been cautioned
Been convicted of a crime	Got a criminal record	None of these

E. Me and my friends

1a Do you have a group of friends that you regularly hang out with?		Yes	No
b Do you have a best friend?		Yes	No

2. How true is the following statements for you?	Not at all true	Not very true	Sort of true	Very true
I think it's more important to be who I am than to fit in with the crowd				
I would do something that I know is wrong just to stay on my friend's good side				
I would go along with my friends just to keep them happy				
It would be pretty hard for my friends to get me to change my mind				
I would break the law if my friends said they would				
I would say my true opinion in front of my friends, even if I know they would make fun of me because of it				
I would take more risks when I am with my friends than I would when I am alone				
I would act the same way when I am alone as I would when I am with my friends				
I would say things I don't really believe because I think it would make my friends respect me more				

F. My family

1. Who lives with you? Tick as many as apply		
Natural mother	Natural father	Grandparent
Step mother / father's partner	Step father / mother's partner	Aunt or Uncle
Other mother (foster, adoptive, carer)	Other father (foster, adoptive, carer)	Lodger(s) How many…………
Brothers / step How many ……………..	Sisters / step How many………………	Friends
Your own wife/husband/partner	Your own son/daughter	In Social services care
In Youth offenders care	Other Who?	
2a Do you have to look after (be a carer for) a family member – so it stops you doing what you want to do in your own time?	Yes	No
b If YES, are you looking after …		
Parent	Brother/Sister	Grandparent
Other member of family	Your own child	Other person: Who?
c If YES how often		
Everyday	Every weekend	Once or twice a week
Any further comments you would like to make?		

Thank you VERY much for your help. Please return the questionnaire in the post-paid envelope or to the address at the front of the questionnaire.   ©

EPPSE Project January 2009

Please remember to complete the consent on the front page.

Appendix 2: Background differences in reports of student **life**

Table A2.1: Differences in aspects of school life by gender

Differences in aspects of school		Strongly agree		Agree		Disagree		Strongly agree	
		n	%	n	%	n	%	n	%
I like most of the lessons	Male	130	17.0	492	64.4	131	17.1	11	1.4
	Female	159	17.6	624	69.2	104	11.5	15	1.7
	Chi=10.884, P<0.05								
I never bully other pupils	Male	352	46.2	285	37.4	63	8.3	62	8.1
	Female	538	59.3	255	28.1	36	4.0	78	8.6
	Chi=37.416, P<0.001								
I behave in class	Male	156	20.6	524	69.0	73	9.6	6	0.8
	Female	255	28.3	599	66.4	41	4.5	7	0.8
	Chi=25.795, P<0.001								
Differences in aspects of school		Strongly agree		Agree		Disagree		Strongly agree	
		n	%	n	%	n	%	n	%
School is a waste of time for me Male		17	2.2	31	4.1	340	44.6	375	49.1
	Female	21	2.3	40	4.4	338	37.4	504	55.8
	Chi=8.797, P<0.05								
I mess about in lessons	Male	19	2.5	138	18.3	411	54.5	186	24.7
	Female	13	1.4	107	11.9	484	53.7	297	33.0
	Chi=23.641, P<0.001								

Table A2.2: Differences in School enjoyment and Mental well-being by gender

Differences in School enjoyment and Mental well-being	None of the time		Rarely		Some of the time		Often		All of the time	
	N	%	n	%	n	%	n	%	n	%
I have been feeling useful Male	22	2.9	89	11.7	264	34.8	322	42.5	61	8.0
Female	29	3.2	131	14.6	390	43.5	299	33.3	48	5.4
Chi=124.153, P<0.001										
I have been feeling relaxed Male	20	2.6	111	14.6	229	30.1	302	39.7	98	12.9
Female	54	6.0	243	27.1	312	34.7	243	27.1	46	5.1
Chi=91.891, P<0.001										
I have had energy to spare Male	29	3.8	140	18.5	220	29.0	273	36.0	96	12.7
Female	72	8.0	256	28.5	274	30.5	234	26.1	62	6.9
Chi=57.078, P<0.001										
I have been dealing with problems well Male	19	2.5	65	8.5	231	30.4	349	45.9	97	12.7
Female	33	3.7	105	11.7	334	37.2	340	37.8	87	9.7
Chi=21.294, P<0.001										
I have been thinking clear Male	9	1.2	62	8.1	203	26.7	372	48.9	115	15.1
Female	25	2.8	104	11.6	327	36.3	355	39.4	89	9.9
Chi=39.523, P<0.001										
I have been feeling good about myself Male	10	1.3	55	7.2	185	24.3	380	50.0	130	17.1
Female	57	6.3	160	17.8	297	33.0	297	33.0	89	9.9
Chi=117.152, P<0.001										
I have been feeling confident Male	7	0.9	53	7.0	204	26.8	352	46.2	146	19.2
Female	52	5.8	143	15.9	270	30.1	335	37.3	98	10.9
Chi=84.124, P<0.001										
I have been able to make up my mind about things Male	10	1.3	66	8.7	176	23.1	361	47.4	148	19.4
Female	30	3.3	101	11.2	305	33.9	358	39.8	106	11.8
Chi=47.591, P<0.001										
I have been feeling loved Male	11	1.5	43	5.7	136	18.0	314	41.5	252	33.3
Female	23	2.6	47	5.2	189	21.1	305	34.0	333	37.1
Chi=12.466, P<0.05										
I have been feeling cheerful Male	12	1.6	43	5.6	182	23.9	372	48.8	153	20.1
Female	27	3.0	81	9.0	290	32.3	366	40.8	134	14.9
Chi=32.509, P<0.001										

Appendix 3: Changes in dispositions over time

Students were asked similar or identical questions across some of the surveys allowing for comparisons over time to be made[50]. The following section looks at changes from Year 9 to Year 11 for selected questions. Students became increasingly less positive about school across the primary school period (Sammons et al., 2008). The same level of decline from Year 9 to Year 11 was not as evident, although some significant changes in responses did occur. The following tables represent matched samples where the same students answered similar or identical questions at different in Year 9 and Year 11. Students in Year 11 reported liking being at school less than in Year 9, although the majority were still positive (83 per cent).

Table A3.1: Changes in School enjoyment over time from Year 9 to Year 11

Changes over time	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%
On the whole I like being at school (Year 11)	256	19.2	852	64.1	164	12.3	58	4.4
On the whole I like being at school (Year 9)	287	21.6	905	68.0	121	9.1	17	1.3
Total n	1330, p<0.001							

Nearly all students (90%) in both Years 9 and 11 thought their school was a friendly place, although more students in Year 11 gave the most positive response (32% strongly agreed compared to 17% in Year 9).

Table A3.2: Changes over time from Year 9 to Year 11: This school is a friendly place

Changes over time	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%
This school is a friendly place (Year 11)	416	31.5	761	57.7	118	8.9	25	1.9
My school is a friendly place (Year 9)	219	16.6	969	73.4	120	9.1	12	12
Total n	1320, p<0.001							

Similarly, although approximately one out of ten students in Years 9 and 11 felt out of place at school, students in Year 11 were more likely to strongly disagree with this statement (48% compared to 41% of Year 9 students.

Table A3.3: Changes over time from Year 9 to Year 11: I feel out of place at school

Changes over time	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%
I feel out of place at school (Year 11)	36	2.7	112	8.4	542	40.9	636	48.0
I feel out of place at school (Year 9)	21	1.6	103	7.8	655	49.4	547	41.3
Total n	1326, p<0.001							

---

[50] Responses for students who had returned questionnaires in both Year 9 and Year 11 were analyzed here.

A similar pattern of responses was found for students feeling that school was a waste of time, although fewer students agreed with this statement (5-6%).

Table A3.4: Changes over time from Year 9 to Year 11: School is a waste of time for me

Changes over time	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	n	%
School is a waste of time for me (Year 11)	27	2.0	48	3.6	517	39.0	735	55.4
School is a waste of time for me (Year 9)	13	1.0	53	4.0	598	45.1	663	50.0
Total n	1327, p<0.001							

As Table A3.5 displays, levels of homework increased dramatically from Year 9 to Year 11, with the 6 per cent of students in Year 11 reporting doing at least an hour of homework a day compared to just 37 per cent in Year 9.

Table A3.5: Levels of daily homework in Years 9 and 11

Levels of daily homework	End of Year 9		End of Year 11	
	n	%	n	%
None	56	4.3	104	7.9
Less than 1 hour	212	58.6	413	31.4
1-2 hours	949	29.8	571	43.5
2-3 hours	81	6.2	166	12.6
More than 3 hours	16	1.2	60	4.6
Student n	1314	100.0	1314	100.0

At the end of Year 9, 87 per cent of students felt that Vocation qualifications were important compared to just 40 per cent in Year 11, probably related to GCSE/vocational course decisions and student importance of Vocational qualifications. Students were slightly more likely to think GCSEs were important at the end of Year 11 than in Year 9 (92% thought they were very important compared to 86% in Year 9). Older students were slightly less likely to feel A-levels and degrees were important, although the difference was small.

Table A3.6: Importance of qualifications in Years 9 and 11

Importance of qualifications	Very important		Fairly important		Not very important		Not at all important		Total %	n
	n	%	N	%	n	%	n	%		
5 good GCSEs or Equivalent Year 9	1139	85.8	170	12.8	14	1.1	5	0.4	100.0	1328
Year 11	1219	91.8	89	6.7	16	1.2	4	0.3	100.0	
Vocational Qualification for particular job Year 9	766	60.0	341	26.7	126	9.9	44	3.4	100.0	1328
Year 11	233	18.2	272	21.3	385	30.1	387	30.3	100.0	
'A' levels Year 9	989	75.6	257	19.6	53	4.0	10	0.8	100.0	1309
Year 11	988	75.5	161	12.3	117	8.9	43	3.3	100.0	
A university degree Year 9	802	61.3	334	25.5	144	11.0	29	2.2	100.0	1309
Year 11	768	58.7	307	23.5	156	11.9	78	6.0	100.0	

Appendix 4: Multiple risk behaviours in Year 11

High risk behaviours group was classified as two separate dichotomous outcomes:

Yes/No: 2 or more risk behaviours (n=273, 19.1%)
Yes/No: 3 or more risk behaviours (n=150, 10.5%)

Table A4.1: Relationship between child variables and high number of risk behaviours

Relationship between child variables and high number of risk behaviours			2 or more risk behaviours		3 or more risk behaviours	
			% risk engaged in risky behaviours	p	% risk engaged in risky behaviours	p
Gender		Boys	22.6	***	12.1	***
		Girls	15.9		9.1	
EAL		English first language	20.5	***	11.2	***
		EAL	4.1		2.4	
Ethnicity				**		**
Health problems in the early years				ns		ns
Developmental problems in the early years				ns		ns
Behavioural problems in the early years		0	8.5	#		ns
		1+	4.2			
SEN Year 11		Statement	10.0		7.5	
		School action+	53.3	***	40.0	***
		School Action	22.6		12.9	
		Not on register	16.9		8.3	
SEN Year 11 any		Yes	28.6	***	19.2	***
		No	6.9		8.3	

# p<0.10   * p<0.05   ** p<0.01   *** p<0.001   ns not significant

Table A4.2: Relationship between family demographics and high number of risk behaviours

Relationship between family demographics and high number of risk behaviours		2 or more risk behaviours		3 or more risk behaviours	
		% risk engaged in risky behaviours	p	% risk engaged in risky behaviours	p
Mothers age	16-25	31.6	**	17.3	*
Fathers age	16-25	ns		25.0	**
Highest parental qualifications		ns		Ns	
Marital status in the early years	Married	15.4		8.2	
	Single parent	28.0		15.9	
	Separated/divorced	26.5	***	13.2	***
	Living With partner	24.9		13.9	
	Widowed	40.0		40.0	
Family Structure in Year 11	Both natural parents	14.4		8.1	
	Natural parent and step parent	26.5	***	13.5	**
	Single parent	25.0		14.2	
	Other	40.0		16.7	
Mothers employment in the early years		ns		Ns	
Fathers Employment (Early years)	Full-time	15.6		8.5	
	Not working	23.9	***	15.5	**
	Absent father	28.7		14.3	
Combined Employment in the early years	Both working	16.2		8.6	
	One parent working	18.2		11.0	
	Both parents not working	22.0	***	12.0	#
	Father Absent/ Mother working	22.7		11.3	
	Father Ab./mother not working	33.7		16.8	
Highest SES in the early years	Professional	15.9		8.2	
	Skilled	19.6	**	10.8	**
	Semi/unskilled	28.4		16.6	
	Not working	23.3		13.3	
Family salary in Key stage 1		ns		ns	
Family salary in Key stage 2		ns		ns	
FSM	Yes	26.6	**	15.0	*
	No	17.8		9.6	

# p<0.10   * p<0.05   ** p<0.01   *** p<0.001   ns not significant

Table A4.3: Relationship between family demographics and high number of risk behaviours

Relationship between family demographics and high number of risk behaviours		2 or more risk behaviours		3 or more risk behaviours	
		% risk engaged in risky behaviours	p	% risk engaged in risky behaviours	p
Early Years HLE		ns		ns	
KS1 Computer use		ns		ns	
KS1 Parent-child interaction	High	16.1	*	7.8	*
	Medium	16.3		9.0	
	Low	24.0		14.9	
KS1 Outings		ns		ns	
KS1 Creative play		ns		ns	
KS2 Parent-Child Educational Computing		ns		ns	
KS2 HLE Parent-Child Interactive Learning Processes		ns		ns	
KS2 HLE Individual Child Activities		ns		ns	
KS2 HLE Computer Games		ns		ns	
KS3 Learning support and resources	High	17.5	p<.06	7.6	*
	Medium	14.4		7.8	
	Low	21.5		13.5	
KS3 Computer use	High	24.4	***	14.5	***
	Medium	16.9		8.1	
	Low	7.7		4.3	
KS3 Parental interest in school		ns		ns	
KS3 Academic enrichment	High	13.7	***	5.6	*
	Medium	15.2		8.3	
	Low	22.7		12.6	
KS3 Parental academic supervision	High	6.7	***	2.2	*
	Medium	16.7		8.2	
	Low	24.6		16.0	

Table A4.4: Relationship between neighbourhood and high number of risk behaviours

Relationship between neighbourhood and high number of risk behaviours		2 or more risk behaviours		3 or more risk behaviours	
		% risk engaged in risky behaviours	p	% risk engaged in risky behaviours	p
Parent view of neighbourhood Year 9	Low	23.9	*	14.7	*
	Medium/low	22.5		11.6	
	Medium/high	17.5		8.1	
	High	14.5		8.2	
Student view of safety to and from school in Year 9	Always	14.7	*	ns	
	Sometimes	21.5			
	Rarely/never	25.9			
Student view of safety in neighbourhood at weekends in Year 9	Always	14.8	**	7.6	*
	Sometimes	19.4		10.9	
	Rarely/never	31.6		18.4	
Pupil Year 9: evenings		ns		ns	
Year 11 IDACI rank	Most deprived/deprived	22.5	*	13.3	**
	Average	15.0		7.5	
	Less deprived/least deprived	16.4		8.1	

In addition students with high risk behaviours have higher deprivation in terms of IMD, IDACI and domains of IMD Employment and Crime (based on home postcode at entry of Pre-school). Students with high risk behaviours also live in areas with higher numbers of people with long term limiting illness.

Logistic regression: Child, family, HLE (final model)

A logistic regression on the multiple risk index behaviours was also carried, using a binary outcome representing three or more risk behaviours (n=150, 10.5%), to complement the analysis in Section two of two or more risky behaviours. Table A4.5 shows the significant child, family and home learning influences, with odds ratios, when tested in combination. As can be seen, girls are 33% less likely than boys to engage in multiple risk behaviours (odds ratio=0.67). Students with English as an additional language at entry to the study are also much less likely (83 per cent) than other students to be involved in multiple risk behaviours and younger students within the year group (summer born) were less likely to be involved in multiple risk behaviour than autumn born (37% less likely, odd ratio=0.63).

Family background was less predictive, once child influences were modelled. However, students from semi or unskilled families were more likely to engage in multiple risk behaviours than students from professional SES families (83% more likely, odd ratio=1.83). Marital status proved to be a predictor of multiple risk behaviours. Students from widowed families at entry to pre-school were much more likely than students living in married households to engage in multiple risk behaviours (eight times more likely, although the sample size was very small). Students with fathers in the 26-35 years age group or 36-45 years (at child's entry to the study) were the least likely to engage in multiple risky behaviours.

Home learning environment at different phases was also tested and two aspects of home learning in KS3 were found to be significant when tested in combination. High and medium computer use was found to be associated with multiple risk behaviour compared to low computer use (High odds ratio=3.52, medium odds ratio=1.99). In contrast, students with higher 'parental academic supervision' were less likely to engage in multiple risk behaviours (High odds ratio=0.14, medium odds ratio=0.44). In addition poorer parent-child interaction during primary school (KS1) was also significantly related to high risk behaviours (High odds ratio=0.54, medium odds ratio=0.63)

Table A4.5: Final logistic model for multiple risky behaviours (three or more)

Characteristics	3 or more risky behaviours	
Child	**Odd ratio**	**p**
Gender: female	0.67	*
English as an Additional Language	0.17	**
Age in year group: Summer (compared to autumn born)	0.63	*
Family	**Odd ratio**	**p**
Highest SES at pre-school entry: Skilled (compared to professional)	1.28	ns
Highest SES at pre-school entry: Semi skilled/unskilled (compared to	1.83	*
professional)	2.01	ns
Highest SES at pre-school entry: Not working (compared to professional)	1.70	ns
Marital status in the early years: Single	1.71	ns
Marital status in the early years: Separated/divorced	1.36	ns
Marital status in the early years: Living with partner	8.00	***
Marital status in the early years: Widowed	0.37	*
Father's age: 26-35 years old	0.31	*
Father's age: 36-45 years old	0.39	ns
Father's age: 46+ years old		
Home learning	**Odd ratio**	**p**
KS1 Parent-child interaction: High (compared to low)	0.54	#
KS1 Parent-child interaction: Medium (compared to low)	0.63	#
KS3 computer use: High (compared to low)	3.52	**
KS3 computer use: Medium (compared to low)	1.99	#
KS3 academic supervision: High (compared to low)	0.14	***
KS3 academic supervision: Medium (compared to low)	0.44	**

*p<0.05   **p<0.01   ***p<0.001   #p<0.10 --- Not fitted

Multiple logistic regression was used to ascertain whether school level variance. When individual background characteristics were accounted for, school variation was not significant.

Relationship between dispositions and multiple risky behaviours

There is overlap between social/behavioural outcomes and dispositions in Year 11 but chart A4.1 gives a bit more information about how students who were engaging in differing levels of risk feel in Year 11. Risk taking is particularly associated with lower *School enjoyment*, higher *Disaffected behaviour* in school, lower *Resistance to Peer Influence* and lower *General academic self-concept*.

Figure A4.1: Year 11 risk taking and disposition outcomes
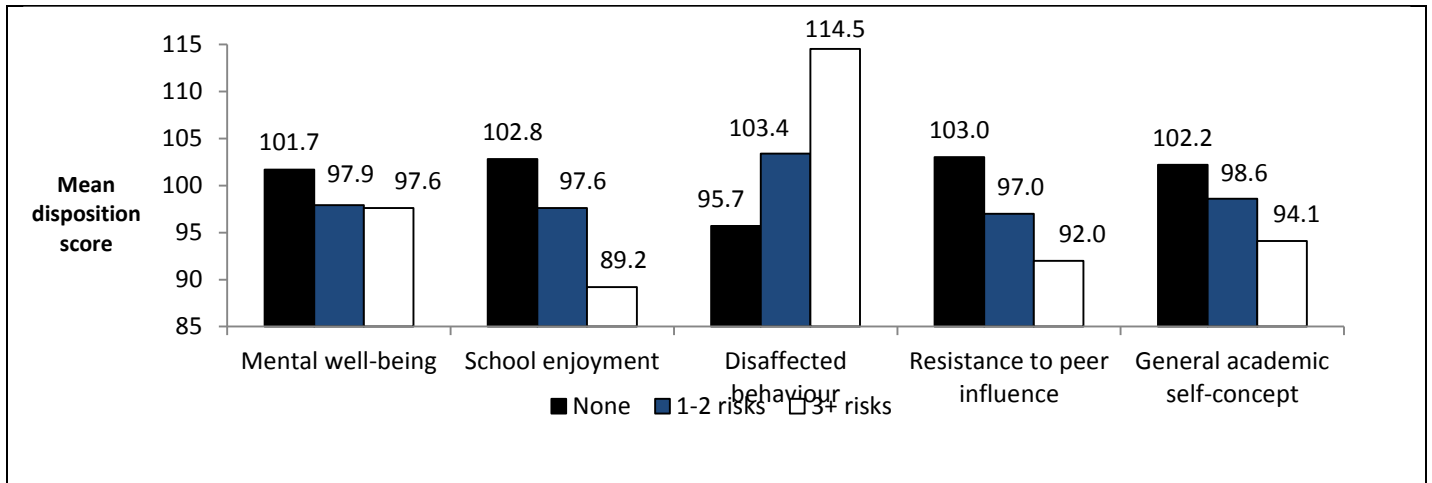
Individual risk behaviours: logistic regression analyses

In addition, logistic regression models were run for individual risk behaviours. Although girls report higher levels of smoking, when tested in combination gender becomes non significant, particularly with the inclusion of family SES. Students with EAL at entry to the study were much less likely to smoke or have taken drugs. Older students in the year group were more likely to drink regularly and have taken drugs.

Smoking is associated with lower SES groups, father not working, and younger mothers. Regular drinking is not related to family background to any significant degree, with only FSM eligibility associated with lower rates of regular drinking. Students from single parent families or other settings were more likely to report having taken drugs. Family home learning environment in terms of academic supervision and computer use shows a strong association with health risk behaviours. Lower computer use and higher academic supervision were associated with decreased likelihood of regular smoking, regular drinking or drug use. Students with higher parent-child interaction during early primary schooling (Key stage 1) also reported lower levels of smoking in Year 11. The full logistic models are described in table A4.6.

Table A4.6: Year 11 risk taking and disposition outcomes

Characteristics	Smoking n=155, 9.3%		Drinking n=148, 9.0%		Drugs n=319, 21.1%	
Child	**OR**	**p**	**OR**	**p**	**OR**	**p**
Gender: female	---	---	0.64	*	---	---
EAL	0.04	**	---	---	0.28	***
Age in year group: Summer	---	---	0.54	**	0.71	*
Age in year group: Spring	---	---	0.63	*	0.77	#
Family	**OR**	**p**	**OR**	**p**	**OR**	**p**
Highest SES: Skilled	1.71	*	---	---	---	---
Highest SES: Semi-skilled/unskilled	2.49	**	---	---	---	---
Highest SES: Not working	2.98	#	---	---	---	---
Family structure Yr 11: Step parent	1.53	#	---	---	---	---
Family structure Yr 11: Single parent	---	---	---	---	1.44	*
Family structure Yr 11: Other	---	---	4.62	**	2.08	#
Mother's age: 26-35 years old	0.51	*	---	---	---	---
Mother's age: 36+ years old	---	---	---	---	---	---
FSM: yes	---	---	0.42	*	---	---
Home learning	**OR**	**p**	**OR**	**p**	**OR**	**p**
KS1 Parent-child interaction: High	0.47	*	---	---	0.64	#
KS1 Parent-child interaction: Medium	0.55	**	---	---	---	---
KS3 Learning resources: High	0.46	*	---	---	---	---
KS3 Learning resources: Medium	---	---	---	---	---	---
KS3 computer use: High	3.00	**	2.32	*	2.09	**
KS3 computer use: Medium	2.35	*	2.02	*	1.76	**
KS3 academic supervision: High	0.25	**	---	---	0.38	**
KS3 academic supervision: Medium	0.55	**	0.57	*	0.58	**
Number of observations in model	1659		1641		1515	

*p<0.05   **p<0.01   ***p<0.001   #p<0.10

Multiple logistic regression models were run on the data. School level variation was only significant for the engagement in drugs outcome. When individual student attainment was accounted for, school variation was still significant.

Girls reported lower levels of anti-social behaviour and police involvement, and students with EAL at entry to the study were much less likely to report truanting. Truancy was associated with lower skilled SES groups, father not working, and younger mothers. Family structure and marital status were related to Anti-social behaviour and police involvement. Students from families including a step parent were more likely to be involved in anti-social behaviours and students who came from a separated or divorced family or had a widowed parent in the early years were more likely to have been in trouble with the police. Family home learning environment in terms of higher academic supervision and lower computer use showed a strong association with lower levels of anti-social behaviours.

Table A4.7: Final logistic model for anti-social risk behaviours

Characteristics	Anti-social n=148, 9.3%		Police n=137, 8.7%		Truancy n=326, 19.6%	
Child	OR	p	OR	p	OR	p
Gender: female	0.52	***	0.52	***	---	---
EAL	---	---	---	---	0.57	*
Family	OR	p	OR	p	OR	p
Highest SES: Skilled	---	---	---	---	1.64	**
Highest SES: Semi-skilled/unskilled	---	---	---	---	2.99	***
Highest SES: Not working	---	---	---	---	---	---
Family structure Yr 11: Step parent	1.80	*	---	---	---	*
Family structure Yr 11: Single parent	1.45	#	---	---	1.55	**
Family structure Yr 11: Other	---	---	---	---	2.14	#
Marital status: Parent widowed	---	---	5.44	***	---	---
Marital status: Separated/divorced	---	---	1.81	*	---	---
Mother's age: 26-35 years old	---	---	---	---	0.57	**
Mother's age: 36+ years old	---	---	---	---	0.62	*
Home learning	OR	p	OR	p	OR	p
KS1 Parent-child interaction: High	---	---	---	---	---	---
KS1 Parent-child interaction: Medium	---	---	0.58	*	---	---
KS3 computer use: High	2.49	**	3.33	**	2.37	**
KS3 computer use: Medium	---	---	2.21	**	1.54	*
KS3 academic supervision: High	0.29	**	0.25	*	0.34	**
KS3 academic supervision: Medium	0.54	*	---	---	0.66	*
Number of observations in model	1583		1583		1661	

*p<0.05   ** p<0.01   ***p<0.001   #p<0.10

N.B. KS1 Parent-child interaction: High for Police outcomes was not statistical significant (OR=0.64).

Lower GCSE attainment predicted increased risk behaviours across all six risky behaviours measured, in particular smoking (Odds Ratio for Top 20% GCSE =0.10, p<0.001 compared to bottom 20% in GCSE attainment), being in trouble with the police OR Top 20% GCSE =0.14, p<0.001 compared to bottom 20% in GCSE attainment) and truanting OR Top 20% GCSE =0.17, p<0.001 compared to bottom 20% in GCSE attainment). GCSE attainment was the least predictive for drinking (OR =0.56, p<0.10).

In addition, students with lower levels of Resistance to peer influence were found to be significantly more likely to engage in all risk behaviours except smoking. For example, students with the lowest levels of resistance (bottom scoring 20%) were nearly four times as likely to drink regularly (OR=3.69, p<0.001) than those with the highest resistance (top scoring 20%), even after attainment accounted for.

Figure A4.2: Resistance to Peer Influence and individual risk behaviours
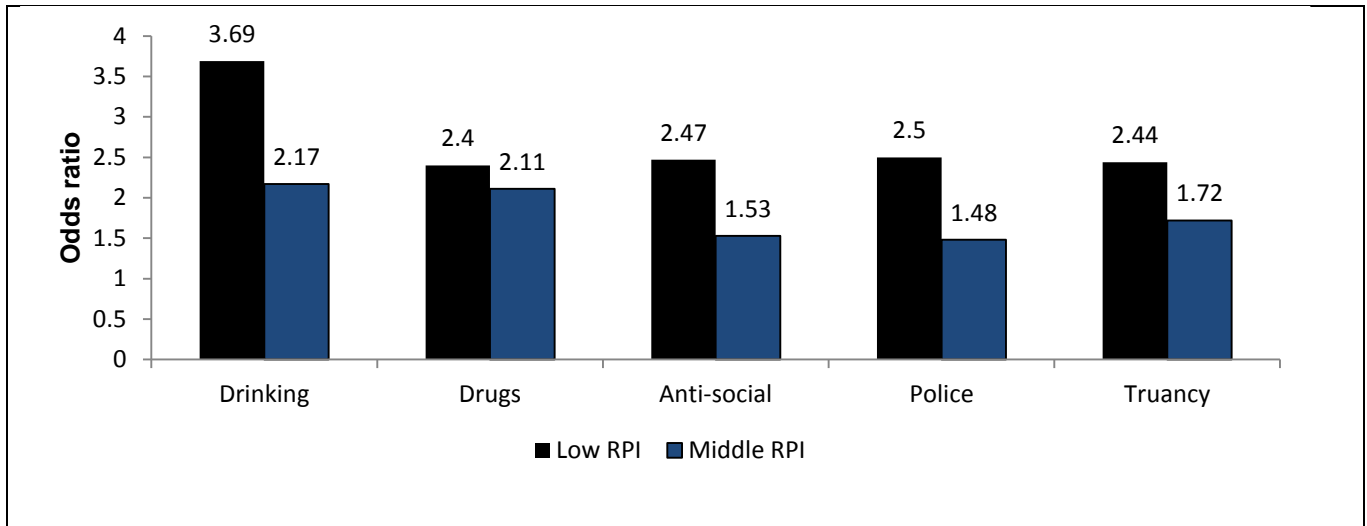
Appendix 5: Sources of questionnaire items

Warwick – Edinburgh mental well-being scale (WEMWBS)

The Warwick – Edinburgh mental well-being scale (WEMWBS) has been widely used in public health services (Stewart-Brown & Janmohamed, 2008) and has been used in the Scottish Government's '*Well? What do you think?*' survey, in the core module of the annual Scottish Health Survey since 2008[51], and as one of the Scottish Government's 45 National Indicators. The WEMWBS consists of 14 items related to mental well-being, using a 5 point Likert style scale. All items are positively and worded address aspects of positive mental health. The WEMWBS was developed by researchers at Warwick and Edinburgh Universities and is revised version of the existing *Affectometer 2 scale* (Kammann and Flett 1983). The Warwick-Edinburgh Well Being scale has been validated elsewhere (Tennant et al., 2007, Clarke et al., 2011; Stewart Brown et al., 2007). Reported Cronbach's alpha statistics from Tennant et al., (2007) and were 0.89 for a student sample and 0.91 for a population sample. The scale was also validated on a sample of young people aged 13-16 years and the Cronbach's alpha was 0.87. The EPPSE Year 11 sample Cronbach's alpha was 0.90 for the nine item scale, and did not improve with the removal of any of the items.

Figure A5.1: Distribution of the un-weighted Warwick-Edinburgh Mental well-being scale

n=1662, Mean = 49.0, Standard deviation=8.8

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[51] See for more details: http://www.healthscotland.com/understanding/population/Measuring-positive-mental-health.aspx
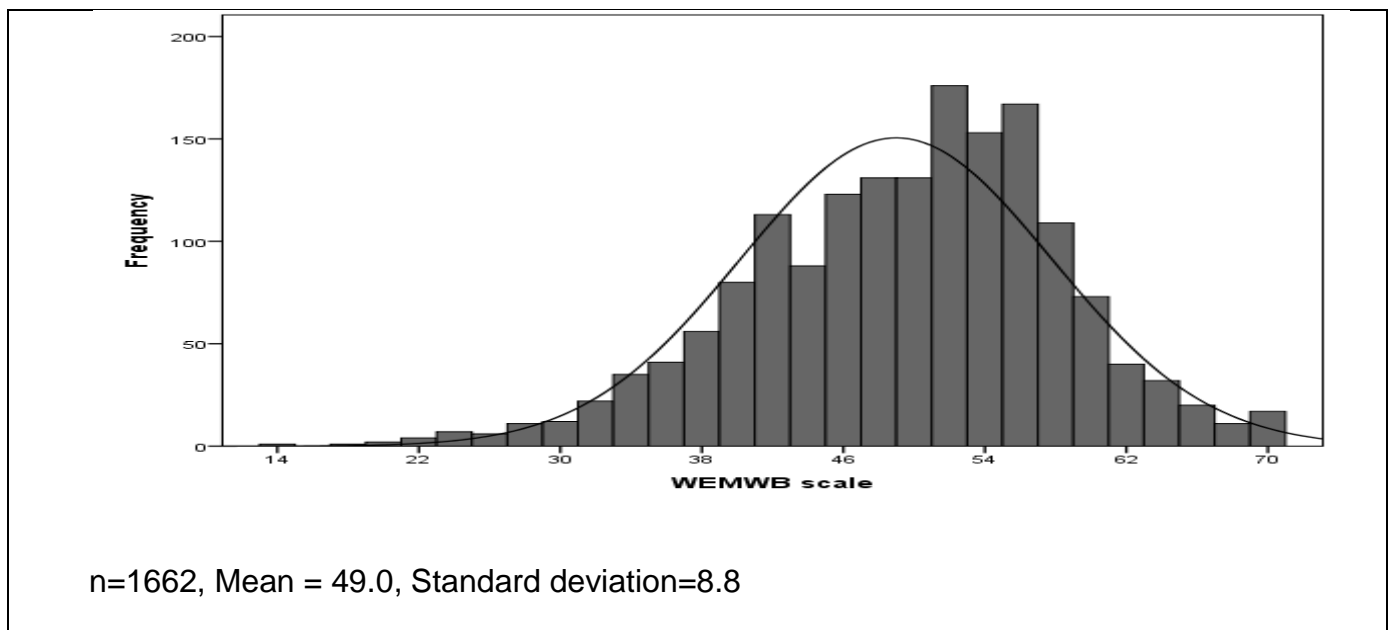
Table A5.1: Mean scores and proportions for key student groups, Mental well-being (original scale)

Characteristics	Mean WEMWBS score				Proportion in bottom 10% of WEMWBS	
Gender	n	Score	Std dev.	p	%	p
Boys	762	50.8	8.3	***	6.2	***
Girls	900	47.5	9.0		13.0	
Highest qualifications						
Higher (degree, higher degree, other professional)	497	49.8	8.3	*	6.8	**
School/vocational (16 academic, 18 academic, vocational)	943	48.9	8.8		10.4	
No qualifications	183	47.8	10.3		15.8	
Highest social class						
Professional	665	49.7	8.5	**	7.7	*
Skilled (non-manual & manual)	732	48.7	8.7		10.4	
Semi-skilled	171	48.1	9.7		14.0	
Unskilled	30	44.4	10.7		23.3	
Never worked	34	50.3	9.9		14.7	
Marital status						
Married	1086	49.4	8.5	**	9.0	#
Single, never married	153	46.6	10.2		16.3	
Never married, living with partner	226	49.0	9.2		10.6	
Separated/ Divorced	156	49.0	8.7		9.0	
Widow/widower/ Other	13	43.5	8.0		15.4	
Family structure Year 11						
Both natural parents	1040	49.5	8.4	**	8.7	#
Single parent	364	48.3	9.0		10.4	
Natural + step	219	47.9	9.8		13.4	
Other	34	46.7	10.1		17.6	

***p<0.001   **p<0.01   *p<0.05   #p<0.10

Table A5.2: Contextualised regression model for Year 11 Mental well-being (original scale)

Mental well-being original scale contextualised models	Coefficient	Sig.	Std. Error	Effect size
Gender (Girls compared to Boys)	-3.25	***	0.43	-0.38
Ethnicity (compared to White UK)				
White European	0.19		1.15	0.02
Black Caribbean	-2.09		1.36	-0.24
Black African	4.60	*	1.81	0.54
Any other ethnic group	0.06		1.67	0.01
Indian	0.38		1.42	0.04
Pakistani	0.03		1.01	0.00
Bangladeshi	-2.82		2.04	-0.33
Mixed Race	-2.31	*	0.92	-0.27
Marital status at entry to pre-school (compared to married)				
Missing	-1.86		1.70	-0.22
Single parent/Never married	-2.60	**	0.76	-0.30
Living with partner	-0.31		0.63	-0.04
Separated/divorced	0.01		0.74	-0.72
Widow/widower	-6.18	*	2.39	0.00
Key stage 3 HLE: supervision (compared to low)				
Missing	0.69		0.76	0.08
High	3.30	***	0.84	0.39
Medium	0.80		0.66	0.09
Intercept	50.25	***	0.67	
Residual, Mean square	73.09			
Number of students	1660			
R square	0.068			
Adjusted R square	0.058			
Std. Error of the Estimate	8.54947			
F	7.056	***		

* p<0.05, **p<0.01, ***p<0.001

Family structure in Year 11 was also tested instead of early years marital status, and was found to be a poorer predictor of Mental well-being. Being part of a step family predicted poorer well being weakly (ES=-0.14, p<0.10), but single parent and other family structure failed to be significant.

Table A5.3: Family process regression model for Year 11 Mental well-being (original scale)

Mental well-being original scale contextualised models+ family process	Coefficient	Sig.	Std. Error	Effect size
Gender (Girls compared to Boys)	-2.99	***	0.43	-0.35
Ethnicity (compared to White UK)				
White European	0.04		1.16	0.00
Black Caribbean	-1.78		1.36	-0.21
Black African	5.33	*	1.80	0.63
Any other ethnic group	0.46		1.67	0.05
Indian	0.33		1.40	0.04
Pakistani	0.05		1.01	0.01
Bangladeshi	-2.22		2.03	-0.26
Mixed Race	-2.03	*	0.92	-0.24
Marital status at entry to pre-school (compared to married)				
Missing	-1.19		1.68	-0.14
Single parent/Never married	-2.52	**	0.75	-0.30
Living with partner	-0.08		0.63	-0.01
Separated/divorced	0.13		0.73	0.02
Widow/widower	-5.95	*	2.36	-0.70
Key stage 3 HLE: supervision (compared to low)				
Missing	-2.36		2.42	-0.28
High	2.21	***	0.86	0.26
Medium	0.08		0.66	0.01
Family process: quarrel with parents - student's view (compared to quarrel sometimes or never)				
Missing	1.78		2.00	0.21
Often	-2.05	**	0.68	-0.24
Family process: severe family discord - student's view (compared to No discord reported)				
Missing	-0.21		2.39	-0.02
Discord in family	-2.19	**	0.67	-0.26
Family process: Eat meals together - students view (compared to 6-7 times a week)				
Missing	1.75		2.63	0.21
0-2 times a week	-1.40	*	0.62	-0.17
3-5 times a week	-0.63		0.55	-0.07
Family process: A time set for coming in on week day - parents' view (compared to never/sometimes)				
Missing	1.75		1.30	021
Always	2.34	*	1.17	0.28
Never goes out	1.12		1.22	0.13
Family process: Feel under pressure to do well - student's view (compared to strongly agree)				
Missing	-1.76		1.86	-0.21
Agree	0.01		0.75	0.00
Disagree	0.12		0.73	0.01
Strongly disagree	1.44	#	0.86	0.17

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

132

Mental well-being original scale contextualised models+ family process	Coefficient	Sig.	Std. Error	Effect size
Intercept	49.79	***	1.49	
Residual, Mean square	71.29			
Number of students	1660			
R square	0.099			
Adjusted R square	0.082			
Std. Error of the Estimate	8.443			
F	5.760			***

#p<0.10 *p<0.05   **p<0.01   ***p<0.001

Mental well-being original scale contextualised models+ family process	Coefficient	Sig.	Std. Error	Effect size
Intercept	49.79	***	1.49	

Table A5.4: Peer group regression model for Year 11 Mental well-being (original scale)

Mental well-being original scale contextualised models+ family process+ peer group	Coefficient	Sig.	Std. Error	Effect size
Gender (Girls compared to Boys)	-2.96	***	0.43	-0.35
Ethnicity (compared to White UK)				
White European	0.17		1.16	0.02
Black Caribbean	-1.86		1.35	-0.22
Black African	5.72	**	1.80	0.68
Any other ethnic group	0.61		1.65	0.07
Indian	0.27		1.40	0.03
Pakistani	-0.07		1.02	-0.01
Bangladeshi	-2.38		2.02	-0.28
Mixed Race	-2.03		0.91	-0.24
Marital status at entry to pre-school (compared to married)				
Missing	-1.39		1.67	-0.17
Single parent/Never married	-2.46	**	0.75	-0.29
Living with partner	0.05		0.63	0.01
Separated/divorced	0.31		0.73	0.04
Widow/widower	-6.12	*	2.35	-0.73
Key stage 3 HLE: supervision (compared to low)				
Missing	-2.68		2.41	-0.32
High	1.76	*	0.86	0.21
Medium	-0.31		0.66	-0.04
Family process: quarrel with parents - student's view (compared to quarrel sometimes or never)				
Missing	1.37		2.00	0.16
Often	-1.87	**	0.67	-0.22
Family process: severe family discord - student's view (compared to No discord reported)				
Missing	0.61		3.00	0.07
Discord in family	-2.05	**	0.67	-0.24
Family process: Eat meals together - students view (compared to 6-7 times a week)				
Missing	1.20		2.62	0.14
0-2 times a week	-1.33	*	0.62	-0.16
3-5 times a week	-0.68		0.55	-0.08
Family process: A time set for coming in on week day - parents' view (compared to never/sometimes)				
Missing	1.54		1.30	0.18
Always	2.14	#	1.16	0.26
Never goes out	1.09		1.22	0.13
Family process: Feel under pressure to do well - student's view (compared to strongly agree)				
Missing	-1.91		1.87	-0.23
Agree	0.14		0.76	0.02
Disagree	0.14		0.74	0.02
Strongly disagree	1.49	#	0.86	0.18
Peer group: excluded from friendship group (compared to not excluded in Year 9)				
Missing	-1.58		2.02	-0.19
Excluded	-2.77	**	0.83	-0.33

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Mental well-being original scale contextualised models+ family process+ peer group	Coefficient	Sig.	Std. Error	Effect size
Peer group: Mostly spend free time in Year 9 (compared to 'with friends')				
Missing	1.58		1.27	0.19
Spend it with family	0.17		0.55	0.02
Spend it alone	-2.58	**	0.79	-0.31
Intercept	50.55	***	1.52	
Residual, Mean square	70.20			
Number of students	1660			
R square	0.115			
Adjusted R square	0.096			
Std. Error of the Estimate	8.379			
F	5.875			***

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Separate regression models investigated educational influences, accounting only for student, family and HLE factors. Pre-school and primary school influences were not found. Secondary school CVA also did not predict *Mental well-being*. Ofsted overall judgement was tested and found to predict *Mental well-being* weakly ('Outstanding' ES=0.23, p<0.10; Good ES=0.22, p<0.10; Satisfactory ES=0.11, ns, compared to 'Inadequate' schools). This was not explained by better attainment in 'Outstanding' schools, as when GCSE attainment is added to the model similar Effect sizes were found ('Outstanding' ES=0.23, p<0.10; Good ES=0.25, p<0.05; Satisfactory ES=0.13, ns, compared to 'Inadequate' schools). In a separate model, Valuing students, Headteacher qualities and behaviour climate predicted *Mental well-being (Valuing students* ES=0.26, p<0.001; *Headteacher qualities* ES=0.17, p<0.01; and *Poor behaviour climate* ES=0.17, p<0.05).

General Academic Self-Concept (Marsh)

Eight items included in the *Life in Year 11* survey related to General Academic Self-Concept, taken from Marsh's Academic Self Description Questionnaire II (ASDQII[52]), a 136 item questionnaire that measures Academic self-concept in 16 different school subjects as well as a general school self-concept (Marsh 1992). The original 8 point Likert style response (Definitely false-Definitely true) was collapsed to a 4 point scale (Not at all like me, A bit like me, Quite a lot like me, Definitely like me). The ASDQII was designed specifically for early adolescents, and is based on earlier work on Academic Self-Concept known as the *Marsh/Shavelson model* (Shavelson et al., 1976). The items included in the scale were:

- I have always done well in most school subjects
- Compared to others my age I am good at most school subjects
- I get good marks in most school subjects
- Work in most school subjects is easy for me
- I learn things quickly in most school subjects
- I am satisfied with how well I do in most school subjects
- I am hopeless when it comes to most school subjects
- It is important to me to do well in most school subjects

Marsh has a number of general academic self concept scales (The *SDQ-I, SDQ-II instrument* and *SDQ-III[53])* and Marsh et al., (2006) have a 3 item 'General Academic self-concept' factor as part of the 14 Factor *Student Approaches to Learning (SAL) Instrument,* which has been evaluated as 'good':

- I learn things quickly in most school subjects.
- I'm good at most school subjects.
- I do well in tests in most school subjects

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[52] See ASDQii website for more details: http://www.self.ox.ac.uk/Instruments/ASDQII_PACKAGE/ASDQII.htm.

[53] http://www.self.ox.ac.uk/Instruments/SDQI/SDQI.htm; http://www.self.ox.ac.uk/Instruments/SDQII/SDQII.htm; http://www.self.ox.ac.uk/Instruments/SDQIII/SDQIII.htm

Figure A5.2: Distribution of the un-weighted ASDQII General academic self-concept scale

n=1665, Mean = 23.3, Standard deviation=4.8
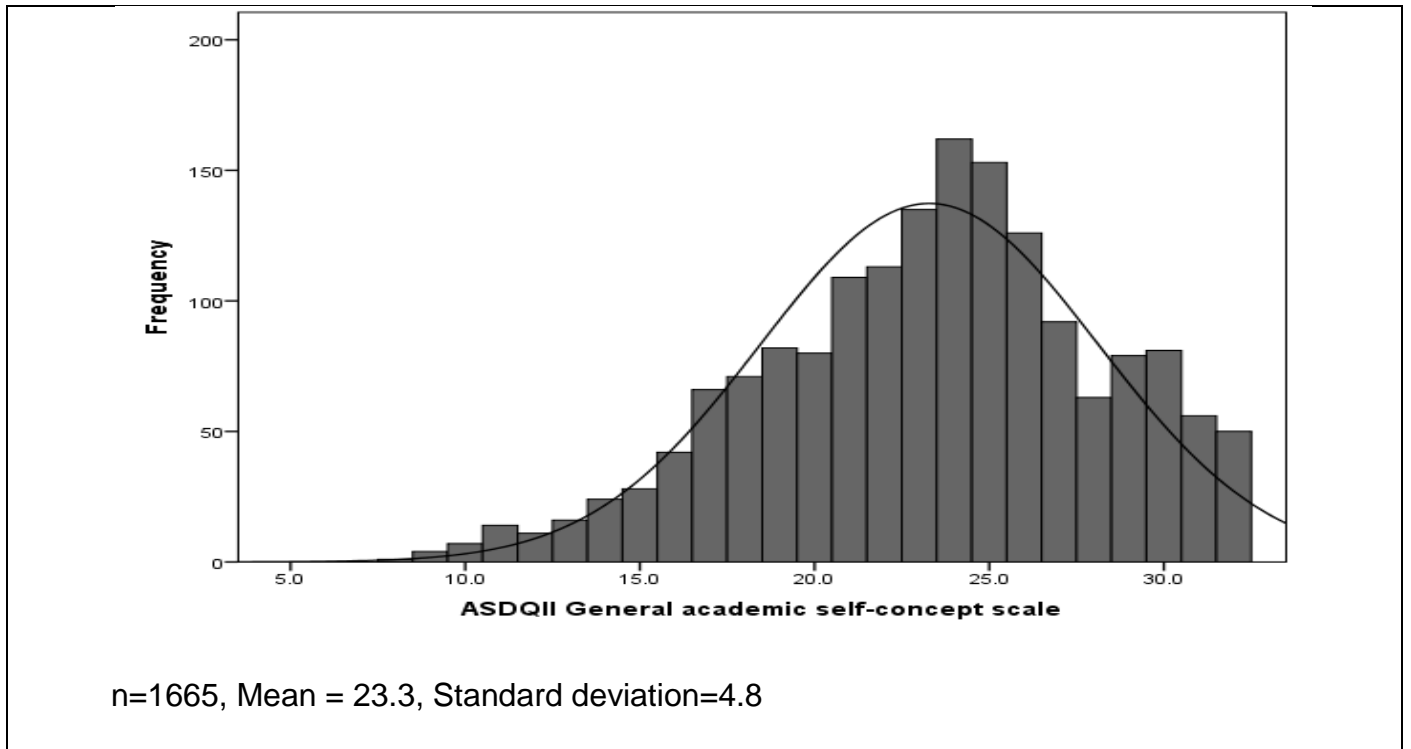
Internal validity

Reported Cronbach's alpha statistics for the whole ASDQII (including all domains) was reported by Jackson et al., (2011) at 0.90. The EPPSE Year 11 sample Cronbach's was 0.88 for the full eight item scale, and 0.89 for the final six item scale.

Table A5.5: Contextualised regression model, General Academic self-concept (original scale)

General academic self-concept (ASDQII) original scale contextualised models for original scale	Coef.	Sig.	Std. Error	Effect size
Age within the year group	0.09	**	0.03	0.13
Ethnicity (compared to White UK)				
White European	-0.37		0.63	-0.08
Black Caribbean	1.17		0.75	0.26
Black African	1.85	#	0.97	0.41
Any other ethnic group	0.94		0.92	0.21
Indian	1.25		0.78	0.27
Pakistani	1.68	**	0.60	0.37
Bangladeshi	1.08		1.12	0.24
Mixed Race	0.06		0.49	0.01
Mother's qualifications (compared to no qualifications)				
Missing	-0.08		0.98	-0.02
Vocational	-0.00		0.45	0.00
16 Academic	0.18		0.37	0.04
18 Academic	0.64		0.51	0.14
Degree	0.82	#	0.49	0.18
Higher degree	1.95	**	0.63	0.43
Other professional	2.04	**	0.93	0.45
Highest social class (compared professional)				
Missing	-1.34		1.37	-0.29
Skilled	-0.71	*	0.30	-0.16
Semi-skilled	-0.19		0.46	-0.04
Unskilled	-2.26	*	0.91	-0.50
Never worked	0.90		0.87	0.20
Family structure in Year 11 (compared to both parents)				
Missing	-5.51		1.91	-1.21
Single parent	-0.37		0.30	-0.08
One parent and step parent	-0.94	**	0.36	-0.21
Other arrangement	-1.98	*	0.83	-0.44
Early years HLE (compared to low)				
Missing	-0.18		0.90	-0.04
14-19	-0.38		0.51	-0.08
20-24	0.62		0.51	0.14
25-32	0.32		0.50	0.07
33-45	0.93	#	0.56	0.20
Key stage 3 HLE: Enrichment (compared to low)				
Missing	0.74		0.71	0.16
High	1.57	***	0.41	0.34
Medium	0.58	**	0.36	0.13
Key stage 3 HLE: Supervision (compared to low)				
Missing	-0.93		0.72	-0.20
High	1.38	**	0.46	0.30
Medium	0.21		0.36	0.05

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

General academic self-concept (ASDQII) original scale contextualised models for original scale	Coef.	Sig.	Std. Error	Effect size
Intercept	22.12	***	0.70	
Variance-school level	0.40		0.39	
Variance-student level	20.75		0.81	
Total variance	21.14			
Number of students	1664			
Deviance (-2 x Log Restricted-Likelihood	9748.907			
Intra-school correlation (ICC)	0.0187			
% Reduction student variance	7.4%			
% Reduction school variance	62.5%			
% Reduction total variance	9.8%			

$^{\#}$p<0.10   *p<0.05   **p<0.01   ***p<0.001

The Resistance to Peer Influence instrument

The measure used by the EPPSE project in Year 11 was an adapted version of *The Resistance to Peer Influence instrument* (Steinberg & Monahan 2007) that addresses the ability of students to act of their own volition as opposed to acting due to the influence of their peers. Nine adapted items were[54] :

- I think it's more important to be who I am than to fit in with the crowd
- I would do something that I know is wrong just to stay on my friend's good side
- I would go along with my friends just to keep them happy
- It would be pretty hard for my friends to get me to change my mind
- I would break the law if my friends said they would
- I would say my true opinion in front of my friends, even if I know they would make fun of me because of it
- I would take more risks when I am with my friends than I would when I am alone
- I would act the same way when I am alone as I would as I would when I am with my friends
- I would say things I don't really believe because I think it would make my friends respect me more

The items were presented in a four point Likert style scale (Not at all true to Very true), exploring different aspects of peer influence. Confirmatory factor analysis of the original instrument (Sternberg and Monahan 2007) confirmed that the scale was robust (NFI: 0.92; NNFI: 0.92; CFI: 0.94; RMSEA: 0.04).

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[54] See http://www.pathwaysstudy.pitt.edu/codebook/resistance-to-peer-influence-sb.html for more details of the original scale.

Internal validity

Reported Cronbach's alpha statistics from Stenberg and Monahan (2007) and other studies were 0.70 or above. The EPPSE Year 11 sample Cronbach's was 0.70 for the nine item scale, and 0.51 for the four item scale. Although the internal reliability was lower for the reduced scale the Confirmatory factor analysis was not found to be acceptable with the inclusion of the additional items. An additional analysis of the full un-weighted scale was also carried out.

Figure A5.3: Distribution of the un-weighted Resistance to peer influence scale

n=1664, Mean = 28.7, Standard deviation=3.8
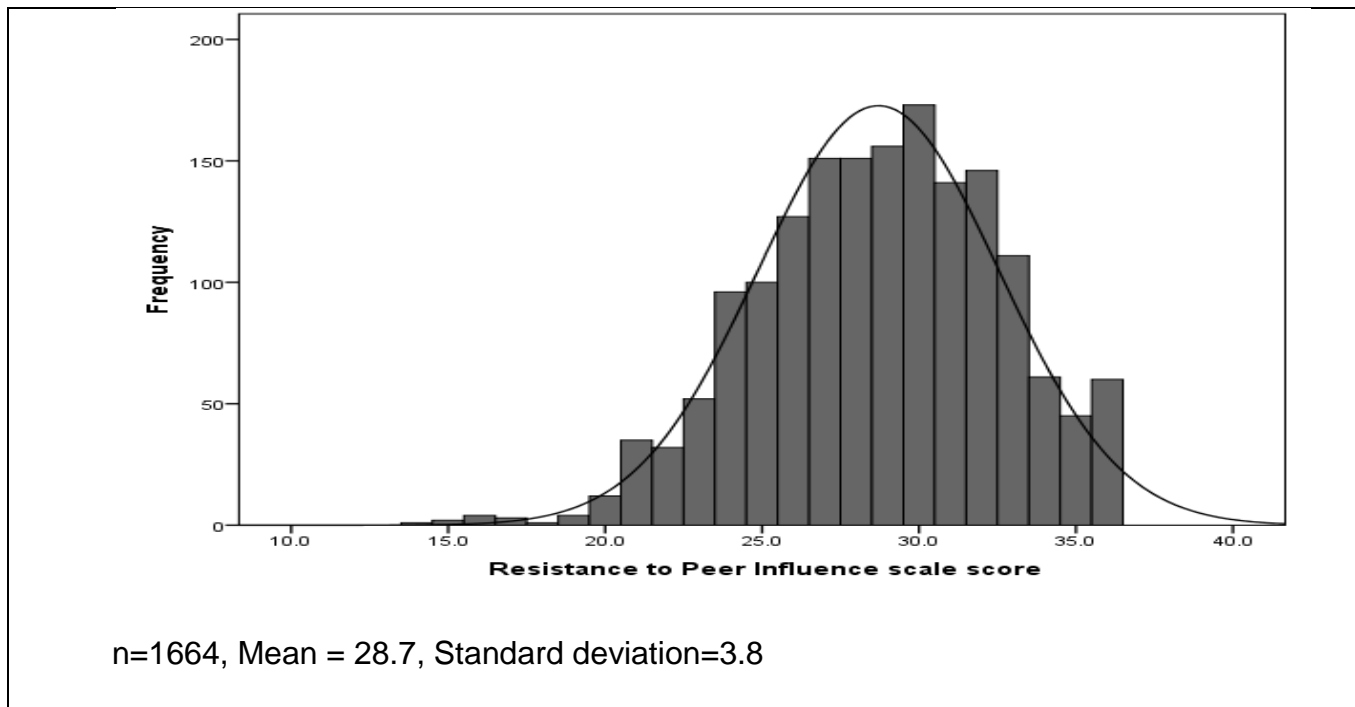
Table A5.6: Contextualised regression model for Year 11 Resistance to peer influence (original scale)

Resistance to peer influence (RPI) original scale contextualised model	Coefficient	Sig.	Std. Error	Effect size
Girls	1.13	0.186	0.30	***
Ethnicity				
White European	-0.84		0.51	-0.23
Black Caribbean	1.13	#	0.63	0.31
Black African	1.78	*	0.80	0.48
Any other ethnic group	0.85		0.74	0.23
Indian	-0.13		0.67	-0.04
Pakistani	0.30		0.56	0.08
Bangladeshi	-0.44		0.96	-0.12
Mixed Race	-0.45		0.42	-0.12
Highest qualifications (compared to no qualifications)				
Missing	0.46		0.80	0.12
Vocational	-0.06		0.41	-0.02
16 Academic	-0.14		0.33	-0.04
18 Academic	-0.27		0.40	-0.07
Degree	-1.02	**	0.36	-0.28
Higher degree	-1.30	**	0.43	-0.35
Other professional	-1.50	*	0.75	-0.41
Father absent/missing mother's qualifications	1.74		1.19	0.47
Key stage 2 HLE: Educational computing (compared to low)				
Missing	0.39		0.34	0.11
High	0.75	#	0.41	0.20
Medium	0.42		0.31	0.11
Key stage 3 HLE: Supervision (compared to low)				
Missing	1.04	***	0.34	0.28
High	1.68	***	0.37	0.45
Medium	1.14	***	0.29	0.31
% White British in neighbourhood	-0.01	#	0.01	
Intercept	27.83	***	0.68	
Variance-school level	0.12		0.24	
Variance-student level	13.71		0.53	
Total variance	13.83			
Number of students	1660			
Number of schools				
Deviance (-2 x Log Restricted-Likelihood	9055.060			
Intra-school correlation (ICC)	0.009			
% Reduction student variance	4.5%			
% Reduction school variance	72.3%			
% Reduction total variance	6.5%			

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Appendix 6: The Multiple Disadvantage Index

The Multiple Disadvantage Index was developed as part of the Early Years Transition & Special

Educational Needs (EYTSEN) Project which focuses on the identification of children 'at risk' of SEN (see Sammons et al., 2004). An index was created based on 10 indicators collected at entry to the study. In total: three child variables, six family variables, and one related to the Early years Home Learning Environment (HLE). All the variables were chosen because they related to low baseline attainment when looked at in isolation. Where indicators were closely related, such as first language and ethnic groups, only the most significant was included.

Child variables

- First language: English as an additional language (EAL)
- Large family: 3 or more siblings
- Pre-maturity / low birth weight

Family variables

- Mother's highest qualification level: no qualifications
- Social class of father's occupation: Semi-skilled, unskilled, never worked, absent father
- Father not employed
- Young Mother (Age 13-17 at birth of EPPE child)
- Lone parent
- Mother not working / unemployed

Home learning variables

- Low Early years Home Learning Environment (HLE)

Appendix 7: Final contextualised models

Table A7.1: Contextualised regression models for Year 11 Mental well-being

Mental well-being contextualised model	Coefficient	Sig.	Std. Error	Effect size
Gender (Girls compared to Boys)	-6.51	**	0.72	-0.45
Ethnicity (White UK)				
White European	0.24		1.95	0.02
Black Caribbean	-2.91		2.31	-0.20
Black African	7.46	*	3.07	0.52
Any other ethnic group	0.18		2.83	0.01
Indian	2.67		2.39	0.18
Pakistani	1.71		1.71	0.12
Bangladeshi	-3.73		3.45	-0.26
Mixed Race	-3.91	*	1.56	-0.27
Marital status at entry to pre-school (compared to married)				
Missing	-2.47	*	2.87	-0.17
Single parent/Never married	-4.70	*	1.28	-0.33
Married/Living with partner	-0.72		1.07	-0.05
Separated/divorced	0.17		1.25	0.01
Widow/widower	-7.63	#	4.04	-0.53
Academic supervision (compared to Low)				
Missing	1.65		1.29	0.11
High	6.15	*	1.43	0.43
Medium	1.52		1.11	0.11
Intercept	102.29	***	1.12	
Residual, Mean square	208.93			
Number of students	1661			
R square	0.081			
Adjusted R square	0.072			
Std. Error of the Estimate	14.454			
F	8.577			***

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

143

Table A7.2: Contextualised model for Year 11 School enjoyment

School enjoyment contextualised model	Coefficient	Sig.	Std. Error	Effect size
Ethnicity (compared to White UK)				
White European	0.21		1.93	0.01
Black Caribbean	-0.93		2.32	-0.07
Black African	2.15		3.01	0.15
Any other ethnic group	1.46		2.81	0.10
Indian	8.52	***	2.41	0.60
Pakistani	8.48	***	1.83	0.59
Bangladeshi	1.78		3.47	0.12
Mixed Race	-4.19	**	1.54	-0.29
Family structure in Year 11 (compared to both parents)				
Missing	-6.91		4.86	-0.48
Single parent	-1.71	#	0.95	-0.12
One parent and step parent	-2.45	*	1.17	-0.17
Other arrangement	-3.77		2.58	-0.26
Mother's employment (compared to not working)				
Missing	-3.68		5.44	-0.26
Full-time	2.64	*	1.04	0.19
Part-time	0.37		0.84	0.03
Self-employed/combination	2.00		1.69	0.14
Father's qualifications (compared to no qualifications				
Missing	3.30		5.50	0.23
Vocational	3.78	* *	1.42	0.27
16 Academic	4.06	* *	1.25	0.28
18 Academic	3.11	#	1.64	0.22
Degree	4.38	**	1.42	0.31
Higher degree	4.75	**	1.77	0.33
Other professional	2.17		3.75	0.15
Father absent	0.96		1.33	0.07
Early years HLE (compared to low)				
Missing	-0.12		2.83	-0.01
14-19	1.40		1.57	0.10
20-24	2.53		1.57	0.18
25-32	2.20		1.52	0.15
33-45	3.68	*	1.71	0.26
Key stage 3 HLE: Enrichment (compared to low)				
Missing	2.19		2.20	0.15
High	5.29	***	1.28	0.37
Medium	2.58	*	1.10	0.18
Key stage 3 HLE: Supervision (compared to low)				
Missing	1.88		2.21	0.13
High	8.42	***	1.44	0.59
Medium	3.27	**	1.12	0.23

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

School enjoyment contextualised model	Coefficient	Sig.	Std. Error	Effect size
Intercept	88.87	***	2.09	
Variance-school level	1.41		3.05	
Variance-student level	203.78		7.67	
Total variance	205.19			
Number of students	1672			
Number of schools	571			
Deviance (-2 x Log Restricted-Likelihood	13509.48			
Intra-school correlation (ICC)	0.0069			
% Reduction student variance	6.8%			
% Reduction school variance	80.3%			
% Reduction total variance	9.1%			

<div align="right">#p<0.10   *p<0.05   **p<0.01   ***p<0.001</div>

Table A7.3: Contextualised model for Year 11 Disaffected behaviour

Disaffected behaviour contextualised model	Coefficient	Sig	Std. Error	Effect size
Gender (Girls compared to boys)	-3.34	***	0.72	-0.23
Ethnicity (compared to White UK)				
White European	0.76		1.94	0.05
Black Caribbean	-4.25	#	2.32	-0.30
Black African	0.61		3.02	0.04
Any other ethnic group	-2.02		2.79	-0.14
Indian	-3.56		2.40	-0.25
Pakistani	-7.98	***	1.76	-0.56
Bangladeshi	-1.66		3.47	-0.12
Mixed Race	1.02		1.54	0.07
Family structure in Year 11 (compared to both parents)				
Missing	7.16		4.88	0.50
Single parent	1.08		0.95	0.08
One parent and step parent	2.43	*	1.18	0.17
Other arrangement	8.19	***	2.59	0.57
Key stage 2 HLE: Parent-child interaction (compared to low)				
Missing	-2.98		1.21	-0.21
High	-4.76	**	1.32	-0.33
Medium	-3.29	**	1.07	-0.23
Father's employment: early years (compared to full-time)				
Missing	2.49		3.07	0.17
Part-time	-0.62		2.48	-0.04
Self employed/combination	0.62		1.11	0.04
Not working	2.94	*	1.26	0.21
Father absent	1.23		1.14	0.09
Key stage 3 HLE: Enrichment (compared to low)				
Missing	-1.91		2.21	-0.13
High	-5.67	***	1.26	-0.40
Medium	-2.45	*	1.10	-0.17

<div align="right">#p<0.10   *p<0.05   **p<0.01   ***p<0.001</div>

Disaffected behaviour contextualised model	Coefficient	Sig	Std. Error	Effect size
Key stage 3 HLE: Supervision (compared to low)				
Missing	-1.32		2.21	-0.09
High	-6.81	***	1.44	-0.47
Medium	-2.10	#	1.12	-0.15
Intercept	109.05	***	1.63	
Variance-school level	1.38		2.93	
Variance-student level	205.60		7.70	
Total variance	206.98			
Number of students	1670			
Number of schools	571			
Deviance (-2 x Log Restricted-Likelihood	13543.43			
Intra-school correlation (ICC)	0.007			
% Reduction student variance	6.1%			
% Reduction school variance	78.0%			
% Reduction total variance	8.1%			

$^{\#}p<0.10$ $*p<0.05$ $**p<0.01$ $***p<0.001$

N.B. The model was also tested without father's employment in the early years as the 'father absent' category could be possibly have a multicollinear function with single parent in Year 11. Estimates for 'single parent' in Year 11 were similar without father's employment in the model so the model above was considered acceptable.

Table A7.4: Contextualised model for Year 11 Resistance to Peer Influence

Resistance to Peer Influence contextualised model	Coefficient	Sig	Std. Error	Effect size
Gender (Girls compared to Boys)	4.83	***	0.72	0.34
Ethnicity (compared to White UK)				
White European	-2.88		1.96	-0.20
Black Caribbean	6.29	***	2.31	0.44
Black African	5.18	#	3.01	0.36
Any other ethnic group	3.28		2.84	0.23
Indian	2.05		2.41	0.14
Pakistani	3.07	#	1.82	0.21
Bangladeshi	2.15		3.55	0.15
Mixed Race	-1.43		1.56	-0.10
Highest parental qualifications (compared to no qualifications				
Missing	3.88		3.01	0.27
Vocational	0.93		1.58	0.07
16 Academic	0.57		1.26	0.04
18 Academic	-1.19		1.52	-0.08
Degree	-2.91	*	1.39	-0.20
Higher degree	-4.31	**	1.64	-0.30
Other professional	-2.78		2.92	-0.19
Father absent	7.37		4.62	0.51
Key stage 3 HLE: Supervision (compared to low)				
Missing	3.82	**	1.30	0.27
High	6.96	***	1.44	0.48
Medium	4.73	***	1.12	0.33
Intercept	93.60	***	1.57	
Variance-school level	3.86		3.58	
Variance-student level	206.23		7.87	
Total variance	210.09			
Number of students	1663			
Number of schools	570			
Deviance (-2 x Log Restricted-Likelihood	1353.43			
Intra-school correlation (ICC)	0.018			
% Reduction student variance	5.8%			
% Reduction school variance	43.6%			
% Reduction total variance	7.0%			

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Table A7.5: Contextualised model for Year 11 General academic self-concept

General Academic self-concept contextualised model	Coefficient	Sig.	Std. Error	Effect size
Age (in months within year group)	0.34	**	0.10	0.17
Ethnicity (compared to White UK)				
White European	-1.09		1.94	-0.09
Black Caribbean	3.36		2.32	0.24
Black African	5.46	#	3.00	0.39
Any other ethnic group	3.06		2.82	0.22
Indian	3.43		2.42	0.25
Pakistani	4.94	**	1.91	0.35
Bangladeshi	4.60		3.46	0.33
Mixed Race	0.13		1.53	0.01
Family structure in Year 11 (compared to both parents)				
Missing	-18.29	**	5.87	-1.31
Single parent	-1.30		0.91	-0.09
One parent and step parent	-2.46	*	1.10	-0.18
Other arrangement	-5.25		2.56	-0.38
Highest social class (compared professional)				
Missing	-3.17		4.33	-0.23
Skilled	-2.32	*	0.94	-0.17
Semi-skilled	-0.22		1.44	-0.02
Unskilled	-5.74	*	2.83	-0.41
Never worked	2.34		2.69	0.17
Mother's qualifications (compared to no qualifications				
Missing	1.36		3.06	0.10
Vocational	-0.63		1.39	-0.05
16 Academic	-0.24		1.16	-0.02
18 Academic	1.08		1.58	0.08
Degree	2.27		1.53	0.16
Higher degree	5.81	**	1.96	0.42
Other professional	6.30	*	2.88	0.44
Mothers age (16-25)				
Missing	-0.06		2.03	-0.00
26-35 years at entry to pre-school	2.67	*	1.28	0.19
36 years or above at entry to pre-school	2.80	*	1.43	0.20
Early years HLE (compared to low)				
Missing	-0.08		2.78	-0.01
14-19	-0.97		1.56	-0.07
20-24	2.27		1.57	0.16
25-32	1.11		1.53	0.08
33-45	3.64	*	1.72	0.26
Key stage 3 HLE: Enrichment (compared to low)				
Missing	2.82		2.20	0.20
High	5.49	***	1.27	0.39
Medium	2.24	*	1.10	0.16

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

General Academic self-concept contextualised model	Coefficient	Sig.	Std. Error	Effect size
Key stage 3 HLE: Supervision (compared to low)				
Missing	-3.99	#	2.21	-0.29
High	3.03	*	1.42	0.22
Medium	-0.55		1.11	-0.04
Intercept	94.90	***	2.48	
Variance-school level	5.43		4.06	
Variance-student level	195.08		7.66	
Total variance	200.51			
Number of students	1665			
Number of schools	569			
Deviance (-2 x Log Restricted-Likelihood	13405.32			
Intra-school correlation (ICC)	0.0271			
% Reduction student variance	8.3%			
% Reduction school variance	57.9%			
% Reduction total variance	11.1%			

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Appendix 8: School and teaching process factors

Table A8.1: School and teaching process factors, Year 9

Teacher support (Cronbach's α=0.86)	**School environment** (Cronbach's α=0.75)
- Most teachers mark & return my homework promptly - Most teachers make helpful comments on my work - Teachers praise me when I work hard - Teachers tell me how to make my work better - Teachers make me feel confident about my work - Teachers are available to talk to me privately - Teachers will help me if I ask for help - I get rewarded for good behaviour	- My school has attractive buildings - Classrooms are nicely decorated & clean - Toilets are well cared for & clean - My school is well organised - People think my school is a good school
Valuing students (Cronbach's α=0.78)	**Headteacher qualities** (Cronbach's α=0.72)
- The school values students' views - Teachers listen to what students say about the school - The teachers in this school show respect for all students - Teachers are unpleasant if I make mistakes - Teachers are friendly towards me	- I often see the headteacher around the school - The headteacher makes sure students behave well - The headteacher is interested in how much we learn
Poor Behaviour climate (Cronbach's α=0.72)	**Emphasis on learning** (Cronbach's α=0.68)
- Most students want to leave this school as soon as they - can - Students who work hard are given a hard time by others - Most students take no notice of school rules - There are often fights (in or around school) - Some kids bring knives or weapons into school	- Most students want to do well in exams - Teachers expect me to do my best - The lessons are usually 'challenging' but 'do-able' - Most teachers want me to understand something, not - just memorise it - Most teachers believe that mistakes are OK so long as we learn
Teacher discipline (Cronbach's α=0.62)	**Learning resources** (Cronbach's α=0.70)
- Teachers make sure that it is quiet during lessons - Teachers make clear how I should behave - Teachers take action when rules are broken - Teachers are not bothered if students turn up late	- There are enough computers - Science labs are good - We have a good library - We get enough time using computers in subject lessons

Table A8.2: School and teaching process factors, Year 11

Teacher professional focus (Cronbach's α=0.77)	**Positive relationships** (Cronbach's α=0.79)
• If a pupil is bullied, they would feel able to tell a teacher about it • Teachers spend all of the time in lessons teaching us or making sure we are working • Teachers have the same rules about behaviour • Teachers in this school come to their lessons on time • Teachers mark and return homework promptly • Teachers make sure that it is quiet and orderly during lessons • Teachers in this school believe that learning is important	• Teachers in this school treat the pupils fairly • My teachers are interested in me as a person • Teachers in this school show respect for the pupils • The teachers and pupils get on well in this school
Monitoring students (Cronbach's α=0.69)	**Formative feedback** (Cronbach's α=0.83)
• I am set targets for my learning by my teachers which are individual • to me and not for the whole class • The school has rewards for pupils who work hard or make good progress even if they do not get high grades • A pupil who works hard or makes good progress is noticed and praised • Teachers notice those pupils who are not working as well as they could and try to make them work harder	• Teachers help me when I am stuck • Teachers make helpful comments on my work • Teachers tell me how to make my work better

Academic ethos (Cronbach's α=0.78)

- Most pupils at this school want to do well in exams
- Most pupils at this school want to continue their education after GCSEs
- Most pupils at this school are interested in learning

Table A8.3: Correlations between Views of school factors in Year 11

Year 11 Views of school factors	Positive relationships	Monitoring students	Formative feedback	Academic ethos
Teacher Professional Focus	0.62**	0.52**	0.56**	0.42**
Positive relationships	1	0.47**	0.52**	0.38**
Monitoring students		1	0.52**	0.33**
Formative feedback			1	0.36**

**p<0.001

Table A8.4: Correlations between Views of school factors in Year 9 and Year 11

Year 11 / Year 9 Views of school factors	Mental well-being	School enjoyment	Disaffected behaviour	Resistance to peer influence	General Academic self concept
Teacher Professional Focus	0.26**	0.52**	-0.35**	0.13**	0.22**
Positive relationships	0.28**	0.57**	-0.30**	0.07*	0.25**
Monitoring students	0.24**	0.39**	-0.24**	0.12**	0.16**
Formative feedback	0.24**	0.47**	-0.29**	0.13**	0.21**
Academic ethos	0.15**	0.33**	-0.18**	0.06*	0.10**

**p<0.001

Appendix 9: Relationship between earlier dispositions and Year 11 outcomes

Table A9.1: Correlations between Year 2 and Year 11 dispositions

Year 2 and Year 11 dispositions	Year 11 disposition outcomes				
	Mental Well-being	**School Enjoyment**	**Disaffected behaviour**	**Resistance to Peer Influence**	**General Academic Self-Concept**
Enjoyment of school	0.04	0.08**	-0.08**	0.10**	
	1421	1429	1427	1422	1427
Behaviour self-concept	0.04	0.08**	-0.17**	0.09**	0.05*
	1421	1429	1427	1422	1427
Academic self-concept	0.04	0.09**	-0.11**	0.03	0.12**
	1421	1429	1427	1422	1427
Anxiety and isolation	-0.08**	-0.12**	0.14**	-0.11**	-0.08**
	1416	1424	1422	1417	1422

** Significant at the p<0.01 level

Appendix 10: Final contextualised Value Added models

Table A10.1: Contextualised value added regression models for Year 11 Mental well-being

Mental well-being contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Year 5 Anxiety and Isolation	-0.13	***	0.03	-0.27
Year 5 Academic Self-Concept	0.08	**	0.03	0.16
Gender (Girls compared to Boys)	-6.62	**	0.75	-0.47
Ethnicity (compared to White UK)				
White European	1.31		2.09	0.09
Black Caribbean	-3.87		2.35	-0.27
Black African	7.48	*	3.18	0.53
Any other ethnic group	0.43		2.86	0.03
Indian	1.43		2.57	0.10
Pakistani	1.66		1.81	0.12
Bangladeshi	-2.48		3.76	-0.17
Mixed Race	-3.61	*	1.62	-0.25
Marital status at entry to pre-school (compared to married)				
Missing	-19.09	*	7.45	-1.34
Single parent/Never married	-6.16	***	1.74	-0.43
Married/Living with partner	-0.40		1.13	-0.03
Separated/divorced	-0.70		1.56	-0.05
Widow/widower	-10.99	*	4.37	-0.77
Father's qualifications (compared to no qualifications)				
Missing	19.10		7.54	1.34
Vocational	2.90	*	1.50	0.20
16 Academic	1.70	#	1.31	0.12
18 Academic	3.18		1.72	0.22
Degree	1.38	#	1.42	0.10
Higher degree	2.64		1.76	0.19
Other	8.06	*	3.97	0.57
Absent	3.87	*	1.65	0.27
Key stage 3 HLE: supervision (compared to low)				
Missing	2.70	*	1.37	0.41
High	5.78	***	1.49	0.19
Medium	1.46		1.18	0.10
Intercept	100.10	***	1.59	
Residual, Mean square	202.18			
Number of students	1493			
R square	0.122			
Adjusted R square	0.106			
Std. Error of the Estimate	14.22			
F	7.599			***

#p<0.10   * p<0.05, **p<0.01, ***p<0.001

Table A10.2: Contextualised value added model for Year 11 School enjoyment

School enjoyment contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Year 5 Enjoyment of school	0.10	***	0.03	0.26
Year 5 Anxiety and isolation	-0.07	*	0.03	-0.13
Year6 Academic Self-concept	0.08	*	0.03	0.20
Year6 Behaviour Self-concept	0.08	*	0.03	0.20
Ethnicity (compared to White UK)				
White European	-0.03		2.01	-0.00
Black Caribbean	0.80		2.28	0.06
Black African	1.38		3.05	0.10
Any other ethnic group	-0.62		2.79	-0.05
Indian	7.59	**	2.53	0.55
Pakistani	7.06	***	1.84	0.52
Bangladeshi	0.83		3.63	0.06
Mixed Race	-3.47	*	1.55	-0.25
Family structure in Year 11 (compared to both parents)				
Missing	-10.58	#	5.72	-0.77
Single parent	-1.37		0.96	-0.10
One parent and step parent	-2.35	*	1.18	-0.17
Other arrangement	-2.11		2.69	-0.15
Father's qualifications (compared to no qualifications				
Missing	0.09		6.36	0.00
Vocational	3.15	*	1.47	0.23
16 Academic	3.39	**	1.29	0.25
18 Academic	1.83		1.70	0.13
Degree	3.02	#	1.55	0.22
Higher degree	2.71		1.90	0.20
Other professional	3.41		3.88	0.25
Father absent	0.14		1.38	0.01
Highest social class (compared professional)				
Missing	-7.33		5.92	-0.54
Skilled	-2.32	*	0.95	-0.17
Semi-skilled	-2.77	#	1.45	-0.20
Unskilled	0.72		2.89	0.05
Never worked	1.59		2.76	0.12
Early years HLE (compared to low)				
Missing	3.17		2.90	0.23
33-45	3.18	#	1.76	0.23
25-32	2.41		1.56	0.18
20-24	2.10		1.62	0.15
14-19	2.11		1.61	0.15
Key stage 3 HLE: Enrichment (compared to low)				
Missing	3.54		2.27	0.26
High	5.18	***	1.30	0.38
Medium	2.88	**	1.11	0.21

<div align="center">#p<0.10   *p<0.05   **p<0.01   ***p<0.001</div>

School enjoyment contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Key stage 3 HLE: Supervision (compared to low)				
Missing	0.88	***	2.31	0.06
High	7.50	*	1.47	0.55
Medium	2.60	***	1.16	0.19
Intercept	91.82		2.27	
Variance-school level	0.000		0.000	
Variance-student level	187.38		6.94	
Total variance	187.38			
Number of students	1501			
Deviance (-2 x Log Restricted-Likelihood	11995.61			
Intra-school correlation (ICC)	0.0000			
% Reduction student variance	14.5%			
% Reduction school variance	100.0			
% Reduction total variance	14.5%			

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Table A10.3: Contextualised value added model for Year 11 Disaffected behaviour

Disaffected behaviour contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Year 5 Enjoyment of school	-0.09	**	0.00	-0.18
Year 5 Behaviour Self-concept	-0.15	***	0.03	-0.30
Gender (Girls compared to Boys)	-1.98	**	0.75	-0.14
Ethnicity (compared to White UK)				
White European	-1.20		2.01	-0.09
Black Caribbean	-5.08	*	2.30	-0.37
Black African	0.26		3.04	0.02
Any other ethnic group	-0.81		2.79	-0.06
Indian	-2.21		2.52	-0.16
Pakistani	-6.89	***	1.77	-0.50
Bangladeshi	-0.93		3.65	-0.07
Mixed Race	0.57		1.56	0.04
Family structure in Year 11 (compared to both parents)				
Missing	12.85		5.75	0.93
Single parent	0.51		0.96	0.04
One parent and step parent	2.19	#	1.19	0.16
Other arrangement	4.88	#	2.71	0.35
Father's employment (compared to full-time)				
Missing	4.44		3.29	0.32
Part-time	0.34		2.57	0.02
Self employed/combination	0.03		1.13	0.00
Not working	4.40	**	1.30	0.32
Father absent	2.48	*	1.16	0.18
Key stage 1 HLE: Parent-child interaction (compared to low)				
Missing	-3.20	*	1.23	-0.24
High	-5.09	***	1.33	-0.37
Medium	-3.28	*	1.07	-0.24
Key stage 3 HLE: Enrichment (compared to low)				
Missing	-2.30		2.27	-0.17
High	-5.38	***	1.28	-0.39
Medium	-2.74	*	1.11	-0.20
Key stage 3 HLE: Supervision (compared to low)				
Missing	-1.13		2.29	-0.08
High	-6.03	***	1.48	-0.44
Medium	-1.87		1.16	-0.13
Intercept	108.19	***	1.67	
Variance-school level	0.30		2.95	
Variance-student level	191.63		7.63	
Total variance	191.93			
Number of students	1506			
Deviance (-2 x Log Restricted-Likelihood	12097.29			
Intra-school correlation (ICC)	0.0016			
% Reduction student variance	10.4%			
% Reduction school variance	93.5%			
% Reduction total variance	12.2%			

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

157

Table A10.4: Contextualised value added model for Year 11 Resistance to peer influence

Resistance to peer influence contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Year 5 Enjoyment of school	0.09	**	0.03	0.19
Year 5 Behaviour Self-concept	0.06	*	0.03	0.13
Gender (Girls compared to Boys)	4.32	***	0.77	0.31
Ethnicity (compared to White UK)				
White European	-2.27		2.08	-0.16
Black Caribbean	8.25	**	2.38	0.59
Black African	6.62	*	3.17	0.47
Any other ethnic group	3.64		2.89	0.26
Indian	1.60		2.61	0.11
Pakistani	3.40	#	1.90	0.24
Bangladeshi	-0.67		3.80	-0.05
Mixed Race	-0.49		1.62	-0.03
Birth weight (compared to normal)				
Missing	2.40		3.29	0.17
Very low	-0.58		3.75	-0.04
Low	-2.83	#	1.50	-0.20
Highest parental qualifications (compared to no qualifications)				
Missing	0.41		-0.93	0.03
Vocational	-0.80		-2.66	-0.07
16 Academic	-3.70		-4.68	-0.06
18 Academic	-4.18		6.37	-0.19
Degree	-0.41	*	-0.93	-0.26
Higher degree	-0.80	*	-2.66	-0.33
Other professional	-3.70		-4.68	-0.30
Highest social class (compared to professional non-manual)				
Missing	1.40		1.78	0.10
Other professional (manual)	2.11		1.48	0.15
Skilled (non-manual)	4.81	**	1.76	0.34
Skilled (manual)	2.94	#	1.71	0.21
Semi-skilled	1.92		1.95	0.14
Unskilled	2.51		2.99	0.18
Never worked	-4.31		3.68	-0.31
Key stage 3 HLE: Supervision (compared to low)				
Missing	2.69		1.38	0.19
High	5.56	***	1.50	0.39
Medium	3.85	**	1.19	0.27

#p<0.10 *p<0.05 **p<0.01 ***p<0.001

Resistance to peer influence contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Intercept	93.61	***	2.32	
Variance-school level	4.35		3.93	
Variance-student level	198.57		8.11	
Total variance	202.92		1.38	
Number of students	1501			
Deviance (-2 x Log Restricted-Likelihood	12119.497			
Intra-school correlation (ICC)	0.0215			
% Reduction student variance	7.6%			
% Reduction school variance	42.0%			
% Reduction total variance	8.7%			

#p<0.10   *p<0.05   **p<0.01   ***p<0.001

Table A10.5: Contextualised value added models for Year 11 General academic self-concept

General Academic self-concept contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Age in year group	0.28	**	0.10	0.14
Academic self-concept in Year 5	0.25	***	0.03	0.56
Behaviour self-concept in Year 5	0.07	*	0.03	0.16
Ethnicity (compared to White UK)				
White European	0.76		2.01	0.06
Black Caribbean	2.48		2.28	0.19
Black African	5.37	#	3.02	0.40
Any other ethnic group	2.80		2.76	0.21
Indian	2.34		2.53	0.18
Pakistani	3.87	*	1.96	0.29
Bangladeshi	2.69		3.62	0.20
Mixed Race	0.39		1.54	0.03
Family structure in Year 11 (compared to both parents)				
Missing	-18.29	**	5.87	-1.31
Single parent	-1.30		0.91	-0.09
One parent and step parent	-2.46	*	1.10	-0.18
Other arrangement	-5.25		2.56	-0.38
Highest social class (compared to professional)				
Missing	-1.80		4.42	-0.13
Skilled	-1.58	#	0.95	-0.12
Semi-skilled	0.88		1.45	0.07
Unskilled	-4.67		2.88	-0.35
Never worked	1.75		2.74	0.13
Mother's qualifications (compared to no qualifications				
Missing	0.73		3.07	0.05
Vocational	-1.63		1.44	-0.12
16 Academic	-0.78		1.20	-0.06
18 Academic	0.20		1.62	0.01
Degree	2.44		1.58	0.18
Higher degree	4.39	*	1.99	0.33
Other professional	5.20	#	2.80	0.39
Mothers age (16-25)				
Missing	-1.14		2.06	-0.09
26-35 years at entry to pre-school	2.26	#	1.31	0.17
36 years or above at entry to pre-school	2.10		1.46	0.16
Early years HLE (compared to low)				
Missing	0.87		2.80	0.07
14-19	-0.45		1.58	-0.03
20-24	2.24		1.61	0.17
25-32	1.46		1.56	0.11
33-45	3.21	*	1.75	0.24
Key stage 3 HLE: Enrichment (compared to low)				
Missing	-0.53		1.23	-0.20
High	5.44	***	1.28	0.41
Medium	2.47	*	1.10	0.19

General Academic self-concept contextualised value added model	Coefficient	Sig.	Std. Error	Effect size
Intercept	94.90	***	2.48	
Variance-school level	7.29		4.15	
Variance-student level	177.65		7.40	
Total variance	184.78			
Number of students	1498			
Deviance (-2 x Log Restricted-Likelihood	11940.695			
Intra-school correlation (ICC)	0.0394			
% Reduction student variance	16.1%			
% Reduction school variance	39.7%			
% Reduction total variance	8.9%			

$^{\#}p<0.10$ $^{*}p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$

Glossary

A-level (include Applied A-level): the GCE Advanced Level qualifications are the main pre-university qualification taken by students in England. For further information see http://ofqual.gov.uk/qualifications-and-assessments/qualification-types/a-levels/

A/S-level: The AS is a stand-alone qualification, usually made up of two units, and is worth half the value of a full A level. For further information see http://ofqual.gov.uk/qualifications-and-assessments/qualification-types/a-levels/

Academic self-concept: EPPSE derived two measures of Academic self-concept from Year 9 student questionnaire data: 'Academic self-concept for English' & 'Academic self-concept for maths'. Both measures are based on items taken from existing well established 'academic self-concept' scales (Marsh, 1990a; 1990b; Marsh & Hau, 2003; Marsh & Craven, 2006). In addition a General academic self-concept measure, based on similar items (and based on Marsh's scale) was derived from the Year 11 questionnaire.

Academic ethos – Year 11 Factor: A factor derived from Year 11 student questionnaire items that relate to the extent to which students feel that other students within the school are interested in learning, doing well and continuing their education past compulsory schooling age.

Age standardised scores: Assessment scores adjusted to take account of the pupil's age at testing, enabling comparisons between the cognitive/academic outcome of an individual pupil, and the achievement of a nationally representative sample of pupils in the same age group or, in this case, the achievement of the EPPSE sample.

Anti-social behaviour: A social-behavioural construct identified from teachers' ratings about EPPSE students, collected through a pupil profile based on Goodman's (1997) Strength and Difficulties questionnaire. Five items formed the factor 'anti-social' behaviour e.g., Steals from home, school or elsewhere.

Anxiety: A factor derived from Year 9 student questionnaire items that reflect the degree to which the students feel unhappy, worried, nervous, fearful in new situations, or suffer from minor ailments.

Aspiration: Aspirations refer to students intentions for future educational destinations and achievements, such as gaining qualifications, carry on in education (e.g., going to university) and career choices.

'At risk': The term 'at risk' is complex and differs depending on the criteria used. The definition of possible cognitive/academic 'at risk' used in the ETYSEN study (Taggart et al., 2006), was based on children's cognitive/academic attainment age 3; a score of one standard deviation (sd) below the mean (in standardised assessments) in relation to national norms (at risk). In the EPPSE case studies, there are various definitions of risk and resilience (Siraj-Blatchford et al., 2011).

Basic Skills: qualifications in literacy and numeracy for adults and other skills for everyday life (http://ofqual.gov.uk/files/2010-11-26-statistics-glossary.pdf [Last accessed 14 March 2014]).

Birth weight: In the EPPSE research, babies born weighing 2500 grams (5lbs 8oz) or less are defined as below normal birth weight; foetal infant classification is below 1000 grams, very low birth weight is classified as 1001-1500 grams and low birth weight is classified as 1501-2500 grams (Scott and Carran, 1989). When EPPSE uses this measure in analyses, the categories foetal infant (<1000g) and very low birth weight (1001-1005g) are often collapsed into one category due to small numbers in the former group.

British Ability Scales (BAS): This is a battery of assessments specially developed by NFER-Nelson to assess very young pupils' abilities. The assessments used at entry to the EPPE study and at entry to reception were:

- Block building - Visual-perceptual matching, especially in spatial orientation (only entry to study).
- Naming Vocabulary – Expressive language and knowledge of names.
- Pattern construction – Non-verbal reasoning and spatial visualisation (only entry to reception).
- Picture Similarities – Non-verbal reasoning.
- Early number concepts – Knowledge of, and problem solving using pre-numerical and numerical concepts (only entry to reception).
- Copying – Visual–perceptual matching and fine-motor co-ordination. Used specifically for pupils without English.
- Verbal comprehension – Receptive language, understanding of oral instructions involving basic language concepts.

BTEC: This is a type of vocational work-related qualification offered by the Business and Technology Education Council (BTEC) in three levels: Award, Certificate and Diploma.

Centre/School level variance: The proportion of variance in a particular child/student outcome measure (i.e. Year 9 English Teacher Assessment level at the end of Key Stage 3 in secondary school) attributable to differences between individual centres/schools rather than differences between individual children/students.

Citizenship values: A factor derived from Year 9 student questionnaire items that relate to how important students feel certain behaviours are such as strong people not picking on weak people, respecting rules and laws, controlling your temper, respecting other's views, and sorting out disagreements without fighting.

City & Guilds: This is a type of vocational work-related qualification, offered by City & Guilds qualifications, which can be completed in the workplace, in the classroom or workshop. For further information, see http://www.cityandguilds.com/courses-and-qualifications/qualifications-explained/ [Last accessed 14 March 2014]).

Comparative Fit Index (CFI): The CFI is an index of a statistical model fit that takes into account sample size. Values close to 0.95 indicate good fit (Hu & Bentler, 1999).

Compositional effects: The influence of a student's peer group on that particular student's individual outcomes. For example, the influence of attending a school where a high percentage of students are in receipt of Free School Meals (FSM) or come from disadvantaged backgrounds. This influence is irrespective of the characteristics (FSM status) of the individual student in question. For further details see Harker (2001).

Confidence intervals (at 95 or 99%): A range of values which can be expected to include the 'true' value in 95 or 99 out of 100 samples (i.e. if the calculation was repeated using 100 random samples).

Continuous measures: Numerical/Scale variables. In this report, continuous measures include total GCSE and equivalents point score, grade achieved in full GCSE English, grade achieved in full GCSE maths, and total number of full GCSE entries

Contextualised models: Cross-sectional multilevel models exploring individuals' outcomes, while controlling for individual, family and home learning environment characteristics (but not prior attainment).

Controlling for: Several variables may influence an outcome and these variables may themselves be associated. Multilevel statistical analyses can calculate the influence of one variable upon an outcome having allowed for the effects of other variables. When this is done the net effect of a variable upon an outcome controlling for other variables can be established.

Correlation: A correlation is a measure of statistical association ranging from + 1 to -1.

Cronbach's alpha (α): A measurement of the internal reliability (or consistency) of the items on a test or questionnaire that ranges between 0 and 1 showing the extent to which the items are measuring the same thing (Reber, 1995). A value greater than 0.7 ($α<0.7$) suggests that the items consistently reflect the construct that is being measured.

CVA (Contextualised Value Added): Measures of secondary school academic effectiveness derived from KS2-KS4 contextual value added (CVA) indicators produced by the Department for Education (DfE). At the pupil level, the CVA score was calculated as the difference between predicted attainment (i.e., the average attainment achieved by similar pupils) and real attainment in KS4. The predicted attainment was obtained by using multilevel modelling controlling for pupils' prior attainment and adjusting for their background characteristics (i.e., gender, age, ethnicity, SEN, FSM, mobility etc.). For each school, all individual pupil scores were averaged and adjusted for the proportion of pupils attending the school in a specific year. This final averaged score represents the school level CVA and it is presented as a number based around 1000.

Dichotomous measures: categorical variable with only two possible values (1 defining the existence of a characteristic and 0 defining the inexistence). In this report, dichotomous measures include achieved 5 or more GCSE/GNVQs at grades A*-C, achieved 5 or more GCSE and equivalents at grades A*-C including GCSE English and maths and achieved the English Baccalaureate.

The Diploma: The Diploma is composite qualification for 14 to 19 year-olds, made up of individual free-standing qualifications combined in a specific way, mixing practical and theoretical learning, with an emphasis on 'applied learning'. Three of the components of the Diploma (Principal Learning, Project and Functional Skills) can also be studied as qualifications in their own right. (http://webarchive.nationalarchives.gov.uk/+/http://www.ofqual.gov.uk/popups/explaining-qualifications/ [Last accessed 14 March 2014]).

Disaffected behaviour (from Year 11 Dispositions report): Disaffected behaviour is the term EPPSE has used to reflect negative and positive behaviours/attitudes that indicate the extent of school engagement (behaviour within class and a more general item covering perceptions of the worth of schooling).

Dispositions: An overarching term used to refer to factors such as 'Mental well-being', 'School Enjoyment', 'Disaffected behaviour', 'Resistance to Peer Influence' and 'general academic self concept'. The EPPSE study derived these factors from the Life in Year 11 questionnaire. EPPSE had previously derived other disposition factors such as 'enjoyment of school', 'academic self concept (English and maths)', 'popularity', 'citizenship values' and 'anxiety' from questionnaires completed by students in Year 9 called 'All about Me' and 'All about Me in school'.

E2E: Entry to employment is a learning programme which is part of the work-based learning route and funded by the Learning and Skills Council (LSC). It is designed to provide opportunities for young people aged 16 and over who are not yet ready or able to take up a Modern Apprenticeship or further education or to move directly into employment. http://www.nfer.ac.uk/publications/EET01/EET01_home.cfm

English Baccalaureate (EBacc): The EBacc is not a qualification but a performance measure that indicates where a student has secured a C grade or above across a core of KS4 academic subjects (https://www.gov.uk/government/publications/english-baccalaureate-eligible-qualifications/ [Last accessed 14 March 2014]).

ECERS-R and ECERS-E: The American Early Childhood Environment Rating Scale (ECERS-R) is an observational instrument based on child centred pedagogy that assesses interactions and resources for indoor and outdoor learning (Harms et al., 1998). The English ECERS-E rating scale (Sylva et al., 2003) is an extension to the ECERS-R that was developed specially for the Effective Provision of Pre-school Education (EPPE) study to reflect developmentally appropriate practices in early years Literacy, Numeracy, Science & the Environment and Diversity (gender, race, individual needs).For more information see Sylva et al., (2010).

Educational effectiveness: Research design which seeks to explore the effectiveness of educational institutions in promoting a range of child/student outcomes (often academic measures) while controlling for the influence of intake differences in child/student characteristics.

Effect size (ES): Effect sizes (ES) provide a measure of the strength of the relationships between different predictors and the outcomes under study. For further information see Elliot & Sammons (2004).

Emphasis on learning: A factor derived from Year 9 student questionnaire items that relate to teacher expectations, emphasis on understanding something not just memorising it, teachers believing that it is okay for students to mistakes as long as they learn from them, students wanting to do well in exams, and lessons being challenging.

Enjoyment of school: A factor derived from Year 9 student questionnaire items that reflect the degree to which students reported they like lessons and being at school, like answering questions in class, but also how much the student experiences boredom in lessons or feels school is a waste of time.

EPPE: The Effective Provision of Pre-school Education (EPPE) project was designed to explore the impact of pre-school on children's cognitive/academic and social-behavioural outcomes as well as other important background influences (including family characteristics and the home learning environment). EPPE was the original phase of the EPPSE study, funded by the Department for Education and Employment it ran from 1997-2003.

Factor Analysis (FA): An umbrella term covering a number of statistical procedures that are used to identify a smaller number of factors or dimensions from a larger set of independent variables or items (Reber, 1995). At KS3 EPPSE used:

Exploratory FA – a type of analyses where no prior (theoretical) knowledge is imposed on the way the items cluster/load.

Principal Components Analysis (PCA) – a procedure that converts a set of observations of possibly correlated items into a set of values of uncorrelated items called principal components.

Confirmatory FA – type of factor analyses used where the measure of a factor/construct are tested against a prior (theoretical) knowledge.

Family characteristics: Examples of family characteristics are mother's highest qualification level, father's highest qualification level and family socio-economic status (SES).

Formative feedback – Year 11 Factor: A factor derived from Year 11 student questionnaire items that relate to students' experiences of practical support from teachers, helping students when they are stuck and guiding them on how to improve their work.

Free school meals (FSM): An indicator of family poverty.

Functional Skills: These qualifications, available in England to those aged 14 and older, are available as stand-alone qualifications at a number of different levels, and may also contribute towards the Diploma qualification. Functional Skills qualifications lead to the development of practical skills that allow learner to use English, maths and ICT in real life contexts (http://ofqual.gov.uk/files/2010-11-26-statistics-glossary.pdf [Last accessed 14 March 2014]).

GCSE: General Certificate of Secondary Education (GCSE) exams are usually sat during Year 11 at age 16 but can be taken by 15 to 18 year olds in schools or colleges. They can also be taken by those wanting to gain an exit school level qualification see http://ofqual.gov.uk/qualifications-and-assessments/qualification-types/gcses/ [Last accessed 14 March 2014]).

GCSE Benchmark Indicators: DfE benchmark indicators of GCSE performance include: achieved 5 or more GCSE/GNVQs at grades A*-C /-/ achieved 5 or more GCSE and equivalents at grades A*-C including GCSE English and maths /-/ achieved the English Baccalaureate.

Head teacher qualities: A factor derived from Year 9 student questionnaire items that reflect the head teacher making sure that students behave well, their presence around the school and interest in how much students learn.

Hierarchical nature of the data: Data that clusters into pre-defined subgroups or levels within a system (i.e. students, schools, local authorities).

Higher academic route: dichotomous measure based on students' responses on the Life After Year 11-Questionnaire 1- Full-Time Education. It takes the value 1 for those who took 4 or more AS/A levels and 0 for all others returning a Life After Year 11 questionnaire.

Home learning environment (HLE) characteristics: Measures derived from reports from parents (at interview or using parent questionnaires) about what children do at home (with/independent of their parents). There are several HLE measures: early years HLE, KS1 HLE, KS2 HLE (please see Appendix 1 for further details).

Homework: Student's self-reported time spent on homework on an average school night.

Hyperactivity: A social-behavioural construct identified from teachers' ratings about EPPSE students, collected through a pupil profile based on Goodman's (1997) Strength and Difficulties questionnaire. Several items formed the factor 'hyperactivity' e.g., Restless, overactive, cannot stay still for long.

Income Deprivation Affecting Children Index (IDACI): The IDACI represents the percentage of children in each SOA that live in families that are income deprived. For further details see Noble et al., (2008).

Independent School - Category: An independent school is any school or establishment, which is not maintained by a local authority or a non-maintained special school, that provides full time education for 5 or more pupils of compulsory school age (http://www.education.gov.uk/edubase/glossary.xhtml?letter=I [Last accessed 14 March 2014]).

Index of Multiple Deprivation (IMD): The IMD is a measure of a range of characteristics evident in a neighbourhood. For further details see Noble et al., (2004; 2008).

Internal Reliability/Consistency: The degree to which the various parts of a test (items) or other instrument (e.g., questionnaire) measure the same variables/construct (Reber, 1995). An example measure would be **Cronbach's alpha** (see earlier).

International Baccalaureate: The International Baccalaureate Diploma Programme (DP) is a programme of education with final examinations that prepares students, aged 16 to 19, for success at university and life beyond - see http://www.ibo.org/diploma/ [Last accessed 14 March 2014]).

Intra-centre/school correlation: The intra-centre/school correlation measures the extent to which the outcomes from children/students in the same centre/school resemble each other as compared with those from children/students at different centres/schools. The intra-centre/school correlation provides an indication of the extent to which unexplained variance in children's/students' progress (i.e. that not accounted for by prior attainment) may be attributed to differences between centres/schools. This gives an indication of possible variation in pre-school centre/school effectiveness.

Key Skills: These qualifications can be studied in 6 subject areas (communication, application of number, information and communication technology (ICT), working with others, improving own learning and performance, and problem solving) that provide the necessary skills for learning, working and life in general (http://ofqual.gov.uk/files/2010-11-26-statistics-glossary.pdf [Last accessed 14 March 2014]).

Key Stage (KS): The English education system splits students into age phases known as Key Stages as follows: KS1 (age 5-7), KS2 (8-11), KS3 (12-14), KS4 (14-16).

Lower academic route: dichotomous measure based on students' responses on the "Life After Year 11-Questionnaire 1- Full-Time Education". It takes the value 1 for those who took 3 or less As/A levels and 0 for those who are on a higher academic route.

Matriculation: exam refers to the qualification (in any country) that describes the transfer from secondary to tertiary education.

Mean average: A measure of central tendency that is calculated by summing a set of values (or scores) and then dividing by the number of values or scores (Reber, 1995).

Mental well-being (from Year Dispositions report): In order to asses mental well-being EPPSE included items from the Warwick-Edinburgh Mental Well-Being scale (WEMWB; Tennant et al., 2007) in the Life in Year 11 questionnaire. The Warwick-Edinburgh Mental Well-being scale was used to measure students' positive mental well-being in Year 11 allowing investigation of specific aspects of mental well-being as well as providing an overall scale.

Monitoring students – Year 11 Factor: A factor derived from Year 11 student questionnaire items that relate to the extent to which teachers monitor the progress students are making, set targets and reward hard work.

Multilevel modelling: A methodology that allows data to be examined simultaneously at different levels within a system (i.e. children/students, pre-school centres/schools, local authorities), essentially a generalisation of multiple regression.

Multiple Disadvantage Index: This measure was developed as part of the Early Years Transition & Special Educational Needs (EYTSEN) Project, which focuses on the identification of children 'at risk' of SEN (see Sammons et al., 2004d). An index was created based on 10 indicators in total: three child variables, six parent variables, and one related to the Early years Home Learning Environment (HLE).

Child variables: First language: English as an additional language (EAL) - Large family: 3 or more siblings - Pre-maturity / low birth weight.

Parent/HLE variables: mother's highest qualification level: no qualifications - Social class of father's occupation: Semi-skilled, unskilled, never worked, absent father - Father not employed - Young Mother (Age 13-17 at birth of EPPE child) - Lone parent - Mother not working / unemployed - Low Early years Home Learning Environment (HLE). For further details see Sammons et al., (2002).

Multiple regression: method of predicting outcome scores on the basis of the statistical relationship between observed outcome scores and one or more predictor variables.

National Assessment Levels: The table below shows the levels that could be achieved by a student at different ages in their National Assessments tests / can be awarded to a student for their Teacher Assessment (TA).

Outcome	Key Stage 1 (KS1), Age 7	Key Stage 2 (KS2), Age 11	Key Stage 2 (KS3), Age 14
Reading/ English Levels	Working towards level 1		
	Level 1	Level 1	Level 1
	Level 2 – Expected Level	Level 2	Level 2
	Level 3	Level 3	Level 3
	Level 4	Level 4 – Expected Level	Level 4
		Level 5	Level 5 – Expected Level
		Level 6	Level 6
			Level 7
			Level 8
Maths Levels	Working towards level 1		
	Level 1	Level 1	Level 1
	Level 2 – Expected Level	Level 2	Level 2
	Level 3	Level 3	Level 3
	Level 4	Level 4 – Expected Level	Level 4
		Level 5	Level 5 – Expected Level
		Level 6	Level 6
			Level 7
			Level 8
Science Levels	Working towards level 1		
	Level 1	Level 1	Level 1
	Level 2 – Expected Level	Level 2	Level 2
	Level 3	Level 3	Level 3
	Level 4	Level 4 – Expected Level	Level 4
		Level 5	Level 5 – Expected Level
		Level 6	Level 6
			Level 7
			Level 8

Net effect: The unique contribution of a particular variable upon an outcome while other variables are controlled.

NEET: The term NEET (Not in Education, Employment or Training) is used to describe young people (aged 16 to 25) who are not studying, working or involved in formal training programmes.

Non-Maintained Special School - Category: Type of Establishment. Non-Maintained Special schools are special schools approved by the Secretary of State for Education and Skills, and are run on a not-for-profit basis by charitable trusts and normally cater for children with severe and/or low incidence special educational needs. Non-Maintained Special schools get the majority of their funding from local authorities placing children with special educational needs statements at the schools and paying the fees (http://www.education.gov.uk/edubase/glossary.xhtml?letter=N) [Last accessed 14 March 2014]).

Null model: multilevel model with no predictors.

NVQ: National Vocational Qualifications (NVQ)s are 'outcome based' and are delivered in a workplace setting. NVQs are work-related, competence-based qualifications that cover a broad range of industry sectors and occupations (http://webarchive.nationalarchives.gov.uk/+/http://www.ofqual.gov.uk/popups/explaining-qualifications/ [Last accessed 14 March 2014]).

Odds Ratio (OR): Odds Ratios represent the odds of achieving certain benchmark performance indicators given certain characteristics relative to the odds of the reference group.

Ofsted: The Office for Standards in Education, Children's Services and Skills (Ofsted) inspect and regulate services that care for children and young people, and those providing education and skills for learners of all ages. See Matthews & Sammons (2004) and the Ofsted website (http://www.ofsted.gov.uk/) for further details.

Out of school activities (from Year 11 Dispositions report): Out of school activities include activities students were involved in outside of school during Year 11 (during the month previous to completing the Life in Year 11 questionnaire). They include activities such as reading, going to the library, going to parties, going to church, music groups etc.

Pedagogical strategies: Strategies used by an educator to support learning. These include the face to face interactions with students, the organisation of resources and the assessment practices.

Peer group (and Peer group affiliation) (from Year 11 Dispositions report): The peer group refers to other students in their immediate social circle, primarily other students sharing similarities such as age and background. Peer affiliation refers to being affiliated, or associated, with a specific friendship group.

Physical Health (from Year 11 Dispositions report): Physical health refers to students' health status, including any illness, disability or infirmity experienced in the 12 months pervious to completing the Life in Year 11 questionnaire.

(Poor) behaviour climate: A factor derived from Year 9 student questionnaire items that relate to the general behaviour climate in the EPPSE student's school; students being given a hard time by others if they work hard, level of compliance with school rules, fighting and weapons being brought into school, and whether most students want to leave the school as soon as they can.

Popularity: A factor derived from Year 9 student questionnaire items that relate to how popular students feel they are with other teenagers and how many friends they have.

Positive relationships – Year 11 Factor: A factor derived from Year 11 student questionnaire items that relate to how well students and teachers get on, such as students feeling they are treated fairly and respected and teachers showing an interest in students.

Pre-reading attainment: Composite formed by adding together the scores for phonological awareness (rhyme and alliteration) and letter recognition.

Pre-school effectiveness: Measures of the effectiveness of pre-schools were derived from Value Added (VA) models of the sample's actual progress during pre-school, controlling for prior attainment and children's background characteristics (Sammons et al., 2004b).

Primary school effectiveness: Primary school academic effectiveness scores were obtained from National Assessment data for several cohorts across all primary schools in England. Value-added scores were calculated across the years 2002-4, for each primary school in England and then extracted for schools attended by the EPPE sample (Melhuish et al., 2006a; 2006b).

Prior attainment: Measures which describe a participant's achievement at the beginning of the phase or period under investigation (i.e. taken on entry to the study or school, or for Year 9 and Year 11 analyses, outcomes from Year 6).

Pro-social Behaviour: A social-behavioural construct identified from teachers' ratings about EPPSE students, collected through a pupil profile based on Goodman's (1997) Strength and Difficulties questionnaire. Several items formed the factor 'pro-social' behaviour e.g., Considerate of other people's feelings.

Pupil Profile: An instrument containing Goodman's (1997) Strength and Difficulties questionnaire plus some additional items used to collect information about EPPSE student's social behaviour. It is completed by a teacher who knows the EPPSE student well.

Resistance to peer influence (from Year 11 Dispositions report): The Resistance to Peer Influence scale (RPI) examines a students' ability to resist the influence of their peers in more than just anti-social scenarios, ranging from wanting to fit in with the crowd to being willing to break the law to fit in with friends. Items included 'I think it's more important to be who I am than to fit in with the crowd'.

Risky behaviours (from Year 11 Dispositions report): Students were asked about activities considered as risky to health or as risky anti-social behaviours and responses to these items were then combined to form an overall measure of 'risky' behaviours. EPPSE asked about the following risky behaviours in the Life in Year 11 questionnaire: Truanting - Smoking prevalence - Drinking prevalence - Drug usage - Anti-social criminal behaviours and legal intervention.

Quality of pre-school: Measures of pre-school centre quality were collected through observational assessments (ECERS-R, ECERS-E) completed by trained researchers. For further information see **ECERS** and Sylva et al.,. (2010).

Quality of secondary schools: Secondary school quality was derived from measures taken from Ofsted inspection judgments. See Ofsted for further details.

Root Mean Square Error of Approximation (RMSEA): The RMSEA is an index measure of model; values less than 0.06 are an indication of a good fit.

Sampling profile/procedures: The EPPSE sample was constructed of: Five regions (six Local authorities) randomly selected around the country, but being representative of urban, rural, inner city areas. Pre-schools from each of the 6 main types of target provision (nursery classes, nursery schools, local authority day nurseries, private day nurseries, play groups and integrated centres) randomly selected across the region.

School engagement (from Year 11 Dispositions report): Fredericks et al., (2004) view School engagement as multi-dimensional covering 'behavioural engagement', 'emotional engagement' and 'cognitive engagement'.

School enjoyment (from Year 11 Dispositions report): The EPPSE definition of School Enjoyment is an aspect of what Fredricks et al., (2004) would describe as the 'emotional' dimension of 'school engagement'. The EPPSE factor 'School Enjoyment' includes items such as 'On the whole I like being at school'.

School environment: A factor derived from Year 9 student questionnaire items that relate to how EPPSE students view their school in terms of the physical space (the attractiveness of buildings, the decorative state of the classrooms, the condition of the toilets), as well as its reputation as a good school and how well organised it is.

School/learning resources: A factor derived from Year 9 student questionnaire items that relate to practical resources for learning at the EPPSE student's school; amount of computers and getting enough time on them in lessons, and the quality of science labs and the school library.

School level variation: School level variance here refers to the percentage of variation in students' outcomes that can be attributed to differences between schools.

Secondary school effectiveness: Secondary school academic effectiveness scores were obtained from the Department for Education (DfE). The measure of academic effectiveness is represented by the average KS2 to KS4 contextual value added (CVA) school level scores over 4 years (2006-2009) when EPPSE students were in secondary school. See 'CVA' as this is the same measure.

Self-regulation: A social-behavioural construct identified from teachers' ratings about EPPSE students, collected through a pupil profile based on Goodman's (1997) Strength and Difficulties questionnaire. Several items formed the factor 'self-regulation' e.g., Likes to work things out for self; seeks help rarely.

Significance level: Criteria for judging whether differences in scores between groups of children/students or centres/schools might have arisen by chance. The most common criteria is the 95% level ($p<0.05$), which can be expected to include the 'true' value in 95 out of 100 samples (i.e. the probability being one in twenty that a difference might have arisen by chance).

Social-behavioural development: A student's ability to 'socialise' with other adults and pupils and their general behaviour to others. EPPSE uses this overarching name to refer to a range of social-behavioural outcome measures. At age 16, two of these outcomes refer to positive outcomes ('self-regulation' and 'pro-social' behaviour) and two refer to negative outcomes ('hyperactivity' and 'anti-social' behaviour).

Socio-economic status (SES): Occupational information was collected by means of a parental interview/questionnaire at different time points. The Office of Population Census and Surveys (OPCS) (1995) Classification of Occupations was used to classify mothers and fathers current employment into one of 8 groups: professional I, other professional non manual II, skilled non manual III, skilled manual III, semi-skilled manual IV, unskilled manual V, never worked and no response. Family SES was obtained by assigning the SES classification based on the parent with the highest occupational status.

Special Educational Needs (SEN): Children with an SEN have been assessed as having a specific need which demands additional attention/resources. Children with an SEN can be placed on the Code of Practice at various levels, depending on their conditions see https://www.gov.uk/government/publications/special-educational-needs-sen-code-of-practice

Standard deviation (sd): A measure of the spread around the mean in a distribution of numerical scores. In a normal distribution, 68% of cases fall within one standard deviation of the mean and 95% of cases fall within two standard deviations.

Structural equation modelling (SEM): is an umbrella term for statistical modelling techniques which allow for testing causal processes and structural relationships (Byrne, 2010).

Student background characteristics: Student background characteristics include age, birth weight, gender, and ethnicity.

Target centre: A total of 141 pre-school centres were recruited to the EPPSE research covering 6 types of provision

Teacher Assessment (TA) : These assessments made by teachers provide measures of students' educational outcomes for English, maths and science in Year 9 (age 14) in the form of National curriculum levels.

Teacher discipline: A factor derived from Year 9 student questionnaire items that relate to the level of teacher control during lessons, in terms of behaviour, noise, rule breaking and teachers being bothered if students turn up late.

Teacher professional focus – Year 11 Factor: A factor derived from Year 11 student questionnaire items that relate to perceptions of teachers' focus on day to day teaching responsibilities such as learning and behaviour within the classroom.

Teacher support: A factor derived from Year 9 student questionnaire items that relate to support given by teachers in terms of helping students, giving them feedback, making them feel confident about their work, rewarding them for good behaviour, being available to talk privately, and marking and returning homework.

Term of birth: Using EPPSE student's dates of birth, the EPPSE sample were categorised into three 'term of birth' categories: Autumn born (September to December); Spring born (January to April); Summer born (May to August).

Total GCSE and equivalents point score: This is a mechanism for comparing equivalencies of different types of KS4 exams, based on the total pupil's point scores and not the average points scores per subject. For example in School A, if pupils take 10 full GCSEs and in each obtain grade C, which has a points score of 40, their total points score will be 10 x 40, which is 400. If all pupils in the school had the same results, the school's average total points score would be 400. In School B all pupils might take only 8 GCSEs but in each attain grade B, which has a points score of 46. The school's average total points score would be 368. So School A has a higher average total points score than School B. In EPPSE total points score is a continuous measure.

Total number of full GCSE entries: The total number of GCSE's entered regardless of the results.

Truanting (from Year 11 Dispositions report): Truanting refers to whether the student had taken unauthorised time off school during Year 11 (the students were asked if they had bunked/skived off in Year 11).

Value added models: Longitudinal multilevel models exploring individuals' progress over time, controlling for prior attainment as well as significant individual, family and home learning environment characteristics.

Value added residuals (pre-school effectiveness): Differences between predicted and actual results for pre-school centres (where predicted results are calculated using value added models). See **Pre-school effectiveness** for further information

Value added residuals (primary school academic effectiveness): Differences between predicted and actual results for primary schools measuring pupil progress across KS1 – KS2. For further information see **Primary school effectiveness** and Melhuish et al.,. (2006a; 2006b).

Valuing pupils: A factor derived from Year 9 student questionnaire items that relate to whether the school values students' views, teachers listen to students views, are respectful and friendly to students, teachers are unpleasant to students if they make mistakes.

Views of school: An overarching term used to refer to factors such as 'teacher support', 'school environment', 'valuing pupils', 'headteacher qualities', 'poor behaviour climate', 'emphasis on learning', 'teacher discipline', and 'school/learning resources'. The EPPSE study derived these factors from the questionnaire completed by students in Year 9 called 'All about me in school', and the Life in Year 11 questionnaire, completed in Year 11.

Vocational qualifications: work-related qualifications that are examined through practical assessment as opposed to formal academic assessment. Types of vocational qualification include NVQs, VRQs, and the Diploma.

Vocational route: dichotomous measure based on students' responses on the "Life After Year 11-Questionnaire 1- Full-Time Education". It takes the value 1 for those who did not take any As/A levels, but returned a "Life After Year 11-Questionnaire 1- Full-Time Education" questionnaire.

Z score (from Year 11 Dispositions report): A Z score is a statistical method for standardising data so that the mean equals zero and the standard deviation equals one.

VRQ: Vocationally Related Qualifications (VRQ) are related to employment but, unlike NVQs, do not necessarily require a work placement. VRQs are work-related, competence-based qualifications designed to provide learners with the skills and knowledge needed to do a job (http://ofqual.gov.uk/files/2010-11-26-statistics-glossary.pdf [Last accessed 14 March 2014]).

Well-being: Well-being here refers to aspects of young people's life such as physical health, peer and family relationships, and engagement (or not) in risky behaviours.

The Warwick-Edinburgh Mental Well-being scale: The Warwick-Edinburgh Mental Well-being scale is a 14 item scale (WEMWB; Tennant et al., 2007) that covers aspects of hedonic and eudaemonic well-being. Hedonic well-being is more emotional in nature, such as feelings of optimism, cheerfulness and feeling good about oneself. Eudaemonic well-being relates to mental capacities such as dealing with problems, thinking clearly and decision making.