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

Students' views of school in Key Stage 4 at age 16

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Executive Summary

This report describes the development of measures of students' views of their secondary school experience at age 16. It also investigates how views of school vary for different groups of students. The sample is part of a major longitudinal study of children's development from age 3 to 16 years conducted in England from 1997 to 2014. The most recent findings about students' academic and social-behavioural outcomes and their dispositions in Year 11 are presented in companion reports (Sammons et al 2014a; 2014b; 2014c).

Background to the EPPSE 3-16+ project

The Effective Pre-school, Primary and Secondary Education (EPPSE 3-16+) project has followed a sample of children from age three up to the end of compulsory schooling (Year 11) and into their post-16 destinations. This major longitudinal study began in 1997 (originally the Effective Provision of Pre-School Education: EPPE) and the sample was recruited at entry to pre-school and studied the impact of pre-schooling on children's outcomes up to the end of Key stage 1. The project has been further extended up to the end of primary schooling (EPPE 3-11), and to the end of Key stage 3 in secondary school (EPPSE 3-14), allowing the study to explore children's developmental outcomes across successive phases of education into adolescence. The latest extension of the project follows the students up to the end of compulsory schooling (EPPSE 3-16+) in Year 11 and their educational, training and employment destinations Post- 16.

EPPSE 3-16+ utilises a wide range of information about the students, their families and their educational experiences. Information about students' academic outcomes has been obtained from national databases at the end of Key Stage 4 and at earlier time points. Teachers' ratings of social-behavioural outcomes and self-report measures of students' views and experiences of school have also collected. Background information about individual student, family and home learning environment characteristics has been sought through parent interviews and questionnaires at earlier time points in the study.

A range of information about students' educational experiences has also been collected. This included characteristics of the pre-school attended, in terms of quality and effectiveness, value added measures of primary school academic effectiveness (Melhuish et al 2006a) and DfE data in the form of Contextual Value Added (CVA) national performance indicators for secondary schools attended by the sample. In addition, Ofsted judgements related to a range of aspects of secondary school quality have been obtained.

Student questionnaire data provides an opportunity to investigate students' own experiences and views about of their teaching and school environments. Questionnaires have been used to explore the EPPSE students' experiences and views in Year 2, 5, 9 and 11. The most recent questionnaire asked students about themselves (dispositions) and their experiences of school during Year 11. A number of existing measures of student dispositions (such as *General Academic self-concept* and *Mental well-being*) and school climate have been incorporated into the

questionnaire[1]. Several companion reports present the findings on students' GSCE academic, social behavioural and disposition outcomes in Year 11(see Sammons, 2014a, b, c). This report focuses on views and experiences of secondary school in Key Stage 4.

Aims

The aims of the analyses of the Year 11 survey data are outlined below. They sought to explore:

- underlying dimensions (factors) related to students' experiences and views of school at the end of Key Stage 4 (KS4);
- differences between various student groups (gender, SES etc) in their experiences;
- relationships between individual, family and home learning environment characteristics and students' experiences of school at the end of KS4;
- relationships between school composition, school effectiveness and school quality and variations in student' experiences of school at the end of KS4, as well as the effects of earlier educational influences.

The report outlines various associations and provides evidence on the strength of these measures in terms of correlations and 'effect sizes', statistical measures of association. It also documents some of the differences between various student groups in the form of simple tables for individual survey questions. While many of the differences in views are not large the report highlights only those that are statistically significant for this sample.

Key findings

This report investigated students' views about their experiences of classroom and school life at the end of compulsory schooling. It adds to previous research during Key Stage 3 (KS3) and Key Stage 2 (KS2), when views on similar topics were also sought from EPPSE students (Sammons et al 2011a; Sammons et al 2008).

Previously analyses at the end of Year 9 found large differences between individual secondary schools in students' reports of their experiences in terms of several factors including *School environment*, *Headteacher qualities* and *Poor behaviour climate*. Some of these measures were predicted by aspects of student, family and home learning environment (HLE) background. For example, students whose parents were more highly qualified typically had more positive views of the behaviour climate of their secondary school in KS3, but this did not account for all the differences between schools and 17 per cent of variance was found at the school level after the influence of students' own individual, family and HLE characteristics had been controlled. This pointed to the existence of important differences between secondary schools in these features of students' school experiences in KS3.

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[1] These include Mental well-being (Clarke et al 2011), General academic self-concept (Marsh 1999) and Resistance to Peer Influence (Sternberg and Monahan 2007). In addition items from existing measures of school climate were also incorporated from The School Climate Assessment Instrument (Grosin and McNamara 2001), and The Louisiana ABC+ model (Teddlie and Stringfield 1993).

This report based on the Year 11 survey extends the findings from a similar analyses conducted during KS3.

Summary of findings

School life, academic self-concept and aspirations

Measuring Views of school in Year 11: factors

Analyses of the student questionnaire *Life in Year 11* identified five underlying factors that relate to students' experiences of secondary schooling in KS4. These were;

- *Teacher professional focus*, relates to perceptions of teachers' focus on day to day teaching responsibilities such as learning and behaviour within the classroom.
- *Positive relationships*, covers how well students and teachers get on, such as students feeling they are treated fairly and respected and teachers showing an interest in students.
- *Monitoring students* relates to the extent to which teachers monitor the progress students are making, set targets and reward hard work.
- *Formative feedback*, relates to students' experiences of practical support from teachers, helping students when they are stuck and guiding them on how to improve their work.
- *Academic ethos*, measures 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.

Students' overall experiences of school in Year 11

On the whole students were very positive about their secondary school experiences in KS4, in line with findings from Year 9 (Sammons et al 2011a). The majority showed particularly favourable views for the factors *Positive relationships, Formative feedback* and the *Academic ethos* of their schools. However, the items related to behaviour and discipline in school were rated rather less favourably than those on other aspects. For example approximately a third of students did not think teachers in their school applied rules for behaviour consistently (33%), and a similarly large minority did not think that their teachers marked and returned homework promptly (32%). Similarly, a quarter of students did not believe that teachers made sure that lessons were quiet and orderly (26%).

By contrast, approximately nine out of ten students felt they were treated fairly by teachers and that teachers treated them with respect (71% agreed, 18% agreed strongly). Eight out of ten felt that teachers were interested in them as a person and that teachers and students generally got on well in their secondary school (68% agreed, 16% agreed strongly).

In total, over 95 per cent of students agreed that 'Teachers in this school believe that learning is important', which relates to the factor *Teachers' professional focus* (55% agreed, and 43% agreed strongly).

In addition, approximately nine out of ten students reported that teachers supported them in terms of providing help when they were stuck, helpful comments and ways to improve their work (e.g.

32% strongly agreed, 63% agreed teachers helped them when they were stuck). These items related to the factor *Formative feedback*.

Nearly all students believed that fellow students in their school thought it was important to do well in exams (66% agreed, 30% agreed strongly) and wanted to carry on with their education after GCSEs (67% agreed, 28% agreed strongly). In all, less than one in five thought students in their school weren't really interested in learning (15%).

Students' views were less favourable when asked about student behaviour and order and structure in the classroom. Also, a quarter of students did not feel that their teachers would be approachable if they were being bullied (24%).

Differences between student groups in their views of school

The analyses investigated differences between various student groups in their responses to individual questionnaire items and their scores on the five underlying factors. Responses were compared for the following groups: gender, Free School Meals (FSM), parental qualification level, Special Educational Needs (SEN) and the home learning environment (HLE).

Gender differences were generally fairly small but boys were more positive than girls for a number of questionnaire items related to teacher-student relationships (items from the *Positive relationships* and *Teacher professional focus* factors). Specifically, boys were more likely to report their teachers arrived on time to lesson, marked and returned homework promptly and treated students fairly. Boys were significantly more positive than girls about the three factors *Teacher professional focus, Positive relationships* and *Formative feedback*.

However, girls were slightly more likely to think students in their school wanted to carry on their education after GCSEs (30% strongly agree compared to 25% of boys). This may relate to differences in boys and girls own plans as nationally more girls enter higher education.

As found in Year 9, SEN was associated with views of school, but not consistently across the stages of the Code of Practice. Students who were on School Action plus had less favourable views of school, but those at the other stages (School Action, Full statement).

There were only a few differences related to the influence of eligibility for FSM on students' views of school (and no significant difference in the five factor scores). However, there were some large differences for a few individual items. For example, nearly a quarter of FSM students strongly agreed that Teachers have the same rules about behaviour compared to only 13 per cent of non-FSM students.

Students from households where parents had no qualifications showed more positive views for a few individual questionnaire items (the approachability of teachers if they were bullied and the consistency between teachers of behaviour rules). Nonetheless, in general students whose parents were more highly qualified had more positive views of school than others, especially for the two factors *Positive relationships* and *Academic ethos*.

The HLE measures capture education related activities that the student has experienced at home and outside of school. They have been collected at regular intervals from the early years up to the end of Year 9 and were investigated to assess any association with views of school. There was no evidence that the early years HLE still predicted differences in secondary students' views of school in Year 11. In contrast, the KS3 HLE measures of Academic supervision and Academic enrichment activities at home were strong predictors of views of school at age 16. Students whose parents provided higher levels of Academic supervision and Academic enrichment activities in KS3 showed consistently more positive views up to age 16. In particular, students with higher levels of Academic supervision reported more favourable views of their secondary schools in terms of *Teacher professional focus, Monitoring students,* and *Formative feedback*. Home learning environment may be an additional indicator of cultural capital that could be associated with parents' more active pursuit of good educational opportunities for their children. The findings point to the continued importance of parents in supporting their children's education not only in the early years but through adolescence and the way school and parenting support for education may be mutually reinforcing.

The combined impact of student, family and home learning environment

The differences in student responses described above do not take into account the inter-relationship between individual, family and HLE characteristics, so that the strongest predictors of views cannot be identified easily. However, multilevel models (hierarchical linear regression) allow for variables to be tested in combination, and provide estimates of the net influence of one predictor, once other variables are controlled. Thus the net effect of say gender can be identified and compared to that of other predictors (e.g.SEN or FSM status).

EPPSE used this statistical approach in further analyses and results show that gender still significantly predicted differences in student reports on the factors *Teacher professional focus* (ES=-0.15), *Positive relationships* (ES=-0.10,$p<0.10$) and *Formative feedback* (ES=-0.12), with girls reporting less favourable views than boys.

Students who had shown behavioural problems in their early years were less positive about the *Teacher professional focus* at age 16 (ES=-0.17). Some ethnic group differences remain evident, with Indian and Pakistani heritage students being more positive in their reports than white students for many or all of the views of school outcomes (Indian*: Monitoring students* ES=0.36, *Academic ethos* ES=0.53; Pakistani: *Teacher professional focus* ES=0.48*, Positive relationships* ES=0.43, *Monitoring students* ES=0.35, *Formative feedback* ES=0.32, *Academic ethos* ES=0.48).

Students from single parent or reconstituted families had less positive views of school (Single parent: *Positive relationships* ES=-0.14, *Monitoring students* ES=-0.13, *Academic ethos* ES=-0.16; Reconstituted family: *Formative feedback* ES=-0.16*)* than students from families with both natural parents in the house. The effect sizes for student and family variables were generally fairly small however (below 0.2) but taken together suggest that background characteristics continue to shape students' experiences as well as their outcomes.

Those students with higher HLE scores in KS3 in terms of Academic Enrichment (students were engaged in academic related activities outside school) and Academic Supervision (where parents

were more involved in monitoring their academic work) also had more positive views of school, even after other student and family variables had been accounted for (Academic supervision: . *Teacher professional focus* ES=0.56*, Positive relationships* ES=0.37, *Monitoring students* ES=0.40, *Formative feedback* ES=0.50, *Academic ethos* ES=0.22; Academic enrichment: *Teacher professional focus* ES=0.24*, Positive relationships* ES=0.21, *Monitoring students* ES=0.19, *Formative feedback* ES=0.20). The ES for home learning was moderate in size, and interestingly by far the strongest predictor of more favourable views of school. The analyses on Year 11 academic outcomes (Sammons et al., 2014a) show how HLE predicts GCSE attainment and progress from KS2 to KS4.

There were no significant differences associated with the type of neighbourhood[2] the student had been brought up in and their views of school, again in contrast to results for academic and social behavioural outcomes.

Academic achievement and views of school

Separate analyses investigated the relationship between current GCSE achievement and students' views of school (Sammons et al., 2014a). Higher attaining students in Year 11 reported better relationships with teachers (*Positive relationships:* ES=0.31). They also expressed more positive views of *Teacher professional focus* (ES=0.19)*, Monitoring students* (ES=0.13) *and Formative feedback* (ES=0.16), although the size of the effect was small. In contrast, prior achievement (in Year 6 and Year 9) only weakly predicted differences in later views in Year 11 for *Positive relationships* (ES=0.16). Interestingly, higher attainers in Year 11 also reported better experiences of schooling but did not rate the academic ethos of others in their school more favourably than other students.

School context and views of school

School ethnic composition was associated with some of the factors related to views of school, once other influences (individual, family and HLE) were taken into account. Students in schools with a higher proportion of White British heritage students reported significantly less favourable views of their school in terms of *Academic ethos* and *Positive relationships.* Other school context measures (the percentage of students' that was eligible for FSM, or on the SEN register) were not associated with views after controlling for other influences.

Educational influences on views of school

Earlier education phases (pre-school and primary school)

Pre-school attendance (whether they went to pre-school or not), pre-school quality and pre-school effectiveness did not predict any differences in EPPSE students' views of secondary school at age 16. This is in contrast to findings for academic results at GCSE for the EPPSE sample (Sammons et al 2014a). However, students who had attended a pre-school that combined education and care did show more favourable views in Year 11 (compared to the group with no pre-school experience) for *Positive relationships* (ES=0.23)*, Monitoring students* (ES=0.41) and *Formative*

[2] Overall IMD, IDACI, Crime and Employment measures were tested as well as census level data on the proportion of White British ethnic heritage group and the proportion of adults with limiting long term illness in the neighbourhood.

feedback (ES=0.33). This was the case even after account for secondary school quality, academic effectiveness and student background influences[3].

There was some evidence of a relationship between the academic effectiveness of the primary school a student attended and later views of school in Year 11. Students from academically more effective primary schools (for English) reported more favourable views of their secondary school experiences in terms of *Academic ethos* (ES=0.25) and *Teacher professional focus* (ES=0.20). Attending an academically effective primary school has been shown to have boosted EPPSE students' attainment at entry to secondary school at age 11 and also predicted their attainment in Year 9 and their progress (from age 11-14). This better attainment at entry to secondary school may have shaped such students' later secondary school experience in KS3 and KS4 in ways that reinforced more positive experiences and views. Elsewhere, we show that the academic effectiveness of the primary school attended continues to predict GCSE outcomes in Year 11 and progress from Year 6 to Year 11 (Sammons et al, 2014a).

Secondary school quality and effectiveness

It was anticipated that EPPSE students' views of their own secondary school might be associated with external measures of school quality and effectiveness and this proved to be the case. Students from more academically effective secondary schools (measured by the DfE Contextualised Value Added indicators) reported significantly more positive views of their secondary school in terms of *Academic ethos* (ES=0.24), *Teacher professional focus* (ES=0.34) and *Positive relationships* (ES=0.27) than those from less effective secondary schools. EPPSE students attending more academically effective secondary schools also reported slightly higher scores for *School enjoyment* and slightly lower scores for *Disaffected behaviours,* as reported elsewhere (Sammons et al 2014c). These findings show that the DfE CVA indicators provided valuable measures of differences in school performance that shaped EPPSE students' experiences and outcomes. The analyses on academic outcomes (Sammons et al., 2014a) shows that students who attended a more academically effective secondary school (measured by the DfE CVA indicator), also had a boost to their GCSE outcomes and made more progress over Year 6 to Year11).

EPPSE students' views of school were also more positive in secondary schools that had received more favourable Ofsted quality judgements. Students' views of *Academic ethos* showed the strongest association with Ofsted quality ratings, followed by *Teacher professional focus* and *Positive relationships*. Reports of *Academic ethos* were more favourable in secondary schools where 'the standards reached by learners' were judged by inspectors to be higher, and where attendance was judged as better. Inspection judgements of achievement and standards showed

[3] Students in the EPPSE sample from different types of secondary school had different trajectories in terms of the quality, effectiveness and type of secondary school they were likely to attend later on. For example, 27% of students who attended a Private Day Nursery went on to attend a selective or independent secondary school. This compares to approximately 4-7% of students from each of the other types of pre-school settings (and the home group).

the most consistent association with EPPSE students' views of school for *Teacher professional focus*, *Positive relationships* and *Academic ethos.*

By contrast, students' reports of two other factors *Monitoring students and Formative feedback* showed no statistically significant association with Ofsted quality and CVA effectiveness measures.

School type

Once student, family and out of school HLE influences were accounted for, students from independent schools[4] had significantly more positive views of their secondary school than students from other schools classed as 'comprehensive' by the DfE for all factors except *Monitoring students*, where no significant differences were found (*Teacher professional focus: ES=0.33*, *Positive relationships* ES=0.31,*Formative feedback* ES=0.31, *Academic ethos* ES=0.91) Students from other maintained schools (mainly special schools) also had significantly more positive views of *Teacher professional focus* (ES=0.44) and reported higher levels of *Formative feedback* (ES=0.50) than students from comprehensive schools. In addition, students from selective schools gave more favourable ratings for *Academic ethos* (ES=1.30) than students from comprehensive schools. These differences are likely to reflect academic selection processes and the extra support provide for students with SEN in special schools.

Variation between schools

As was found in previous analyses of EPPSE students' views in Year 9 (Sammons et al., 2011a), most factors related to students' views of school in Year 11 varied significantly between schools. This is in contrast to variation in dispositions (Sammons et al., 2014c), which show little if no school level variation. Once intake differences (student, family and home learning variables) were controlled for, *Academic ethos* showed the greatest variation between schools. A substantial 15 per cent of variance was found at the school level. School level variation was smaller but still significant for *Teacher professional focus*, *Positive relationships*, and *Monitoring students* at between 4-6 per cent. These areas of secondary school processes have been identified as important features of educational effectiveness in past research (Sammons, Thomas & Mortimore, 1997).

Implications

EPPSE students' views about their secondary school experiences continue to be largely favourable towards the end of compulsory schooling, yet there are some statistically significant differences between schools in terms of the quality of students' experiences. In Year 9, the analyses found substantial variation in measures related specifically to the school structure, ethos and management (*Head teacher qualities*, *Poor behaviour climate* and the *School environment*). In Year 11 it was *Academic ethos* that showed the largest variation between secondary schools (although all measures showed significant variation). In addition, EPPSE students who were attending more academically effective secondary schools (as measured independently by DfE CVA indicators) had significantly more favourable views.

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[4] Schools were classified by the DfE as: Comprehensive, Selective, Other maintained or Independent.

Significant associations were found between external measure of quality and effectiveness (DfE CVA, Ofsted judgements and students' experiences) indicating triangulation. This implies that students are picking up on particular aspects of the quality of education in their secondary schools. In particular, highly effective schools were ones in which academic success was perceived to be highly valued by students (*Academic ethos*), behaviour and discipline was better (*Poor behaviour climate, Teacher discipline*) and students and teachers got on well (*Positive relationships, Valuing students)*. *Teacher professional focus* and the *School environment* also appeared to be higher in more effective schools. This emphasises the importance of students' opinion and experience in the evaluation of school performance. There was no evidence, in terms of their students' scores for *Mental well-being*, that more academically effective secondary schools were putting undue pressure on their students. In contrast, students from these schools had more favourable reports for *School enjoyment* (although the size of the effect was small, Sammons et al., 2014c).

As in Year 9, student and family background characteristics accounted for only a small amount of variance in student views. The HLE was an exception with more stimulating KS3 HLE (Academic supervision and Academic enrichment) predicted more positive views of school in Year 11. The relationship between Academic supervision and more favourable views is complex and causation should not be inferred. Students whose parents spend more time monitoring their children's schoolwork report more favourable school experiences for *Teacher professional focus, Monitoring students, Formative feedback* and *Positive relationships*[5]. HLE predicted attainment and social-behavioural outcomes across the educational phases of this longitudinal study and it is possible that students with this kind of home support may also be receiving more support from teachers.

There may be a complex interplay between school processes and the HLE. Students attending more effective and higher quality secondary schools had significantly higher HLE at the end of primary schooling and engaged in more educational enrichment activities in Year 9, suggesting parents who provide a more stimulating HLE may have chosen more effective and higher quality secondary schools for their children. However, schools with a greater focus on *Teacher professional focus, Monitoring students, Formative feedback* and *Positive relationships* may well also have an influence on both student and parental behaviour, for example through practices such as setting and marking homework, and expectations. It is not possible to tease out such potentially reciprocal relationships in this research. However, by controlling for the influence of parental qualifications and support (as measured by the HLE indicators), it is possible to identify the net role of other school influences in shaping differences in students' academic, social-behaviour and other outcomes and their views and experiences of school (Sammons et al., 2014a: b). Controlling for prior attainment or social behaviour, and other student and family characteristics including HLE differences, secondary school experiences still shape students' outcomes and progress up to the end of Year 11.

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[5] This relationship was also found for views of school in Year 9. When tested without controlling for other factors, students with higher scores for Academic supervision at home also had more favourable views of school. This was particularly marked for views related to their experiences in the classroom and their relationship with teachers (*Emphasis on learning, Valuing students, Teacher discipline, Teacher support*). Higher levels of academic enrichment were associated more with a more positive behaviour climate (*Poor behaviour climate* measure) and a better *School environment*.

Table ES.1: Summary of background influences on views of school in Year 11

Factors	Teacher professional focus	Positive relationships	Monitoring students	Formative feedback	Academic ethos
Student Factors					
Gender (Girls)	-0.15	ns	ns	-0.12	ns
Early behavioural problems					
One or more	-0.17	ns	ns	ns	ns
Ethnicity (White UK heritage)					
White European heritage	ns	ns	ns	ns	ns
Black Caribbean heritage	ns	ns	0.48	ns	0.35
Black African heritage	ns	ns	ns	ns	0.50
Any other ethnic minority	ns	ns	ns	ns	ns
Indian heritage	ns	ns	0.36	ns	0.53
Pakistani heritage	0.48	0.43	0.35	0.32	0.48
Bangladeshi heritage	ns	ns	ns	ns	ns
Mixed race	ns	-0.25	ns	ns	ns
Family factors					
Parent's Highest SES at age3/5 (professional non-manual)					
Other Professional, Non-Manual	ns	-0.38	ns	ns	ns
Skilled; Non-manual	ns	-0.41	ns	-0.21	-0.33
Skilled; manual	ns	-0.33	ns	-0.23	-0.28
Semi-skilled	ns	ns	0.27	ns	-0.23
Unskilled	ns	ns	0.60	ns	ns
Not working/never worked	ns	ns	0.39	ns	ns
Family structure in Year 11 (living with both natural parents)					
Living in reconstituted family	ns	ns	ns	-0.16	ns
Living with single parent	ns	-0.14	-0.13	ns	-0.16
Other arrangement	ns	ns	ns	ns	ns
Home Learning Environment					
KS1 Creative play (grouped) (low)					
Medium	ns	0.20	ns	ns	ns
High	ns	0.24	ns	ns	ns
KS1 Outings (grouped) (low)					
Medium	ns	ns	ns	ns	ns
High	ns	ns	0.21	ns	ns
KS3 Academic supervision (Grouped) (Low)					
Medium	0.27	0.16	0.22	0.27	ns
High	0.56	0.37	0.40	0.50	0.22
KS3 Academic enrichment (Grouped) (Low)					
Medium	ns	ns	ns	ns	ns
High	0.24	0.21	0.19	0.20	ns

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

Introduction

This report presents the results of analyses related to students' experiences of school in Year 11 (age 16), towards the end of their last year of compulsory schooling. The primary purpose of the analyses was to create measures of school and classroom experiences that could be used within the analyses of other concurrent outcomes collected in Year 11: academic attainment at GCSE, social-behavioural development and student self-reported dispositions. Analyses conducted when the students were in KS3 found similar measures of school experiences to be significant predictors of Year 9 outcomes. In addition, analyses were carried out on measures to investigate the association between student, family, educational measures and views of school. Specifically, whether there was any clear link between how students experience school and external existing measures of secondary school quality from Department for Education (DfE) and the Office for Standards in Education (Ofsted) indicators.

The original EPPSE sample consisted of approximately 2,800 children, recruited at entry to pre-school. An additional sample of approximately 300 'home' children, who did not attend pre-school, entered the study at the start of school. The full sample was monitored at different time points up to the end of Key Stage 1 (age 7, Year 2) in the original EPPE project. The project was then extended up to the end of Key stage 2 (age 11, Year 6) and then again up to the end of Key stage 3 (age 14, Year 9). The present extension of the project has tracked and monitored the sample up to the end of compulsory schooling (age 16, Year 11) and their post 16 destinations. The study has continued to investigate potential educational influences, including pre-school, primary school and secondary school on Year 11 outcomes as well as those related to individual student, family and home learning environment (HLE) characteristics.

The EPPSE project has collected a wide range of individual child, family and HLE characteristics over the life of the project as well as information about the original pre-school attended. In addition, the project utilised measures of primary and secondary school quality and academic effectiveness. These included 'value added' measures of primary and secondary school effectiveness (derived from national data sets) and overall quality judgements from Ofsted inspections as well as judgements on twenty one individual dimensions from the inspection frameworks in operation at the time EPPSE students were in KS3 and KS4 (the Ofsted Framework was changed in 2012).

The measurement of students' school experiences is of growing interest and other research has found more favourable school climate to be associated with better performance and reduction in risky behaviours (Voight et al 2013, Patton et al 2006). As is the case with dispositions and views more generally, there is less consensus on what should be included in the measurement of school climate and school experience than for other student outcomes such as social-behavioural development and academic achievement. Voight et al (2013) identified themes commonly covered by such measures include school safety, academic supports, personal and social relationships, school facilities, and school connectedness. The EPPSE analyses of students' views of school in Year 9 covered many of these aspects of school experience. Factors measuring levels of Teacher support, Teacher discipline, and Emphasis on learning assessed

classroom milieu and learning whilst other factors (Poor behaviour climate, Headteacher qualities, School environment, Learning resources, Valuing students) measured students' experiences of the school and relationships with staff more generally.

The *Life in Year 11* questionnaire was designed to explore a wide range of areas of student experience, including their dispositions, views of school and their behaviour patterns. Similar questionnaires were also administered in Years 5 and Year 9. In Year 2 a shorter version of the questionnaire was the first self-report measure used in the EPPSE project.

Aims

The aims of the analyses were to:

- identify underlying dimensions (factors) related to students' experiences or views of school at the end of Key stage 4;
- explore student responses to the questionnaire covering their experiences of school;
- explore any differences between different student groups (gender, SES etc) in their experiences and views;
- explore the relationships between individual, family and HLE characteristics and students experiences of school at the end of Key Stage 4.
- explore the relationships between school composition, school effectiveness and school quality and views of school at the end of Key Stage 4, as well as the effects of earlier educational influences.

Analytical strategy

Statistical techniques

The analyses described here incorporate a range of statistical techniques from simple descriptive analyses to factor analysis (exploratory and confirmatory) and multilevel (hierarchical) regression. This paper focuses on five views of secondary school measures derived from student questionnaire data collected towards the end of Year 11 in secondary school.

Multilevel (hierarchical) regression (Goldstein 2010, Raudenbush & Bryk 2002) was used to investigate the influence of student, family and HLE characteristics on student outcomes (views of school in Year 11). Background information was obtained through parent interview at entry to the study and subsequently through parent questionnaires during KS1, KS2 and KS3. The response rate for the initial parent interview was 97 per cent and 81 per cent for the KS1 parent questionnaire[6]. Parent response rates were lower for the KS2 and KS3 parent questionnaires[7]. Additional details on family structure were also collected from students using the Life in Year 11 questionnaire.

[6] 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.

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

Educational influences were measured by observation, inspection reports and analysis of student progress (collected from statistical analysis of student level data). Value added estimates (residuals) were calculated for aspects of pre-school effectiveness (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, b). In addition, multilevel (hierarchical) regression analysis was used to create value added scores for all English primary schools (combined across 3 years, 2002-2004) measuring progress across KS2 (Melhuish 2006a; b). DfE contextualised valued added measures (CVA) and Ofsted inspection judgements were also used to explore the impact of secondary schools, as well students' own experiences of various aspects of school and classroom life. In Year 11, the national databases also provided information on the type of secondary school the EPPSE students attended.

Estimates from the multilevel (hierarchical) models are shown as model estimates and effect sizes (ES). Effect sizes measure the strength of an influence on an outcome (Elliot & Sammons 2004) and EPPSE uses the Tymms et al., (1997, see Sammons et al., 2014a) formula. Coe (2002) presents different ways of interpreting ES, such as a z score (from a normal distribution). So for example, an ES of 0.6 for the predictor group (e.g. girls) could be interpreted as 0.6 standard deviations above that of the boys in the control group. Girls, on average, would score higher than 73 per cent of boys in the sample (Coe 2002 for full explanation and other interpretations). It should be noted that a significant estimate shows an influence of a predictor on an outcome but cannot infer causality. Cohen (1969) suggested that an ES of 0.2 could be considered small; an ES of 0.5 could be considered 'medium' and an ES of 0.8 could be considered 'large'.

Structure of the report

This report is made up of 5 sections.
Section 1 reports the demographic characteristics of the sample at the end of Key Stage 4 and describes missing and non-missing data.

Section 2 describes the five views of school measures and investigates the raw differences between particular groups in these factor scores and individual items, such as differences between girls and boys, and groupings based on social class etc.

Section 3 examines the net impact of individual, family and HLE as predictors of views of school measures. Multilevel (hierarchical) modelling examines the net impact of individual variables whilst controlling for other significant influences on these outcomes.

Section 4 explores possible educational influences on views of school. Pre-school, primary and secondary school are investigated, in particular whether external measures of secondary school quality and effectiveness predict students' views of school. Building on multilevel models developed in Section 3 (controlling for differences in intake), the impact of secondary school CVA and Ofsted quality judgements and school type at the end of KS 4 is explored.

The last section summarises the key findings, conclusions and policy implications.

Section 1: Characteristics of the sample

Table 1.1 describes the student characteristics for the complete and missing sample. Girls and White UK heritage students were more likely to have complete data. In terms of gender, the proportion of boys in the complete sample was somewhat lower than the girls in the sample (46% compared to 54%) reflecting their greater propensity to return the Year 11 questionnaires. In terms of ethnicity, 77 per cent of the complete sample was White UK heritage, compared to 67 per cent of the missing sample. 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%).

Selected family demographics and home learning characteristics are presented in Table 1.1. In terms of early years HLE (measured at entry to the study), students with missing data were more likely to be lower scoring in their early HLE scores than students with completed data. In terms of qualifications, approximately 28 per cent with complete data had at least one parent with a degree or higher, compared to a much lower 17 per cent of students with missing data. Students from higher SES groups were more likely to have complete data than the lower SES groups.

Table 1.1: Selected student and pre-school 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
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
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

Section 2: Students' views of school at the end of Year 11

Key findings

General patterns in student response

- On the whole students were very positive about their secondary school experiences in KS4, in line with findings from Year 9.
- Items related to behaviour and discipline in school were rated rather less favourably than other items. Approximately a third of students did not think teachers in their school applied rules for behaviour consistently and a similarly large minority did not think that their teachers marked and returned homework promptly. A quarter of students did not agree that 'teachers make sure that it is quiet and orderly during lessons'.
- Approximately nine out of ten students felt they were treated fairly by teachers and that teachers treated them with respect.
- Eight out of ten felt that teachers were interested in them as a person and that teachers and students generally got on well in their secondary school.
- The vast majority (98%) of students agreed that 'Teachers in this school believe that learning is important.
- Regarding *Formative feedback*, approximately nine out of ten students reported that teachers supported them in providing help when they were stuck, helpful comments and ways to improve their work.
- Nearly all students believed that fellow students in their school thought it was important to do well in exams and wanted to carry on with their education after GCSEs. In all, less than one in five thought students in their school weren't really interested in learning.
- Students' views were less favourable when asked about student behaviour and order and structure in the classroom. A quarter of students did not feel that their teachers would be approachable if they were being bullied.

Views of school measures

- Five views of school factors were identified from exploratory and confirmatory factor analysis of the student questionnaire: *Teacher professional focus*, *Positive relationships, Monitoring students*, *Formative feedback* and *Academic ethos*.
- The majority of students showed particularly favourable views for the factors *Positive relationships, Formative feedback* and *Academic ethos.*.
- Differences in raw scores for gender, family demographics (FSM 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 views of school.

Gender differences in raw factor scores

- Girls were significantly less positive than boys in their views on *Teacher professional focus, Positive relationship* scores, but had lower scores for *Formative feedback.*
- There were no significant differences between girls and boys in their reported levels of *School enjoyment*.

Parental qualifications and HLE as predictors of raw scores

- Students whose parents had higher qualifications showed more favourable responses for *Positive relationships* and reported higher *academic ethos* in their school.
- Students with parents with no qualifications and those with parents who had higher qualifications (degree or above) reported the highest levels of *Formative feedback*.
- The early years HLE was not found to have an association with views of school in Year 11. In contrast, higher HLE, measured in KS3 was positively associated with all five views of school.
- Higher levels of 'parental academic supervision' and 'academic enrichment activities' in KS3 were associated with more favourable views of school. Higher levels of reported 'Parental academic supervision' were particularly related to *Positive relationships* and *Formative feedback*. 'Academic enrichment activities' had the strongest association with *Teacher professional focus* and *Formative feedback*.

Special educational needs as predictors of raw views of school scores

- SEN students with a statement reported higher levels of *Teacher professional focus*, more *Positive relationships* and higher scores for *Formative feedback* than students not on the SEN register and students on other stages of the register.

2.1 The student questionnaire

A student questionnaire (Life in Year 11) was administered in the spring term of Year 11. Students had the option to return a paper version or complete the questionnaire online[8]. The questionnaire comprised six sections, covering students' views/dispositions, aspirations, extended school activities, out of school activities, friendship, behaviour, and experiences of school and classroom life (Sammons et al., 2014a). Similar self report questionnaires were administered at different time points throughout the study (aged 7, 10 and 14). In total 1675 students completed the questionnaire in Year 11.

Creating the 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 adapted items related to views of school from the following surveys:

- The School Climate Assessment Instrument (Grosin and McNamara 2001),

[8] Follow up on initial non-responders was in the form of telephone or face-face interviews.

- The Louisiana ABC+ model (Teddlie and Stringfield 1993)

Exploratory and confirmatory factor analysis was used to produce five factors related to views of school. The items linked to these five measures are shown in Table 2.1.

Table 2.1: Views of school factors in Year 11

Teacher professional focus	***Positive relationships***	***Monitoring students***
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 ..have the same rules about behaviour ..come to their lessons on time ..mark and return homework promptly ..make sure that it is quiet and orderly during lessons ..believe that learning is important ***Cronbach=0.77***	Teachers... ..treat the pupils fairly ..are interested in me as a person ..school show respect for the pupil The teachers and pupils get on well ***Cronbach=0.79***	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 ***Cronbach=0.69***

Formative feedback	***Academic ethos***
Teachers.. ..help me when I am stuck ..make helpful comments on my work ..tell me how to make my work better ***Cronbach=0.83***	*Most pupils*.. ..want to do well in exams ..want to continue their education after GCSEs ..are interested in learning ***Cronbach=0.78***

Some of the factors were more strongly correlated than others, such as *Positive relationships* and *Teacher professional focus* (r=0.62). *Academic ethos* displayed the lowest association with other views of school factors, suggesting it is a more distinct construct.

Table 2.2: Correlation between views of school factors in Year 11

	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

For descriptive analyses below the un-standardised factor scores (but weighted) are presented for ease of interpretation below in Table 2.3 (e.g. in line with the original 1-4 scale). Elsewhere they have been standardised to a mean of 100 and standard deviation of 15. In the factor scores, students' ratings are the most positive for *Academic ethos* and least positive for *Teacher professional focus,* although as in Year 9 (Sammons et al., 2011a) students are generally have favourable views about all the areas investigated.

Table 2.3: Views of school factors in Year 11

	Mean	Standard deviation	Range	Student n
Teacher professional focus	2.98	0.42	1.40-4.00	1673
Positive relationships	3.01	0.46	1.00-4.00	1673
Monitoring students	3.03	0.48	1.00-4.00	1664
Formative feedback	3.13	0.53	1.00-4.00	1666
Academic ethos	3.15	0.46	1.00-4.00	1665

Similar to results found in Year 9, the *School enjoyment* disposition factor, related to aspects of school experience such as liking school and lessons, showed some of the highest associations with the other views of school factors, especially *Positive relationships* (r=0.57), *Teacher professional focus* (r=0.52) and *Formative feedback* (r=0.47).

Table 2.4: Correlations between Views of school and dispositions in Year 11

	Year 11 Dispositions				
	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

2.2 Students' views at the end of Year 11

Teacher professional focus

Table 2.5 shows that the majority of students thought teachers believed learning to be important although there was variation in terms of the strength of agreement (43% strongly agreed, 55% agreed), and students were generally positive about most aspects of teacher's professional focus.

Views were less positive about the extent that teachers kept good order and marked and returned homework promptly. For example nearly a third (32%) disagreed that teachers marked and returned homework promptly and nearly 26% disagreed that teachers make sure it is quiet and orderly in lessons.

Table 2.5: Students' views of Teacher professional focus in Year 11

Teachers in this school....	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	N	%
believe that learning is important	719	43.1	918	55.0	31	1.9	2	0.1
come to their lessons on time	324	19.5	1059	63.7	258	15.5	21	1.3
spend all of the time in lessons teaching us or making sure we are working	311	18.7	1051	63.2	285	17.1	17	1.0
have the same rules about behaviour	239	14.4	876	52.7	491	29.5	56	3.4
mark and return homework promptly	212	12.9	909	55.1	461	28.0	67	4.1
make sure that it is quiet and orderly during lessons	133	8.0	1094	66.0	396	23.9	35	2.1
If a pupil is bullied, they would feel able to tell a teacher about it	293	17.6	968	58.3	366	22.0	34	2.0

Positive relationships

In Table 2.6 approximately nine out of ten students feel that their teachers treat students fairly and show them respect. Slightly less, although still the large majority (eight out of ten) feel that teachers are interested in them as a person (although 18% disagreed) and that teachers and students get on well in school (82%).

Table 2.6: Students' views of Positive relationships in Year 11

	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	N	%
Teachers treat the pupils fairly	314	18.8	1141	68.3	195	11.7	21	1.3
Teachers show respect for the pupils	302	18.2	1182	71.1	161	9.7	18	1.1
My teachers are interested in me as a person	258	15.5	1128	67.7	267	16.0	14	0.8
The teachers and pupils get on well in this school	199	12.0	1161	70.2	264	16.0	30	1.8

Monitoring students

Although students were generally positive about the level of monitoring they received, in Table 2.7 below, proportionally fewer students felt that the 'school has rewards for pupils who work hard or make good progress even if they do not get high grades', although two thirds still believed this was the case. Students were most likely to believe that 'teachers notice those pupils who are not working as well as they could and try to make them work harder'.

Table 2.7: Students' views of Monitoring in Year 11

	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	N	%
I am set targets for my learning by my teachers which are individual to me and not for the whole class	437	26.4	899	54.3	290	17.5	29	1.8
The school has rewards for pupils who work hard or make good progress even if they do not get high grades	355	21.5	817	49.5	394	23.9	85	5.1
A pupil who works hard or makes good progress is noticed and praised	337	20.4	1033	62.4	251	15.2	34	2.1
Teachers notice those pupils who are not working as well as they could and try to make them work harder	328	19.8	1156	69.6	158	9.5	18	1.1

Formative feedback

Nearly all students (95%) reported that teachers helped them when they are stuck, and in Table 2.8 a similar proportion reported that teachers tell them how to make their work better (91%). Although still very positive, a relatively smaller proportion (85%) reported that teachers make helpful comments about their work (15% disagreed).

Table 2.8 Students' views of Formative feedback in Year 11

Teachers...	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	N	%
help me when I am stuck	528	31.7	1046	62.8	82	4.9	10	0.6
tell me how to make my work better	430	26.0	1080	65.2	129	7.8	17	1.0
make helpful comments on my work	346	20.8	1066	64.2	221	13.3	28	1.7

Academic ethos

In line with views expressed by Year 9 students (Sammons et al., 2011a), in Year 11 most students still believe they to do well in exams (96%). Table 2.9 shows similar proportion believe most students want to continue their education after GCSEs (95%). In total, only15 per cent of students reported that other students in their school were not interested in learning.

Table 2.9: Students' views of Academic ethos in Year 11

	Strongly agree		Agree		Disagree		Strongly disagree	
	n	%	n	%	n	%	N	%
Most pupils at this school want to do well in exams	491	29.5	1101	66.1	70	4.2	3	0.2
Most pupils at this school want to continue their education after GCSEs	461	27.8	1111	67.0	84	5.1	3	0.2
Most pupils at this school are interested in learning	233	14.1	1168	70.7	232	14.0	20	1.2

2.3 Differences between student groups in reported experiences of school

Gender, family poverty (measured by Free School Meals entitlement), parental qualifications (highest) and early HLE were investigated to see if there were any significant differences in views between student groups.

Gender

Few gender differences were found as shown in Tables 2.10 and 2.11. By and large gender differences were small but boys were more positive than girls for a small number of items on teacher-student relationships. Specifically, boys were more likely to report their teachers arrived on time to lesson, marked and returned homework promptly and treated students fairly.
Girls were more likely to think most pupils in their school wanted to carry on their education after GCSEs.

Table 2.10: Differences in views of school items by gender in Year 11

Teachers....		Strongly agree		Agree		Disagree		Strongly disagree		Chi, p
		n	%	n	%	n	%	n	%	
come to their lessons on time	***Girls***	163	18.1	568	62.9	157	17.4	15	1.7	9.216, p=0.027
	Boys	161	21.2	491	64.7	101	13.3	6	0.8	
mark and return homework promptly	***Girls***	104	11.6	474	52.8	273	30.4	46	5.1	14.108, p=0.003
	Boys	108	14.4	435	57.8	188	25.0	21	2.8	
treat the pupils fairly	***Girls***	148	16.3	622	68.7	122	13.5	14	1.5	13.172, p=0.004
	Boys	166	21.7	519	67.8	73	9.5	7	0.9	
Most pupils at this school want to continue their education after GCSEs	***Girls***	270	30.0	597	66.3	33	3.7	0	0.0	14.718, p=0.002
	Boys	191	25.2	514	67.7	51	6.7	3	0.4	

In terms of views of school factors, boys had significantly more positive factor ratings for *Teacher professional focus, Positive relationships* and *Formative feedback*.

Table 2.11: Differences in views of school factors by gender in Year 11

		n	Mean	Standard deviation	t, p
Teacher professional focus	***Girls***	906	99.21	15.30	2.353, p=0.019
	Boys	767	100.94	14.59	
Positive relationships	***Girls***	906	99.06	15.21	2.784, p=0.005
	Boys	767	101.11	14.68	
Formative feedback	***Girls***	903	99.26	15.11	2.208, p=0.027
	Boys	763	100.88	14.83	

Special Educational Needs (SEN)

There were differences between students who had some form of SEN and other non-SEN students in some of the views of school items (Table 2.12). Student on the School Action plus stage of the SEN register had somewhat less favourable views of school. In contrast, students who had a full statement of SEN had similar in views to students not on the SEN register, suggesting perhaps that the extra provision they were receiving was beneficial.

Table 2.12: Differences in views of school items by SEN status in Year 11

Teachers....		Strongly agree		Agree		Disagree		Strongly disagree		Chi, p
		n	%	n	%	n	%	n	%	
have the same rules about behaviour	None	315	19.8	1013	63.6	245	15.4	19	1.2	24.669, p=0.003
	Sch. Action	32	21.5	84	56.4	29	19.5	4	2.7	
	Sch. Act. +	7	10.4	37	55.2	20	29.9	3	4.5	
	Statement	9	19.6	32	69.6	5	10.9	0	0.0	
come to their lessons on time	None	268	20.1	852	64.0	200	15.0	12	0.9	17.498, p=0.041
	Sch. Action	25	16.8	95	63.8	24	16.1	5	3.4	
	Sch. Act. +	9	13.6	39	59.1	17	25.8	1	1.5	
	Statement	13	28.9	27	60.0	4	8.9	1	2.2	
treat the pupils fairly	None	256	19.1	916	68.5	151	11.3	14	1.0	22.375, p=0.008
	Sch. Action	27	18.0	99	66.0	21	14.0	3	2.0	
	Sch. Act. +	3	4.5	47	70.1	15	22.4	2	3.0	
	Statement	13	28.3	30	65.2	2	4.3	1	2.2	
and pupils get on well in this school	None	160	12.1	943	71.4	196	14.8	21	1.6	19.245, p=0.023
	Sch. Action	20	13.3	97	64.7	27	18.0	6	4.0	
	Sch. Act. +	4	6.0	41	61.2	20	29.9	2	3.0	
	Statement	6	13.0	32	69.6	8	17.4	0	0.0	
help me when I am stuck	None	411	30.8	857	64.3	57	4.3	8	0.6	24.747, p=0.003
	Sch. Action	54	36.5	81	54.7	13	8.8	0	0.0	
	Sch. Act. +	16	23.5	43	63.2	7	10.3	2	2.9	
	Statement	20	43.5	25	54.3	1	2.2	0	0.0	
Most pupils at this school want to do well in exams	None	373	28.0	900	67.5	59	4.4	2	0.1	22.061, p=0.009
	Sch. Action	49	33.1	96	64.9	3	2.0	0	0.0	
	Sch. Act. +	29	42.6	36	52.9	3	4.4	0	0.0	
	Statement	16	35.6	25	55.6	3	6.7	1	0.1	
Most pupils at this school want to continue their education after GCSEs	None	360	27.1	900	67.7	69	5.2	1	0.1	21.861, p=0.009
	Sch. Action	44	29.7	101	68.2	2	1.4	1	0.7	
	Sch. Act. +	22	32.4	40	58.8	6	8.8	0	0.0	
	Statement	9	20.5	31	70.5	3	6.8	1	2.3	

Students at the stage of the SEN register in which they are receiving assessments of their needs from outside agencies (School action plus) were found to have somewhat less favourable views in terms of *Teacher professional focus*, *Positive relationships* and *Formative feedback*, of any of the groups, whilst those who had already received a statement of need were the most positive.

Table 2.13: Differences in views of school factors by SEN status in Year 11

		n	Mean	Standard deviation	f, p
Teacher professional focus	**None**	1339	99.85	15.07	2.994, p=0.030
	Sch. Action	150	101.03	15.86	
	Sch. Action +	67	96.72	12.60	
	Statement	46	104.92	13.51	
Positive relationships	**None**	1339	100.28	14.67	5.784, p=0.001
	Sch. Action	150	99.22	16.21	
	Sch. Action +	67	93.32	13.37	
	Statement	46	103.60	14.59	
Formative feedback	**None**	1333	99.70	14.97	2.688, p=0.045
	Sch. Action	148	102.13	16.34	
	Sch. Action +	68	97.48	16.95	
	Statement	46	103.60	13.04	

Family poverty

Where significant differences arose between students entitled and not entitled to Free School Meals (FSM), it was the FSM students who tended to have more positive responses as shown in Table 2.11 and relate mainly to aspects of positive relationships with teachers and behaviour management. No significant differences were found in overall factor scores.

Table 2.14: Differences in views of school by family poverty in Year 11

		Strongly agree		Agree		Disagree		Strongly disagree		Chi, p
		n	%	n	%	n	%	n	%	
If a pupil is bullied, they would feel able to tell a teacher about it	***No FSM***	235	16.6	842	59.5	315	22.3	23	1.6	16.832, p=0.001
	FSM	49	23.7	105	50.7	43	20.8	10	4.8	
Teachers have the same rules about behaviour	***No FSM***	174	12.8	727	53.4	409	30.0	52	3.8	25.900, p=0.001
	FSM	53	23.6	120	53.3	49	21.8	3	1.3	
Teachers make sure that it is quiet and orderly during lessons	***No FSM***	104	7.4	954	67.6	327	23.2	27	1.9	18.052, p=0.000
	FSM	26	12.6	111	53.6	62	30.0	8	3.9	
The teachers and pupils get on well in this school	***No FSM***	149	11.0	986	72.8	199	14.7	21	1.5	21.821, p=0.000
	FSM	33	14.8	126	56.5	55	24.7	9	4.0	
A pupil who works hard or makes good progress is noticed and praised	***No FSM***	253	18.6	861	63.4	214	15.8	29	2.1	12.914, p=0.005
	FSM	60	26.9	130	58.3	30	13.5	3	1.3	
The school has rewards for pupils who work hard or make good progress even if they do not get high grades	***No FSM***	274	20.2	677	50.0	329	24.3	74	5.5	12.521, p=0.006
	FSM	65	29.1	107	48.0	44	19.7	7	3.1	

Family qualifications

Parental qualification level was also associated with students' of views of school in Year 11. Those with students from higher qualified household held less positive views of their schools than students from households holding lower level qualifications or no qualifications for some aspects of *Teacher professional focus* such as approachability of the teacher, and the consistency of behaviour rules. Students whose parents held middle qualifications were the most likely to agree that 'teachers make sure that it is quiet and orderly during lessons' and students whose parents were more highly qualified were more likely report that 'teachers mark and return homework promptly'.

Table 2.15: Differences in aspects of Teacher professional focus by parental qualifications[9]

		Strongly agree		Agree		Disagree		Strongly disagree		Chi, p
		n	%	n	%	n	%	n	%	
If a pupil is bullied, they would feel able to tell a teacher about it	***None***	45	24.6	89	48.6	44	24.0	5	2.7	22.018, p=0.001
	Middle	169	17.8	575	60.7	184	19.4	20	2.1	
	Higher	70	14.2	280	56.8	134	27.2	9	1.8	
Teachers have the same rules about behaviour	***None***	37	20.1	105	57.1	36	19.6	6	3.3	34.096, p=0.000
	Middle	137	14.5	521	55.1	261	27.6	27	2.9	
	Higher	58	11.8	226	45.8	187	37.9	22	4.5	
Teachers mark & return homework promptly	***None***	25	13.6	92	50.0	56	30.4	11	6.0	13.267, p=0.039
	Middle	112	12.0	500	53.7	276	29.6	43	4.6	
	Higher	70	14.1	293	59.2	120	24.2	12	2.4	
Teachers make sure that it is quiet & orderly during lessons	***None***	21	11.5	113	61.7	45	24.6	4	2.2	18.537, p=0.005
	Middle	62	6.6	612	64.7	248	26.2	24	2.5	
	Higher	46	9.4	346	70.5	93	18.9	6	1.2	

Overall students whose parents were more highly qualified had more favourable views than other students. For example 93 per cent of students whose parents were highly qualified thought teachers treated students fairly compared to 82 per cent of those whose parents held no qualifications.

Table 2.16: Differences in aspects of Positive relationships and Monitoring students by parental qualifications

Teachers...		Strongly agree		Agree		Disagree		Strongly disagree		Chi, p
		n	%	n	%	n	%	n	%	
treat the pupils fairly	**None**	42	22.6	111	59.7	29	15.6	4	2.2	47.261, p=0.000
	Middle	137	14.4	671	70.6	128	13.5	14	1.5	
	Higher	128	25.8	332	66.9	35	7.1	1	0.2	
are interested in me as a person	**None**	36	19.7	112	61.2	34	18.6	1	0.5	16.170, p=0.013
	Middle	135	14.2	637	67.1	166	17.5	11	1.2	

[9] Original groups have been collapsed: None= No qualifications; Middle =Vocational, 16 academic or 18 academic; Higher=Other professional, Degree, Higher degree

	Higher	82	16.5	353	71.2	60	12.1	1	0.2	
show respect for the pupils	**None**	36	19.5	124	67.0	24	13.0	1	0.5	20.031, p=0.003
	Middle	150	15.9	681	72.1	100	10.6	14	1.5	
	Higher	111	22.5	348	70.4	33	6.7	2	0.4	
and pupils get on well in this school	**None**	27	14.7	119	64.7	35	19.0	3	1.6	20.820, p=0.002
	Middle	91	9.7	668	71.1	157	16.7	23	2.4	
	Higher	79	16.1	343	69.7	66	13.4	4	0.8	

Items related to *Monitoring students* and *Formative feedback* did not show any statistically significant relationship with parental qualifications. In contrast, students whose parents had higher qualifications were more likely to think most students in their school wanted to do well in exams, continue with education after GCSE and that students were interested in learning.

Table 2.17: Differences in aspects of Formative feedback by parental qualifications

Most pupils.....		**Strongly agree**		**Agree**		**Disagree**		**Strongly disagree**		**Chi,p**
		n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	
want to do well in exams	***None***	54	29.2	123	66.5	8	4.3	0	0.0	19.784, p=0.003
	Middle	251	26.5	642	67.9	50	5.3	3	0.3	
	Higher	174	35.1	312	62.9	10	2.0	0	0.0	
want to continue their education after GCSEs	***None***	53	28.6	127	68.6	4	2.2	1	0.5	25.804, p=0.000
	Middle	227	24.1	657	69.7	56	5.9	2	0.2	
	Higher	174	35.2	296	59.9	24	4.9	0	0.0	
are interested in learning	***None***	29	15.7	127	68.6	27	14.6	2	1.1	26.388, p=0.000
	Middle	101	10.8	681	72.5	142	15.1	15	1.6	
	Higher	98	19.9	330	67.1	62	12.6	2	0.4	

Table 2.18 shows that students whose parents were higher qualified were found to have more positive views of the student-staff relationships (*Positive relationships*) and more positive views of the school's *Academic ethos*. Students whose parents were unqualified and those with more highly qualified parents reported more favourable responses for the factor *Formative feedback.*

Table 2.18: Differences in views of school factors by parental qualifications in Year 11

		n	**Mean**	**Standard deviation**	**f, p**
Positive relationships	***None***	186	99.87	16.74	15.566, p=0.000
	Middle	951	98.50	14.93	
	Higher	497	103.08	13.85	
Formative feedback	***None***	185	100.20	15.41	3.199, p=0.041
	Middle	945	99.29	15.14	
	Higher	497	101.25	14.31	
Academic ethos	***None***	185	100.49	14.97	13.005, p=0.000
	Middle	945	98.47	14.69	
	Higher	497	102.68	15.43	

Home Learning environment (HLE) and views of school

There was little evidence that early years HLE was associated with views of school in Year 11. In contrast, some aspects of later HLE in Year 9 had shown strong associations with views of school. Students with more stimulating Year 9 HLE, especially Academic supervision and Academic enrichment activities in Year 9 showed more positive views towards schooling[10]. In Table 2.19 the strongest association was with Academic supervision followed by Academic enrichment.

Table 2.19: Association between views of school and Year 9 HLE

	Learning resources	Computer use	Parent interest in school	Academic enrichment	Academic supervision
Teacher professional focus	0.030 (n=1256)	-0.052 (n=1299)	-0.011 (n=1272)	0.103** (n=1303)	0.166** (n=1332)
Positive relationships	-0.004 (n=1256	-0.057* (n=1299	0.055* (n=1272	0.121** (n=1303	0.097** (n=1332
Monitoring students	-0.003 (n=1249)	-0.013 (n=1293)	-0.028 (n=1267)	0.068* (n=1296)	0.137** (n=1325)
Formative feedback	0.001 (n=1250)	-0.047 (n=1295)	-0.007 (n=1266)	0.108** (n=1299)	0.158** (n=1328)
Academic ethos	-0.013 (n=1250)	-0.028 (n=1294)	0.041 (n=1267)	0.080** (n=1298)	0.053 (n=1327)

* p<0.05 ** p<0.01

Nonetheless, as Table 2.19 and 2.20 show the factors Academic enrichment and Academic supervision were significantly related to all the views of school factors.

Table 2.19: Differences in views of school factors by Academic enrichment in Year 11

Year 11 Views of school		n	Mean	Standard deviation	f, p
Teacher professional focus	***Low***	228	98.23	15.12	6.316, p=0.002
	Medium	735	99.61	14.63	
	High	340	102.41	15.22	
Positive relationships	***Low***	228	97.08	15.36	8.516, p=0.000
	Medium	735	100.29	14.24	
	High	340	102.21	14.61	
Monitoring students	***Low***	228	97.94	15.21	3.401, p=0.034
	Medium	728	99.90	15.07	
	High	340	101.33	15.44	
Formative feedback	***Low***	228	97.81	14.60	5.540, p=0.004
	Medium	732	99.87	14.35	
	High	339	101.33	15.04	
Academic ethos	***Low***	228	98.78	14.54	4.517, p=0.011
	Medium	731	99.33	14.68	
	High	339	101.98	15.37	

[10] In addition a relationship between higher computer use in Year 9 and poorer views of the relationship between staff and students (Positive relationships) was found.

Table 2.20: Differences in views of school factors by Academic supervision in Year 11

Year 11 Views of school		n	Mean	Standard deviation	f, p
Teacher professional focus	***Low***	210	96.09	14.89	16.782, p= 0.000
	Medium	915	99.90	14.82	
	High	207	104.52	15.25	
Positive relationships	***Low***	210	97.57	16.08	7.315, p=0.001
	Medium	915	99.96	14.38	
	High	207	103.03	14.29	
Monitoring students	***Low***	207	96.50	15.83	9.949, p=0.000
	Medium	911	99.86	14.73	
	High	207	103.17	16.63	
Formative feedback	***Low***	209	95.93	15.45	15.172, p=0.000
	Medium	912	99.98	14.37	
	High	207	103.83	14..99	
Academic ethos	***Low***	208	99.09	14.84	2.658, p=0.070
	Medium	912	99.53	14.80	
	High	207	102.00	15.07	

Section 3: The effects of individual, family and HLE characteristics in predicting views of school at the end of Key stage 4 (Year 11)

Key findings

- These analyses predict views of school in terms of different student, family, HLE and neighbourhood characteristics. The combined 'net' effects are reported.
- In line with analyses of student dispositions and views of school at earlier time points, background accounted for very little of the variation in views of school.

Student influences

- Girls reported lower levels of *Teacher professional focus*, lower levels of *Positive relationships* and lower *Formative feedback.*
- Students with earlier behavioural problems had less favourable views of *Teacher professional focus* than other students.

Family influences

- Students from single parent families showed poorer views of on all measures except *Teacher professional focus.*
- Students from higher SES household had more favourable views of *Positive relationship, Formative feedback* and *Academic ethos.* In contrast, students from lower SES households reported higher levels of *Monitoring students* than higher SES students.

Home learning influences

- Higher levels of parental Academic supervision and Academic enrichment activities, (in Key Stage 3) were associated with more favourable views of school across all five measures.

School composition influences

- Higher levels of white British students within a school predicted lower levels of reported *Positive relationships* and *Academic ethos.*

Academic achievement

- Higher attainers (GCSE) had more favourable views of school for all measures except *Academic ethos.*

This section presents the results of contextualised multilevel analyses establishing the links between individual family and home learning environment (HLE) characteristics and views of school (factors) at the end of Year 11. Outcomes for the multilevel analyses were standardised (mean=100, standard deviation=15).

Background characteristics for this analysis were selected from the details collected earlier in the project through parent interview, and subsequent parent questionnaires[11]. Details on students' Free School Meals (FSM) and Special Educational Needs (SEN) status were collected from the National Pupil Database and the Year 11 pupil profile[12]. 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 FSM, family, socio-economic status (SES), parental qualifications, family income);
- HLE in the early years, KS1, KS2 and KS3.

The net effects of particular individual, family and HLE characteristics 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 with students from the original 141 pre-schools attending over 500 secondary schools across the country). This small number of students per secondary school makes estimates of school level (level 2) variation difficult and potentially unreliable, and as such any estimates should be treated with caution.

The original estimates of net effects for different predictors are shown alongside their effect sizes (ES)[13].

3.1 The Null models

In line with findings in Year 9 (Sammons et al., 2011a) most of the views of school factors showed significant variation between schools. *Formative feedback* was the only factor that showed no significant variation between schools. In contrast, *Academic ethos* showed a large amount of variation (21.2% of the variation at the school level). This shows that there is more variation between secondary school in students' perceptions of *Academic ethos* in KS4 than there is in their views of other aspects of schooling.

[11] 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.

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

[13] As explained earlier, and effect size (ES) 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 ES were calculated. For a more detailed explanation of the variables modelled see Sammons et al (2014a).

Table 3.1: Null models for the Year 11 views of school outcomes

	Teacher professional focus	Positive relationships	Monitoring students	Formative feedback	Academic ethos
No. of students	1672	1672	1663	1665	1664
No. of schools	571	571	569	571	569
Intra-school correlation	0.078	0.068	0.063	0.037 (ns)	0.212

In Year 9 significant variation between schools was found for all the views of school measures investigated, but was particularly large for *School environment* (intra-school correlation=0.276), *Poor behaviour climate* (intra-school correlation=0.275), *Headteacher qualities* (intra-school correlation=0.145) and *Learning resources* (intra-school correlation=0.107).

3.2 Contextualised models

Significant predictors of the five views of school factors are shown in Table 3.2.

Gender

Girls reported less favourable views of *Teacher professional focus* (ES=-0.15), *Positive relationships* (ES =-0.10, p<0.10) and *Formative feedback* than boys (ES-0.12), although the size of effect is small. This may reflect a less positive *Mental well-being* than boys at this age, as the small gender effect disappears if *Mental well-being* is also controlled for.

Ethnicity

The size of the sample for many of the ethnic heritage groups was small so results should be treated with caution. However, students of Indian and Pakistani heritage reported more positive views of *Teacher professional focus, Monitoring students* and *Academic ethos* than White UK heritage students. In addition Pakistani heritage students also reported more favourable views of *Formative feedback* and *Positive relationships.*

Students of Black Caribbean and Black African heritage reported more favourably on *Academic ethos in their schools* than White UK heritage students. Students of Mixed Race heritage reported lower levels of *Positive relationships* in their school (ES=-0.25) as well lower *Mental well-being* and lower *School Enjoyment* (Sammons et al., 2014a).

Marital status and family structure

Students who were had a widowed parent at entry to pre-school report lower levels of *Teacher professional focus* than from married families at that time (ES=-0.50) .

Family structure was also collected in Year 11 and found to significantly *Positive relationships, Monitoring students, Formative feedback* and *Academic ethos.* Compared to households that had both natural parents, students from single parent households had lower ratings of *Positive relationships* (ES=-0.14), *Monitoring students* (ES=-0.13), *Formative feedback* (ES=-0.11, p<0.10)

and *Academic ethos* (ES=-0.16). Compared to households that had both natural parents, students living with step parents in the household had less favourable ratings of *Monitoring students* (ES=-0.14, p<0.10), *Formative feedback* (ES=-0.16) and *Academic ethos* (ES=-0.13, p<0.10).

Family Socio-Economic Status (SES)

Students from lower SES families had less favourable ratings of *Positive relationships, Formative feedback* and *Academic ethos.* In contrast, *Monitoring students'* scores were higher for students from unskilled and non-working families.

Key Stage 3 Home Learning Environment (KS3 HLE)

Parents' supervision of students (high compared to low) predicted more favourable ratings for *Teacher professional focus* (high ES=0.56; medium ES=0.27), *Positive relationships* (high ES=0.37; medium ES=0.16), *Monitoring students* (high ES=0.40; medium ES=0.22), and *Formative feedback (*high ES=0.50; medium ES=0.27) and *Academic ethos* (high ES=0.22).

Higher levels of Enrichment activities (compared to low) predicted more favourable reports of *Teacher professional focus* (high ES=0.24), *Positive relationships* (high ES=0.21), *Monitoring students* (high ES=0.19), and *Formative feedback* (high ES=0.20). See Appendix 1 for full details of the contextualised models.

The proportion of variance explained by the background measures was very small as shown in Table 3.2 and ranged between two and six per cent. This is in line with models for the Year 11 dispositions, and is much lower than found for academic achievement and social-behavioural outcomes (Sammons et al., 2014b; c). Controlling for background characteristics reduced the variation between schools, between approximately 20 and 40 per cent. Once background had been accounted for, school level variation was still statistically significant for all factors except *Formative feedback*. It was greatest for *Academic ethos* (14.6%).

Table 3.2: Contextualised models for the Year 11 views of school outcomes

	Teacher professional focus	Positive relationships	Monitoring students	Formative feedback	Academic ethos
No. of students	1672	1672	1663	1665	1664
No. of schools	571	571	569	571	569
Intra-school correlation	0.063	0.044	0.053	0.022 (ns)	0.146
Reduction Total var.	2.2%	3.3%	2.7%	1.9%	6.2%
Reduction School var.	22.1%	38.7%	20.1%	41.4%	36.9%
Reduction Student var.	8.5%	5.7%	4.0%	3.4%	2.0%+

3.3 Academic achievement and views of school

Achievement at entry to secondary school (Year 6) was only a significant predictor of student reports of *Positive relationships* (ES=0.14, English only), and the same pattern was found in relation to Year 9 achievement. In contrast, by Year 11, achievement (GCSE total point score)

was associated with more positive views of school for all factors except *Academic ethos*, after controlling for student, family and home learning environment, although the biggest association was found for *Positive relationships* (ES=0.31), followed by *Teacher professional focus* (ES=0.19), *Formative feedback* (ES=0.16) and *Monitoring students* (ES=0.13).

3.4 School context and views of school

The proportion of students from White British heritage in secondary school was a significantly predictive of less favourable views of school, especially for *Academic ethos* (Table 3.3). The impact of school context (the % of students that were eligible for FSM, on SEN register or White British) was also tested separately and in combination after controlling for other influences (see Section 3). *Academic ethos* and *Positive relationships* were still reported as lower by students in schools that had higher proportions of White British students, once the individual characteristics of students had been accounted for.

Table 3.3: Correlation between school characteristics and Year 11 views of school

	% FSM	% SEN	% White British
Teacher professional focus	0.046 (n=1455)	-0.010 (n=1443)	-0.076** (n=1455)
Positive relationships	0.013 (n=1455)	-0.016 (n=1443)	-0.073** (n=1455)
Monitoring students	0.083** (n=1449)	-0.016 (n=1437)	-0.087** (n=1449)
Formative feedback	0.039 (n=1448)	-0.009 (n=1436)	-0.055* (n=1448)
Academic ethos	0.030 (n=1449)	-0.032 (n=1437)	-0.182** (n=1449)

* p<0.05 ** p<0.001

Section 4: The impact of educational influences on views of school 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 attendance, quality or effectiveness in predicting views of schooling in Year 11.
- The type of pre-school attended predicts some later views of school. Students who had attended a pre-school that combined education and care had more favourable views in some measures (*Monitoring students*, *Formative feedback* and *Positive relationships*; compared to students who had attended a Local Authority day nursery).

Primary school influences

- There was only little evidence of a relationship between the academic effectiveness of the primary school a student had attended on later views of school in Year 11.

Secondary school influences

- Students from more academically effective secondary schools (CVA) reported significantly more positive views of their secondary school in terms of *Academic ethos*, *Teacher professional focus* and *Positive relationships* than those from less effective schools.
- Students' views of school were also more positive in secondary schools that had more favourable Ofsted quality judgements. Students' views of *Academic ethos* showed the strongest association with Ofsted quality ratings, followed by *Teacher professional focus* and *Positive relationships*. Reports of *Academic ethos* were more favourable in secondary schools where 'the standards reached by learners' were higher, and where attendance was judged as better.
- Once student, family and out of school HLE influences were accounted for, students from independent schools had significantly more positive views of their secondary school than students from other schools classed as 'comprehensive' for all factors except *Monitoring students*, where no significant differences were found.
- Students from other maintained schools (mainly special schools) also had significantly more positive views of *Teacher professional focus* and reported higher levels of *Formative feedback* than students from comprehensive schools.
- Students from selective schools gave more favourable ratings for *Academic ethos* than students from comprehensive schools.
- Most of the views of school factors in Year 11 showed significant variation between schools, although generally modest in size (4-6% for *Teacher professional focus*, *Positive relationships*, and *Monitoring students),* and smaller than found in Year 9. *Academic ethos* was the exception, with a substantial 15 per cent of variance being found at the school level.

4.1 Pre-school attendance, quality and effectiveness and views of school

As was the case when the students were in KS3 (Sammons et al., 2011a), aspects of pre-school attendance, quality and effectiveness showed very little association with views of school in Year 11. Attending a pre-school did not predict more or less favourable views of school in Year 11. Similarly, the quality or effectiveness of the pre-school also failed to predict views of secondary school in Year 11.

In contrast, there were a few significant findings related to type of pre-school provision attended. When comparisons were made with students who did not attend pre-school, students who had attended a centre combining education and care (combined centres) in the earlier years tended to have more favourable views of *Positive relationships* (ES=0.23), and reported more favourable views of *Monitoring students* (ES=0.41) and *Formative feedback* (ES=0.33) in Year 11.

Using a different comparison group; the Local authority day nurseries, significant differences between student groups were found. Students who attended Local authority day nurseries had significantly poorer views for a number of measures (Table 4.1). Apart from the difference between these students and those from combined centres, they also had significantly less positive views than those who had gone to a Nursery class and Private day nursery for some items.

Table 4.1: Association between pre-school type and Year 11 views of school

Pre-school type **Reference group=Local Authority day nursery**		**Contextualised**		**Contextualised + Year 11 school type**	
		ES	**p**	**ES**	**p**
Teacher professional focus	Nursery class	0.19	#	ns	---
	Private day nursery	0.19	#	ns	---
	Nursery school	0.25	*	ns	---
	Combined centres	0.39	**	ns	---
Positive relationships	Combined centres	0.38	**	0.33	*
Monitoring students	Nursery class	0.19	#	ns	---
	Combined centres	0.42	**	0.41	**
Formative feedback	Combined centres	0.31	*	0.34	*
	Play group	-0.18	#	ns	---
Academic focus	Private day nursery	0.30	*	ns	---

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

The type of pre-school attended was related to the type of subsequent secondary school attended. Students who attended a private day nursery in the early years were four times more likely to attend an independent or selective secondary school later on than students who had attended a

combined centre[14]. When account was taken of school characteristics such as school type, school effectiveness and Ofsted quality, the effect of pre-school type largely disappears[15].

4.2 Primary school effectiveness and views of school

Students who had attended a more academically effective primary school (for English only) showed more favourable views of school for *Teacher professional focus* and *Academic ethos*. This relationship held even after account was made of the academic effectiveness of the current secondary school in KS4 and school type. However, the effect is still significant (*Teacher professional focus* ES High=0.20, p<0.10; *Academic ethos* High ES=0.22, p<0.05). It could be that more favourable attitudes to learning are in part influenced by earlier education, in the same way that home learning is still associated with more favourable views. Thus going to a more academically effective primary has been shown to predict better attainment at KS2, KS3 and KS4. It may shape the students' response to secondary education.

Table 4.2: Primary school effectiveness and views of school

Reference group= Low effectiveness		Contextualised		Contextualised + CVA		Contextualised + school type		Contextualised + Ofsted	
		ES	p	ES	p	ES	p	ES	p
Teacher professional focus	**High**	0.26	*	0.22	*	0.24	*	0.20	#
	Medium	0.14	#	ns	-----	0.14	#	ns	-----
Positive relationships	**High**	0.19	*	ns	-----	ns	-----	ns	-----
	Medium	0.21	*	0.20	*	0.21	*	ns	-----
Academic focus	**High**	0.31	**	0.28	*	0.27	*	0.22	*

# p<0.10 * p<0.05 ** p<0.01 ----- Not tested

4.3 Secondary school academic effectiveness, quality and type and views of school

Contextualised Value Added measure (CVA)

The DfE Contextualised Value Added measure (CVA) is based on national analyses tracking the progress of students from Year 7 to Year 11, distinguishing schools whose students make more progress on a like for like basis[16]. Higher secondary school effectiveness (CVA) was found to be a weak but significant predictor of more favourable ratings of *Teacher professional focus* (r=0.11),

[14] In EPPSE sample (with available data on school type in Year 11) 27% of students who attended a Private Day Nursery went on to attend a selective or independent secondary school. This contrasts with 7% of students who had attended a combined centre. Approximately 4-5% of students from each of the other types of pre-school settings (and the home group) went on to attend a selective or independent school. See Appendix 2 for further details.

[15] The secondary school type, CVA grouping and Ofsted quality (standards achieved by students) were tested separately but in combination with background variables and pre-school type. Significant combined centre effects were still found for *Monitoring students* (ES=0.36, p<0.05), and to a lesser extent (significant at the p<0.10 level) for *Positive relationships* (ES=0.26, p<0.10) and *Formative feedback* (ES=0.26, p<0.10).

[16] 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.

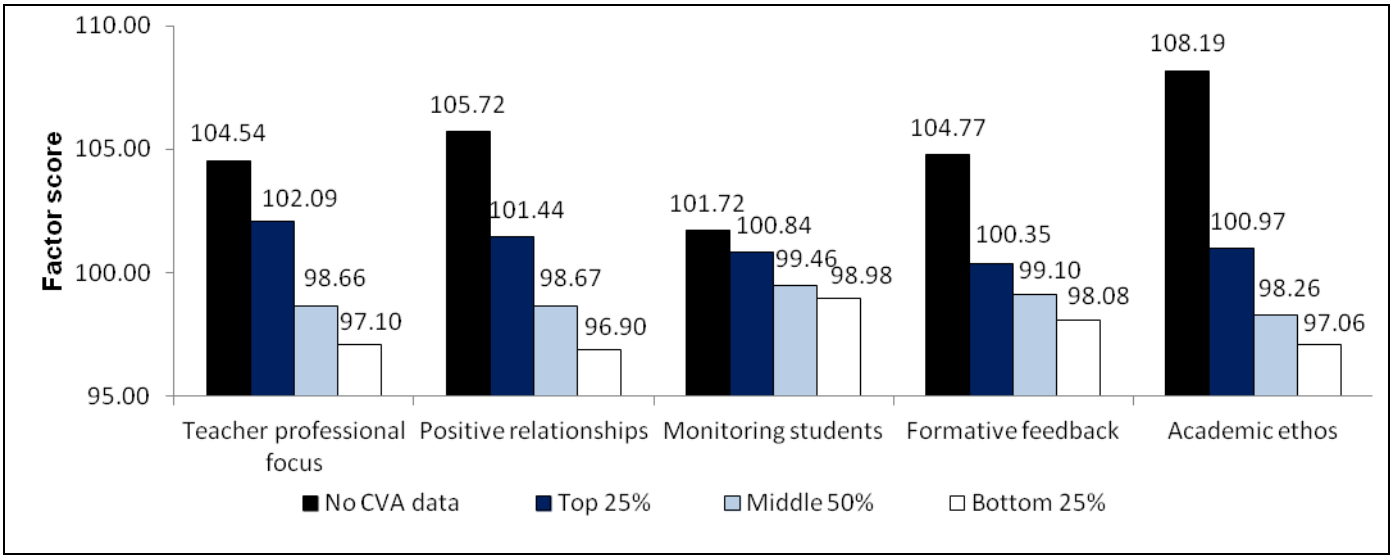
Monitoring students (r=0.06), *Positive relationships* (r=0.09) and *Academic ethos* (r=0.09). Although the effects were all positive and significant they were very small.

Table 4.1: Association between school characteristics and Year 11 views of school

	CVA, Pearsons r	
Teacher professional focus	0.107**	(n=1458)
Positive relationships	0.090**	(n=1458)
Monitoring students	0.064*	(n=1451)
Formative feedback	0.049	(n=1451)
Academic ethos	0.090**	(n=1452)

Figure 4.1 shows the mean factor scores (before controlling for any background influences) for schools scoring in the top, middle and bottom scoring for CVA nationally. The scores for students from non-state sector for which CVA data was not available are also displayed. The largest differences between CVA groupings were found for *Academic ethos*, followed by *Teacher professional focus* and *Positive relationships*[17]. Students from non-state schools also had more favourable ratings for *Formative feedback*. No significant differences were found for reports of *Monitoring students*.

Figure 4.1: Secondary school effectiveness (CVA) and views of school (mean scores, standardised)

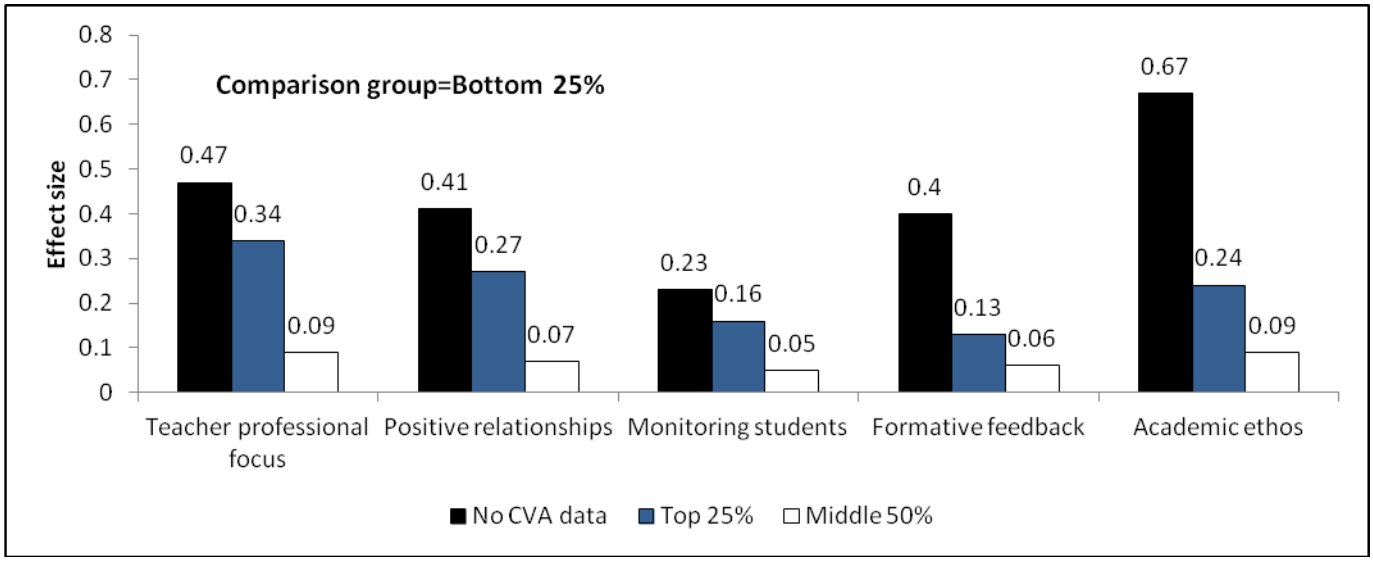


Secondary school effectiveness (CVA) was also tested after controlling for student, family and the HLE. Effect sizes (ES) for the top 25 per cent of schools nationally compared to the bottom 25 per cent were significant and positive for *Teacher professional focus* (ES=0.34, p<0.01), *Positive relationships* (ES=0.27, p<0.01) and *Academic ethos* (ES=0.24, p=0.051).

[17] Including the non-state schools, ANOVA differences between groups: *Teacher professional focus* f=13.788, p=0.000; *Positive relationship* f=16.819, p=0.000, *Academic ethos* f=29.392, p=0.000. The difference between groups was less pronounced when non-state schools were not included but still significant: *Teacher professional focus* f=8.985, p=0.000; *Positive relationship* f=6.815, p=0.000, *Academic ethos* f=6.085, p=0.000.

Students from schools without CVA scores reported more favourable views of school for all outcomes but the size of effect was substantial for *Academic ethos* (ES=0.67, p<0.001). Many of these students would be from the independent sector, and this is investigated further in a later section. These findings are in line with Voight et al., (2013) who found that schools beating the odds in terms of academic progress made by students had significantly better school climate than other schools. Controlling for students' prior attainment at intake (Year 6) made little or no difference to the effect sizes.

Figure 4.2: Secondary effectiveness and views of school (effect sizes)



Ofsted quality judgements

Attending a secondary school judged to be higher quality in terms of Ofsted inspection judgements also predicted some views of school. In general, the largest differences were generally found between 'Outstanding' schools and schools with other Ofsted judgements. Student's scores for *Monitoring students* and *Formative feedback* were only significantly predicted by to a small number of Ofsted judgements, and the differences were small. Scores for *Teacher professional focus*, *Positive relationships* and *Academic ethos* were all significantly higher for students attending secondary schools with better Ofsted quality judgements. In particular the following judgements showed larger effects across the three factors:

- how well learners achieve;
- the standards reached by learners;
- how well learners make progress (including those with learning difficulties and disabilities);
- how well learners enjoy their education.

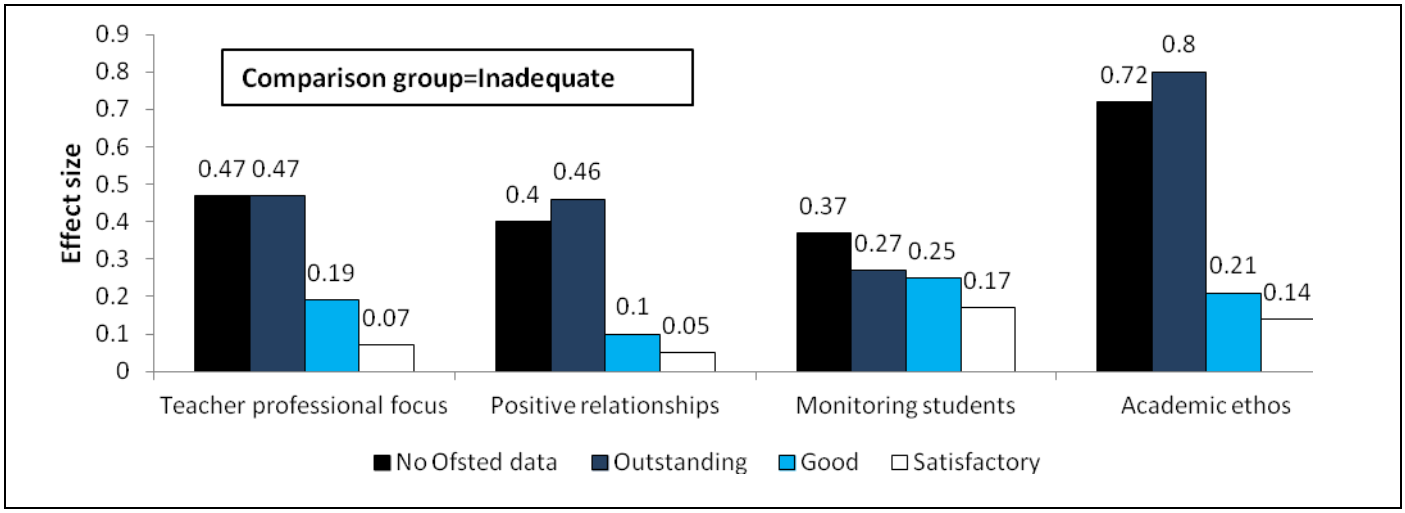
Table 4.2: School quality (Ofsted judgements) and views of school in Year 11

		Teacher professional focus		Positive relationships		Monitoring students		Formative feedback		Academic ethos	
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Overall effectiveness	**None**	104.31	14.30	105.33	14.91	102.55	15.37	104.78	15.28	107.27	16.60
	Outstanding	103.01	15.14	102.75	15.93	102.38	16.10	101.78	14.54	104.62	14.87
	Good	99.27	15.06	98.76	14.86	99.09	14.85	98.88	14.63	97.84	13.94
	Satisfactory	97.43	14.79	98.09	14.37	99.31	14.22	98.04	15.26	97.19	14.00
	Inadequate	97.08	13.27	96.15	15.21	97.13	14.20	99.31	14.14	97.46	13.93
		f=11.776, p=0.000		f=14.542, p=0.000		f=4.885, p=0.001		f=10.098, p=0.000		f=29.692, p=0.000	

In particular, higher quality measured by Ofsted judgements for achievement and standards predicted with more positive views of school (Figure 4.2). In comparison to the schools judged as 'Inadequate' by Ofsted for 'standards reached by learners', students in schools judged as Outstanding had significantly higher views of *Teacher professional focus*, *Positive relationships* and *Academic ethos*. Significant, but smaller effects were also found for *Monitoring students*. Students from schools with no available Ofsted data, largely from the non-maintained sector also had higher scores for these factors.

Once contextual factors had been accounted for (student, family and HLE) students who attended secondary schools judged as 'Outstanding' by Ofsted (compared to 'Inadequate') reported significantly more favourable views of *Teacher professional focus* (ES=0.47, p<0.001), *Positive relationships* ('Outstanding' ES=0.46, p<0.001) and *Academic ethos* ('Outstanding' ES=0.80, p<0.001). Significant, but smaller effects were also found for *Monitoring students* ('Outstanding' ES=0.27, p<0.10; Good ES=0.25, p<0.10).

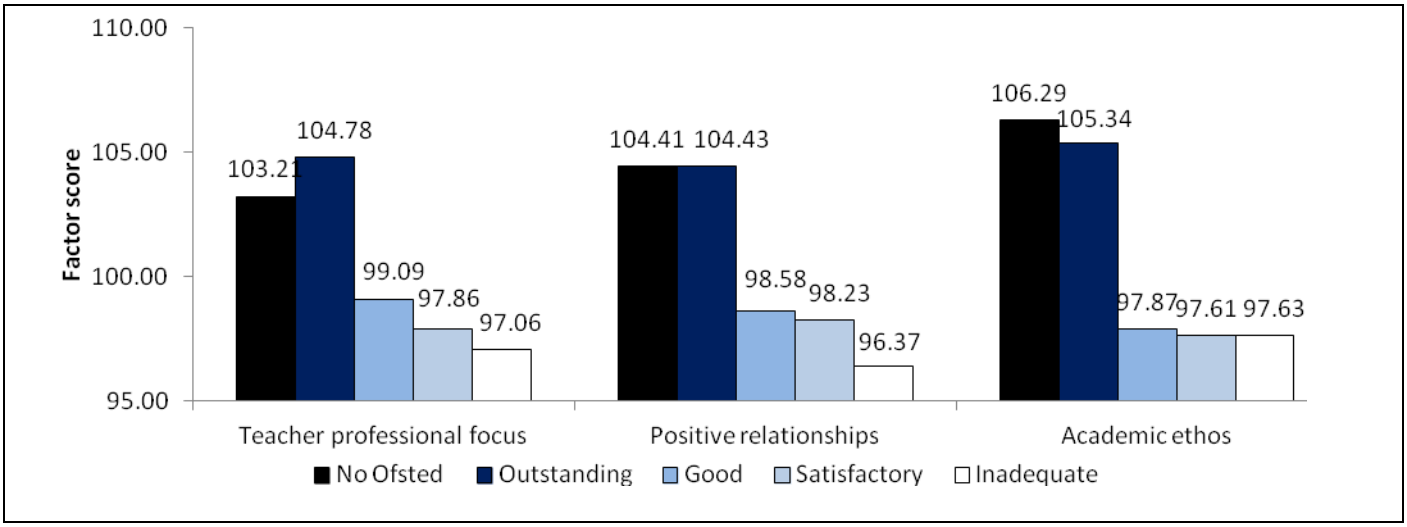
Figure 4.2: Ofsted judgement- The standards reached by learners (effect sizes)



Similarly, in comparison to those attending secondary schools judged as Inadequate by Ofsted for the criteria 'how well do learners achieve?', students from schools judged as 'Outstanding' had

significantly more favourable views of *Teacher professional focus*, *Positive relationships* and *Academic ethos (*Figure 4.4).

Figure 4.4: Ofsted judgement- How well do learners achieve? (factor scores, standardised)

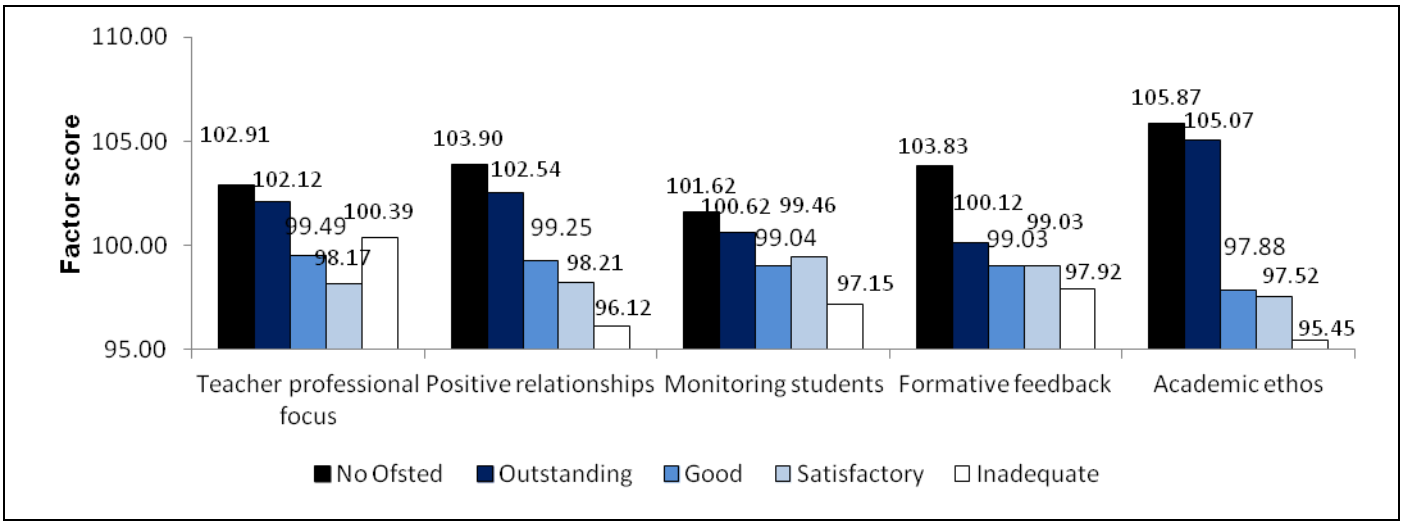


Once background was controlled for students from schools judged as 'Outstanding' for 'how well learners achieve' (compared to students from Inadequate schools) expressed significantly more favourable views of *Teacher professional focus* (ES=0.63, p<0.001), *Positive relationships* (ES=0.53, p<0.001) and *Academic ethos* ('Outstanding' ES=0.57, p<0.001) (Figure 4.5).

Academic ethos showed the strongest relationship to Ofsted judgements. One of the largest differences in reported *Academic ethos* between schools of differing Ofsted quality was found for the 'attendance of learners'. Students from 'Outstanding' schools gave the most favourable ratings for *Academic ethos* and Inadequate schools the lowest[18].

[18] Students with no Ofsted data are likely to be from schools where there is no statutory requirement to be inspected.

Figure 4.5: Ofsted judgement- Student attendance and views of school (factor scores, standardised)



Likewise, once student, family and HLE influences were accounted for, students from schools judged as 'Outstanding' in attendance had significantly higher self-reported scores for *Academic ethos* than those from Inadequate schools (ES=0.73, p<0.001 compared to Inadequate).

Moreover, students from schools judged as 'Outstanding' in promoting 'students enjoyment of education' had significantly higher self-reported scores for all factors except *Formative feedback* taking into account the influence of student, family and HLE (*Teacher professional focus* ES=0.32, p<0.001; *Positive relationships* ES=0.23, p<0.05; *Monitoring students* ES=0.18, p<0.10; *Academic ethos* ES=0.28,p<0.001. This is in comparison to Satisfactory/Inadequate schools[19]).

Table 4.5: The impact of secondary school quality (Ofsted judgements) on Year 11

How well learners enjoy their education?	Teacher professional focus		Positive relationships		Monitoring students		Formative feedback		Academic ethos	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
None	104.31	14.30	105.33	14.92	102.55	15.37	104.78	15.28	107.27	16.60
Outstanding	101.55	15.10	101.26	15.10	100.78	14.91	100.56	14.53	101.57	14.79
Good	98.56	14.87	98.47	14.51	99.37	14.65	98.50	14.66	97.19	13.79
Satisfactory	97.15	14.30	96.47	14.52	98.10	14.77	98.68	15.27	97.36	13.58
	f=13.904, p=0.000		f=19.030, p=0.000		f=4.522, p=0.004		f=11.964, p=0.000		f=33.916, p=0.000	

As mentioned previously, the strongest relationship was found for *Academic ethos* and Ofsted judgements on the behaviour of learning and students who reported a views of *Academic ethos* ('Outstanding' ES=0.53, p<0.10 compared to Inadequate).

[19] In most cases the reference group was Inadequate, but where there were too few cases, such as how well students enjoy their education, a combined satisfactory/inadequate group was sued as the comparison.

School type and views of school

Type of secondary school was taken from students Year 11 PLASC data, and was classified into five main types (Table 4.6).

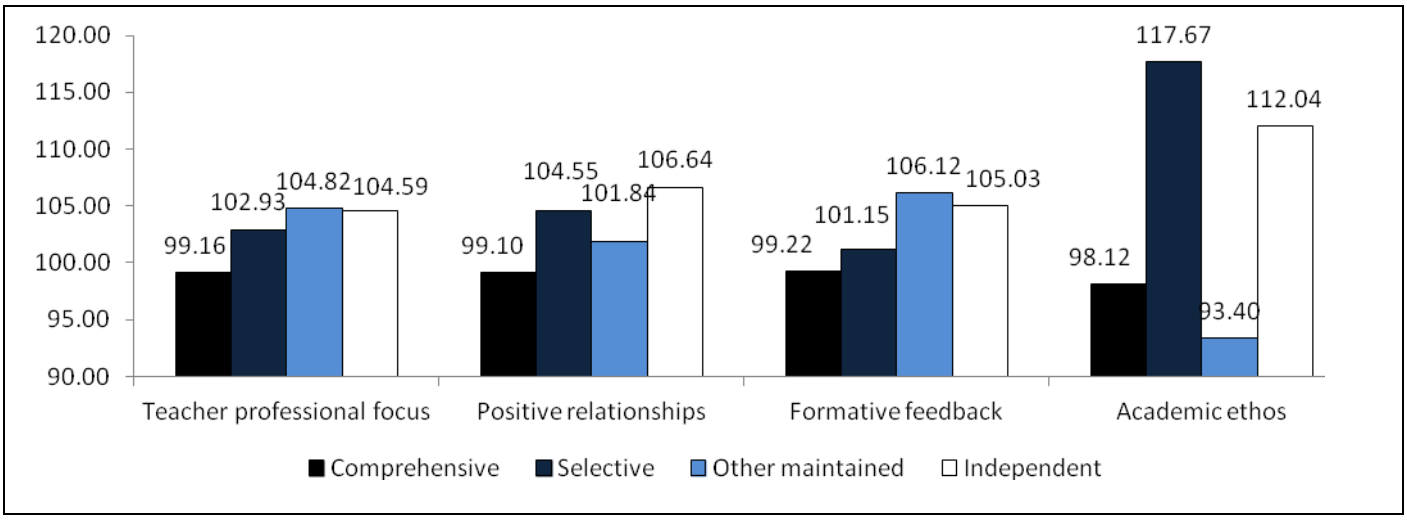
Table 4.6: Secondary school classification

	n	%
Comprehensive	2372	85.9
Selective	55	2.0
Modern	29	1.1
Other maintained	106	3.8
Independent	199	7.2

The main differences in reported views of school were between students from comprehensive schools and independent schools. Students from independent schools reported significantly more favourable views of *Teacher professional focus*, *Positive relationships*, *Formative feedback* and *Academic ethos* than students from comprehensive schools. Students from other maintained schools also reported higher levels of *Monitoring students*.

Views on *Academic ethos* were lower for students from comprehensive and other maintained schools, and higher for students in selective and independent schools. The difference between *Academic ethos* between comprehensive/other maintained schools and independent/selective schools was significant and substantial (Figure 4.5 for factor significant differences)[20].

Figure 4.6: School type and Year 11 views of school (factor scores, standardised)

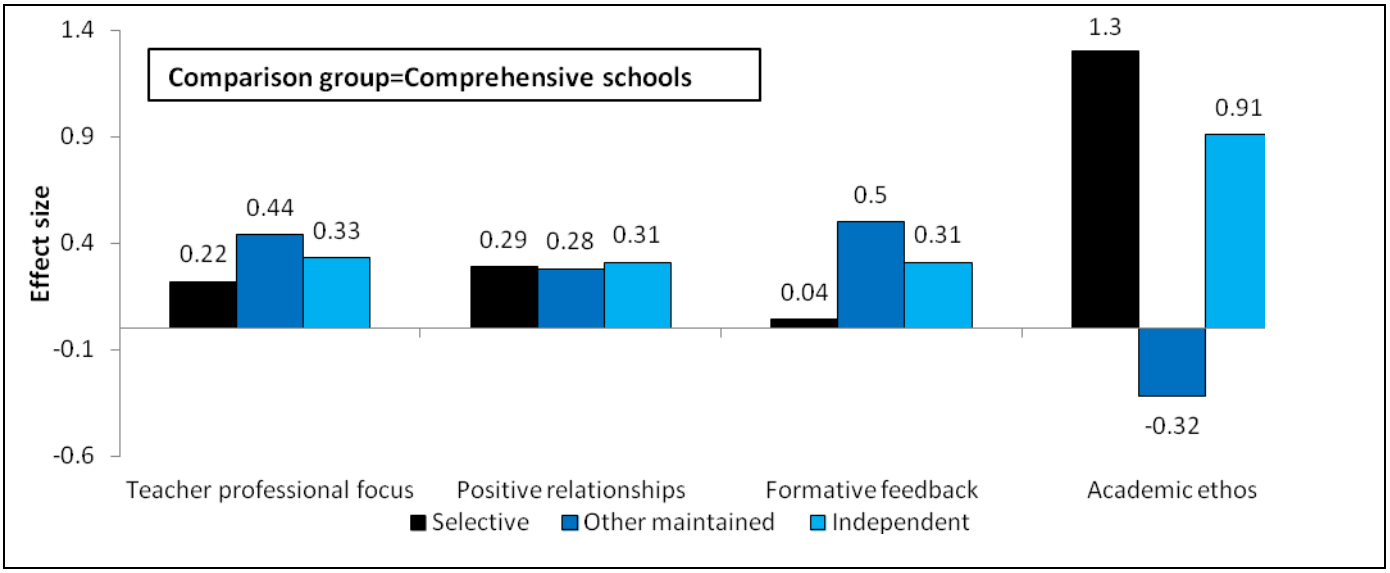


Once student, family and Home learning influences were accounted for, students from independent schools still had significantly more positive views of school than those from

[20] ANOVA differences between means: *Teacher professional focus* f=7.128, p<0.001; *Positive relationships* f=12.285, p<0.001; *Monitoring students* f=1.532, ns; *Formative feedback* f=8.110, p<0.001; *Academic ethos* f=63.177, p<0.001.

comprehensive schools for all factors except *Monitoring students* (*Teacher professional focus* ES=0.33, p<0.01; Positive relationships ES=0.31, p<0.001; *Formative feedback* ES=0.31, p<0.001; *Academic ethos* ES=0.91,p<0.001. Comparison is with maintained schools). Students from other maintained schools also had significantly more positive views of *Teacher professional focus* (ES=0.44, p<0.001) and reported higher levels of *Formative feedback* (ES=0.50, p<0.001) than students from comprehensive schools. In addition, students form selective schools reported significantly higher ratings for *Academic ethos* than students from comprehensive schools (ES=1.30, p<0.001).

Figure 4.6: School type and views of school (effect sizes)



Section 5: Summary and conclusions

This report complements the analyses of students' dispositions in Year 11 presented elsewhere (Sammons et al., 2014a) using five measures of school experience that have been derived from the Life in Year 11 student questionnaire. EPPSE students' views of school have been collected in Year, 2, 5, Year 9 and now in Year 11, and are found to be significant predictors of both academic achievement and social-behavioural development (Sammons et al 2011b; 2011c; 2014b; 2014c).

As a snapshot of student experiences of school and classroom life, students remain generally very positive about their secondary schooling in KS4, especially in response to items related to *Teacher professional focus* and *Formative feedback*. Views were somewhat less favourable about aspects related to discipline and order such as teacher approachability if they were being bullied and the teacher keeping lessons quiet and orderly (although the majority still held positive views). This is very much in line with recent PISA findings (Wheater et al., 2013) that showed English students to be extremely positive about teacher-student relationships and support for learning, but less so for aspects of order within the classroom.

A third of students did not believe that teachers followed the same rules for behaviour or marking and returning homework promptly. Sammons et al., 2011 b; 2013a showed that time spent on homework has a strong and positive impact on attainment and progress in KS3. This key feature of school life and student learning deserves further exploration and attention.

Academic ethos was generally reported as high by most students, and nearly all respondents (95%) believed that other students in their secondary school thought it was important to do well in exams and wanted to carry on with their education after GCSEs. This is in line with national findings from the latest PISA study that found students appreciate the importance of hard work at school and enjoy their academic achievements (Wheater et al 2013). The finding does not support recent policy debates that assume that low aspirations are a key driver of outcomes and that raising aspirations will, of itself, narrow the equity gap in attainment and overcome problems in social mobility (Baker et al., 2013). Less than one in five of the EPPSE sample thought other students weren't interested in learning. Overall, the findings did not show evidence of significant effects of the concentration of disadvantage on students' own aspirations in schools with higher proportions of FSM students.

Demographic differences were also investigated. In contrast to Year 9, where few gender differences in students' views had been found[21], girls were slightly (but still significantly) less positive than boys in Year 11 in their reports of experiences of *Teacher professional focus,*

[21] Girls in Year 9 tended to have more favourable views for the *Emphasis on learning* factor, once other student, family and home learning factors had been taken into account.

Positive relationships and *Formative feedback*. Research elsewhere (DeSantis King et al 2006, Verkuyten and Thijs 2002, Mok and Flynn 2002) has found that girls report greater school satisfaction than boys, although in some cases the difference is only small. The EPPSE analyses of student dispositions (Sammons et al., 2013a) found no differences in measure of *School enjoyment* in Year 11, but did find lower levels of *Disaffected behaviour* reported by girls. There is less research available on specific aspects of schooling, but our research suggests girls may be slightly more critical of the quality of some aspects of the secondary schooling they receive, although the differences were fairly small.

Ethnic differences in views were found with students of Indian and Pakistani heritage reported consistently more favourable views of school for a many of the factors, although the sample size from individual ethnic groups is small so findings should be treated with caution.

Certain family demographics also proved to be significant predictors of views of school. Students from either single parent families or families with a step parent reported less favourable views of school for most outcomes than students from households with both natural parents. These students may lack some of the support that students from families with both natural parents present experience.

The HLE predicted differences in views of school, especially the levels of Academic supervision, but also Enrichment activities reported in KS3. A more favourable HLE in these areas predicted more favourable views of secondary school later on in KS4, particularly for *Teacher professional focus* and *Formative feedback*. The same HLE activities also proved to be powerful predictors of dispositions in Year 11 (Sammons et al., 2014a) suggesting this kind of academic and educational support at this stage of adolescence can bolster students' views of schooling or that these students are getting more out of their schooling, perhaps due to a higher level of engagement in school. It may also be that students with parents that promote these kinds of activities also seek out higher quality schools for their children with higher performance on aspects of schooling picked up in the EPPSE measures.

In addition to the influence of student demographics, those students with better academic outcomes (measured by GCSEs) had significantly more favourable views of school, especially of relationships between students and staff (*Positive relationships)*. This factor indicates views on whether students in the school were treated fairly, were respected and the level of interest shown by the teacher in individuals. Students with better academic outcomes also held more favourable views for *Teacher professional focus*, *Formative feedback* and *Monitoring students*, although the size of the effects were smaller.

In addition to students' perspectives on their own schooling, Ofsted inspection judgements and DfE CVA measures provided external measures of school quality on a number of dimensions, allowing associations to be investigated. Students' reports of *Teacher professional focus*, *Positive relationships* and *Academic ethos* were predicted by the academic effectiveness of their secondary school measured by the CVA indicator. Views of school were also predicted by school

quality as measured by Ofsted inspection judgements, especially for aspects of achievement and standards.

Students' views of *Teacher professional focus*, *Positive relationships* and *Academic ethos* were more favourable in higher quality and more academically effective schools, suggesting that EPPSE students are picking up on important aspects of school quality and experience. This is also supported by the significant variation between secondary schools for these measures, especially for *Academic ethos*. On the other hand, particular student background variables were also associated with more positive student reports. It may be that there are possible reciprocal relationships between school and parental support that my be mutually reinforcing. Some schools may be more successful in promoting home support, but supportive parents may also shape how students behaviour and respond to their secondary schools. However, the statistical models reported in this research seek to control for other individual student, family and HLE influences in testing for the net effects of secondary school quality indicators and reveal that such student charcteristics do not account for the quality effects identified for either the DFE CVA measure or the Ofsted inspection judgments..

School type was found to be a predictor of *Academic ethos*, with students from selective mainstream schools and independent schools reporting a more favourable *Academic ethos* compared to comprehensive schools. *Teacher professional focus*, *Positive relationships* and *Formative feedback* were all rated as less favourably in the comprehensive sector. However, these findings are likely to reflect important differences in academic selection practices in operation.

Overall, the findings of this last phase of the EPPSE 3-16 research show that student questionnaire surveys can provide robust measures of important features of young people's secondary school experiences in KS4. This work follows on and extends earlier research conducted in both KS2 and KS3 with the EPPSE sample. The five main factors identified relating to views of school in KS4 are predicted by a number of individual, family and HLE. Moreover, there is additional evidence of the role of primary and secondary school quality (as measured by academic effectiveness CVA indicators and Ofsted inspection ratings) as predictors of students' views and experiences. Elsewhere the relationships between EPPSE students' views of school factors and other Year 11 student outcomes (academic GCSE results, social-behavioural and dispositions) are explored (Sammons et al 2014a; b; c).

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Appendix 1: Contextualised multilevel models

Table A1.1: Contextualised model for Year 11 *Teacher professional focus*

***Teacher professional focus* contextualised model**				
	Coef.	**Sig**	**Std. Error**	**Effect size**
Gender	-2.18	**	0.74	-0.15
Ethnicity				
White European	-0.02		1.99	0.00
Black Caribbean	-0.10		2.39	-0.01
Black African	1.44		3.07	0.10
Any other ethnic group	-2.10		2.83	-0.15
Indian	4.20	#	2.47	0.29
Pakistani	6.92	***	1.84	0.48
Bangladeshi	-0.29		3.55	-0.02
Mixed Race	-2.13		1.58	-0.15
Behavioural problems in the early years (None)				
Missing	-1.77		15.14	-0.12
One or more behavioural problems	-2.40	*	1.19	-0.17
Marital status at entry to pre-school (Married)				
Missing	0.44		14.84	0.03
Single parent/Never married	-1.09		1.30	-0.08
Married/Living with partner	-.036		1.09	0.00
Separated/divorced	0.82		1.26	0.06
Widow/widower	-7.12	#	3.94	-0.50
Key stage 3 HLE: Enrichment (compared to low)				
Missing	0.57		2.24	0.04
High	3.41	*	1.29	0.24
Medium	1.10		1.13	0.08
Key stage 3 HLE: Supervision (compared to low)				
Missing	4.92	*	2.25	0.34
High	7.96	***	1.45	0.56
Medium	3.83	**	1.13	0.27
Intercept	96.00	***	1.45	
Variance-school level	13.68		5.46	
Variance-student level	203.96		8.15	
Total variance	217.64			
Number of students	1672			
Number of schools	571			
Deviance (-2 x Log Restricted-Likelihood	13638.764			
Intra-school correlation (ICC)	0.063			
% Reduction student variance	2.2%			
% Reduction school variance	22.1%			
% Reduction total variance	8.5%			

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

Table A1.2: Contextualised regression models for Year 11 *Positive relationships*

***Positive relationships* contextualised model**				
	Coef.	**Sig**	**Std. Error**	**Effect size**
Gender	-1.44	#	0.76	-0.10
Ethnicity				
White European	-0.80		1.96	-0.06
Black Caribbean	-2.13		2.36	-0.15
Black African	-0.26		3.07	-0.02
Any other ethnic group	-3.71		2.85	-0.26
Indian	1.27		2.46	0.09
Pakistani	6.17	***	1.87	0.43
Bangladeshi	5.78		3.55	0.40
Mixed Race	-3.63	**	1.57	-0.25
Highest social class (compared Professional non-manual)				
Missing	-8.27	**	3.07	-0.58
Other professional non-manual	-5.35	#	1.28	-0.16
Skilled non-manual	-5.91	***	1.54	-0.38
Skilled manual	-4.68	***	1.63	-0.41
Semi-skilled	-0.55	**	2.98	-0.33
Unskilled	-3.89		2.80	-0.04
Never worked	-2.22		1.25	-0.27
Family structure in Year 11 (compared to both parents)				
Missing	-5.35		4.69	-0.37
Single parent	-2.04	*	0.93	-0.14
One parent and step parent	-1.99		1.12	-0.14
Other arrangement	-1.19		2.64	-0.08
Key stage 1 HLE: Creative play				
Missing	2.24		1.19	0.16
High	3.46	*	1.36	0.24
Medium	2.91	**	1.06	0.20
Key stage 3 HLE: Enrichment (compared to low)				
Missing	-0.53		2.23	-0.04
High	3.06	*	1.30	0.21
Medium	2.11	#	1.11	0.15
Key stage 3 HLE: Supervision (compared to low)				
Missing	5.50		2.24	0.39
High	5.37	***	1.46	0.37
Medium	2.29	**	1.13	0.16
Intercept	98.53	***	1.99	
Variance-school level	9.34		4.56	
Variance-student level	203.63		7.96	
Total variance	212.97			
Number of students	1672			
Number of schools	571			
Deviance (-2 x Log Restricted-Likelihood	13590.610			
Intra-school correlation (ICC)	0.044			
% Reduction student variance	3.3%			
% Reduction school variance	38.7%			
% Reduction total variance	5.7%			

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

Table A1.3: Contextualised model for Year 11 *Monitoring students*

***Monitoring students* contextualised model**				
	Coef.	**Sig**	**Std. Error**	**Effect size**
Ethnicity				
White European	-2.51		1.99	-0.17
Black Caribbean	6.82	*	2.38	0.48
Black African	2.86		3.10	0.20
Any other ethnic group	-3.10		2.91	-0.22
Indian	5.16	*	2.50	0.36
Pakistani	5.08	**	1.92	0.35
Bangladeshi	-0.52		3.59	-0.04
Mixed Race	-2.45		1.58	-0.17
Highest social class (compared Professional non-manual)				
Missing	0.04		3.09	0.00
Other professional non-manual	0.32		1.27	0.02
Skilled non-manual	0.08		1.30	0.01
Skilled manual	1.47		1.57	0.10
Semi-skilled	3.92	*	1.67	0.27
Unskilled	8.60	**	3.02	0.60
Never worked	5.59	*	2.85	0.39
Family structure in Year 11 (compared to both parents)				
Missing	-7.64		6.07	-0.53
Single parent	-1.89	*	0.94	-0.13
One parent and step parent	-1.97	#	1.13	-0.14
Other arrangement	-0.86		2.66	-0.06
Key stage 1 HLE: Parent-child interaction				
Missing	3.79	*	1.55	0.26
High	2.50	#	1.35	0.17
Medium	1.37		1.09	0.10
Key stage 1 HLE: Parent-child outing				
High	3.03	*	1.46	0.21
Medium	2.40	#	1.24	0.17
Key stage 3 HLE: Enrichment (compared to low)				
Missing	0.22		2.25	0.02
High	2.66	*	1.30	0.19
Medium	1.46		1.13	0.10
Key stage 3 HLE: supervision (compared to low)				
Missing	4.82	*	2.26	0.34
High	5.77	***	1.48	0.40
Medium	3.18	**	1.15	0.22
Intercept	91.27	***	2.24	
Variance-school level	11.41		4.800	
Variance-student level	205.49		8.07	
Total variance	216.51			
Number of students	1663			
Number of schools	569			
Deviance (-2 x Log Restricted-Likelihood	13539.098			
Intra-school correlation (ICC)	0.053			
% Reduction student variance	2.7%			
% Reduction school variance	20.1%			
% Reduction total variance	4.0%			

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

Table A1.4: Contextualised model for Year 11 *Formative feedback*

***Formative feedback* contextualised model**				
	Coef.	**Sig**	**Std. Error**	**Effect size**
Gender	-1.80	*	0.75	-0.12
Ethnicity				
White European	-0.01		2.00	0.00
Black Caribbean	3.02		2.38	0.21
Black African	2.79		3.10	0.19
Any other ethnic group	-1.80		2.92	-0.12
Indian	3.38		2.48	0.23
Pakistani	4.60	*	1.86	0.32
Bangladeshi	-0.01		3.57	0.00
Mixed Race	-1.44		1.58	-0.10
Highest social class (compared Professional non-manual)				
Missing	-6.69	*	3.11	-0.46
Other professional non-manual	-2.17	#	1.27	-0.15
Skilled non-manual	-3.04	*	1.29	-0.21
Skilled manual	-3.38	*	1.55	-0.23
Semi-skilled	-1.81		1.64	-0.12
Unskilled	-0.28		3.05	-0.02
Never worked	3.56		2.85	0.24
Family structure in Year 11 (compared to both parents)				
Missing	0.83		5.67	0.06
Single parent	-1.63	#	0.95	-0.11
One parent and step parent	-2.31	*	1.14	-0.16
Other arrangement	-0.38		2.63	-0.03
Key stage 3 HLE: Enrichment (compared to low)				
Missing	0.23		2.26	0.02
High	2.90	*	1.32	0.20
Medium	1.37		1.13	0.09
Key stage 3 HLE: Supervision (compared to low)				
Missing	5.58	*	2.27	0.38
High	7.34	***	1.48	0.50
Medium	3.93	**	1.15	0.27
Intercept	98.18	***	1.77	
Variance-school level	4.82		3.94	
Variance-student level	212.85		8.19	
Total variance	217.67			
Number of students	1665			
Number of schools	571			
Deviance (-2 x Log Restricted-Likelihood	13583.262			
Intra-school correlation (ICC)	0.022			
% Reduction student variance	1.9%			
% Reduction school variance	41.4%			
% Reduction total variance	3.4%			

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

Table A1.5: Contextualised model for Year 11 *Academic ethos*

***Academic ethos* contextualised model**				
	Coef.	**Sig**	**Std. Error**	**Effect size**
Ethnicity				
White European	0.16		1.94	0.01
Black Caribbean	5.07	*	2.38	0.35
Black African	7.26	*	3.08	0.50
Any other ethnic group	3.74		2.87	0.26
Indian	7.80	**	2.50	0.53
Pakistani	6.98	***	1.93	0.48
Bangladeshi	3.92		3.56	0.27
Mixed Race	2.43		1.56	0.17
Highest social class (compared Professional non-manual)				
Missing	-3.96		3.02	-0.27
Other professional non-manual	-1.26		1.24	-0.09
Skilled non-manual	-4.85	***	1.25	-0.33
Skilled manual	-4.11	**	1.51	-0.28
Semi-skilled	-3.41	*	1.61	-0.23
Unskilled	-2.70		2.96	-0.18
Never worked	-3.83		2.79	-0.26
Family structure in Year 11 (compared to both parents)				
Missing	0.08		5.45	0.01
Single parent	-2.27	*	0.92	-0.16
One parent and step parent	-1.95	#	1.11	-0.13
Other arrangement	1.87		2.56	0.13
Key stage 3 HLE: supervision (compared to low)				
Missing	2.76	*	1.29	0.19
High	3.14	*	1.43	0.22
Medium	1.21		1.12	0.08
Intercept	101.30	***	1.44	
Variance-school level	31.10		7.79	
Variance-student level	186.87		7.92	
Total variance	217.98		1.29	
Number of students	1664			
Number of schools	569			
Deviance (-2 x Log Restricted-Likelihood	13528.591			
Intra-school correlation (ICC)	0.146			
% Reduction student variance	2.0%inc			
% Reduction school variance	36.9%			
% Reduction total variance	6.2%			

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

Appendix 2: Relationship between Pre-school type attended and later secondary school destinations

Table A3.1: Pre-school type attended by later secondary school type in Year 11

	Selective		Modern		Other maintained		Independent		Comp-rehensive	
	n	%	n	%	n	%	n	%	n	%
Nursery class	6	1.1	5	1.0	15	2.9	22	4.2	476	90.8
Playgroup	12	2.2	4	0.7	18	3.3	17	3.1	498	90.7
Private day nursery	17	3.9	5	1.2	4	0.9	100	23.0	308	71.0
Local authority day nursery	4	1.1	1	0.3	29	8.2	16	4.5	302	85.8
Nursery school	12	2.5	12	2.5	14	3.0	29	6.1	406	85.8
Combined centres	2	1.2	2	1.2	7	4.3	7	4.3	143	88.8
Home (no pre-school)	2	0.7	0	0.0	19	7.1	8	3.0	239	89.2

We did not have secondary school information for a proportion of students either because it wasn't available or the student had left the project (students from private day nurseries, local authority day nurseries and combined centres were more likely to have missing school information than other groups).

Table A3.2: Pre-school type attended by later secondary school effectiveness (CVA)

	Top 25%		Middle 50%		Bottom 25%	
	n	%	n	%	n	%
Nursery class	95	19.0	342	68.4	63	12.6
Playgroup	106	21.0	352	69.7	47	9.3
Private day nursery	79	24.0	218	66.3	32	9.7
Local authority day nursery	131	37.9	168	48.6	47	13.6
Nursery school	88	20.5	268	62.3	74	17.2
Combined centres	41	29.1	74	52.5	26	18.4
Home (no pre-school)	107	39.6	116	43.0	47	17.4

Table A3.3: Pre-school type attended by later secondary school quality (Overall Ofsted judgement)

	Outstanding		Good		Satisfactory		Inadequate	
	n	%	n	%	n	%	n	%
Nursery class	53	10.8	284	57.8	124	25.3	30	6.1
Playgroup	41	8.4	279	56.9	147	30.0	23	4.7
Private day nursery	64	19.7	170	52.3	78	24.0	13	4.0
Local authority day nursery	63	19.1	150	45.5	80	24.2	37	11.2
Nursery school	37	8.9	218	52.3	116	27.8	46	11.0
Combined centres	28	23.1	62	51.2	28	23.1	3	2.5
Home (no pre-school)	30	11.5	107	41.0	98	37.5	26	10.0

Appendix 3: Relationship between HLE and secondary school indicators

Table A4.1: Home learning in KS2 and by later secondary school quality (national CVA)

Key stage 2 HLE		N	Mean HLE score	Std. Deviation	f	p
Parent-Child Educational Computing	Top 25%	410	2.43	0.94	3.502	*
	Middle 50%	1080	2.39	0.92		
	Bottom 25%	212	2.22	1.08		
Parent-Child Interactive Learning Processes	Top 25%	410	1.92	0.49	4.862	**
	Middle 50%	1080	1.94	0.44		
	Bottom 25%	212	1.83	0.53		
Individual Child Activities	Top 25%	410	1.43	0.37	5.390	**
	Middle 50%	1080	1.46	0.31		
	Bottom 25%	212	1.38	0.36		
Computer Games	Top 25%	410	1.58	0.84	0.695	ns
	Middle 50%	1080	1.64	0.79		
	Bottom 25%	212	1.65	0.85		

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

Table A4.2: Home learning in KS2 and by later secondary school quality (Overall Ofsted judgement)

Key stage 2 HLE		N	Mean HLE score	Std. Deviation	f	p
Parent-Child Educational Computing	Outstanding	227	2.45	0.85	0.978	ns
	Good	891	2.40	0.93		
	Satisfactory	421	2.36	0.97		
	Inadequate	110	2.28	1.08		
Parent-Child Interactive Learning Processes	Outstanding	227	2.00	0.43	4.056	**
	Good	891	1.93	0.44		
	Satisfactory	421	1.89	0.48		
	Inadequate	110	1.84	0.55		
Individual Child Activities	Outstanding	227	1.51	0.30	4.100	**
	Good	891	1.43	0.33		
	Satisfactory	421	1.44	0.34		
	Inadequate	110	1.39	0.34		
Computer Games	Outstanding	227	1.45	0.82	4.828	**
	Good	891	1.65	0.79		
	Satisfactory	421	1.61	0.81		
	Inadequate	110	1.76	0.89		

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

Table A4.3: Home learning in KS3 and by later secondary school quality (national CVA)

Key stage 3 HLE		N	Mean HLE score	Std. Deviation	f	p
Learning support and resources	**Top 25%**	361	4.58	2.11	0.098	ns
	Middle 50%	912	4.55	2.10		
	Bottom 25%	170	4.49	2.07		
Computer use	**Top 25%**	377	7.73	3.22	1.473	ns
	Middle 50%	947	8.01	3.09		
	Bottom 25%	183	8.15	3.02		
Parental interest in school	**Top 25%**	363	7.24	1.32	4.957	**
	Middle 50%	925	7.23	1.35		
	Bottom 25%	178	6.89	1.52		
Academic enrichment	**Top 25%**	382	2.06	1.55	8.034	***
	Middle 50%	947	1.97	1.53		
	Bottom 25%	184	1.53	1.49		
Parental academic supervision	**Top 25%**	390	5.13	1.20	1.205	ns
	Middle 50%	966	5.02	1.13		
	Bottom 25%	190	5.06	1.12		

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

Table A4.4: Home learning in KS3 and by later secondary school quality (Overall Ofsted judgement)

Key stage 3 HLE		N	Mean HLE score	Std. Deviation	f	p
Learning support and resources Computer use	**Outstanding**	211	4.64	2.05	0.475	ns
	Good	737	4.54	2.07		
	Satisfactory	373	4.55	2.15		
	Inadequate	85	4.32	2.21		
Computer use	**Outstanding**	230	8.06	3.02	0.265	ns
	Good	758	7.92	3.17		
	Satisfactory	388	7.99	3.04		
	Inadequate	95	8.17	3.01		
Parental interest in school	**Outstanding**	212	7.30	1.28	4.646	**
	Good	742	7.26	1.34		
	Satisfactory	384	7.09	1.42		
	Inadequate	91	6.78	1.58		
Academic enrichment	**Outstanding**	232	2.29	1.55	10.321	***
	Good	760	2.02	1.53		
	Satisfactory	392	1.65	1.49		
	Inadequate	93	1.72	1.62		
Parental academic supervision	**Outstanding**	233	5.11	1.20	0.703	ns
	Good	781	5.07	1.18		
	Satisfactory	395	5.00	1.05		
	Inadequate	98	4.96	1.19		

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

Glossary of terms

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 ($\alpha<0.7$) 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 questionnaires.

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 a 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.

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