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Effective Pre-school and Primary Education 3-11 Project (EPPE 3-11)

A longitudinal study funded by the DfES (2003 – 2008)

Exploring pupils' views of primary school in Year 5

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The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education and Skills

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Executive summary

Key findings on pupils' views of primary school in Year 5 primary schools

A range of information about pupils' self-perceptions and views of their primary school were collected as part of the Effective Provision of Pre-school and Primary Education (EPPE 3-11) Project. The EPPE 3-11 study is funded by the Department for Children, Schools and Families (DCSF) and has followed children's development from pre-school through to the end of primary school and explored evidence of educational influences in pre-school and primary school, as well as the impact of child, family and home learning environment (HLE) characteristics as predictors of pupils' outcomes (attainment, social/behavioural development and self-perceptions). In Year 5 the 'All About Me and My School' questionnaire included information about pupils' views of their primary school. A range of statistical methods has been used to investigate results for 2528 pupils for whom at least one pupils' views of primary school outcome measure was collected in Year 5.

Three measures of pupils' views of primary school were identified from exploratory and confirmatory factor analysis of the questionnaire data and these measures have been further analysed in relation to a range of child, family and home learning environment (HLE) characteristics to explore whether certain groups of pupils have different views and experiences. In addition, analyses have been conducted to see whether pupils' views of primary school are associated with variation in pupils' other outcomes in Year 5.

Pupils' views of primary school in Year 5

The first factor 'Teacher's support for pupils' learning' reflected the praise, encouragement and feedback a pupil felt they received from their class teacher. The second factor 'Headteacher qualities' reflected the degree to which pupil's felt that their Headteacher was interested in the pupils in the school, interested in how much they learnt and how much they appeared to care about good behaviour. The third factor 'Positive social environment' measures how Year 5 pupils perceived all pupils in the school to behave in terms of a) friendliness, b) the level of bullying and c) how safe they felt in the class and at break times.

EPPE 3-11 pupils were found to be generally positive about their primary school, with only a small minority giving very negative responses. This was especially the case for the items related to 'Headteacher qualities'. Table E.1 below displays details of the three factors (see Appendix 1 for more details). The headteacher's role was seen to be more to do with behaviour climate and discipline than managing their learning (85% believed headteachers made sure pupils behaved well all of the time compared to 52% believing the headteacher is really interested in how much pupils learn). Pupils were again very positive for all areas in relation to the factor 'Teacher's support for pupils' learning'. When we examined the level of teacher support, pupils were least positive when asked if they got praise when they did well, and being told how they were getting on (54% said they get praised all or most of the time when they do well, and 63% say they get told how they are getting on all or most of the time). Pupils' views of the social environment in the school were also generally positive, although 1 in 4 pupils didn't think other children were friendly, and behaviour was clearly a concern for a substantial minority as a third expressed disagreement with the item 'there is not much bullying or name calling'.

Table E.1 Responses from the 'All about Me and My School' pupil questionnaire in Year 5

	All of the time %	Most of the time %	Some of the time %	Never %
'Teacher's support for pupils' learning'				
I am told by my teacher I can do well	34	47	17	2
If I do well get praised	27	37	28	8
If I don't understand my work someone will explain it to me	48	34	16	2
I am told how I am getting on with my work by my teacher				
I am helped to do my best	32	41	24	4
	46	36	16	3
Cronbach's Alpha 0.68				
'Headteacher qualities'				
The head is interested in the children	54	31	11	3
The head makes sure children behave well	85	12	2	1
The head is really interested in how much we learn at school				
	52	41	7	1
Cronbach's Alpha 0.68				
	Agree a lot	**Agree**	**Disagree**	**Disagree a lot**
'Positive social environment'				
The children in this school are really friendly	39	37	21	3
There is not much bullying or name calling at this school	23	45	27	5
I feel safe at lesson times	27	37	28	8
I feel safe at school during break and lunch times	48	34	16	2
Cronbach's Alpha 0.69				

Another EPPE 3-11 paper has investigated pupils' self-perceptions in Year 5 of primary school in terms of their 'Enjoyment of school', 'Anxiety and Isolation', 'Behavioural self-image' and 'Academic self-image' (Sammons et al., 2008a). In general, pupils with positive self-perceptions also had positive views of primary school. 'Enjoyment of school' had the strongest correlation with all the factors related to the views of primary school (generally r=0.3-0.4). This shows that pupils who enjoy school more are also likely to be more positive about their primary school. 'Anxiety and Isolation' displayed the weakest relationship with 'Teacher's support for pupils' learning' and 'Headteacher qualities' (r=0.1-0.2), but the strongest relationship with the factor 'Positive social environment' (r=0.42). This indicates that pupils who feel more anxious and isolated also tend to view their primary school less favourably than other pupils.

There was also evidence of significant school level variation in EPPE 3-11 pupils' views of their experiences of the primary school. The most variation between pupils from different schools was found for their views about the factor 'Headteacher qualities', and least variation for their views on the 'Positive social environment' measure. This finding was further substantiated using additional data collected for all children in Year 5 classes for 125 case study primary schools. Again the results indicate that there are significant differences between schools in how Year 5 pupils perceive their primary school.

Key findings on home, pre-school and primary school influences on pupils' views of their primary school in Year 5

The research identifies a number of child, family and home learning environment (HLE) influences on pupils' views of their primary school. Background characteristics have weaker relationships with pupil's views of primary school than with their academic outcomes (see Sammons et al., 2007a), also the relationships are generally weaker than those found with some aspects of children's social behaviour (Sammons et al., 2007b).

Pupil background

Girls were more positive in their views of 'Headteacher qualities' (ES=0.13) and of 'Positive social environment' (ES=0.15) than boys. This maybe due to the lower incidence of poorer behaviour in their immediate social groups, as girls have been shown to have more positive behaviour than boys generally. This is in line with research elsewhere on school and class climate (Yates, 2001; Quek, Wong & Fraser, 2002).

There were some small differences found between minority ethnic groups and White UK pupils in how they viewed the learning environment. Pupils of Black Caribbean heritage had more positive views about 'Headteacher qualities' and pupils of Mixed heritage had less favourable views about the 'Positive Social Environment' in the school than those of White UK heritage.

Children's birth position was also a predictor of how positive they were. Children who were fifth born had less positive views than first born children about 'Headteacher qualities' (ES=-0.50) and had less favourable views about the 'Positive Social Environment' in the school (ES=-0.67). It should be noted that this group were small so findings should be treated with caution.

Family background

In line with findings on pupils' self-perceptions (Sammons et al., 2008a), pupils entitled to Free School Meals (FSM, a measure of family poverty) were not only more positive about their 'Enjoyment of School', but also had higher ratings for the 'Teacher's support for pupils' learning' factor (ES=0.14). Children whose mothers had vocational qualifications were more negative about the 'Teacher's support for pupils' learning', 'Headteacher qualities' and 'Positive Social Environment' than children whose mothers had no qualifications. However, children from families with higher salaries tended to have more favourable views for 'Positive Social Environment' factor.

Home learning environment (HLE)

A positive association was found between a pupil's Early years home learning environment (HLE) and their view of the 'Positive Social Environment' in the school. Pupils in the lowest Early years HLE group (collected at pre-school) had less positive views of school in terms of the 'Positive Social Environment' factor than pupils in the highest Early years HLE group (ES=-0.22).

Table E.2 summarises the impact of pupils' background characteristics on pupils' views of the primary school.

Table E.2 Significant measures for the contextualised analysis

Factor	Effect size	Description
'Teacher's support for pupils' learning':		
Free school meals (FSM) (Year 5)	0.14	Pupils entitled to FSM were more positive than those not entitled FSM
Mother's qualification	-0.18	Pupils with mothers who had Vocational qualifications were less positive than those with mothers who had no qualifications
KS1 Home learning: computers	-0.16	Pupils with low computer use were significantly less positive than those with very high usage
'Headteacher qualities':		
Gender	0.13	Girls were more positive than boys
Ethnicity	0.24	Black Caribbean pupils were more positive than White UK pupils
Birth position	-0.50	5th born children were less positive than 1st born
Mother's qualifications	-0.24/-0.17	Pupils with mothers who had Vocational and 16 Academic level qualifications were less positive than those whose mothers had no qualifications
'Positive Social Environment':		
Gender	0.15	Girls were more positive than boys
Ethnicity	-0.21	Pupils of Mixed heritage were less positive than White UK pupils
Birth position	-0.67	5th born children were less positive than 1st born
Mother's qualifications	-0.22	Pupils with mothers who had Vocational level qualifications were less positive than those whose mothers had no qualifications
Father's qualifications	+0.31	Pupils with fathers who had Higher degree level qualifications were more positive than those whose fathers had no qualifications
Early years Home learning environment (HLE)	-0.22	Pupils with the lowest Early years HLE score were less positive than pupils with the highest score
Salary	0.17/ 0.18 /0.34	Pupils whose family's salary was £17,500-29,999, £37,500-67,499, £67,500-132,000+ were more positive than pupils whose family had no salary

Relationships with academic attainment

Pupils who had a higher attainment in Reading and Mathematics were found to view the 'Positive Social Environment' of the school more favourably (ES=0.22 combined Reading and Mathematics attainment) and 'Headteacher qualities' (Reading=0.18, Mathematics ES=0.13).

Relationships with Special Educational Needs (SEN)

Pupils who have ever had a Special Educational Need (SEN) were more negative in their ratings of 'Positive Social Environment' in the school. When we looked at current SEN, pupils on the SEN Code of practice had more negative views of 'Positive Social Environment', but this was not the case for the smaller sub-group of pupils who had a statement of SEN. Pupils who had a statement of SEN were also found to have more positive views of 'Teacher's support for pupils' learning' than other pupils not on the SEN Code of practice; this could be because they are entitled to more teacher support.

Pre-school effects

The analyses provide some evidence of pre-school effects on pupils' views of the *Positive social environment'* in their school than 'home' children (ES=-0.18). When pre-school quality and effectiveness were examined it was found that having attended a high (ES=0.18, p=0.07) or medium quality pre-school (ES=0.20) predicted more positive views of the 'Positive Social Environment' compared to pupils who had not attended pre-school

('home' children). However, pupils who attended poor quality pre-schools did not show more favourable views.

There was a stronger pre-school effect for views of the 'Positive Social Environment' for pupils attending more effective pre-schools, especially when related to social/behavioural effectiveness. Compared to 'home' children, pupils who had attended highly effective pre-schools (for social/behavioural outcomes) showed more favourable ratings for the factor 'Positive Social Environment' in Year 5.

Primary school effects

The academic effectiveness of the primary school attended was not found to relate to pupils' views of primary school in Year 5. This is in contrast to analyses of pupils' attainment where positive effects were found. An analysis of pupils' self-perceptions reported in a separate paper found one significant relationship, however, children from more academically effective primary schools were more likely to have higher 'Behavioural self-image' (Sammons et al., 2008a).

The influence of Year 2 self-perceptions

Pupils' prior self-perceptions in Year 2 influenced their present views of primary school, but did not reduce the differences that were found between schools.

Implications

These results indicate that some distinct dimensions relating to pupils' views of primary school in Year 5 can be identified. These measures provide evidence about children's experiences of the wider school context. Most pupils are found to have positive views of primary school (for example 82% of pupils felt they were helped to do their best all or most of the time).

There are only modest associations between pupils' views of primary school and their attainment; this is in line with another EPPE 3-11 paper looking at pupils' self-perceptions (Sammons et al., 2008a). Where significant associations were found they were positive, indicating that pupils with better academic outcomes tended to be more positive about their Headteacher and social environment.

Child, family and home learning environment (HLE) influences were much weaker for pupils' views of primary school than for their academic and social/behavioural outcomes in Year 5 as well as their self-perceptions ('Enjoyment of school', 'Academic self-image', 'Anxiety and Isolation', 'Behavioural self-image'). Overall, girls were more favourable about their Headteacher and social environment, but not significantly different to boys in how they viewed the teachers' support of their learning. Pupils entitled to free school meals (FSM) were more favourable about the teacher's support for their learning, in line with the finding reported in a separate paper (Sammons et al., 2008a) that these pupils enjoyed school more. Very low HLE during the early years predicted less favourable views of 'Positive social environment' in primary school in Year 5. Pupils from families with higher salaries tended to be more favourable about 'Positive social environment'. These differences in views of school may also be influenced by pupils' peer groups.

The results provide some evidence of continuing pre-school influences on pupils' later views and experiences of primary school, mainly for their views of 'Positive social environment'. Overall, attending a pre-school versus not attending was associated with more favourable views of Positive social environment'. Pupils who had attended medium

and high quality pre-schools were more positive. The effectiveness of the pre-school attended (for social/behavioural outcomes) continues to show a significant influence on later views of 'Positive social environment', with pupils who had attended effective pre-schools (both for cognitive and social/behavioural outcomes) being more positive about 'Positive social environment' in Year 5.

Overall the academic effectiveness of the primary school attended did not predict pupils' views of their primary school.

Introduction

This report presents the results of further analyses from the longitudinal Effective Pre-school and Primary Education 3-11 (EPPE 3-11) project. The study is funded by the Department for Children, Schools and Families (DCSF). The focus of this report is pupils' views of primary school in Year 5 (age 10). Findings on pupils' cognitive and social/behavioural development at this age are reported separately (Sammons et al., 2007a; 2007b). Another EPPE 3-11 report describes findings about pupils' self-perceptions in terms of 'Enjoyment of school', 'Academic self-image', 'Behavioural self-image' and 'Anxiety and Isolation' (Sammons et al., 2008a). The original EPPE pre-school sample was recruited to the study at age 3 years plus and monitored to the end of Key Stage 1 (Year 2) in primary school. An additional sample of 'home' children (who had not attended a pre-school setting) was recruited when the pre-school sample started primary school. The EPPE 3-11 extension is following up the sample to the end of primary school (age 11 years in Key Stage 2). This extension to the research is designed to explore the influence of primary school on pupils' educational outcomes, as well as to investigate any continuing pre-school effects.

EPPE 3-11 involves the collection and analysis of a wide range of data about pupils' development; child, family and home learning environment (HLE) characteristics and the characteristics of the pre-schools attended. Additional 'value added' measures of primary school academic effectiveness have been derived from independent statistical analyses of National assessment data conducted for all primary schools in England over three years and separate cohorts, 2002-2004 (Melhuish et al., 2006). These school effectiveness measures have been incorporated into the EPPE 3-11 database to provide indicators of the academic effectiveness of the primary school a pupil attends to complement the measures collected earlier on the pre-school setting attended. Thus it is possible to explore both pre-school and primary school influences on pupils' outcomes in Year 5 both separately and jointly.

Survey questionnaires (All about Me in Year 5 and All about Me and My School) were designed to explore pupils' self-perceptions and views about school and classroom life and these provide self-report measures of pupils' views of primary school in Year 5. A range of statistical methods has been used to investigate results for 2528 pupils for whom at least one view of primary school outcome measure was collected in Year 5.

Aims

The aims of the analyses were:

- To explore the relationships between child, parent and home learning environment (HLE) characteristics on pupils' views of primary school at the end of Year 5.
- To investigate any continuing impact of pre-school, including any variations in pupils' outcomes for those who attended different types of pre-school (and those who received no pre-school provision i.e. the 'home' children).
- To explore relationships between measures of pre-school processes (measures of quality and effectiveness) on pupils' views of primary school.
- To investigate the influence of primary school academic effectiveness on pupils' views of primary school (controlling for child, family and HLE characteristics).
- To investigate the combined effect of pre-school experience and primary school experience on pupils' views of primary school in Year 5.

Methods

The findings rely on both descriptive analyses and complex techniques such as confirmatory factor analysis and multilevel analysis. Principal components analysis was used to examine underlying dimensions in pupils' views of primary school. Confirmatory factor analysis was then used to create a more robust overall model. Multilevel analyses were used to analyse simultaneously the

impact of child background characteristics (including child, family, HLE) and the impact of both the pre-school and the primary school attended (Year 5) on pupils' views of primary school.

The paper focuses on four measures of pupils' views of primary school assessed using self-report questionnaires administered at the end of Year 5. Multilevel models provide estimates of the impact of different child or primary school characteristics on pupil outcomes and can be used to explore institutional influences by partitioning variance into individual and higher levels (e.g. pre-school centre or school) reflecting clustering in the sample.

Background information about child, parent and family characteristics, was obtained initially through parent interviews conducted soon after children were recruited to the EPPE study. The parent interviews were designed to obtain information about a child's health and care history, details of family structure and parents' own educational and occupational backgrounds as well as some indications of parent-child activities and routines. In most cases the parent interviews were conducted within 10 weeks of recruiting a child to the study and an excellent response rate (97%) was achieved. It should be noted that most interviews were with children's mothers.

Subsequently parents were again asked to give some further information (via a questionnaire) about child, parent and family characteristics when the children were in Key Stage 1 of primary school (age approximately 6 years). Details were sought regarding any change in background information (in employment, family structure, number of siblings etc) as well as information on aspects of the HLE in Key Stage 1. The response rate was slightly lower than in the pre-school period (80.6 %)[1].

Structure of Paper and Analyses

This report is divided into six sections. The first section gives details about the characteristics of the EPPE 3-11 sample. The second section gives details about how the baseline and outcome measures were created using exploratory and confirmatory analysis of the pupil self-report questionnaire items. The third section investigates whether particular groups of pupils show differences in their views of the primary school at the end of Year 5. This section also explores the predictive power of different child, family and home learning environment (HLE) background characteristics in accounting for variation in these pupils' views. Further analyses are used to identify the unique (net) contribution of particular characteristics to variation in pupils' outcomes, while other influences are controlled. For example, the impact of family Socio-Economic Status (SES) is established while taking into account the influence of other characteristics such as mother's qualification levels, low income, ethnic group, birth weight, HLE etc. Results are reported in terms of effect sizes (ES); a statistical measure of the relative strength of predictive power. It is of policy interest to establish the nature and strength of such background influences individually and in total, because they are relevant to issues of equity and social inclusion. For example, EPPE 3-11 was commissioned by the Equalities Review (EPPE 3-11 Team, 2007) to provide information on such influences to inform the Cabinet Office Equalities Review (The Equalities Review, 2007).

In Section 4 pre-school and primary school influences on pupils' views of primary school are investigated. The analyses of cognitive and social/behavioural outcomes at age 10 show that pre-school experience still gives pupils a significant boost in terms of higher cognitive attainments and improved social/behavioural outcomes (Sammons et al., 2007a; 2007b). In addition to the effects of pre-school attendance, measures quality of pre-school provision (measured by the ECERS-E scale, Sylva et al., 2006; Sylva, Siraj-Blatchford & Taggart, 2006) and centre effectiveness (measured by value added residual estimates based on cognitive and social behavioural progress during the pre-school period) are tested to explore any continuing effect of pre-school on pupils' views of primary school at the end of Year 5.

[1] Between the initial assessment at entry to pre-school and the Reception assessment 139 children dropped out of the study. The response rate is based on the corrected sample of 3032 children.

Further analyses sought to establish the impact of primary school academic effectiveness (based on school effectiveness have been calculated independently using National Assessment data for all primary schools in England linking KS1 and KS2 results, Melhuish et al., 2006) on pupils' views of primary school in Year 5. Section 5 explores the influence of pupils' earlier (Year 2) self-perceptions on pupils' views of primary school at the end of Year 5.

The final section summarises the results drawing together the main findings and conclusions.

Section 1: Characteristics of the Sample at the end of Year 5

The educational effectiveness research design used for the original EPPE study is described in EPPE Technical Paper 1 (Sylva et al., 1999). Further discussion of the mixed methods approach is given by Sammons et al., 2005 and Siraj-Blatchford et al., 2006. In summary, six English Local Authorities (LAs), in five regions, participated in the research with children recruited from six main types of provision: nursery classes, playgroups, private day nurseries, local authority day nurseries, nursery schools and integrated centres (that combined care and education). In all, there were 2,857 children from 141 pre-school centres in the pre-school sample. An additional sample of 315 'home' children (who had not attended a pre-school setting) was added at entry to primary school, for comparison with those who had attended a pre-school sample, bringing the total sample to 3,172.

EPPE 3-11 children were asked their views about school life at two time points: Year 2 (age 7) and Year 5 (age 10). This section provides descriptive statistics for the sample at the end of Year 5 for whom information on views had been obtained at age 10. Tables 1.1a to 1.1b provide a brief summary of the characteristics of the EPPE 3-11 sample at the end of Year 5 for whom at least one factor score of pupils' views of primary school (created from individual survey items) was available (n=2528).

In all twenty-five per cent of pupils in the sample were not of White UK heritage and nine per cent of the pupils had English as a n additional language (EAL). With respect to family structure, sixteen per cent of pupils lived in large families with 3 or more siblings.

Table 1.1a also shows the distribution of the Early years home learning environment (HLE) index which is a measure of aspects of the HLE in the early years. A number of measures collected at entry to study from the parent interviews provided an indication of the frequency of engagement in specific activities involving the child such as teaching the alphabet, reading to the child, listening to the child read, taking the child to the library etc. (as reported by the parents). Just under one in ten (238 children, 9.4 % of the total sample) had not attended any type of pre-school, being part of the sample of 'home' children.

Table 1.1a: Selected characteristics of children who have valid data on the measure of their views of primary school at Year 5

Some figures do not include non-response to questions therefore the total is not always 2528 (100 %)

	n	%
Gender		
Male	**1289**	**51.0**
Female	**1239**	**49.0**
Ethnicity		
White UK Heritage	**1899**	**75.1**
White European Heritage	**77**	**3.0**
Black Caribbean Heritage	**94**	**3.7**
Black African Heritage	**50**	**2.0**
Indian Heritage	**57**	**2.3**
Pakistani Heritage	**51**	**2.0**
Bangladeshi Heritage	**129**	**5.1**
Mixed Heritage	**29**	**1.1**
Any Other Ethnic Minority Heritage	**139**	**5.5**
English as an Additional Language (EAL)	**235**	**9.3**
Child needs special EAL support	**91**	**3.6**
3 or more siblings (pre-school)	**383**	**15.5**
Early years Home Learning Environment (HLE) Index		
0 – 13	**228**	**9.0**
14 – 19	**528**	**20.9**
20 – 24	**582**	**23.0**
25 – 32	**794**	**31.4**
33 – 45	**293**	**11.6**
Type of Pre-School		
Nursery Class	**476**	**18.8**
Playgroup	**486**	**19.2**
Private Day Nursery	**435**	**17.2**
Local Authority	**324**	**12.8**
Nursery Schools	**430**	**17.0**
Integrated Centres	**139**	**5.5**
'Home' sample	**238**	**9.4**

Table 1.1b shows that nearly a fifth (19.7%) of pupils were identified as eligible for free school meals (FSM), and approximately a third (21.3%) were growing up in families whose annual salary was reported to below (£17,500 or less) when they were in Key Stage 1 (age 6/7).

An index of multiple disadvantage[2] was created in the original EPPE research. Table 1.1b indicates that twenty-two per cent of the sample was recorded as low disadvantage on this whereas, thirteen per cent of the children were highly disadvantaged with a score of 4 or more factors identified as increasing the risk of low attainment.

Table 1.1b: Selected characteristics of children who have valid data on the measure of their views of primary school at Year 5

Some figures do not include non-response to questions therefore the total is not always 2528 (100 %)

	n	%
Income indicator:		
Free School Meals (FSM) (at Year 5 or earlier)	**497**	**19.7**
No Free school meals	**2020**	**79.9**
Salary of family during Key Stage 1		
No salary	**703**	**27.8**
£2,500 – 17,499	**538**	**21.3**
£17,500 – 29,999	**334**	**13.2**
£30,000 – 37,499	**220**	**8.7**
£37,500 – 67,499	**182**	**7.2**
£67,500 – 132,000+	**151**	**6.0**
Employment status of mother during pre-school period:		
Not working	**1208**	**47.8**
Working part-time	**753**	**29.8**
Working full-time	**390**	**15.4**
Self-employed / Combination of part-time & self-employed	**115**	**4.5**
Total Multiple Disadvantage Index		
0 (low disadvantage)	**554**	**21.9**
1	**652**	**25.8**
2	**506**	**20.0**
3	**290**	**11.5**
4	**185**	**7.3**
5 plus (high disadvantage)	**151**	**6.0**

In general, only a small proportion of children had missing data (<5%) which is a result of the procedures for tracking children and good relations with primary schools as well as regular data quality checks of the EPPE 3-11 data-management team. Higher proportions of missing values occur for income-related variables like salary, socio-economic status or the eligibility of FSM, which is also an additional low income indicator, although the proportions remain small.

[2] The index combines poor child, family and home learning environment (HLE) characteristics associated individually with lower attainment.

Section 2: Analysis of Pupils' views of primary school

Information about pupils' views of their primary school was collected through a self-report questionnaire administered by class teachers in Year 5. The items were derived from a study of existing measures and adapted for use with this age group. Some questions were taken or adapted from The School Climate Assessment Instrument (Grosin & McNamara, 2001) and from Teddlie and Stringfield's Louisiana ABC+ model (Teddlie et al., 1984; Teddlie and Stringfield, 1993, see Appendix 2).

Pupils' views of primary school at the end of Year 5

Statistical analyses were used to explore the variation in pupils' responses to the questionnaire items and to see whether robust measures of their views of primary school could be identified. The results revealed underlying dimensions (factors) that reflect patterns of associations amongst the questionnaire items. The responses of pupils for all the items in the survey are shown in Appendix 2. Three robust factors related to the views of primary school were revealed by the principle components analysis and confirmatory factor analysis (see Appendix 1 for details). The items are shown in Table 2.1 grouped by underlying factor, along with the percentage responses given by pupils to each item. As can be seen, pupils are generally positive about their primary school, with only a small minority giving very negative responses.

For the factor 'Teachers' support for pupils' learning', pupils gave relatively less positive responses when asked if they got praise when they do well, and being told how they were getting on (54% say they get praised all or most of the time when they do well, and 63% say they get told how they are getting on all or most of the time). The items linked to the factor 'Headteacher qualities' suggests that behaviour control was rated most strongly, more than interest in children and their learning (85% believe headteachers make sure children behave well all of the time compared to 52% believing the Headteacher is really interested in how much children learn), although pupils again were very positive for all areas. Pupil's views of the 'Positive social environment' in the school were also generally positive, although twenty-four per cent of pupils didn't think children were friendly, and thirty-two per cent expressed disagreement with the item 'there is not much bullying or name calling, suggesting that bullying and name calling are experienced by a third of all pupils.

Table 2.1 Responses from the 'All About Me and My School' pupil questionnaire in Year 5

	All of the time %	Most of the time %	Some of the time %	Never %
'Teachers' support for pupils' learning'				
I am told by my teacher I can do well	34	47	17	2
If I do well get praised	27	37	28	8
If I don't understand my work someone will explain it to me	48	34	16	2
I am told how I am getting on with my work by my teacher	32	41	24	4
I am helped to do my best	46	36	16	3
Cronbach's Alpha=0.68				
'Headteacher qualities'				
The head is interested in the children	54	31	11	3
The head makes sure children behave well	85	12	2	1
The head is really interested in how much we learn at school	52	41	7	1
Cronbach's Alpha=0.68				
	Agree a lot	**Agree**	**Disagree**	**Disagree a lot**
'Positive social environment'				
The children in this school are really friendly	39	37	21	3
There is not much bullying or name calling at this school	23	45	27	5
I feel safe at lesson times	27	37	28	8
I feel safe at school during break and lunch times	48	34	16	2
Cronbach's Alpha=0.69				

Three additional factors had too low Cronbach's Alpha statistics: 'Pupil's external activities' (Cronbach's=0.55) and 'Parental support' (Cronbach's=0.49), suggesting they were not robust conceptually, and therefore they were not included in any further analyses. The final factor related to 'School Resources' and had a strong Cronbach's Alpha (0.74) and was created as an unweighted scale. The items and responses can be seen in Table 2.2.

Table 2.2 Responses from the 'All about me at school' pupil survey in Year 5

	Agree a lot %	Agree %	Disagree %	Disagree a lot %
'School Resources'				
Pupils have enough books,	52	32	14	1
The computers in school are good,	54	31	11	3
The sports equipment are good,	85	12	2	1
The toilets are well cared for,	71	20	7	2
We have a good library,	22	58	16	4
The teachers in the school know their subjects well	62	34	3	1
Cronbach's Alpha=0.74				

Table 2.3 shows the correlations between the different factors of pupils' views of primary school. All are highly statistically significant and the associations positive and moderate to moderately strong in size. The strongest association is between pupils' views of 'Teachers' support for pupils' learning' and 'Headteacher qualities' whilst the weakest correlation is between 'Headteacher qualities' and 'Positive Social Environment'. These associations suggest that the different dimensions of school climate tend to be connected in pupils' perceptions.

Table 2.3 Correlations between the different factors of pupils' views of primary school in Year 5

	'Teacher's support for pupils' learning'	'Headteacher qualities'	'Positive Social Environment'
'Teachers' support for pupils' learning'	**1.00****	**0.41****	**0.38****
'Headteacher qualities'		**1.00****	**0.36****
'Positive Social Environment'			**1.00****

** Statistically significant at the 0.01 level

The association between the pupils' self-perceptions (Sammons et al., 2008b) and their views of primary school was also tested. Self-reported 'Enjoyment of school' had the strongest correlation with all the views of primary school factors and 'Anxiety and Isolation' the weakest. This suggests that pupils' views of their school and their level of 'Enjoyment of school' are connected, enjoyment being greater where views of primary school were rated more favourably. Similarly there is a positive association between pupils' 'Enjoyment of school' and the level of 'School Resources'. There was a moderately strong relationship between low ratings for 'Anxiety and Isolation' and more favourable views of the 'Positive Social Environment'.

Table 2.4 Correlation between Year 5 factors of pupils' self-perceptions and their views of primary school

	'Enjoyment of school'	'Anxiety & Isolation'	'Academic self-image'	'Behavioural self-image'
'Teachers' support for pupils' learning'	.40**	.16**	.34**	.22**
'Headteacher qualities'	.34**	.13**	.19**	.26**
'Positive Social Environment'	.34**	.42**	.23**	.28**
'School Resources'	.41**	.20**	.20**	.25**

** p<0.01

A separate paper (Sammons et al., 2008a) explored pupils' self-perceptions of 'Enjoyment of school', 'Anxiety and Isolation', 'Behavioural self-image' and 'Academic self-image'. Weak but statistically significant associations between pupils' self-perceptions and their cognitive

attainments were identified. This was not the case for their views of primary school, where few if any significant correlations were found (see Table 2.5). Pupils who had a more favourable view of the 'Positive Social Environment' also tended to have better Reading and Mathematics attainment, although the correlations are weak. In addition, pupils were more likely to give positive ratings of their own behaviour if they attended an academically more effective primary school (Sammons et al, 2008a).

Table 2.5 Correlations between pupils' views of primary school and attainment in Year 5

School factors	Year 5 Reading score	Year 5 Mathematics score
'Teacher's support for pupils' learning'	ns	ns
'Headteacher qualities'	ns	ns
'Positive Social Environment'	0.13**	.14*
Other factors		
'School Resources'	ns	ns

* Statistically significant at the 0.05 level ** Statistically significant at the 0.01 level

Multilevel estimates

Multilevel models were used to explore possible variations between schools in pupils' views of primary school. Table 2.6 shows the null models with no explanatory variables included for the three outcomes. The intra-school correlation measures the extent to which the scores of EPPE 3-11 pupils in the same primary school resemble each other as compared with those from EPPE 3-11 pupils at different schools. The intra-school correlations for 'Headteacher qualities' and 'Positive social environment' are the highest at approximately thirteen per cent. The factor 'Teachers' support for pupils' learning' has a relatively smaller intra-school correlation at approximately eight per cent. This suggests that there are moderately strong differences between schools in these measures of school climate.

Table 2.6 Null model showing primary school and child level variance in Year 5

	'Teachers' support for pupils' learning'	'Headteacher qualities'	'Positive Social Environment'
School level variance estimate (se)	207.76	193.65	196.48
Child level variance (se)	16.95	29.95	28.84
Intra-school correlation	0.075	0.134	0.128
Number of children	2503	2503	2503
Number of schools	953	953	953

The results from a contextualised analysis, where explanatory variables related to child, family and home learning environment (HLE) characteristics are added to the multilevel model to control for the influence of background characteristics, are shown in Table 2.7. The intra-school correlation represents the extent to which variation in pupils' outcomes is associated with individual schools after control for background influences.

Table 2.7 Contextualised models for children's views of primary school in Year 5

	'Teachers' support for pupils' learning'	'Headteacher qualities'	'Positive Social Environment'
School level variance estimate (se)	206.75	192.12	193.06
Child level variance (se)	15.78	28.61	24.45
Intra-school correlation	0.071	0.130	0.112
% Reduction in school level variance	0.7%	4.5%	15.3%
% Reduction in child level variance	0.5%	0.8%	1.7%
% Reduction total variance	1.0%	1.3%	3.5%

The intra-school correlations for 'Headteacher qualities' and 'Positive Social Environment' are somewhat higher than for 'Teacher's support for pupils' learning' after control for background factors, suggesting that these are aspects that may be more susceptible to school influences when account is taken of the influence of pupils' background characteristics. However, the intra-school correlations for these models must be treated with caution as many of the primary schools just have one or two EPPE 3-11 pupils attending. An additional data collection of 125 case study schools provided questionnaire data for a whole class of non-EPPE peers per school and was analysed to see if similar intra-school correlations were found on a sample where the number of pupils per school was larger (mean=21.9). Multilevel models for the null model on the non-EPPE sample found similar intra-school correlations of 0.072 for 'Teacher's support for pupils' learning' and ''Positive Social Environment' (0.162) and a slightly larger intra-school correlation for 'Headteacher qualities' (0.190). This provides strong support for the conclusion that pupils from different schools or classes vary significantly in their views of the school, especially related to their perceptions of 'Headteacher qualities' and the 'Positive Social Environment'. The existence of significant class/school level variation suggests that pupils' perceptions share common elements and are not just unique to the child.

The proportion of variance at the child level accounted for by child, family and home learning environment (HLE) characteristics is small. The proportion of school variance explained for these outcomes is also much smaller than is found in equivalent analyses of these pupils' cognitive outcomes in Year 5. The pattern of results is consistent with Tymm's (2001) analysis of 21,000 seven year olds attitudes towards school, and their Mathematics and Reading attainments.

Section 3: Links between child, family and home learning environment (HLE) characteristics and pupils' views of primary school at the end of Year 5

This section presents the results of a contextualised multilevel analysis establishing the pattern of relationships between child, family and home learning environment (HLE) characteristics and pupils' views of primary school experiences at the end of year 5. The three Year 5 outcomes discussed in Section 2 are employed as outcomes. Background details about pupils' earlier child care experiences, health, family and home learning environment (HLE) were obtained from parental interviews conducted when children entered the EPPE study as well as selected details from other time points.

Differences in pupils' views of primary school for different groups of pupils

The contextualised models indicate that, for all three outcomes, a number of child, family and home learning environment (HLE) characteristics show statistically significant relationships with pupils' views of their primary school at the end of Year 5. Net effect sizes (ES) for the single factors are given. An effect size is a statistical measure representing predictive power. An ES of 0.2 can be seen as representing a moderate influence while a relatively strong influence would be an ES of 0.5 plus.

Differences in raw scores are examined alongside differences in 'net' impact (effect sizes), showing the unique contribution of a given predictor to a pupil's outcome once all other predictors are taken into account. The net effects of particular child, family and home learning environment (HLE) characteristics reported in this section were derived by contextualised multilevel analyses and therefore take into account any clustering related to the primary school attended. Due to the inter-relationship between the predictors some raw differences between sub-groups of pupils disappear and some become accentuated once the influences of other factors are partialled out. Presenting raw and net differences side by side helps to show how demographic factors taken together affect the relative strength of estimates of the unique influence of particular factors. The following measures were used in the analyses:

- Child characteristics (e.g. gender, birth weight, ethnicity, mother tongue,)
- Family characteristics (e.g. eligibility for free school meals [FSM], socio-economic status [SES], parent's qualification, family earned income),
- Home Learning Environment (HLE) in the early years (how often parents read to the child, teach the child the alphabet, play with letters and numbers, teach songs and nursery rhymes, paint and draw etc.),
- Parental activities during Key Stage 1 (KS1) such as the frequency of reading to the child, taking the child out on educational visits, computing activities, play, etc.

3.1 Child Measures

Gender

At the end of Year 5 we find a significant but fairly weak gender effect for 'Headteacher qualities' and 'Positive Social Environment', showing girls were more positive about their Headteacher (ES=0.13) and social environment (ES=0.15) than boys.

Table 3.1 Gender differences in views of primary school at the end of Yr 5*

		Male	Female	Total
'Teachers' support for pupils' learning'	**Mean**	99.7	100.3	100.00
	S.d.	15.5	14.5	15.00
	Net Effects	**ns**	**ns**	
'Headteacher qualities'	**Mean**	99.0	101.0	100.00
	S.d.	15.7	14.2	15.00
	Net Effects	**0.13**	**0**	
'Positive Social Environment'	**Mean**	99.0	101.0	100.00
	S.d.	15.4	14.5	15.00
	Net Effects	**0.15**	**0**	
Total N		1289	1239	2528

***** 'Female' as the comparison category

Ethnic Groups

Some significant but statistically small differences in average scores occur for some ethnic groups. For perceptions of the learning environment, Black Caribbean pupils gave more positive reports of 'Headteacher qualities'. Pupils of Mixed heritage also showed less positive perceptions of 'Positive Social Environment'. It should be noted the differences should be interpreted with caution due to the small numbers of some ethnic minorities in the research.

Table 3.2 Ethnic groups and differences in views of primary school at the end of Yr 5*

Ethnic groups		White UK	White European	Black Caribbean	Black African	Other Ethnic	Indian	Pakistani	Bangladeshi	Mixed Heritage
'Teachers' support for pupils' learning'	**Mean**	99.6	97.9	102.9	104.3	101.6	101.2	104.2	101.7	98.4
	S.d.	14.8	14.4	13.9	16.1	15.3	16.0	17.2	14.9	15.6
	Net Effects	**0**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**
'Headteacher qualities'	**Mean**	100.0	100.2	102.6	104.2	97.1	99.6	104.0	101.7	98.7
	S.d.	14.9	16.2	14.8	13.0	16.5	17.3	13.7	13.5	16.4
	Net Effects	**0**	**ns**	**0.24**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**
'Positive Social Environment'	**Mean**	100.7	97.6	97.6	99.2	96.7	99.1	98.9	93.9	97.8
	S.d.	14.9	14.3	15.9	13.5	12.4	14.9	16.0	14.2	16.2
	Net Effects	**0**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**ns**	**-0.21**
Total N		1899	77	94	50	57	51	129	29	139

***** White UK as the comparison category[3]

[3] Any category of a predictor variable can be used as a reference group. The overall calculations (e.g. model's variance, BIC, etc.) are not affected by the choice of reference group; the absolute differences (in terms of effect size) between the different categories of the predictor variable also remain the same. The statistical models show the relative differences between categories in relation to the outcome measure. We select the category as a reference group that would show the pattern of association between the predictor variable and the outcome measure in the clearest possible way, the only restriction that the reference category is of a reasonable size. When the relationship is linear we would typically choose the lowest or the highest performing group as a reference category (e.g. highest qualification or none). If the relationship is non-linear we would select the largest category (e.g. ethnicity: White UK as the reference group). Occasionally we would select the category that is of most interest (e.g. pre-school quality: low quality) regardless of the type of association.

Special Education Needs (SEN)

EPPE 3-11 collected details for each pupil in the sample on whether their class teacher reported that they had been identified as having any form of special educational need (SEN) at any time and their special needs status at the end of Year 5. Pupils who had a statement of SEN had significantly more positive views of 'Teachers' support for pupils' learning' than other groups (ES=0.39). By contrast the larger group of pupils who have had a SEN at any point had significantly more negative views of the social environment in the school (see table 3.4). When we look at SEN stage in Year 5, pupils with School Action and School Action Plus had significantly more negative views about the 'Positive Social Environment', however this was not the case for pupils who had a statement of SEN.

Table 3.3 SEN and views of primary school at the end of Yr 5*

SEN		Unknown	School Action	School Action Plus	Statement of SEN	Not on COP	Total
'Teacher's support for pupils' learning'	Mean	100.3	100.2	101.3	105.3	99.7	100.0
	S.d.	15.6	15.8	15.0	15.5	14.8	15.0
	Net Effects	ns	ns	ns	0.39	0	
'Headteacher qualities'	Mean	99.8	99.0	99.8	98.7	100.2	100.0
	S.d.	15.4	16.7	16.2	16.7	14.5	15.0
	Net Effects	ns	ns	ns	ns	ns	
'Positive Social Environment'	Mean	99.8	97.2	96.3	99.7	100.8	100.0
	S.d.	15.5	16.0	15.3	18.4	14.5	15.0
	Net Effects	ns	-0.18	-0.27	ns	ns	
Total N		152	312	133	66	1865	2528

***** 'Not on SEN register as the comparison category

Children identified by primary school records as having at least one special educational need in Year 5 or earlier in primary school were significantly more negative about their social environment in school although the ES is relatively weak (ES-0.16).

Table 3.4 SEN and differences in views of primary school at the end of Year 5*

		Has the pupil had a special educational need (SEN) at any time?			
SEN		Unknown	Yes	No	Total
'Teacher's support for pupils' learning'	Mean	99.0	101.0	99.6	100.0
	S.d.	13.3	15.7	14.8	15.0
	Net Effects	ns	ns	ns	
'Headteacher qualities'	Mean	99.0	99.3	100.3	100.0
	S.d.	15.3	16.3	14.4	15.0
	Net Effects	ns	ns	ns	
'Positive Social Environment'	Mean	98.5	97.8	100.9	100.0
	S.d.	14.6	16.2	14.5	15.0
	Net Effects	ns	-0.16	0	
Total N		77	677	1774	2528

***** 'No SEN as the comparison category

3.2 Family measures

Eligibility for free school meals (FSM)

A pupil's eligibility for free school meals (FSM) provides an indicator of low family income (although it is recognised that not all children take up their entitlement). Pupils who receive free school meals have were more positive about their teachers' support for their learning although differences are small (ES=0.14).

Mother's qualification level

There were no clear trends related to mother's qualifications. Pupils whose mother's who had vocational qualifications had more negative views for all factors than pupils whose mother's had no qualifications and pupils whose mothers had 16 year academic qualifications were also less positive.

Table 3.5 Mother's qualifications and differences in views of primary school at the end of Year 5*

Mother's Highest Qualification level		None	Vocational	16 Academic	18 Academic	Degree	Higher degree	Other professional
'Teachers supporting Pupils' learning'	Mean	102.2	98.8	99.5	100.3	98.8	99.8	97.7
	S.d.	16.3	15.0	14.5	15.0	14.3	14.0	12.3
	Net Effects	ns	-0.18	ns	ns	ns	ns	ns
'Headteacher qualities'	Mean	102.3	98.5	99.7	100.2	99.3	100.1	99.3
	S.d.	14.9	15.0	15.2	13.5	15.6	15.9	13.5
	Net Effects	0	-0.24	-0.17	ns	ns	ns	ns
'Positive Social Environment'	Mean	99.3	97.6	101.9	102.6	104.0	98.8	99.3
	S.d.	14.9	14.4	15.6	15.1	15.6	13.4	14.9
	Net Effects	0	-0.22	ns	ns	ns	ns	ns
Total N		480	362	925	210	312	109	39

***** 'No qualifications' as the comparison category

Father's qualification

Children whose fathers had a higher degree were more positive about 'Positive social environment' than pupils whose fathers had no qualifications.

Table 3.6 Father's qualifications and differences in views of primary school at the end of Year 5*

Father's Highest Qualification level		None	Vocational	16 Academic	18 Academic	Degree	Higher degree	Other professional	Father absent
'Teachers supporting Pupils' learning'	Mean	100.5	98.1	99.4	100.5	99.1	100.4	94.8	101.3
	S.d.	15.7	15.2	14.9	14.1	14.0	14.0	17.4	15.1
	Net Effects	ns	ns	ns	ns	ns	ns	ns	ns
'Headteacher qualities'	Mean	99.6	98.4	100.2	100.5	99.8	99.3	98.3	101.3
	S.d.	15.5	15.3	14.7	14.7	13.8	15.6	15.4	15.1
	Net Effects	ns	ns	ns	ns	ns	ns	ns	ns
''Positive Social Environment'	Mean	98.6	97.7	100.2	101.4	102.5	105.6	97.8	98.6
	S.d.	14.7	14.7	15.0	12.9	14.8	15.9	15.9	14.7
	Net Effects	ns	ns	ns	ns	ns	0.31	ns	ns
Total N		391	288	556	187	315	130	23	571

***** 'No qualifications' as the comparison category

3.3 Home Learning Environment (HLE)

Early years Home Learning Environment (HLE)

A number of measures provide an indication of aspects of the Early years home learning environment (HLE). These are based on the frequency of specific activities involving the child, as reported by parents when children were recruited to the study (i.e. teaching the child the alphabet, teaching/playing with letters and numbers, library visits, reading to the child, teaching the child songs or nursery rhymes). These measures were combined to create an overall Early years HLE index with scores between 0 (Low Early years HLE) to 45 (High Early years HLE, see Melhuish et al., 2008).

Table 3.7 Early years HLE and differences in views of primary school at the end of Yr 5*

Early years Home Learning Environment (HLE)		0-13	14-19	20-24	25-32	33-45	Unknown
'Teachers supporting Pupils' learning'	Mean	102.0	101.2	99.4	98.8	100.3	100.8
	S.d.	15.6	15.6	15.4	14.4	13.3	16.9
		ns	**ns**	**ns**	**ns**	**ns**	**ns**
'Headteacher qualities'	Mean	100.8	100.8	99.4	99.3	100.6	100.8
	S.d.	14.6	15.2	15.4	14.9	14.0	16.1
		ns	**ns**	**ns**	**ns**	**ns**	**ns**
'Positive Social Environment'	Mean	96.9	99.4	99.0	101.3	102.3	99.0
	S.d.	15.3	15.1	15.0	14.3	16.0	14.9
	Net Effects	**-0.22**	**ns**	**ns**	**ns**	**0**	**ns**
Total N		228	528	582	794	293	103

*High Early years HLE score (0-13) as comparison group

When the Early years HLE index was tested, only the lowest level of HLE (0-13) remains a predictor with a rather weak to modest effect (ES=-0.22) for 'Positive Social Environment' but not for the other outcomes. These findings are in contrast to those for pupils' academic and social/behavioural outcomes and 'Academic self-image', which indicate significant Early years HLE influences even at age 10 years.

Key Stage 1 (KS1) Home Learning Environment (HLE)

Parents were again surveyed about their interactions at home with their EPPE 3-11 child via a parent questionnaire during KS1. They reported on activities such as the frequency of reading to the child, taking the child out on educational visits, computing activities, sport activities, dance, etc.

The individual measures have been aggregated to form four factors representing different activities during Key Stage 1 (KS1): 'Home computing', 'One-to-one interaction', 'Enrichment outings' and 'Expressive Play' (see Sammons et al., 2007a; 2007b). These factors were tested with respect to their influence on views of their primary school at the end of Year 5 (age 10)[4]. Only the amount of computer use in KS1 was a significant predictor of pupils' views of 'Teachers' support for pupils'

[4] KS1 HLE factors were not aggregated into a single HLE Index as was done with the Early years HLE since the types of extra curricular activities children are engaged in at this age do not form a simple additive scale. This is for two reasons: first, each of the HLE factors shows a unique pattern of association with different outcome measures, certain activities show a linear relationship (e.g. 'Enrichment outings' during KS1) while others show an inverted U shape function (e.g. 'Home computing' during KS1, suggesting an optimum level of engagement that is neither high nor low). Second, they are differentially and strongly influenced by gender, for example boys are significantly more likely to be reported by their parents to play with computers whereas girls are significantly more likely to be reported as engaging in expressive play. Combining these distinct types of activities into a single scale would cancel out contrasting or disparate influences. Consequently, the resulting scale might show no statistically significant associations with outcomes.

learning, pupils with low computer use were significantly less positive in their views of this factor than pupils with very high usage (ES=0.16).

3.4 An overview of the pupils' views of their primary school

For all three outcomes, a number of child, family and home learning environment (HLE) characteristics show statistically significant but generally rather weak relationships with pupils' views of primary school at the end of Year 5. The net influence of different child, family and HLE characteristics is illustrated in Table 3.8. An effect size is a statistical measure representing the strength of the single effect. An ES of 0.2 can be seen as representing a weak I influence while a relatively strong influence would be an ES of 0.5 plus.

Table 3.8 Significant measures for the contextualised analysis

Factor	Effect size	Description
'Teacher's support for pupils' learning':		
Free school meals (FSM) (Year 5)	0.14	Pupils entitled to FSM were more positive than those not entitled FSM
Mother's qualification	-0.18	Pupils with mothers who had Vocational qualifications were less positive than those with mothers who had no qualifications
KS1 Home learning: computers	-0.16	Pupils with low computer use were significantly less positive than those with very high usage
'Headteacher qualities':		
Gender	0.13	Girls were more positive than boys
Ethnicity	0.24	Black Caribbean pupils were more positive than White UK pupils
Birth position	-0.50	5th born children were less positive than 1st born
Mother's qualifications	-0.24/-0.17	Pupils with mothers who had Vocational and 16 Academic level qualifications were less positive than those whose mothers had no qualifications
'Positive Social Environment':		
Gender	0.15	Girls were more positive than boys
Ethnicity	-0.21	Pupils of Mixed heritage were less positive than White UK pupils
Birth position	-0.67	5th born children were less positive than 1st born
Mother's qualifications	-0.22	Pupils with mothers who had Vocational level qualifications were less positive than those whose mothers had no qualifications
Father's qualifications	+0.31	Pupils with fathers who had Higher degree level qualifications were more positive than those whose fathers had no qualifications
Early years Home learning environment (HLE)	-0.22	Pupils with the lowest Early years HLE score were less positive than pupils with the highest score
Salary	0.17/ 0.18 /0.34	Pupils whose family's salary was £17,500-29,999, £37,500-67,499, £67,500-132,000+ were more positive than pupils whose family had no salary

3.5 Relationship between other outcomes and pupils' views of primary school

Attainment, in terms of combined English and Mathematics attainment in Year 5, was found to be a significant predictor of pupils' views of the 'Positive Social Environment' (ES=0.22), but not for the other factors. Pupils with higher attainment were found to give higher ratings for the factor 'Positive Social Environment' in their school. When looked at individually, Year 5 attainment was also found to predict pupils' views of the Headteacher (ES Mathematics=0.13, Reading=0.18). Pupils' social/behavioural outcomes in Year 5 (measured by class teacher ratings) were also found to predict their views of primary school. Pupils with better 'Pro-social' behaviour were found to have a more favourable view of teachers supporting pupils' learning (ES= 0.26). Positive 'Pro-social' behaviour also predicted more favourable views of the Headteacher (ES=0.21). pupils with lower levels of 'Hyperactivity' (measured by class teacher ratings) were more favourable about the 'Positive Social Environment' (ES=-0.20).

Section 4: Pupils' views of the primary school at the end of Year 5: The Impact of Pre-school and Primary School

One important aim of the EPPE3-11 research is to explore continuing pre-school influences on pupils as they move through primary school. In this section analyses test whether any features of the pre-school setting a child attended continued to be associated with pupils' later views of the class and school environment at the end of Year 5. In addition, whether children who had not attended pre-school ('home' children) had significantly different views of school at the end of Year 5 in comparison to those who had attended pre-school.

For each of the three outcomes, the possible influence of a number of measures related to pre-school experience were tested.

Testing the impact of different aspects of pre-school within the contextualised model

The contextualised models described in Section 3, took account of the impact of child, family and home learning environment (HLE) characteristics. By testing for the impact of the pre-school after these characteristics had been taken into account, differences in intake to different pre-school settings could be separated from the pre-school effects.

Pre-school provision versus no pre-school provision
Children who had attended pre-school had a more positive view of the primary school 'Positive Social Environment' in Year 5 than pupils who did not attend pre-school (ES=0.18). Pupils attending 7 or more sessions of pre-school a week also had more favourable views of 'Teachers' support for pupils' learning' (ES=0.27) and the 'Positive Social Environment' (ES=0.25) than 'home' children (children attending 1-3 sessions a week also had more favourable views of 'Positive Social Environment' than 'home' children).

The impact of Pre-school centre quality (ECERS-E, ECERS-R & CIS)
The quality of pre-school was originally assessed through observations of the setting using the ECERS-R ECERS-E, and CIS instruments. The ECERS-R (Harms et al., 1998) looked at many of the process and structural aspects of the Pre-school setting such as 'Space and furnishings' and 'Activities'[5]. ECERS-E supplemented these areas to cover Literacy, Mathematics, Science and environment and Diversity (Sylva et al., 2006; Sylva, Siraj-Blatchford & Taggart, 2006). The CIS instrument observed the interaction between children and staff in more detail (Arnett, 1989)[6].

When pre-school quality (ECERS-E) was tested as a continuous variable ('home' children omitted), no significant effects were found for any outcome. When split into low, medium and high quality (compared to 'home' children), significant effects were found for 'Positive Social Environment' (children who had attended medium quality pre-school showed significantly better views of the 'Positive Social Environment', ES=0.20, and high quality was nearly significant and positive, p=0.068, ES=0.18). This is in line with findings for various outcomes; children who attended low quality pre-school fair little better than 'home' children, but those who went to medium or high quality pre-school tend to have better outcomes in several areas.

Pre-school Centre Quality was also collected in terms of the ECERS-R. When tested as a continuous variable, no significant effects were found for any outcome. When split into low, medium and high quality (compared to 'home' children), significant effects were found for 'Positive

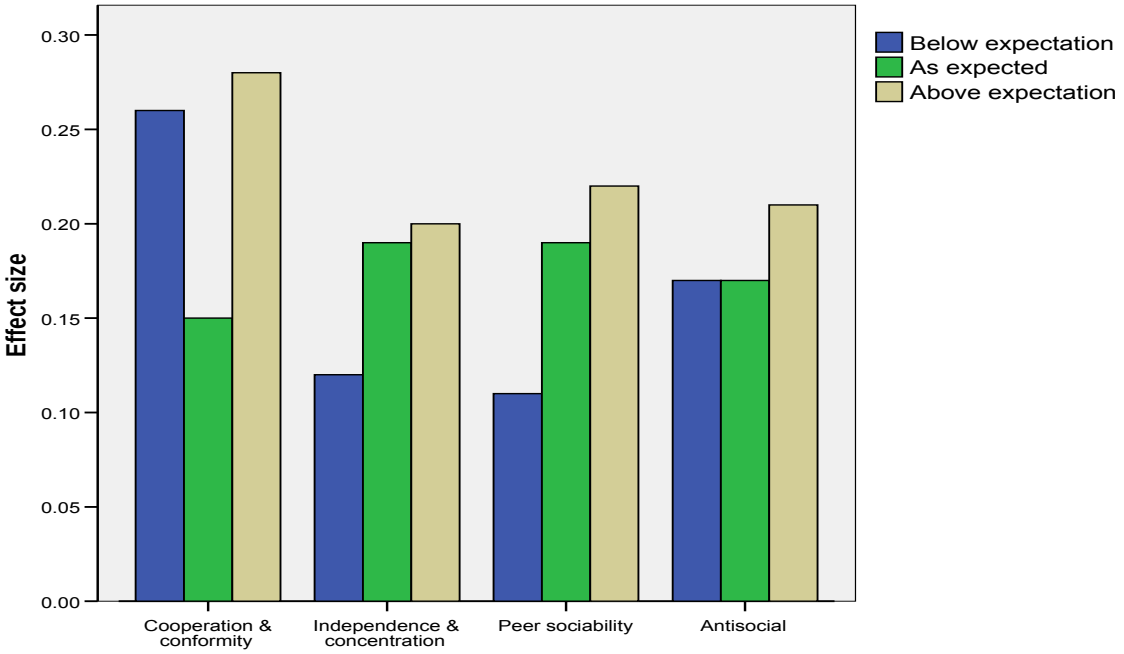
[5] ECERS-R collected information on the following areas: Space and furnishings, Language reasoning, Personal care routines, Activities, Interaction, Programme structure, Parents and staff.
[6] The CIS observation looked at the following areas: Detachment, Positive relationships, Permissiveness, and Punitiveness.

Social Environment' (ES=0.22 children from high quality pre-schools had more favourable views than 'home' children) and 'Teachers' support for children's learning' (ES=0.18 children from high quality pre-schools had more favourable views than 'home' children). Quality, as tested by the CIS instrument found that children who had attended pre-schools with higher scores on the 'Positive relationships' scale had more positive later views about the 'Positive Social Environment' than children who had attended poorer quality pre-schools in this aspect.

The Impact of Pre-school Centre Effectiveness

Analyses found children who had attended high effectiveness pre-schools for cognitive or social/behavioural outcomes showed significantly higher scores for 'Positive Social Environment' than 'home' children.

Chart 5.1: Social/behavioural pre-school effectiveness and 'Positive Social Environment'



The Impact of Primary School Effectiveness

Analyses were conducted to explore whether primary school academic effectiveness was predictive of pupils' views of primary school (taking into account significant background, HLE and child characteristics). The value added effectiveness measures for primary schools were calculated using National assessment data for all primary schools in England linking KS1 and KS2 results, and the separate indicators for English, Mathematics and Science were combined into an overall effectiveness measure in the absence of relevant affective measures. These measures provide a measure of the academic success of the primary school that we can assess in terms of the potential impact on pupil's views of primary school.

The academic effectiveness of the primary school attended did not significant predict pupils' views of primary school for any outcomes. This finding supports the view that academic and affective outcomes are relatively distinct, supported by findings from pupils' self-perceptions, where only 'Behaviour self-image' and primary school academic effectiveness showed a positive link (Sammons et al., 2008a).

Section 5: The influence of pupils' self-perceptions in Year 2: 'Enjoyment of school', 'Academic self-image' and 'Behavioural self-image'

Pupils' views of primary school were only collected in Year 5; however pupils' self-perceptions were also collected in Year 2 (Sammons et al., 2008a). From the pupil questionnaire three factors emerged: 'Enjoyment of school', 'Academic self-image' and 'Behavioral self-image'. These factors were tested to see if they predicted pupils' later views of primary school in Year 5.

The results from contextualised models, where explanatory variables related to child, family and home learning environment (HLE) characteristics and pupils' Year 2 self-perception factors are added to the multilevel model to control for these influences, are reported in Table 4.1. The intra-school correlation represents the extent to which variation in pupils' outcomes is associated with individual schools. However, as the number of EPPE3-11 pupils in each primary school is extremely small, the results must be interpreted with caution. They suggest there may be significant school influences on children's views of primary school. This is greater for 'Headteacher qualities' and 'Positive Social Environment'.

Table 4.1 Contextualised models for views of primary school in Year 5

	'Teacher's support for pupils' learning'	'Headteacher qualities'	'Positive Social Environment'
School level variance estimate (se)	208.411	191.584	191.026
Child level variance (se)	15.081	29.377	23.696
Intra-school correlation	0.067	0.133	0.110
% Reduction in school level variance	0.8%	8.4%	7.8%
% Reduction in child level variance	0.3%	1.3%	3.1%
% Reduction total variance	0.8%	2.4%	3.7%
Number of children	2503	2503	2503
Number of schools	828	828	828

Not all of the previous Year 2 measures of pupils' self-perceptions predicted later views of primary school. Children with higher 'Enjoyment of school' and 'Academic self-image' in Year 2 had more favourable views of Teachers' support for their learning and of their Headteacher in Year 5. 'Behaviour self-image' in Year 2 predicted later views of the 'Positive Social Environment'. Including pupils' Year 2 self-perception factors in the model did not reduce school level variance significantly, suggesting that the differences between pupils from different schools reflected differences in views of school, not the pupils' self-perceptions. These findings should be treated with caution because of the small numbers of EPPE 3-11 children in some schools.

Table 4.2 Pupils' Year 2 self-perceptions as predictors of views of primary school in Year 5 (effect sizes)

	'Teacher's support for pupils' learning'	'Headteacher qualities'	'Positive Social Environment'
'Enjoyment of school'	0.15	0.21	-----
'Academic self-image'	0.13	0.13	-----
'Behaviour self-image'	------	-----	0.20

Section 6: Summary and conclusions

EPPE 3-11 is a 10 year longitudinal research study. The overall objective of the research is to investigate the factors that influence young children's outcomes during pre-school and primary school. A broad range of outcomes has been explored including pupils' academic, social/behavioural, self-perceptions and views of primary school outcomes. An educational effectiveness research design was adopted to investigate the influence of a range of child, family and home learning environment (HLE) influences and to identify the nature and extent of any pre-school and primary school influences on such outcomes at different ages (Sammons et al., 2005; Siraj-Blatchford et al., 2006).

EPPE 3-11 involved the collection and analysis of a wide range of data about pupils' development, child, family and home learning environment (HLE) characteristics and the characteristics of the pre-schools attended. Additional value added measures of primary school academic effectiveness have been derived from independent statistical analyses of National assessment data conducted for all primary schools in England (Melhuish et al., 2006) as part of the study. Data were extracted from these value added results for all schools for the subset of 990 plus primary schools attended by EPPE 3-11 pupils. These data have been incorporated into the existing EPPE 3-11 database to provide indicators of the academic effectiveness of primary schools attended by EPPE 3-11 pupils to complement the measures on the pre-school settings collected in the original pre-school phase of the study. Thus, it is possible to explore both the separate and joint pre-school and primary school influences on EPPE 3-11 pupils' outcomes in Year 5.

Self-report questionnaires were administered to pupils asking their views about different aspects of school and classroom life. These provided measures of pupils' views of primary school in Year 5 in terms of several important dimensions: 'Teachers' support for pupils' learning', 'Headteacher qualities', and 'Positive Social Environment'. A range of statistical methods has been used to investigate results for 2528 children for whom at least one of these pupils' views of primary school outcome measures was collected in Year 5.

The aims of the analyses were:

- To explore the relationships between child, parent and home learning environment (HLE) characteristics on pupils' views of primary school at the end of Year 5.
- To investigate any continuing impact of pre-school, including any variations in children's outcomes for those who attended different types of pre-school (and those who received no pre-school provision i.e. the 'home' sample).
- To explore relationships between measures of pre-school processes (measures of quality and effectiveness) on pupils' later views of primary school.
- To investigate the influence of primary school academic effectiveness on pupils' views of primary school (controlling for child, family and HLE characteristics).
- To investigate the combined effect of pre-school experience and primary school experience on children's views of primary school towards school in Year 5.

This paper complements the analyses of pupils' academic and social/behavioural outcomes in Year 5, reported separately (Sammons et al., 2007a; 2007b), and a paper looking at pupil's self-perceptions in Year 5 (Sammons et al., 2008a). School and classroom climate has been found in previous research to impact on both cognitive and social/behavioural outcomes (Wang et al., 1997; Muijs & Reynolds, 1999; Creemers & Reezigt, 1999; Kuperminc et al., 1997; McEvoy & Welker, 2000). Perceptions of school climate can be considered as social constructs reflecting the subjective experience in school, be that from the teacher, pupil or alternative perspectives. Class climate has been researched and measured in multifaceted ways, and it is generally agreed to be formed of different aspects including areas such as rules, interaction between the teacher and their pupils and physical aspects of the classroom environment (Creemers & Reezigt, 1999).

Pupils' views of their primary school can be seen as outcomes in their own right and there is a growing body of research that is beginning to address this. The evidence in this paper suggests significant variation between schools in pupils' views of their school, especially for 'Headteacher qualities' and 'Positive Social Environment'. 'Teachers' support for pupils' learning' showed the least amount of variation between schools, although still moderate variation. Pupils were generally very positive about their views of primary school, in line with their self-perceptions (Sammons et al., 2008a) at this age.

The Impact of Child, Family and Home Learning Environment (HLE) Characteristics

Pupil, family and home learning environment (HLE) influences were found to be much weaker for pupils' views of primary school than for pupils' academic and social/behavioural outcomes in Year 5 as well as their own self-perceptions ('Enjoyment of school', 'Academic self-image', 'Anxiety and isolation', 'Behavioural self-image'). Taken together, the results show that girls tend to have more favourable views in some areas ('Headteacher qualities' and the 'Positive Social Environment'). This is also in line with research on school and classroom climate elsewhere (Quek et al., 2002; Yates, 2001). Gender differences are often discussed in terms of academic attainment, but this research suggests that boys are also experiencing school differently in terms of affective outcomes. Pupils from lower SES families, as indicated by their eligibility for Free School Meals tended to be more positive about their teacher's support of their learning in the classroom, in line with their higher 'Enjoyment of school' found in a separate analysis of pupils' self-perceptions (Sammons et al., 2008a).

A significant link was found between higher attainment and more favourable views of the 'Positive Social Environment' within the school. Pupils with higher attainment levels tended to report a more 'Positive Social Environment'. A positive link with some of the social/behavioural outcomes was also found. Pupils with better 'Pro-social' behaviour and those with lower anxiety viewed the 'Teacher's support for pupils' learning' more positively. Pupils with better 'Pro-social' behaviour also viewed their Headteacher more positively. Lastly, pupils with lower 'Hyperactivity' levels (measured by class teacher ratings) and lower levels of isolation viewed the 'Positive Social Environment' more favourably. It seems, therefore, that pupils' own experiences are influencing their view of the school, and these pupils with poorer social/behavioural outcomes may require more encouragement by teachers to engage with school in a more positive way.

The impact of attainment and Special Educational Needs (SEN)

Pupils who have a statement of SEN have a significantly more positive view of teachers' support for their learning than other groups. Pupils who have had a SEN at any point have significantly more negative views of the social environment in the school. When we look at SEN stage in Year 5, pupils with School action and School action plus have significantly more negative views about the ''Positive Social Environment' but this is not the case for pupils who have a statement of SEN.

Educational influences

EPPE 3-11 is this first large scale longitudinal study to investigate both pre-school and primary school influences on young children's attainment and progress. In addition to the influence of background characteristics the aim of these analyses was to investigate questions such as whether children who did not go to pre-school or who had attended a less effective pre-school benefited more if they went on to attend a more academically effective primary school? Another hypothesis tested was that high quality or high effective pre-school experience would have a protective effect on children's later outcomes if they went on to attend a less academically effective primary schools (see Section 4).

The importance of earlier educational experiences in shaping children's cognitive and social/behavioural outcomes at Year 5 has been shown elsewhere (Sammons et al., 2007a; 2007b). There was some evidence of continuing pre-school effects for pupil's views of the 'Positive Social Environment' in the school. Pupils who had attended pre-school were more positive than pupils who had not (home' children). Pupils who had attended high or medium

quality pre-schools were significantly more positive than the 'home' children, as were pupils who had attended from high effective pre-schools (for most of the effectiveness outcomes looked at).

There was some evidence to suggest that the views of pupils differ significantly between primary schools especially for 'Headteacher qualities' and "Positive Social Environment' (11% and 13%). These results suggest that schools differ in their impact on these important features of a pupil's experiences of school. Research elsewhere, exploring pupils' attitudes as outcomes in the British context, has also found significant class effects (Smees and Thomas, 1999; Daly & Deft, 2002; Sainsbury and Shagen, 2004; Thomas et al., 2000).

While the academic effectiveness of the primary school attended has a significant impact on pupils' attainment and social/behavioural outcomes, there was no evidence of an effect upon pupils' views of the school.

The impact of year 2 self-perceptions on pupils' views of primary school in Year 5

Multilevel models were conducted for the three outcomes to explore the impact of pupils' Year 2 self-perceptions on later views of primary school (section 5). These reveal that earlier self-perceptions predict later views of primary school, although the relationship is weak. Pupils' self-perceptions of 'Enjoyment of school' and 'Academic self-image' predict their view of the 'Headteacher qualities' and 'Teacher's support for pupils' learning', and more positive 'Behavioural self-image' in Year 2 predicts a more positive view of Year 5 social environment in school.

Overview and discussion of Findings

Main findings indicate that much of the differences between pupil groups that exist in their views of primary school are related to gender, ethnicity and mother's qualifications. These findings are relevant to the focus of Department for Children, Schools and Families (DCSF)'s Social and Emotional Aspects of Learning (SEAL) programme, suggesting that gender and other background influences need to be taken into account in the implementation of SEAL. These effects were weaker than found for cognitive and social/behavioural and self-perception outcomes in Year 5 (Sammons et al., 2007a; 2007b, 2008a). Pupils entitled to Free School Meals (FSM) are also more positive about their 'Teacher's support for pupils' learning'. Pupils who had a low Early years home learning environment (HLE) and whose families had a lower salaries were less positive about the social environment in school.

- There is a significant link between attainment and pupils' views of primary school. Pupils with higher prior attainment in Year 2 had more favourable views of primary school in Year 5 for all outcomes except 'Teacher's support for pupils' learning'. Also pupils with a higher 'Pro-social' behaviour rating in Year 2 had more favourable views of 'Teacher's support for pupils' learning' and the Headteacher qualities'. Pupils with lower 'Hyperactivity' levels (measured by class teacher ratings) were also more positive about the social environment in school.

- The analyses of cognitive and social/behavioural outcomes reported separately (Sammons et al, 2007a; 2007b) produced evidence of continuing pre-school effects. This is less evident in relation to pupils' views of primary school. However, pupils who had attended pre-school, in particular pre-schools of medium or high quality and effectiveness, had significantly more favourable views of 'Positive Social Environment' than pupils who had not attended pre-school ('home' children).

- The academic effectiveness of the primary school a pupil attends (measured independently by value added in terms of National assessment data, see Melhuish et al., 2006) is not a significant influence on views of primary school at Year 5.

Implications

The current research provides new evidence concerning the effects of background, pre-school and primary school influences in shaping pupils' views of their primary school. There are less differences between pupil groups in their views of the primary school than for pupils' self-perceptions.

The pupil groups with less favourable views of their primary school may benefit from additional social and emotional guidance at school to foster greater engagement. The research reveals the continued strength of the influence of Early years home learning environment (HLE) on later views of 'Positive Social Environment'. In line with findings related to cognitive outcomes and 'Academic self-image' this points to the important role of parents and other carers in providing rich home learning experiences during the sensitive pre-school period of young children's development that boost not only cognitive outcomes but more positive views of schooling.

We can conclude that the influences on a pupil's views of primary school vary depending on the outcome looked at. For example boys, pupils from lower salaried families, pupils whose fathers do not have a higher degree and pupils with low Early years HLE scores are particularly likely to have poorer views of the 'Positive Social Environment'. This could be more of a reflection of the immediate social group of the pupils and points to the important influence of the peer group.

Our results provide no evidence to support the idea that pre-schools or primary schools that foster better academic outcomes are any more or less successful in fostering positive pupil views about their school. This has important messages for the achievement of the Every Child Matters agenda, because it shows that the promotion of better academic outcomes is not at variance with non-academic development. There are, however, large differences between schools in the way pupils view the Headteacher and 'Positive Social Environment'. Results of further analyses (Sammons et al., 2008b) suggest that views of their school may also impact on the cognitive and social/behavioural outcomes, especially for 'Positive Social Environment'.

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Appendix 1: The exploratory and confirmatory factor analyses of the Year 5 pupil questionnaire: development of the factors

Exploratory factor analysis of the Year 5 questionnaire data

After an initial exploratory analysis of all the items, the items in both pupil questionnaires were split into three main groups: pupils' self-perception factors, factors related to pupils' views of primary school and 'other' factors (e.g. parental support, external activities). From this exploratory analysis five factors related to the views of primary school emerged: 'Teachers' support for pupils' learning', 'Headteacher qualities', 'Positive Social Environment', 'General pupil ethos' and 'School Resources'.

The confirmatory factor analysis of Year 5 questionnaire data

The Confirmatory factor analysis of the factors showed that the model fit was poor for the initial model. The 'School Resources' factor was taken out as it related to factors less to do with school processes.

Confirmatory factor analysis of the four factor structure without modifications was not an acceptable fit. The item 'If I don't understand my work someone will help me' co varied with 'If I get stuck someone will help me', from the 'Teacher's support for pupils' learning' factor. The second item was omitted to create the slightly better model than omitting the first item. The question, 'It is quiet in lessons' had a low factor weighting so was omitted (<.35).

Table A1.1: Factor loadings and model statistics for Year 5 pupils' views of primary school factors

Pupils' views of primary school factors	Weighting
Question	
'Teachers' support for pupils' learning':	
I am told by my teacher I can do well	.438
If I do well get praised	.491
If I don't understand my work someone will explain it to me	.581
I am told how I am getting on with my work by my teacher	.554
I am helped to do my best	.617
Cronbach's= 0.68	
'Headteacher qualities':	
The head is interested in the children	.766
The head makes sure children behave well	.478
The head is really interested in how much we learn at school	.725
Cronbach's= 0.68	
'Positive social environment':	
The children in this school are really friendly	.653
There is not much bullying or name calling at this school	.545
I feel safe at lesson times	.615
I feel safe at school during break and lunch times	.651
Cronbach's= 0.69	
'General pupil ethos':	
Older children help younger children	.580
Children are asked about what the rules should be	.455
Most children are interested in learning	.590
My parents often get to know how I am getting on	.474
Cronbach's= 0.62	

Initial solution		Final solution	
Statistic type	**Statistic**	**Statistic type**	**Statistic**
Chi	1061.124	Chi	460.592
Probability	<0.0001	Probability	<0.0001
Df	164	Df	98
Chi/df	6.470	Chi/df	4.700
GFI (Goodness of fit Index)	0.951	GFI (Goodness of fit Index)	0.974
CFI (Comparative fit Index)	0.905	CFI (Comparative fit Index)	0.949
NFI (Non-normed fit Index)	0.890	NFI (Non-normed fit Index)	0.937
RMSEA (Root Mean Squared)	0.050	RMSEA (Root Mean Squared)	0.041

It had been discussed whether the ‘Headteacher qualities’ factor should be included. For this reason, an additional analysis was run on three factors. As the four factor model was more robust, this structure was used.

Appendix 2: Responses from the 'All About Me and My School' pupil questionnaire in Year 5

Table A2.1: Responses for 'All About Me and My School'

	All of the time	Most of the time	Some of the time	Never
I am expected to do well	52	41	7	1
I am told by my teacher that I can do well	34	47	17	2
Children who are late are told off	12	19	43	26
It is quiet during lessons	5	31	52	11
If I get stuck someone helps me	39	37	21	3
If I make mistakes I get told off	2	4	28	65
The Lessons are interesting	23	45	27	5
If I do well I get praised	27	37	28	8
If I don't understand my work someone will explain it to me	48	34	16	2
Children are treated fairly	53	31	13	3
I am told how I am getting on with my work by my teacher	32	41	24	4
I am helped to do my best	46	36	16	3
I get homework (question not on cohort 1 booklet)	52	32	14	1
The Headteacher is very interested in the children	54	31	11	3
The headteacher makes sure children behave well	85	12	2	1
The headteacher is really interested in how much we learn at school	52	41	7	1
	Agree a lot	**Agree**	**Disagree**	**Disagree a lot**
Children who get good marks and work hard get teased by other children	7	21	39	34
Most children at this school are interested in learning	22	58	16	4
We have some after-school (or lunch time) clubs run by the teachers like football, computers and art clubs.	69	25	4	3
The children in this school are really friendly	27	55	15	3
Children get involved in organising things like discos and events to raise money for charity and trips	49	36	11	4
There is not much bullying or name calling at this school	18	41	28	13
I feel safe at school in lesson time	67	28	4	2
I feel safe at school during break and lunch times	50	39	9	3
Children get rewards for working hard or getting better at their work (like merit marks or praise in assemblies)	64	31	4	1
Older children help younger children in this school	34	48	13	6
Children are asked about what rules we should have	39	45	12	5
Pupils have enough books	58	35	6	2
The computers in this school are good	63	29	6	2
The sports equipment and playground areas are good	55	34	8	3
The toilets are well cared for and clean	22	36	25	17
I am usually taught by my regular teachers and not by supply teachers	46	44	7	3
We have a good school library	60	31	7	3
The teachers in the school know the subjects they teach really well	62	34	3	1
My parents often get to know how I am doing at school through teachers telling them about how I am getting on	55	37	6	2
If I were to behave badly at school, the teachers would soon tell my parents	54	38	5	2

Appendix 3 Results of contextualised multilevel analyses

Table A.3.1: 'Teachers' support for pupils' learning' Contextualised Model (impact of child, parent, home environment and other measures on year 5 normalised 'Teacher's support for pupils' learning')

*Statistically significant at 0.05 level **Statistically significant at 0.05 level
Just failed to reach statistical significance at 0.05 level

	Estimate	SE	Effect Size
Free School Meal Eligibility (compared to not eligible)			
Missing data	-5.238	4.763	-0.36
Eligible in Year 5	2.015*	0.811	0.14*
Mother's highest level of qualification (compared to no qualifications)			
Missing data	0.411	1.711	0.03
Vocational	-2.575*	1.073	-0.18*
Academic age 16	-1.589	0.878	-0.11
Academic age 18	-0.465	1.285	-0.03
Degree	-1.950	1.156	-0.14
Higher Degree	-0.978	1.658	-0.07
Other	-3.180	2.483	-0.22
Key stage 1 HLE: Computer use (compared to very high)			
Missing data	0.320	1.166	0.02
Very low	-2.112	1.153	-0.15
Low	-2.286*	1.063	-0.16*
High	-1.415	0.998	-0.10

Only significant predictors were kept in the model.

Table A.3.2: 'Headteacher qualities' Contextualised Model (impact of child, parent, home environment and other measures on year 5 normalised 'Headteacher qualities')
*Statistically significant at 0.05 level **Statistically significant at 0.05 level
Just failed to reach statistical significance at 0.05 level

		Estimate	SE	Effect Size
Gender (compared to boys)	Girls	1.860*	0.584	0.13*
Ethnicity (compared to white UK)	White European Heritage	2.005	1.721	0.14
	Black Caribbean Heritage	3.264*	1.624	0.24*
	Black African Heritage	4.160	2.151	0.30
	Any other ethnic minority Heritage	-3.280	2.019	-0.24
	Indian Heritage	1.274	2.250	0.09
	Pakistani Heritage	3.259	1.698	0.24
	Bangladeshi Heritage	3.092	2.916	0.22
	Mixed Heritage	-0.278	1.311	-0.02
Birth position (compared to 1st born)	Missing data	-4.032	2.626	-0.29
	Sixth born	-1.520	2.735	-0.11
	Fifth born	-6.880*	2.669	-0.50*
	Fourth born	-1.677	1.444	-0.12
	Third born	-1.042	0.892	-0.08
	Second born	-0.104	0.678	-0.01
Mother's highest level of qualification (compared to no qualifications)				
	Missing data	1.953	2.250	0.09
	Vocational	-3.394*	1.058	-0.24*
	Academic age 16	-2.426*	0.858	-0.17*
	Academic age 18	-1.199	1.249	-0.09
	Degree	-2.227	1.117	-0.16
	Higher Degree	-1.782	1.627	-0.13
	Other	-3.111	2.432	-0.22

Only significant predictors were kept in the model.

Table A.3.3: 'Positive Social Environment' Contextualised Model (impact of child, parent, home environment and other measures on year 5 normalised 'Positive Social Environment')
*Statistically significant at 0.05 level **Statistically significant at 0.01 level

		Estimate	SE	Effect Size
Gender (compared to boys)	Girls	2.051**	0.596	0.15**
Ethnicity (compared to white UK)	White European Heritage	-2.598	1.725	-0.19
	Black Caribbean Heritage	-1.737	1.638	-0.13
	Black African Heritage	-1.700	2.172	-0.12
	Any other ethnic minority Heritage	-3.222	2.027	-0.23
	Indian Heritage	-1.090	2.242	-0.08
	Pakistani Heritage	-0.134	1.703	-0.00
	Bangladeshi Heritage	-5.202	2.928	-0.37
	Mixed Heritage	-2.911*	1.312	-0.21*
Birth position (compared to 1st born)	Missing data	-1.973	3.618	-0.14
	Sixth born	3.635	2.748	0.26
	Fifth born	-9.349*	2.679	-0.67*
	Fourth born	0.632	1.448	0.05
	Third born	-0.874	0.896	-0.06
	Second born	-1.210	0.623	-0.09
Mother's highest level of qualification (compared to no qualifications)	Missing data	-1.317	2.460	-0.14
	Vocational	-3.064*	1.117	-0.22*
	Academic age 16	-1.251	0.918	-0.09
	Academic age 18	-0.134	1.348	-0.01
	Degree	-0.909	1.373	-0.07
	Higher Degree	-2.139	2.035	-0.15
	Other	-2.394	2.547	-0.17
Father's highest level of qualification (compared to no qualifications)				
	Missing data	2.960	4.198	0.21
	Vocational	-1.515	1.194	-0.11
	Academic age 16	0.424	1.032	0.03
	Academic age 18	1.395	1.382	0.10
	Degree	1.745	1.346	0.13
	Higher Degree	4.282*	1.859	0.31*
	Other	-0.270	3.209	-0.02
	Home	0.225	0.997	0.02
Early years Home Learning Environment (HLE) Index (compared to very high)				
	Missing data	-1.835	2.212	-0.13
	0-13	-3.084*	1.424	-0.22*
	14-19	-0.896	1.144	-0.06
	20-24	-1.829	1.094	-0.13
	25-32	-0.107	1.021	-0.01
Salary (compared to no salary)	Missing data	1.283	1.009	0.09
	£ 2,500 – 17,499	0.074	0.985	0.01
	£ 17,500 – 29,999	2.377*	1.060	0.17*
	£ 30,000 – 37,499	1.059	1.218	0.08
	£ 37,500 – 67,499	2.441*	1.120	0.18*
	£ 67,500 – 132,000+	4.755*	1.596	0.34*

Only significant predictors were kept in the model.

Appendix 4: Effect Sizes

Effect sizes

To illustrate the impact of different factors on attainment or social behaviour in Year 1 effect sizes (ES) were calculated. Effect sizes are most commonly used in experimental studies and essentially measure the strength of mean differences. Glass et al., (1981) define ES as:

ES = (mean of experimental group)-(mean of control group)/pooled standard deviation

Or $\Delta = \frac{X_{Exp} - X_{Cont}}{SD_{pooled}}$

Effect sizes were calculated for different child outcomes, using both the child level variance and coefficients for predictors included in the multilevel statistical models adopting the formulae outlined by Tymms et al., (1997).

For categorical predictors (e.g. gender or ethnicity) the effect size was calculated as:

ES = categorical predictor variable coefficient ⁄√child level variance

Or

$\Delta = \frac{\beta_1}{\sigma_e}$

For continuous predictor variables (e.g. child age in months), the effect size describes the change on the outcome measure produced by a change of +/-one standard deviation on the continuous predictor variable, standardised by the within school SD, adjusted for covariates in the model – the level 1 SD:

$\Delta = \frac{2\ \beta_1 * SD_{x1}}{\sigma_e}$ where $_{x1}$=continuous predictor variable

Effect sizes can be useful for comparisons between different studies but interpretations must be made with caution and with reference to the outcomes concerned and controls used in models (Elliot & Sammons, 2004). For further discussion of effect sizes see Coe (2002). Effect sizes for some categorical measures in the EPPE research are large but apply to small numbers of children (e.g. the very low birth weight group or specific ethnic groups).