The British Educational Research Association (BERA)  
Annual Conference  
University of Manchester  
4th – 6th September 2012  

Wednesday 5th September  
9.00 – 10.30 am  
and linked symposium  
Wednesday 5th September  
11.00 – 12.30  
University Place 2.219/2.220

The Effective Pre-School, Primary and Secondary Education Project (EPPSE):  
(1997 – 2013)

Chair: Brenda Taggart  
Discussant: Professor Daniel Muijs

BERA SIG: Educational Research and Educational Policy Making  
For further information about this session contact:  
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September 2012
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N.B. About this symposium  
Duration: 1hr 30 mins  
There are 3 papers in each symposium.  
Following the presentations will be the Discussant’s remarks followed by Q and A.

N.B. About this handout  
This handout has been designed to give an insight into current EPPSE findings. It gives an overview of each presentation, key findings and commentary. For detailed information (including a full list of references) on each topic it is recommended that the reader consults the appropriate full Technical Paper, Project Report or journal article –see Additional sources of information at the end of this handout or visit the EPPSE website at http://eppe.ioe.ac.uk or contact Brenda Taggart (0207 612 6219 / b.taggart@ioe.ac.uk) if you require additional information.
Overview Symposium 1

**Title:** The Effective Pre-School, Primary and Secondary Education (EPPSE 1997 - 2013)
Project: Academic, social-behavioural and dispositional findings at the end of Key Stage 3

**Convenor:** Brenda Taggart  Principal Investigator and Research Co-ordinator
Institute of Education, London

**Discussant:** Professor Daniel Muijs is Chair of Education at the University of Southampton.

**Overview**
This symposium demonstrates the importance of longitudinal studies for showing how institutions such as the family or the different phases of schooling interact to shape children’s long term academic and social-behavioural development. The symposium will provide a short background to the Effective Pre-school, Primary and Secondary Education (EPPSE) project and then summarise the key findings from the latest phase of the study.

EPPSE is a longitudinal study commissioned in 1997 by the Department for Education (DfE). It has studied the academic and social-behavioural development of 3,000 children from the ages of 3/5 until age 16+ (the end of compulsory schooling). The research has investigated, and will report here, on a wide range of influences including child, family, the home learning environment (out of school learning) and neighbourhood influences as well as the contribution of pre-school, primary education and secondary schooling to young people’s developmental outcomes.

The research broke new ground in applying an educational effectiveness methodology to studying pre-school effects and is the largest study in Europe to investigate the continuing effects of pre-school as well as the influence of primary and secondary schooling on outcomes.

The Key Stage 3 period of the research came to an end in December 2011 and this symposium will report on the key findings during this period. The three papers in the symposium will cover the key influences on teenagers:

a) academic attainment and progress and
b) social-behavioural development and change over Key Stage 3.
c) the importance of students’ own views and dispositions and how these are important considerations when looking at learning and social behaviours, how students’ own reports of themselves as learners (their dispositions) and their views of school can be linked to ‘other’ data to examine factors which influence their outcomes.

This symposium will continue the ‘story’ of EPPSE research for those interested in the continuing effects of pre and primary school as well as provide new findings for those interested in what matters when educating teenagers. The findings have implications for delegates interested in longitudinal research, educational outcomes, social equity and the development of policy and practice.
Abstract 1 - Academic attainment and progress at the end of Key Stage 3
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Presenting authors: Kati Toth and Pam Sammons

a) Relevance of the topic to BERA members
For almost 15 years, EPPSE has contributed to the debate on what influences student outcomes. EPPSE focuses on issues of social inequality and is therefore of interest to a wide range of BERA members. This paper is relevant to colleagues concerned with the education of teenagers and influences on their academic (age 14) outcomes.

b) Clarity of the research questions
Previously EPPSE has reported on academic attainment and progress up to age 11. This paper reports on these same students’ outcomes in English, maths and science at age 14. The main research questions are the:
  • relationships between students’ background characteristics e.g. gender, SES etc. and academic outcomes;
  • influence of pre-school, primary and secondary school experiences (and their interactions) on academic attainment and progress and
  • differences between more and less disadvantaged groups of students.

c) Appropriateness of research methods
EPPSE is innovative in applying an ‘effectiveness’ methodology to the study of what influences learning. This paper reports on the analyses of Key Stage 3 national assessment data using multi level modelling to control for background characteristics so that ‘net’ influences can be explored. Measures of secondary school academic effectiveness (DfE’s KS2-KS4 contextual value) were added to the EPPSE datasets along side of Ofsted judgements which were used to provide indicators of the quality of secondary schools. In addition, the paper reports briefly on challenges for research posed by policy changes which saw the demise of KS3 National Assessments tests and the relationship between these test scores and teacher assessment levels.

d) Robustness of analytical and/or theoretical framework
The analytic framework employs multi-level modelling to explain outcomes using predictors at child, family, community and school-level. This powerful analytical framework enabled EPPSE to answer policy questions such as: the relationship between Ofsted judgements and academic attainment.

e) Significance for educational practice, policy or theory
Past EPPSE findings have contributed to the development of major policy initiatives (Sure Start Children’s Centres etc.) and enquiries (Independent Review of Poverty and Life Chances 2010 etc). They have also made a major contribution to knowledge about effective educational practices. The findings from these analyses have already been used by the DfE to help inform policy makers about what makes a difference to teenager’s learning trajectories. Its significance goes beyond policy making and will be of relevance to those concerned with learning over the life course.
Paper 1 – Academic attainment and progress at the end of Key Stage 3

Introduction
The Effective Pre-school, Primary and Secondary Education Project (EPPSE) has investigated the academic and social-behavioural development of approximately 3,000 children from the age of 3+ years since 1997. This paper focuses on the relationships between a range of individual student, family, home, pre-, primary and secondary school characteristics and students’ academic attainment in English, maths and science in Year 9 at secondary school (age 14). It compares the latest findings with those found for students’ attainment at younger ages. It also highlights the influences of secondary school on students’ attainment in the core curriculum areas and studies their academic progress across Key Stage 3 between the ages of 11 and 14.

Research questions
The main research questions are the:
• relationships between students’ background characteristics e.g. gender, SES etc. and academic outcomes;
• influence of pre-school, primary and secondary school experiences (and their interactions) on academic attainment and progress and
• differences between more and less disadvantaged groups of students.

Key Findings
Individual student, family and home influences
1) Differences in attainment related to background influences which emerged early (at age 3) have remained fairly stable through to the end of Key Stage 3 (KS3; age 14). Both mothers’ and fathers’ (to a lesser extent) educational level strongly predicted attainment as measured by Teacher Assessment levels (TA) in Year 9 and also progress across KS3.
2) Girls had significantly better attainment in English than boys and also made more progress in English, maths and science over KS3.
3) Older students (autumn-born compared with summer-born) in a year group showed higher attainment and appeared to increase their advantage by making more progress over KS3.
4) Other moderately strong predictors of attainment in all core subjects included the early years home learning environment (HLE), birth weight, family income and free school meal (FSM) status. For English only, a lower family income and FSM status also predicted poorer progress across KS3.
5) Students who lived in disadvantaged neighbourhoods had poorer attainment, over and above child and family characteristics, although these neighbourhood effects are relatively small compared to those of the individual student and family measures.

Pre-school influences
6) Both pre-school quality and pre-school effectiveness continued to predict students’ later academic attainment in Year 9, even after controlling for background characteristics.
7) The early experience of high quality pre-school predicted better outcomes for maths and science at age 14, but not for English. Pre-school effectiveness\(^1\) had a continuing effect on English (for pre-schools effective in promoting pre-reading skills), maths and science (for pre-schools effective in promoting early number concepts). However, these effects were weaker than at younger ages.

\(^1\) A ‘value added’ measure. For instance, ‘more effective’ pre-schools were defined as those whose children made significantly greater cognitive/developmental gains controlling for their prior attainment/development and background characteristics from age 3 to 5 yrs. Centres where children made less developmental gains than predicted were defined as ‘less effective’.

8) The continued benefits of pre-school were most evident for students who went on to attend secondary schools of medium or low academic effectiveness (based on the DfE\textsuperscript{2} contextual value added indicator). This is in line with earlier results which showed that pre-school had a similar ‘protective’ effect on attainment at the end of Key Stage 2.

**Primary school influences**

9) Having attended a more academically effective\textsuperscript{3} primary school continued to predict significantly better academic attainment for EPPSE students in maths and science, but not English at the end of KS3.

10) Students who had experienced a positive transition from primary school (in terms of gaining familiarity with new routines and continuity in the curriculum) were more likely to have higher attainment in all core subjects and also to make better progress in maths and science at age 14 (controlling for background factors, although the effects were relatively small).

**Secondary school influences**

11) Two Ofsted measures of the secondary school’s quality (inspectors’ judgments of ‘quality of pupils’ learning’ and ‘learners’ attendance’) predicted better attainment and progress for the EPPSE sample. Students who attended an ‘outstanding’ secondary school had better attainment in English, maths and science and made better progress in English and maths (taking account of students’ individual and family background influences) than those who attended a school judged as ‘inadequate’. For science, only those who attended a secondary school judged as ‘good’ rather than ‘inadequate’ made significantly more progress.

12) Students’ views of their secondary school’s ‘emphasis on learning’ predicted significantly higher attainment and greater progress in all three core subjects.

13) Students’ views of a number of secondary school processes predicted attainment and progress. Students who rated their secondary school more favourably in terms of ‘behavioural climate’ and the ‘emphasis on learning’ had significantly better attainment in all three subjects, taking account of other influences.

14) Time spent on homework, as reported by students, was a relatively strong predictor of better attainment and progress in all three core areas. Spending any amount of time was beneficial, but the strongest effects were for spending 2-3 hours per day after school.

15) There were strong and positive links between students’ ‘academic self-concept’ (whether they felt they were good at a subject) for English and maths and their attainment in these subjects. There was also better attainment where students reported they ‘enjoyed school’, especially for maths. The relationships between these measures tend to be reciprocal e.g., academic attainment predicts ‘students’ self-concepts’ and vice versa. Thus, we can see these outcomes as interdependent.

**Methodology**

The EPPSE research design has been based on an educational effectiveness and mixed methods approach (Sammons et al., 2005; Siraj-Blatchford et al., 2006). This type of design allows for the study of individual, family and home influences, as well as the effect of pre-, primary and secondary school measures on academic and developmental outcomes. This paper focuses on statistical trends and quantitative analyses of factors that predict students’ attainment and progress in KS3 based on results using multilevel statistical models.

\textsuperscript{2} The Department for Education formerly known as the Department for Children, Schools and Families.

\textsuperscript{3} Measured by contextualised ‘value-added’ estimates of effectiveness based on pupils’ progress between KS1 and KS2 from National Curriculum assessments (Melhuish et al., 2006).
Throughout its research, EPPSE 3-14 has gathered a wide range of data on children’s development, individual, family, home learning environment (HLE), pre- and primary school characteristics. Additional measures of secondary school academic effectiveness derived from KS2-KS4 contextual value added (CVA) indicators produced by the DfE have been added to the EPPSE data set. In addition, various Ofsted inspection judgements were used to provide external indicators of the quality of secondary schools. These were used to complement the measures of quality and effectiveness for pre-school settings and the measures of primary school academic effectiveness collected in previous phases of the research. It has therefore, been possible to explore the influences of various measures of pre-, primary and secondary school on students’ outcomes in Year 9. This paper focuses on academic outcomes, but other data on social-behavioural outcomes and student dispositions (from student self-report) were also collected (see Sammons et al., 2011a; 2011b; 20011c). National curriculum levels awarded for Teacher Assessment (TA) in English, maths and science have been used to provide measures of academic outcomes in Year 9. Standardised test scores of National Assessments in English and maths in Year 6 have been used as measures of prior attainment when assessing progress over KS3. In order to maximise our sample size and limit any possible bias linked to missing data, multiple imputation was conducted. Comparisons of the results from both imputed and non-imputed data sets indicated that the results are robust, and broadly consistent. The sample included 3002 students with at least three academic assessments from age 3 to age 14. For further details of the methodology see Sammons et al. (2011a).

Findings

Individual student, family and home influences

The analyses started by examining the overall differences in attainment for particular student groups, without controlling for the influence of any other background characteristics. Previously the project has demonstrated that a range of measures related to child and family characteristics and the HLE are important predictors of children’s academic attainments and progress up to the end of primary school (Sammons et al., 2008a). The influence of such characteristics can be detected from a young age and they continue to affect later educational attainment. Current results show many similarities with the patterns identified in earlier findings.

Overall attainment

EPPSE students had higher average attainment in maths than in either science or English (a difference of 0.51 of a national curriculum level comparing maths and English, and 0.36 of a level comparing maths and science) at the end of KS3. This pattern of higher results in maths is in line with the most recent TIMMS (2007) survey.

Gender

In Year 9, girls had higher attainment than boys in English, by around 0.4 of a national curriculum level (approximately half a standard deviation). There were no significant gender differences in maths or science results.

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4 The strength of an effect is expressed in Effect Sizes (ES). This is a statistical concept that shows the strength of the relationship between outcomes while controlling for other factors. An effect size of 0.1 is relatively weak, one of 0.5 moderate in size, one of 0.7 fairly strong. Differences have also been shown in terms of National Curriculum levels. In most cases only statistically significant effects have been reported.

5 Sturman et al. (2008) revealed England as the highest performing country in Europe in maths with the most improved results since 1995. It should be noted that EPPSE students had experienced the National Numeracy Strategy (DfEE, 1998) during their time in primary school and this is likely to have benefited their attainment as research has shown (Tymms & Merrell, 2007) that this significantly raised overall attainment standards in maths.
Family and the early years Home Learning Environment (HLE)
There were marked differences in attainment related to parents’ qualification levels. Students with highly qualified parents (degree level) had much higher attainment on average than those students whose parents had no qualifications (the difference was 1.4 for English, 1.7 for maths and 1.5 for science in terms of TA levels).

There were similarly large differences related to family socio-economic status (SES) between those from professional non-manual and those from semi/unskilled, manual/unemployed groups. Moreover, students eligible for free school meals (FSM6) had lower average attainment than students who were not eligible. The differences were around 0.7 (English and science) and 0.8 (maths) of a national curriculum level.

The quality of the early years HLE was also strongly associated with differences in attainment at KS3. Those who had experienced a high compared to low early years HLE were generally one (1.0) national curriculum level higher for English and science, and 1.3 higher for maths.

The net effects of student, family and HLE characteristics on attainment in Year 9
The average group differences described above do not take into account the relative influence of other characteristics. Multilevel modelling provides results of the ‘net’ contribution of individual characteristics, whilst controlling for other predictors and so enables the identification of the ‘strongest’ net predictors. For instance, the higher attainment of students whose mothers have degrees is compared to those with no qualifications, net of the influence of other family and student characteristics (SES, income, HLE or gender). Mother’s qualification level was the strongest predictor of better attainment for English, maths and science. The next strongest predictor was gender but for English only, where the effect (strongly positive for girls) was larger in KS3 than was the case when these students were in primary school.

There were also a number of additional strong/moderately strong predictors related to student background listed in decreasing order of effect size (ES):
- **English:** family income, birth weight, father’s highest qualification level, early years HLE;
- **Maths:** birth weight, early years HLE, father’s qualification level, ethnicity, family SES;
- **Science:** father’s qualification level, early years HLE, family SES, ethnicity.

It should be noted that ethnicity was not a significant predictor of TA levels in English, but it was for maths and science; students of Indian heritage obtained significantly better results in maths and science than White British students, controlling for the influence of other factors.7 FSM and family SES also had moderate effects on attainment in English, maths and science. These effects were similar in size to those related to the early years HLE for English. The early years HLE had relatively stronger continued effects for maths and science than FSM.

Poverty and neighbourhood influences
There is evidence that the ‘social composition’ of the school, as measured by the percentage of students entitled to FSM may influence individual student’s outcomes over and above their own FSM status. EPPSE students who attended a secondary school with an intake containing higher proportions of students receiving FSM showed poorer attainment in English, maths and science, although the effects were relatively weak.

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6 FSM = Free school meals which is an indicator of low income/poverty.
7 The number of EPPSE students in minority ethnic group categories is typically small. Thus, any differences for specific groups must be interpreted with caution.
Levels of neighbourhood disadvantage (measured by the IMD\(^8\) - Noble et al., 2004; and IDACI\(^9\) - Noble et al., 2007) were also significant predictors of lower student attainment in English and science in Year 9. This was not the case during the primary school years, possibly because neighbourhood influences increase as adolescents interact more with their peer group outside the home. Students who lived in disadvantaged neighbourhoods had poorer attainment, over and above their own and their family characteristics, although these neighbourhood effects are relatively small compared to those of the family.

**Pre-school influences**

**Attendance**

Just having attended a pre-school was found to be a statistically significant predictor of better attainment in both maths and science (but not English) at the end of KS3, compared with the ‘home’ group who had little or no experience of pre-school. Although relatively weak (ES=0.26 for maths; ES=0.22 for science), these effects were still stronger than those found for ‘age’ (being autumn-born) and were similar to the effects for family income in both maths and science.

**Quality and effectiveness**

The quality\(^10\) of the pre-school attended also continued to predict better outcomes in maths and science in KS3. The effects for medium and high quality were slightly larger than for low quality (compared to the ‘home’ group). For example, the ES for high quality was 0.28 for attainment in maths. In science, only those who had attended a medium or high quality pre-school continued to show significantly better attainment in Year 9 than the ‘home’ group at age 14.

A pre-school’s effectiveness in promoting young children’s pre-reading skills continued to predict better outcomes for EPPSE students in English at age 14, with the highly effective category being statistically significant (ES=0.20) in predicting better attainment when compared to the ‘home’ group. For maths, in Year 9, all groups (ES=0.36 for high; ES=0.22 for medium; ES=0.30 for low effectiveness) had significantly better results than the ‘home’ group after controlling for other factors. For science, having attended a high (ES=0.33) or medium effective (ES=0.19) pre-school (in promoting early number concepts) predicted significantly better outcomes than not attending a pre-school. Those who had attended a low effective pre-school showed no better outcomes in science by the end of KS3 than the ‘home’ group.

**Primary school influences**

Previous EPPSE research has shown that the academic effectiveness of a child’s primary school was a statistically significant predictor of better attainment and progress across KS2 for English and effects were even stronger for maths. Other educational effectiveness research suggests that primary schools can continue to influence students’ longer term academic outcomes at secondary school (Goldstein & Sammons, 1997; Leckie, 2009). In KS3, the academic effectiveness of the primary school the EPPSE students had attended still predicted better outcomes for students in both maths and science attainment three years after transferring to secondary school.

Controlling for student, family and HLE background characteristics, by the end of KS3, the extra benefit of having attended a medium effective primary school was relatively small compared with the low effective group (ES=0.13 for maths; ES=0.10 for science). The net effects of having attended a high academic effective primary school on later attainment compared with the effects of attending a low effective one were rather stronger (ES=0.31 for

\(^8\) Index of Multiple Deprivation.
\(^9\) Income Deprivation Affecting Children Index.
\(^10\) Measured by the Early Childhood Environment Rating Scales (ECERS-R and ECERS-E - see Sylva et al., 2010).
maths; ES=0.29 for science). These effects are similar in size to those of FSM status. The effect, measured in terms of TA levels, represents a third of a level for maths and a quarter of a level for science.

Combined effects of pre-school and primary school
Pre-school effectiveness (in promoting early number concepts) was tested jointly with the primary school academic effectiveness measure and the results indicated that having attended a high effective pre-school offered some protection, even if a student went on to a less effective primary school, for later maths and science outcomes. Likewise, having attended a more academically effective primary school mitigated the effects of experiencing no or only a low effective pre-school. The longer term protective effects of pre-school effectiveness were shown most clearly for students who then attended a low academically effective primary school when we studied their later attainment in Year 9 of secondary school.

Further analyses of the combined effects showed that the continued benefits of pre-school were most evident for EPPSE students who went on to attend medium or low effective secondary schools, suggesting a longer term protective influence of pre-school against attending an ineffective secondary school.

Secondary school influences
Academic effectiveness of secondary schools
The overall academic effectiveness of secondary schools\(^\text{11}\) did not predict EPPSE students' attainment in Year 9, after controlling for individual student, family and HLE measures. In interpreting this result it should be noted that, in contrast to the primary school academic effectiveness measure, these DfE Contextual Value Added (CVA) measures were not subject specific (separate for English, maths and science) in KS3 and this may have affected the results. However, after controlling for the same characteristics, the quality of the secondary school EPPSE students attended, measured by Ofsted inspection ratings, was found to be significant. In particular, the inspection judgment of the 'quality of pupils' learning'\(^\text{12}\) was found to predict EPPSE students' attainment in both English and science, with the difference being only statistically significant (but moderately strong) for the 'outstanding' schools category compared with the 'inadequate' category (ES=0.42 English; ES=0.51 science).

For maths attainment, schools judged by Ofsted as 'good' (on the 'quality of learning') showed more modest and significant positive effects (ES=0.26) and those judged as 'outstanding' showed stronger effects (ES=0.56) compared with the 'inadequate' category.

These results show that secondary school quality remains important in shaping students' academic attainment, over and above the impact of background characteristics. The effects are equivalent to between 0.34 and 0.64 of a TA level for those who attended an 'outstanding' rather than an 'inadequate' school (in terms of the Ofsted judgement 'quality of learning'). A similarly strong pattern was identified for Ofsted judgments of 'learners' attendance'. It should be noted that these two Ofsted measures (‘quality of learning’ and ‘learners’ attendance’) are also correlated and hence were tested separately.

Progress across Key Stage 3
Students' academic progress across KS3 was studied by controlling for their prior attainment measured at the end of primary school (Year 6) as well as taking account of individual

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\(^\text{11}\) Using CVA (Contextual Value Added) measures derived from DfE’s National Pupil Database (NPD) that measures student progress over KS2-4.

\(^\text{12}\) As measured by inspectors from the Office for Standards in Education (Ofsted) during formal school inspections.
student, family and HLE characteristics. Overall, there was evidence that students made more progress in English, maths and science over KS3 if they:

- were older for their year group (autumn-born) (ES=0.24 English; ES=0.32 maths; ES=0.20 science);
- were girls (ES=0.32 English; ES=0.16 maths; ES=0.17 science);
- had highly qualified fathers (ES=0.28 English, ES=0.28 maths and ES=0.43 science).

Students whose mothers were highly qualified (degree/higher degree) made better progress in only English (ES=0.34) and science (ES=0.33). Additionally, students whose families had high incomes also made better progress in English (ES=0.39).

A higher percentage of students in a school eligible for FSM predicted poorer progress for individual students in the EPPSE sample in both English (ES=0.18) and science (ES=0.21). Of the neighbourhood measures tested, only the percentage of White British and the level of reported crime were significant predictors of poorer student progress for English. For progress in science however, reported crime, perceived neighbourhood safety, the IMD and IDACI were all found to be statistically significant predictors. These findings indicate that the disadvantage of the school’s intake and neighbourhood had small negative effects predicting both poorer progress as well as attainment. This shows that schools in some areas face more challenging circumstances in improving student learning.

Higher Ofsted measures of the ‘quality of pupils’ learning’ and ‘attendance of learners’ were also significant predictors of better progress in all three core subjects. EPPSE students who attended an ‘outstanding’ secondary school in terms of the ‘quality of learning’ made significantly more progress in the three core subjects than those in schools judged to be ‘inadequate’ (ES ranged between 0.29 and 0.36). Additionally, students from secondary schools characterised as ‘outstanding’, ‘good’ or even ‘satisfactory’, in terms of ‘pupils’ attendance’ made significantly more progress in English (ES=0.48 for outstanding) and maths (ES=0.35 for outstanding).

Students’ experiences and reports of secondary school

Students’ secondary school experiences were explored using self-report questionnaires administered in Year 9. Measures were tested to see if they predicted academic attainment and progress after controlling for individual, family and HLE characteristics as well as the percentage of students on FSM in the school.

Students who reported that their school placed a higher ‘emphasis on learning’ had significantly higher attainment. The difference was half a TA level in English and science and three quarters of a TA level for maths (ES ranged between 0.20 and 0.22).

EPPSE students’ attainment was also found to be higher where they perceived a more ‘positive behavioural climate’ in their secondary school. This difference was particularly noticeable for maths (ES=0.46). The perceived ‘quality of the school environment’ was also a predictor of better attainment, although the effects were smaller and only significant for maths and science (ES=0.13 for both). Similar, small but positive effects were identified for the factor related to students' perceptions of how much they felt teachers ‘valued and respected’ them. Finally, the factor ‘learning resources’ (related to whether students felt the school was well equipped with computers and technology) also predicted better attainment in maths (ES=0.13) and science (ES=0.15) in KS3. Although the effect sizes were relatively small, this is the equivalent of around half a TA level for both these subjects.

After testing these factors separately as predictors of attainment, they were also tested together to investigate which ones are the most important in predicting academic outcomes.

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13 This factor includes attractive and well decorated buildings, cleanliness of toilets etc.
in Year 9 when still controlling for individual student, family and HLE characteristics. The factors ‘emphasis on learning’ and ‘behavioural climate’ significantly predicted Year 9 academic attainment in all three core subjects when tested together.

The analyses of students’ progress during KS3 revealed that ‘behavioural climate’, ‘valuing pupils’ and ‘teacher support’ were significant predictors of progress in English, maths and science. The quality of the ‘school environment’ and ‘learning resources’ were only significant for maths and science. ‘Headteacher qualities’ was a significant predictor for progress in maths (ES=0.15). Finally, ‘teacher behaviour management’ was a significant predictor of progress in science (ES=0.14).

After controlling for individual, family and HLE influences, the daily time spent on homework, as reported by students, was found to be an important and strong predictor of better attainment and progress (ES for 2-3 hours of homework/day ranged between 0.69 and 0.85 for the three core subjects). Spending more time on homework is likely to increase study skills and opportunities to learn, it may also be influenced by the student’s own self-regulation. It is also likely to reflect secondary school policies and teacher expectations and the academic emphasis in the school as well as encouragement from parents to take school work seriously.

Students’ views of themselves
Earlier EPPSE research (Sammons et al., 2008b), has demonstrated positive relationships between ‘academic self-concept’ and attainment. Higher ‘academic self-concept’ predicted better attainment and vice-versa. Patterns of attainment and self-concept in younger children can shape their future identities as learners. The results for EPPSE students in secondary school show fairly strong links between ‘maths academic self-concept’ as a predictor of maths attainment in Year 9 (ES=1.2; nearly 1 TA level). By contrast, ‘English academic self-concept’ was a weaker predictor of Year 9 English attainment (ES=0.74; equivalent to approximately a half of a TA level). Students’ self-reported ‘enjoyment of school’, also predicted attainment, with stronger effects for maths (ES=0.38) than science (ES=0.31) or English (ES=0.29).

Conclusions and implications
The analyses of students’ attainment in English, maths and science at the end of Year 9, and progress across KS3, have provided a wide range of evidence concerning the factors that predict academic success in Year 9. However, no one predictor explains it all; it is the combination of school factors, alongside individual, family, home and neighbourhood influences, especially the mothers’ qualification level, the early years HLE and family SES, that shape students’ academic outcomes up to age 14.

The socio-economic characteristics of the student’s family continued to predict academic attainment at the end of KS3 in the three core curriculum areas. This research also provides evidence that the school and neighbourhood can also affect outcomes. The early years HLE remains an important predictor of better attainment at age 14, and this has relevance for the development of policy regarding families and parenting. The research has implications for the debate on the drivers of social inequality and has messages for both policy and practice that may help to narrow the gap in educational outcomes and improve children’s and young people’s learning over their life course.

The research reveals that specific characteristics of educational institutions predicted attainment in core subjects up to the end of KS3. The child’s early experiences within a preschool centre continue to predict attainment through primary and into secondary school. Pre-school attendance and also pre-school quality and effectiveness continued to predict later attainment in maths and science. This is relevant to the development of policies intended to
increase the quality and effectiveness of pre-school and is especially important given the increased numbers of children who now take up their funded place.

The findings also provide evidence that the academic effectiveness of the primary school not only influenced EPPSE students’ attainment and progress during KS2, but also continued to predict better outcomes in maths and science later on in KS3. This shows the relevance of educational effectiveness (CVA) indicators (of primary school performance in specific subjects) for both policy makers and practitioners in providing useful information to help evaluate institutions. Other research has also demonstrated that more effective schools tend to make greater use of performance data to help improve their practice (Day et al., 2009).

There is also evidence of secondary school effects on EPPSE students’ progress across KS3. The Ofsted inspection indicator of school ‘quality’ predicted both attainment and progress over and above individual, family, HLE and neighbourhood characteristics. Attending a school judged to be ‘outstanding’ by Ofsted provided a moderately large boost to student attainment outcomes in all three core areas of the curriculum.

Moreover, the results point to the potential importance of the students’ own perceptions and their views. Students’ reports on secondary school processes predicted differences in attainment and progress. Focussing on improving areas of the secondary school experience such as ‘emphasis on learning’ and the school’s ‘behavioural climate’ for all three core subjects plus providing good ‘learning resources’ (for maths and science) is likely to promote better academic results and also improve social-behavioural development and student dispositions¹⁴ (see Sammons et al., 2011a; 2011b; 2011c). This suggests that consulting students and obtaining their views on such topics is likely to be extremely helpful for school self-evaluation.

These results indicate that optimising each phase of education, pre-, primary and secondary school has the potential to improve the attainment of the whole school population in the longer term. These findings build on and extend findings reported for the EPPSE students at younger ages and show that better pre-schools and primary schools continue to have a protective effect in terms of boosting later attainment for all students.

Parenting is important too, and improving the early years home learning environment (HLE) is likely to benefit the educational attainment of children in both the short term and the whole population in the longer term since such effects are shown to last into adolescence. All of these points are particularly relevant for young people growing up in disadvantaged families and neighbourhood contexts.

It has been estimated that by 2050, the working age population within Europe will decrease by approximately twelve per cent, whereas the elderly will increase by fifty per cent. In these circumstances, maximising the productivity of the working population can be viewed as necessary for economic sustainability. One strategy to increase productivity is to enhance educational attainment across the population. This is especially important when the skills necessary for modern economies are rising and changing in nature and when there is still great inequality of opportunities and outcomes. The results of this study provide some pointers to strategies related to policies on supporting parents, promoting higher quality in early years provision and improving educational experiences. Developing policies informed by such evidence may help to address these issues in the medium to longer term.

¹⁴ ‘Dispositions’ here refer to factors such as ‘academic self-concept’, ‘enjoyment of school’ and ‘citizenship values’ etc.
Table 1: Summary of the effects of students’ background characteristics and pre-, primary and secondary school influences on academic attainment in Year 9
(Only the largest effect sizes for the original data are reported; comparison group in brackets)

<table>
<thead>
<tr>
<th>Pupil characteristics</th>
<th>English</th>
<th>Mathematics</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (continuous)</td>
<td>0.19</td>
<td>0.15</td>
<td>0.16</td>
</tr>
<tr>
<td>Gender (boys)</td>
<td>0.46</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Birth weight (normal)</td>
<td>-0.37</td>
<td>-0.40</td>
<td>-0.35</td>
</tr>
<tr>
<td>Ethnicity† (White UK heritage)</td>
<td>ns</td>
<td>0.37</td>
<td>0.30</td>
</tr>
<tr>
<td>Early developmental problems (none)</td>
<td>-0.21</td>
<td>-0.16</td>
<td>-0.15</td>
</tr>
<tr>
<td>Early behavioural problems (none)</td>
<td>-0.18</td>
<td>-0.18</td>
<td>ns</td>
</tr>
<tr>
<td>Number of siblings (none)</td>
<td>-0.31</td>
<td>-0.19</td>
<td>ns</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Family characteristics</th>
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</thead>
<tbody>
<tr>
<td>Mother's age (continuous)</td>
<td>0.16</td>
<td>ns</td>
<td>0.09</td>
</tr>
<tr>
<td>Mother’s qualification level (none)</td>
<td>0.61</td>
<td>0.50</td>
<td>0.61</td>
</tr>
<tr>
<td>Father’s qualification level (none)</td>
<td>0.36</td>
<td>0.37</td>
<td>0.48</td>
</tr>
<tr>
<td>Free school meals (FSM) (non-FSM)</td>
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<td>-0.31</td>
<td>-0.31</td>
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<tr>
<td>Family SES (professional non-manual)</td>
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<td>-0.31</td>
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<tr>
<td>Family earned income (none)</td>
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<tr>
<td>School level FSM (continuous)</td>
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<td>-0.20</td>
<td>-0.22</td>
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<table>
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<td>Key Stage 1 HLE (low)</td>
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<tr>
<td>Key Stage 2 HLE (low)</td>
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<td>0.17</td>
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<th>Pre-school*</th>
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</thead>
<tbody>
<tr>
<td>Attending (not attending)</td>
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<th>Pre-school quality*</th>
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</thead>
<tbody>
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<td>ECERS-E (no pre-school)</td>
<td>ns</td>
<td>0.28</td>
<td>0.23</td>
</tr>
<tr>
<td>ECERS-R (no pre-school)</td>
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<td>ns</td>
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<table>
<thead>
<tr>
<th>Pre-school effectiveness*</th>
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</thead>
<tbody>
<tr>
<td>Early number concepts (no pre-school)</td>
<td>ns</td>
<td>0.36</td>
<td>0.33</td>
</tr>
<tr>
<td>Pre-reading (no pre-school)</td>
<td>0.20</td>
<td>ns</td>
<td>ns</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary School Effectiveness**</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary School Quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of pupils’ learning (inadequate)</td>
<td>0.42</td>
<td>0.56</td>
<td>0.51</td>
</tr>
<tr>
<td>Learners’ attendance (inadequate)</td>
<td>0.70</td>
<td>0.71</td>
<td>0.56</td>
</tr>
</tbody>
</table>

† The number of EPPSE students in minority ethnic group categories is typically small. Thus, any differences for specific groups must be interpreted with caution.

* The reference group for all pre-school quality and effectiveness comparisons is the ‘home’ group, who had very little or no pre-school experience. The effect sizes represent differences between the ‘home’ group and the ‘high quality/effectiveness’ group unless stated otherwise.

** The reference group for primary school is ‘low effectiveness’. The effect sizes represent differences between the ‘low effectiveness’ group and the ‘high effectiveness’ group.

For full list of references see appropriate Technical Paper at [http://eppe.ioe.ac.uk](http://eppe.ioe.ac.uk)
Abstract 2 – Social- behavioural development at the end of Key Stage 3
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° Institute of Education, University of London, + Birkbeck, University of London, § University of Oxford

Corresponding author: Brenda Taggart – Institute of Education, University of London
Presenting authors: Pam Sammons

a) Relevance of the topic to BERA members
EPPSE has contributed to the debate, for almost 15 years, on what influences student outcomes. Relevant to colleagues concerned with the social behaviour of teenagers (age 14).

b) Clarity of the research questions
This paper reports on students’ outcomes in 4 key social behaviours: ‘self-regulation’, ‘pro-social’ behaviour, ‘hyperactivity’ and anti-social’ behaviour. Aims of the research are to investigate:
- relationships between background characteristics and social behaviour;
- influences of pre- primary and secondary schools (singly and combined) on social behaviour and changes over time;
- differences between more and less disadvantaged groups of students.

c) Appropriateness of research methods
EPPSE is innovative in applying an ‘effectiveness’ methodology to the study of social behaviour. This paper reports on the analyses of individual Pupil Profiles completed by teachers at the end of Key Stage 3. The research used multi level modelling to control for background characteristics so that ‘net’ influences can be explored. Behavioural data is notoriously difficult to collect so the project conducted analyses using the multiple imputation of data and comparisons of imputed and non imputed data indicated that the results are robust and broadly consistent. In addition the research undertook growth curve modelling to determine changes in behaviours over time.

d) Robustness of analytical and/or theoretical framework
The analytic framework uses not only multi-level modelling to explain outcomes but addresses some of the difficulties of investigating behavioural data through imputation and growth curve modelling. The factors for investigation are derived from extensive work on student behaviour pioneered by Robert Goodman and Herb Marsh. This analytical framework enabled EPPSE to answer policy and practice questions related to a range of behavioural topics.

e) Significance for educational practice, policy or theory
Social-behavioural development is important in its own right because it contributes to well-being and influence current and future academic achievement, thus shaping developmental pathways. The findings from these analyses have already been used by the DfE to help inform policy makers about what makes a difference to teenager behaviours.
Paper 2- Social-behavioural development at the end of Key Stage 3

Introduction

The Effective Pre-school, Primary and Secondary Education Project (EPPSE) has investigated the cognitive and social-behavioural development of approximately 3,000 children from the age of 3+ years since 1997. This paper focuses on the relationships between a range of child, family, home, pre-, primary and secondary school characteristics and students’ social-behavioural development in Year 9 at secondary school (age 14). It compares these latest findings with those found for social-behavioural development at younger ages, highlights the specific influences of secondary school on students’ social-behavioural outcomes in Year 9 and changes in these developmental outcomes between the ages of 11 and 14.

The social-behavioural development of young people is important in its own right because it contributes to well-being, but also because it can influence current and future academic achievement, and shape developmental pathways. EPPSE derived four measures of social behaviour from individual student assessments made by teachers. These are ‘self-regulation’ (problem-solving, motivation, self-confidence, assertiveness etc.), ‘pro-social behaviour’ (peer empathy, co-operation, altruism etc.), ‘hyperactivity’ (reduced self-control, impulsiveness etc.) and ‘anti-social behaviour’ (verbal abuse, aggression etc.).

Research questions

The aims of this stage of the ongoing EPPSE project were to:

- investigate the relationships between students’ social-behavioural outcomes at the end of KS3 and individual, family and Home Learning Environment (HLE) background characteristics;
- explore the influences of pre-school, primary and secondary school experiences (singly and combined), in terms of quality and academic effectiveness, on students’ later social-behavioural outcomes and how these change over time;
- explore the relationships between students’ dispositions and their social-behavioural outcomes;
- explore the effects of students’ experiences of their secondary school and classroom processes on their social-behavioural outcomes.

Key Findings

1) Most student behaviour is rated positively by teachers in Year 9; only a minority of students are found to show poor behaviour in terms of the four measures studied. Just under fourteen per cent showed raised scores for ‘anti-social behaviour’ and seventeen per cent had high scores for ‘hyperactivity’ according to teacher ratings. Scores for these negative behaviours had increased slightly (compared to findings in primary school), as students moved into adolescence.

2) The relationships between student background characteristics and social-behavioural outcomes emerge early and remain relatively stable through to age 14.

3) The relationships between students’ individual, family and home characteristics and their social-behavioural outcomes in Key Stage 3 (KS3) are generally weaker than those found for academic attainment.

4) Overall, girls were rated more favourably by teachers in terms of showing better social-behavioural outcomes than boys at age 14, and made more progress in improving these outcomes between the ages of 11-14. The gender gap widened during KS3.
5) Those who had experienced a more favourable early years Home Learning Environment (HLE) continued to show better social-behavioural outcomes in Year 9 and made better developmental progress across KS3.

6) Socio-economic disadvantage predicted poorer social-behavioural outcomes in KS3. This is in line with results at younger ages (in pre-school and primary school). Neighbourhood disadvantage also predicted worse social-behavioural outcomes but the effects were weaker than those related to individual student background characteristics.

**Pre-school and primary school influences**

7) High quality pre-school showed lasting benefits for promoting better social-behavioural outcomes, although by age 14 these effects are relatively weak.

8) The effectiveness of pre-school and the academic effectiveness of the primary school no longer predict better social-behavioural outcomes at 14 or changes from age 11-14. This is in contrast to findings for EPPSE students’ academic attainment in KS3.

**Secondary school influences**

9) The quality of the secondary school attended by EPPSE students during KS3 (as measured by Ofsted inspection ratings) predicted better social-behavioural outcomes for students, taking into account the influence of individual, family and home influences. This is in line with findings on academic outcomes for these students at the same age.

10) Ofsted inspection judgements of school quality in terms of the ‘behaviour of learners’ was associated with better social-behavioural outcomes for the EPPSE sample.

11) Based on students’ reports of their school experiences, the following factors all predicted better social-behavioural outcomes and progress from age 11 to age 14:
   - the ‘quality of teaching’ – including factors such as a strong ‘emphasis on learning’ by teachers, ‘teacher support’ for learning and a feeling that teachers ‘valued students’;
   - the ‘behaviour climate’ of the school;
   - the ‘Headteacher qualities’;
   - the physical ‘school environment’;
   - the ‘school resources’.

12) Students’ own ratings of their ‘academic self-concept in maths’ (and to a lesser extent for English) also predicted better social-behavioural outcomes, as well as better academic attainment. Such relationships are likely to be reciprocal. Efforts to improve students’ attainment and ‘academic self-concept’, as well as their ‘enjoyment of school’, are likely to promote better social-behavioural outcomes, while improvements in social-behaviour are likely to benefit academic outcomes and self-concept.

13) Student’s self-reported time on homework was a strong predictor of better social-behavioural outcomes and positive changes in these between ages 11-14, as well as better academic attainment and progress across KS3. Both social-behavioural and academic outcomes improved for those spending any amount of time on homework but the biggest boost was where students reported they spent 2-3 hours a night on homework after school.

**Methodology**

The EPPSE research design has been based on an educational effectiveness and mixed methods approach (Sammons et al., 2005; Siraj-Blatchford et al., 2006). This type of design allows for the study of individual, family and home influences as well as the effects of pre-school, primary and secondary school measures on academic and developmental outcomes.
This research focuses on quantitative analyses of four factors that measure social-behavioural outcomes and the development of these across KS3. The factors (‘self-regulation’, ‘pro-social’, ‘hyperactivity’ and ‘anti-social’ behaviour) were identified from teachers’ ratings based on Goodman’s (1997) Strength and Difficulties questionnaire. Multilevel statistical models were developed to test which factors predicted social behavioural outcomes.

In order to maximise the sample size and limit any possible bias linked to missing data, additional analyses using multiple imputation of missing data were conducted. Comparisons of the results from both imputed and non imputed data sets indicated that the results were robust and broadly consistent. Overall, the analyses were based on data for 2,933 students attending 775 secondary schools. For further details of the methodology see the full Report, Sammons et al. (2011a).

Findings
In line with other research, most EPPSE students are rated favourably by teachers for the four social-behavioural outcomes, with only a relatively small minority showing poor behaviour. In all, less than one in five (17%) of the EPPSE sample had high scores for ‘hyperactivity’ and less than one in seven (14%) had raised scores for ‘anti-social’ behaviour in Year 9. Nonetheless, negative behaviours had increased slightly (compared to equivalent analysis in primary school), as students moved into adolescence.

In this paper we discuss the factors that predicted EPPSE students’ social-behavioural outcomes at the end of KS3 and show examples of the strength of relationships in term of Effect Sizes (ES)\(^\text{15}\).

Individual student, family and Home Learning Environment (HLE) influences
The results of the analyses show many similarities to findings about which factors were important predictors of social-behavioural outcomes at younger ages.

Girls were rated by teachers as showing significantly better social-behavioural profiles than boys at age 14 in all four measures (e.g. ES=0.45 for ‘self-regulation’; ES=-0.42 for ‘anti-social’).

Students whose parents reported that they had behaviour problems in the early years, still showed significantly poorer social-behavioural development at age 14.

Higher family socio-economic status (SES), income and parents’ highest qualification levels were strong predictors of better social-behavioural outcomes. For example, the ES for mothers having a degree or equivalent (compared to no qualifications) was moderately strong (ES=0.47) for ‘self-regulation’ and ‘hyperactivity’ (ES=-0.40). There were weaker negative effects linked to parents’ marital status predicting increased ‘hyperactivity’ and ‘anti-social behaviour’ for those from single parent families (ES=0.20 for ‘hyperactivity’ for single parents versus married parents).

The early years HLE (Melhuish et al., 2008) continued to predict better social-behavioural outcomes for students at the end of KS3 taking into account other student and family influences (high versus very low HLE: ES=0.48 for ‘self-regulation’, ES=0.30 for ‘pro-social’, ES=-0.35 for ‘hyperactivity’).

\(^{15}\) The strength of an effect is expressed in Effect Sizes (ES). This is a statistical concept that shows the strength of the relationship between outcomes while controlling for other factors. An effect size of 0.1 is relatively weak, one of 0.5 moderate in size, one of 0.7 fairly strong. A negative ES expresses a negative statistical relationship e.g. a negative ES for ‘hyperactivity’ or ‘anti-social’ behaviour communicates reduction in these types of behaviours which is usually advantageous.
Students identified as having special educational needs (SEN) in secondary school showed significantly poorer social-behavioural outcomes. This is similar to findings for this sample at younger ages (Taggart et al., 2006; Anders et al., 2010). It is worth noting that the link between behaviour problems and learning difficulties is often reciprocal. An additional strong predictor was the experience of multiple disadvantage from a young age\(^\text{16}\). For instance, students who had experienced several disadvantages in the early years continued to show poorer ‘self-regulation’ and ‘pro-social’ behaviour and increased scores for ‘hyperactivity and ‘anti-social’ behaviour in adolescence at the end of KS3.

**Poverty and neighbourhood influences**

The level of neighbourhood disadvantage\(^\text{17}\) predicted social-behavioural outcomes after controlling for other characteristics although relationships were weak. Higher levels of disadvantage in the EPPSE sample predicted poorer ‘self-regulation’, higher levels of ‘hyperactivity’ and increased ‘anti-social’ behaviour. Higher levels of criminality in neighbourhoods also predicted poorer outcomes in all four social-behavioural domains (e.g. ES=0.14 for ‘hyperactivity’). Higher levels of unemployment in the area predicted higher levels of ‘hyperactivity’ in 14 year olds but did not influence other social-behavioural outcomes. Finally, a higher incidence of limiting long-term illness in the neighbourhood predicted lower scores for ‘self-regulation’. All these relationships were identified after controlling for the influence of individual, family and HLE characteristics. Although neighbourhood influences were small they were statistically significant (in contrast to findings for this group at younger ages) and are similar to the effects on academic outcomes.

**Pre-school influences**

**Attendance and effectiveness**

Just having attended pre-school (rather than staying at home) no longer predicted better social-behavioural outcomes in Year 9; neither did the effectiveness of the pre-school attended. This is in contrast to findings on the impact of pre-school for these students in primary school at the end of Key Stage 2.

**Quality**

The quality of the pre-school\(^\text{18}\) remained a significant although weak positive predictor for all four social-behavioural outcomes up to the end of KS3. Students who had previously attended higher quality pre-schools when they were young showed significantly better social-behavioural outcomes at age 14 than the ‘home’ group\(^\text{19}\) or those who had previously experienced only a low quality pre-school. These effects were relatively weak for ‘self-regulation’ (ES=0.14 high quality versus ‘home group’), ‘pro-social’ (ES=0.14), ‘hyperactivity’ (ES= -0.13) and ‘anti-social’ (ES= -0.14) behaviours.

**Combined effects of pre-school and HLE**

The net effects of pre-school quality are small although consistently positive when tested individually and in combination with the early years HLE. Having attended a medium or higher quality pre-school showed lasting benefits for students from most HLE groups.

For those with a low or average HLE even attending a low quality pre-school provided significant positive benefits for later ‘self-regulation’ and ‘pro-social’ behaviour in KS3. Those who attended a low quality pre-school and had a low HLE had a positive boost (ES=0.40) compared to those in the ‘home’ group with low HLE. However, for children with a

\(^{16}\) As measured by the Multiple Disadvantage Index generated by EPPSE based on students’ own background factors (Sammons et al., 2003).

\(^{17}\) Measured by the Index of Multiple Disadvantage (Noble et al., 2004) and the IDACI (Noble et al., 2007) using student’s postcodes.

\(^{18}\) Measured by the ECERS-R and ECERS-E (see Sylva et al., 2010).

\(^{19}\) The ‘home’ group are those students who had little or no pre-school experience.
low HLE who attended a high quality pre-school the boost was larger (ES=0.50) for ‘self-regulation’. In terms of reducing ‘hyperactivity’ only high quality pre-school offered benefits to students who had experienced a low early years HLE (ES= -0.40).

For those who had high early years HLE, however, low quality pre-school was not found to predict better social behavioural outcomes in Year 9. This pattern fits with earlier findings about interactions between home/out-of-home learning experiences and pre-school when the EPPSE students were in primary education during Key Stage 2 (Sammons et al., 2008a; 2008b).

Primary school influences
There were no statistically significant findings regarding the academic effectiveness of the primary school in predicting better social-behavioural outcomes at the end of KS3. This is in contrast to findings for academic attainment in Year 9, where there were significant longer term benefits from attending a more academically effective primary school which last to the end of KS3 (Sammons et al., 2011b).

Secondary school influences
Quality and academic effectiveness of secondary schools
The quality of the secondary school attended, as rated by Ofsted inspectors, predicted positive social-behavioural outcomes for EPPSE students in KS3. In particular, attending a secondary school judged by inspectors to be better at promoting the ‘behaviour of learners’ predicted better social-behavioural outcomes, taking into account students’ individual, family and HLE characteristics. The differences were mainly between attending either a ‘satisfactory’, ‘good’ or ‘outstanding’ secondary school compared with an ‘inadequate one’. Students who attended a secondary school that had been judged ‘inadequate’ showed significantly poorer social behaviour (e.g. ES ranged between 0.56 and 0.63 for attending a ‘satisfactory’, ‘good’ or ‘outstanding’ school versus an ‘inadequate’ one for ‘pro-social’ behaviour).

Attending a ‘good’ or an ‘outstanding’ secondary school offered the greatest benefits in promoting better social-behavioural outcomes for more advantaged students (higher SES groups and those whose mothers had higher qualification levels etc.). Other student groups benefited, but the positive effects were not as strong. For instance, by the end of KS3 attending a higher quality secondary school had only a marginal benefit in terms of predicting better outcomes for those students who are most disadvantaged. This is in contrast to findings at younger ages which indicated that it was the disadvantaged children who benefited most from attending higher quality pre-schools and more academically effective primary schools.

The overall academic effectiveness of secondary schools did not predict better or poorer social-behavioural outcomes in Year 9, after controlling for individual student, family and HLE measures.

Students’ experiences and reports of secondary school
Students’ reports of their experiences of secondary school predicted social-behavioural outcomes and academic attainment (see Sammons et al., 2011a; 2011b), after controlling for the influence of individual student, family and home influences.

Where students reported that their schools laid a greater ‘emphasis on learning’ (a factor that included teachers expecting the best, lessons being challenging etc.), this predicted

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20 As measured by inspectors from the Office for Standards in Education (Ofsted) during formal school inspections. NB the effects reported are on non-imputed data, as it is not appropriate to impute inspection judgements.
21 Using overall CVA measures derived from the DfE’s National Pupil Database.
22 Students’ secondary school experiences were measured by self-reported questionnaire in Year 9.
better ‘self-regulation’ and ‘pro-social’ behaviour and lower scores for ‘hyperactivity’ and ‘anti-social’ behaviour. This ‘emphasis on learning’ also predicted better educational attainment for all core subjects in KS3 (see Sammons et al., 2011b). The items that describe these school process factors are shown in Table 1.

The factor ‘teacher support’ (which included items on teachers making helpful comments, use of praise and formative feedback) links to the quality of teaching experienced in KS3 and also predicted better ‘self-regulation’ (ES=0.17) and reduced ‘hyperactivity’ (ES=-0.20). The factor measuring ‘Head teacher qualities’ (such as being visible around school, and being perceived to be interested in what students learn) also predicted better social-behavioural scores for all four outcomes. These results are similar to the findings on the positive impact of such factors on EPPSE students’ academic outcomes in Year 9.

Students’ who rated their secondary schools more highly on the physical ‘school environment’ (which included attractive buildings, classroom decoration, and standards of cleanliness) had better social-behavioural outcomes for ‘self-regulation’, ‘pro-social’ behaviour and reduced ‘anti-social’ behaviour. Similarly, the factor related to ‘school resources’ also predicted better social-behavioural outcomes.

A poor ‘behaviour climate’ in a school, as rated by students’ themselves, was also a significant predictor of social-behavioural (and academic) outcomes in Year 9. It predicted lower scores for ‘self-regulation’ (ES=-0.32) and ‘pro-social’ behaviour (ES=-0.26) and higher scores for ‘hyperactivity’ (ES=0.31) and ‘anti-social’ behaviour (ES=0.25).

Students’ self-reported time on homework strongly predicted better social-behavioural outcomes for all measures (spending 2-3 hours per night after school, compared with doing no homework - ES=0.72 for ‘self-regulation’, ES=0.62 ‘pro-social’, ES=-0.71 ‘hyperactivity’ and ES=-0.55 ‘anti-social’). These strong relationships held even when taking into account other individual student, family and HLE influences. The positive impact of spending time on homework for social-behavioural outcomes mirrors results found for academic attainment in KS3. Homework is likely to foster better study skills and motivation, encourage independent learning and, through the extra time spent on study, increase opportunities for learning in KS3.

It is also likely that the positive relationships found between ‘self-regulation’ and time spent on homework are reciprocal, since spending time on homework can be seen as a feature of behaviour that demonstrates self-regulation, student engagement and motivation for school work. Homework is also likely to reflect school policies and the importance teachers place on the completion of homework.

Students’ ‘academic self-concept’ and ‘enjoyment of school’

Earlier phases of the EPPSE research (Sammons et al., 2008c) have shown reciprocal relationships between students’ self-reported ‘academic self-concept’ and their attainment. Higher self-concept predicted better attainment and vice-versa. Earlier patterns of attainment and self-concept can shape students’ future identities as learners, leading to reinforcement of either negative or positive patterns.

There were strong links between students’ ratings of their ‘maths academic self-concept’ and their maths attainment in Year 9, although ‘English academic self-concept’ was a weaker predictor of students’ Year 9 English attainment.

There were stronger positive effects for ‘maths academic self-concept’ as a predictor of ‘self-regulation’ and ‘pro-social’ behaviour than for ‘English academic self concept’. In addition, higher scores on these two measures of academic self-concept predicted lower scores for both ‘hyperactivity’ and ‘anti-social’ behaviour. Due to the likely reciprocal nature of
relationships between ‘academic self-concept’, attainment and behaviour it is not possible to infer causal connections from these analyses.

‘Enjoyment of school’ can be viewed as an important educational outcome in its own right. ‘Enjoyment of school’ as reported by students, was a consistent though modest predictor of better social-behavioural outcomes in Year 9. It also predicted better academic attainment.

Social-behavioural developmental change across Key Stage 3
Relative improvement (or decline) in the four social-behavioural outcomes during KS3 was studied by controlling for the prior social-behavioural measures collected from Year 6 teachers at the end of primary school while taking account of individual, family and HLE factors.

A significant gender gap was identified, with girls showing more progress in the two positive social-behavioural outcomes (e.g. ES=0.34 ‘pro-social’ and ES=0.20 ‘self-regulation’), and also greater reductions in the two negative outcomes over KS3. Parents reporting behaviour problems in early childhood was also a significant negative predictor of students’ later developmental outcomes on all four social-behavioural domains across KS3. This confirms that those who show problems at a very young age remain at risk of poorer long term outcomes and points to the potential value of early identification and intervention in the early years.

Overall, students with parents in professional and non-manual occupations showed better developmental progress in terms of increased ‘self-regulation’ and ‘pro-social’ behaviour suggesting a growing equity gap for these social behaviours (ES=0.28 ‘self-regulation’, ES=0.22 ‘pro-social’ behaviour). Developing such positive social behaviours may be important influences on secondary school engagement and motivation in KS4. In contrast, the results did not point to a similar SES gap for negative behaviour.

A consistent pattern of differences in developmental progress was evident for mother’s highest qualification level and students’ ‘self-regulation’, ‘pro-social’, and ‘anti-social’ behaviour. Students whose mothers had a degree or equivalent, or a higher degree, showed significantly greater improvements in the two positive social-behavioural outcomes (e.g. ES=0.23 ‘self-regulation’), and significant reductions in scores for ‘anti-social’ behaviour (ES=-0.27), compared to students of mothers with no qualifications.

The marital status of parents was not significantly associated with improvements in ‘self-regulation’ or ‘pro-social’ behaviour. However, it did predict increases in students’ ‘hyperactive’ and anti-social’ behaviour. Students in lone parent families showed significant though fairly small increases in both these negative behaviours (ES=0.15 ‘hyperactivity’; ES=0.13 ‘anti-social’ behaviour) during KS3, and students of divorced or separated parents showed some increased ‘anti-social’ tendencies (ES=0.16) between Year 6 and Year 9, controlling for other influences. This is in contrast to findings for academic attainment and progress in KS3 where no significant effects were identified for marital status (Sammons et al., 2011b), but is in line with earlier EPPSE research (Sammons et al., 2003) which showed that family structure had more impact on social-behavioural development than on academic outcomes in pre- and primary school.

The quality of the early years HLE continued to predict better developmental progress across KS3 as well as better overall social-behavioural outcomes. A high or very high quality early years HLE was associated with significant improvements in students’ ‘self-regulation’ (ES=0.32) and ‘pro-social’ behaviour (ES=0.22) from Year 6 to Year 9, as well as significant reductions in ‘hyperactivity’ levels (ES=-0.20). However, the early years HLE did not predict any significant reductions in ‘anti-social’ behaviour during KS3. This demonstrates the
continued importance of early experiences in the home for both students’ academic and several areas of social-behavioural development lasting into adolescence.

The students’ self-reports on school experiences also predicted social-behavioural developmental progress over KS3. Positive secondary school experiences predicted enhanced students’ developmental progress. Important domains identified in the research that predicted outcomes were, ‘emphasis on learning’, ‘teacher support’, ‘school learning resources’, and a culture that ‘valued students’ (see Table 1). These factors predicted significant improvements in ‘self-regulation’ and ‘pro-social’ behaviour and significant reductions in ‘hyperactivity’ and ‘anti-social behaviour’ across KS3.

Where there was a poor ‘behavioural climate’ in the secondary school (i.e. violent confrontations, lack of discipline etc.) as perceived by students, levels of ‘self-regulation’ (ES=-0.18) and ‘pro-social’ behaviour ES=-0.18) declined and there were significant increases in ‘hyperactivity’ ES=0.16) and ‘anti-social’ behaviour ES=0.17) across KS3, taking account of other individual, family and HLE influences.

The findings on EPPSE students’ developmental progress over KS3 show that the effects of background characteristics are broadly similar to those identified when studying changes in the same social behaviours in primary school (across KS2 see Sammons et al., 2008a; 2011a). For instance, the gender gap increases (for all 4 outcomes) in favour of girls and mothers highest qualification level continues to predict improvement in social behaviours. In addition, the findings on the relationships with parents’ marital status remain consistent. In the KS3 analyses the family SES effects are more notable for ‘self-regulation’ and ‘pro-social’ behaviour but this effect was only significant in KS2 in predicting developmental change for ‘anti-social’ behaviour.

**Conclusions and implications**

The findings summarised in this paper reveal the factors that predicted better social-behavioural outcomes for EPPSE students in Year 9 and also the factors that predicted developmental change in these outcomes in adolescence across KS3 from Year 6 to Year 9. Various individual, family and HLE characteristics found to be significant in shaping social-behavioural outcomes at younger ages continued to predict outcomes up to age 14. An equity gap can be identified in terms of factors that promote learning and academic attainment as well as better social adjustment. The experience of multiple disadvantage in the early years increased the risk of poorer social-behavioural development at age 14 years, and also predicted poorer academic attainment in KS3. The two are likely to be mutually reinforcing. By contrast, positive parenting experiences measured by the early years HLE helped to promote better longer term outcomes. There is also some evidence that pre-school experiences continued to shape social-behavioural outcomes into secondary school, although only the measure of pre-school quality showed a statistically significant relationship at age 14 and the positive effects were small.

These findings indicate that higher quality pre-school experiences still showed some longer term social-behavioural benefits at age 14. However, pre-school experience on its own cannot overcome disadvantage although it may help to ameliorate its impact, particularly if children attend high quality pre-school.

Primary school academic effectiveness predicted better attainment in Year 9 but not better (or worse) social behaviour. The overall academic effectiveness of the secondary school did not predict social-behavioural outcomes in Year 9. However, attending a poor quality

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23 This factor captured aspects of the emotional climate of the school, such as relationships with teachers in terms of friendliness and the extent to which students feel valued and involved.
secondary school as measured by Ofsted inspection judgments predicted poorer social-behavioural outcomes for those students who attended a secondary school rated as ‘inadequate’, even after controlling for the influence of individual, family and HLE characteristics.

Measures of the schools ‘quality of teaching’, the ‘headteacher qualities’, the ‘behavioural climate’, the physical ‘school environment’ and the ‘learning resources’, as experienced and reported by EPPSE students themselves, were also found to be consistent and significant predictors of better social-behavioural as well as academic outcomes. Likewise, time spent on homework strongly predicted better academic and social-behavioural outcomes.

The EPPSE research has shown that a range of characteristics relating to the individual student, family, HLE, neighbourhood, pre-school, primary and secondary school are important predictors of students’ social-behavioural development. The influence of such characteristics can be detected from a young age and many continue to predict later educational success and social behaviour into adolescence. The relationships tended to be weaker for social-behavioural measures than for academic ones (Sammons et al., 2011a; 2011b). Nevertheless results of previous phases of the EPPSE research (Sylva et al., 2010) have shown that early experience of socio-economic disadvantage predicts poorer long term social-behavioural outcomes. EPPSE findings contribute to our understanding of the relationships between children’s and adolescents’ academic and social-behavioural development and the characteristics that increase the risk of poor outcomes or promote resilience.

EPPSE findings about schools may be useful in informing policies to promote better outcomes for secondary school students. The aspects of the secondary school experience EPPSE identified as significant in shaping social behaviour as well as academic outcomes in KS3, show the importance (especially to school staff) of enhancing the quality of teaching and learning, student support, improving the behavioural climate of the school, ensuring students feel valued, promoting a high quality physical environment, and good provision of learning resources. These aspects, including listening to the ‘student voice’, are likely to be important for school self-evaluation and planning for improvement as well as for external evaluation.

This research has implications for the debate about the drivers of social inequality and has messages for both policy and practice that may help to ‘narrow the equity gap’ in educational outcomes and improve children’s and young people’s learning over their life course (see the full Research Report, Sammons et al., 2011a). Social behaviour is an important feature of overall well-being for students and can also enhance or impede learning, academic outcomes and good citizenship.
Table 1: Items associated with the eight experiences of school factors

<table>
<thead>
<tr>
<th>Experiences of school factors in Year 9</th>
<th>Teacher support</th>
<th>School environment</th>
<th>Valuing students</th>
<th>Headteacher qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Most teachers mark &amp; return my homework promptly</td>
<td>– My school has attractive buildings</td>
<td>– The school values students' views</td>
<td>– I often see the headteacher around the school</td>
<td></td>
</tr>
<tr>
<td>– Most teachers make helpful comments on my work</td>
<td>– Classrooms are nicely decorated &amp; clean</td>
<td>– Teachers listen to what students say about the school</td>
<td>– The headteacher makes sure students behave well</td>
<td></td>
</tr>
<tr>
<td>– Teachers praise me when I work hard</td>
<td>– Toilets are well cared for &amp; clean</td>
<td>– The teachers in this school show respect for all students</td>
<td>– The headteacher is interested in how much we learn</td>
<td></td>
</tr>
<tr>
<td>– Teachers tell me how to make my work better</td>
<td>– My school is well organised</td>
<td>– Teachers are unpleasant if I make mistakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Teachers make me feel confident about my work</td>
<td>– People think my school is a good school</td>
<td>– Teachers are friendly towards me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Teachers are available to talk to me privately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Teachers will help me if I ask for help</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– I get rewarded for good behaviour</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School (learning) resources</th>
<th>Emphasis on learning</th>
<th>Teacher discipline</th>
<th>Poor Behaviour climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>– There are enough computers</td>
<td>– Most students want to do well in exams</td>
<td>– Teachers make sure that it is quiet during lessons</td>
<td>– Most students want to leave this school as soon as they can</td>
</tr>
<tr>
<td>– Science labs are good</td>
<td>– Teachers expect me to do my best</td>
<td>– Teachers make clear how I should behave</td>
<td>– Students who work hard are given a hard time by others</td>
</tr>
<tr>
<td>– We have a good library</td>
<td>– The lessons are usually ‘challenging’ but ‘do-able’</td>
<td>– Teachers take action when rules are broken</td>
<td>– Most students take no notice of school rules</td>
</tr>
<tr>
<td>– We get enough time using computers in subject lessons</td>
<td>– Most teachers want me to understand something, not just memorise it</td>
<td>– Teachers are not bothered if students turn up late</td>
<td>– There are often fights (in or around school)</td>
</tr>
<tr>
<td></td>
<td>– Most teachers believe that mistakes are OK so long as we learn</td>
<td></td>
<td>– Some kids bring knives or weapons into school</td>
</tr>
</tbody>
</table>

Table 2: Items associated with the six disposition factors

<table>
<thead>
<tr>
<th>Disposition factors in Year 9</th>
<th>Enjoyment of school</th>
<th>Maths Academic Self-concept</th>
<th>English Academic Self-concept</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>– My school is a friendly place</td>
<td>– On the whole I like being at school</td>
<td>– I learn things quickly in my maths classes</td>
<td>– I learn things quickly in my English classes</td>
<td>– In class I worry about what the others think of me</td>
</tr>
<tr>
<td>– I like to answer questions in class</td>
<td>– I like to answer questions in class</td>
<td>– I have always done well in my maths classes</td>
<td>– I have always done well in my English classes</td>
<td>– I get a lot of headaches, stomach aches or sickness</td>
</tr>
<tr>
<td>– School is a waste of time for me</td>
<td>– I like to answer questions in class</td>
<td>– Compared to others my age I am good at maths</td>
<td>– Compared to others my age I am good at English</td>
<td>– I worry a lot</td>
</tr>
<tr>
<td>– I like most of the lessons</td>
<td>– I like most of the lessons</td>
<td>– Work in my maths classes is easy for me</td>
<td>– Work in my English classes is easy for me</td>
<td>– I am often unhappy, downhearted or tearful</td>
</tr>
<tr>
<td>– I am bored in lessons</td>
<td>– I am bored in lessons</td>
<td>– I get good marks in maths</td>
<td>– I get good marks in English</td>
<td>– I am nervous in new situations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Citizenship Values</th>
<th>Popularity</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Making sure strong people don’t pick on weak people</td>
<td>– I make friends easily</td>
<td>– In class I worry about what the others think of me</td>
</tr>
<tr>
<td>– Respecting rules and laws</td>
<td>– Other teenagers want me to be their friend</td>
<td>– I get a lot of headaches, stomach aches or sickness</td>
</tr>
<tr>
<td>– Controlling your temper even when you feel angry</td>
<td>– I have more friends than most other teenagers my age</td>
<td>– I worry a lot</td>
</tr>
<tr>
<td>– Respecting other peoples points of view</td>
<td>– Most other teenagers like me</td>
<td>– I am often unhappy, downhearted or tearful</td>
</tr>
<tr>
<td>– Sorting out disagreements without fighting</td>
<td>– I am popular with other students in my age group</td>
<td>– I am nervous in new situations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– I have many fears, I am easily scared</td>
</tr>
</tbody>
</table>
Table 3: Summary of the effects of background characteristics on social behaviour factors in Year 9
(Only the largest, statistically significant effect sizes for the imputed data are reported; comparison group in brackets)

<table>
<thead>
<tr>
<th></th>
<th>Self-regulation</th>
<th>Pro-social</th>
<th>Hyperactivity</th>
<th>Anti-social</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(boys)</td>
<td>0.45</td>
<td>0.61</td>
<td>-0.54</td>
<td>-0.42</td>
</tr>
<tr>
<td>Age</td>
<td>0.12</td>
<td>0.08</td>
<td>-0.08</td>
<td>ns</td>
</tr>
<tr>
<td>Birth weight</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Number of siblings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(none)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 sibling</td>
<td>0.13</td>
<td>0.11</td>
<td>-0.15</td>
<td>-0.12</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian heritage</td>
<td>0.33</td>
<td>ns</td>
<td>-0.33</td>
<td>ns</td>
</tr>
<tr>
<td>Bangladeshi heritage</td>
<td>0.37</td>
<td>ns</td>
<td>-0.48</td>
<td>-0.34</td>
</tr>
<tr>
<td>Early behavioural problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(none)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Behavioural Problem</td>
<td>-0.30</td>
<td>-0.28</td>
<td>0.36</td>
<td>0.32</td>
</tr>
<tr>
<td>2+ Behavioural Problems</td>
<td>-0.34</td>
<td>ns</td>
<td>0.44</td>
<td>0.33</td>
</tr>
<tr>
<td><strong>Family characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents’ Highest SES at KS2 (unemployed/not working)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unskilled</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>ns</td>
<td>ns</td>
<td>0.17</td>
<td>ns</td>
</tr>
<tr>
<td>Skilled, Manual</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Skilled, Non-Manual</td>
<td>0.30</td>
<td>0.20</td>
<td>-0.20</td>
<td>-0.20</td>
</tr>
<tr>
<td>Other Professional, Non-Manual</td>
<td>0.31</td>
<td>0.23</td>
<td>-0.24</td>
<td>-0.19</td>
</tr>
<tr>
<td>Professional, Non-Manual</td>
<td>0.45</td>
<td>0.31</td>
<td>-0.28</td>
<td>-0.25</td>
</tr>
<tr>
<td>Mother’s Highest Qualification Level (none)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 academic</td>
<td>0.17</td>
<td>0.15</td>
<td>-0.15</td>
<td>-0.13</td>
</tr>
<tr>
<td>18 academic</td>
<td>0.31</td>
<td>0.22</td>
<td>-0.25</td>
<td>-0.21</td>
</tr>
<tr>
<td>Degree or equivalent</td>
<td>0.47</td>
<td>0.36</td>
<td>-0.40</td>
<td>-0.37</td>
</tr>
<tr>
<td>Higher degree</td>
<td>0.54</td>
<td>0.35</td>
<td>-0.43</td>
<td>-0.36</td>
</tr>
<tr>
<td>Marital Status of Parent/Guardian/Carer (married)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>-0.13</td>
<td>ns</td>
<td>0.21</td>
<td>0.15</td>
</tr>
<tr>
<td>Separated/Divorced</td>
<td>ns</td>
<td>ns</td>
<td>0.21</td>
<td>0.18</td>
</tr>
<tr>
<td>Living with partner</td>
<td>-0.18</td>
<td>-0.13</td>
<td>0.21</td>
<td>0.14</td>
</tr>
<tr>
<td>Widow/Widower</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Home Learning Environment (HLE)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Years HLE Index (Grouped) (Very low)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low (14-19)</td>
<td>0.15</td>
<td>0.13</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Average (20-24)</td>
<td>0.17</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>High (25-32)</td>
<td>0.32</td>
<td>0.27</td>
<td>-0.25</td>
<td>ns</td>
</tr>
<tr>
<td>Very high (33-45)</td>
<td>0.48</td>
<td>0.30</td>
<td>-0.35</td>
<td>ns</td>
</tr>
<tr>
<td>Early years Home Learning Environment Index (Continuous scale)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>-0.12*</td>
</tr>
<tr>
<td>Pre-school quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECERS-R (high quality vs. low quality)</td>
<td>0.12</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>ECERS-E (high quality vs. low quality)</td>
<td>0.14</td>
<td>0.14</td>
<td>-0.13</td>
<td>-0.14</td>
</tr>
<tr>
<td>Secondary School Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behaviour of learners (outstanding vs. inadequate)</td>
<td>0.55</td>
<td>0.63</td>
<td>ns</td>
<td>ns</td>
</tr>
</tbody>
</table>

*Continuous scale – no statistically significant differences associated with categorical HLE measure. However, a statistically significant marginal effect was found when testing this variable as a continuous scale.

For full list of references see appropriate Technical Paper at [http://eppe.ioe.ac.uk](http://eppe.ioe.ac.uk)
Abstract 3- Students’ views of school and their dispositions at the end of Key Stage 3
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a) Relevance of the topic to BERA members
Relevant to colleagues interested in what teenagers can tell us about schooling and how this impacts on academic and social-behavioural outcomes.

b) Clarity of the research questions
How can we gain insights into the everyday practices of schools? What kind of dispositions do teenagers bring into school and how do these influence their academic and social behaviour? These questions have been answered from data collected from two questionnaires sent to EPPSE students during Year 9.

c) Appropriateness of research methods
‘All about Me in School’ was analysed using Exploratory and Confirmatory factor analysis which identified 8 factors relating to how students’ view their school e.g. ‘teacher support’ for learning, ‘school environment’, ‘valuing students’ etc. Also using Exploratory and Confirmatory factor analysis the EPPSE questionnaire ‘All About Me’ explored the statistical trends of six disposition factors: ‘enjoyment of school’, ‘anxiety’, ‘popularity’, ‘citizenship values’, and ‘academic self concept’ in both English and maths’ identified by student report.

d) Robustness of analytical framework
The use of multilevel modelling enables the analyses to explore the combined impact of the characteristics of students and their backgrounds which account for significant variations in their views and dispositions, and to explore their influences on students dispositions to learning, as well as academic and social-behavioural outcomes.

e) Significance for educational practice, policy or theory
Students’ views on their experiences of school and classroom environments can provide insights into school processes and learning. The findings emphasise the importance of ‘student voice’. Some of the strongest predictors of dispositions relate to students’ reported experiences of features of secondary schooling. The interest in dispositions reflects the importance of such domains for both academic and social-behavioural success. The findings demonstrate the importance of schools providing an emphasis on learning, good teaching support and a positive behaviour climate. The findings have been used by the DfE to help inform policy makers and will be relevant to those interested in learning over the life course.
Paper 3- Students’ views of school and their dispositions at the end of Key Stage 3

Introduction
The Effective Pre-school, Primary and Secondary Education Project (EPPSE) has investigated the academic and social-behavioural development of approximately 3,000 children from the age of 3+ years since 1997. This paper reports on students’ dispositions when they were age 14 (Year 9) in six main areas: ‘enjoyment of school’, ‘academic self concept’ (English and maths), ‘popularity’, ‘citizenship values’ and ‘anxiety’. It examines how these dispositions have changed during Key Stage 3 (KS3) and the relationships between dispositions and a range of individual student, family, home, pre-, primary and secondary school measures. It shows how school experiences help to shape dispositions, and also explores the relationships between dispositions to school and students’ academic and social-behavioural outcomes.

Research questions
The aims of this stage of the ongoing EPPSE study were to:
- explore students’ dispositions and reports of their experiences of school in Year 9, compared to results found for these outcomes and experiences at younger ages;
- investigate the relationships between students’ experiences of school and their dispositions;
- explore the impact of individual, parent and home learning environment (HLE) characteristics on students’ dispositions at the end of KS3;
- model students’ dispositions to school and changes in their dispositions over KS3;
- investigate any continuing impact of pre-school, including any variations in students’ outcomes for those who had experienced different levels of quality of pre-school provision (and those who had not attended a pre-school centre i.e. the ‘home’ sample);
- investigate the influence of primary and secondary school academic effectiveness and quality on dispositions and changes in disposition (controlling for individual, family and HLE characteristics).

Key Findings

Student dispositions in Year 9
1) Most students had positive views towards school in Year 9, indicating that they enjoyed school, but these have become less positive over time.
2) Students were generally confident about their overall ability in Year 9 although there was some variation between subjects, with students being more confident of their ability in maths, science, sports and the arts than other subjects. They were least confident about their ability in modern languages. Boredom in lessons was reported by a substantial minority.
3) Students had high aspirations; nearly all students believed it was important to get GCSEs and A levels, and nearly eight in ten thought they would apply for university.
4) Most students in Year 9 believed they were popular with their friends. However, anxious behaviours were a common feature of students in this age group, with approximately half feeling nervous in new situations and worrying a lot. Anxiety related behaviours were more commonly reported by girls.

Student, family and out of school learning influences on dispositions
5) Students’ dispositions were influenced by their individual, family and home characteristics but the relationships were weaker than for academic and social-behavioural outcomes.
   - Girls were more likely than boys to report anxious behaviours, gave lower ratings of their own ‘popularity’, have lower ‘maths academic self concept’, and showed more favourable ‘citizenship values’.
   - Students who experienced a good early years Home Learning Environment (HLE), compared to a poor one, reported greater ‘enjoyment of school’ in Year 9. Aspects of earlier home and out of school learning in primary school also continued to show a
positive relationship with students’ dispositions in Year 9 for ‘popularity’ and ‘English academic self concept’.

- Students identified as having Special Educational Needs (SEN) had lower ‘English and maths academic self concepts’, lower ‘popularity’, higher ‘anxiety’ and lower ‘enjoyment of school’.
- Students from richer families were more likely to report higher ‘popularity’ and higher ‘enjoyment of school’ than students from poorer backgrounds.

**Relationship of students’ dispositions with attainment and self regulation**

6) Students’ dispositions were significantly associated with their academic attainment, in particular their ‘English and maths academic self concept’ and ‘enjoyment of school’.

7) In Year 5, ‘enjoyment of school’ was not related to academic achievement, but there was a significant relationship by Year 9.

8) In addition, but to a lesser extent, students who were rated by teachers as having higher levels of ‘self-regulation’ (a measure of autonomy, confidence and self-sufficiency in learning) had higher ‘academic self concepts’, greater reported ‘enjoyment of school’ and more positive ‘citizenship values’.

**Students’ dispositions are influenced by school**

9) Students’ reports of their experiences of secondary school were predictive of their dispositions.

- ‘Enjoyment of school’ was strongly related to the support students’ reported they received from teachers and how well they felt the school valued them. It was also related to the students’ own view of the emphasis their schools placed on learning and the overall condition of the school environment.
- ‘Maths academic self-concept’ was positively related to how well the student felt their school ‘valued’ students, the school’s ‘emphasis on learning’, ‘resources available for learning’ and ‘teacher discipline’. ‘English academic self-concept’ was related to a student’s perceptions of support from teachers and their own view of their school’s ‘emphasis on learning’.
- A ‘poor behaviour climate’, as reported by students, was also strongly predictive of higher levels of ‘anxiety’.

10) Ofsted judgements on secondary schools’ quality and effectiveness were predictive of students’ ‘enjoyment of school’ and lower ‘anxiety’ levels.

11) There were clear differences between schools in students’ dispositions and their experiences of school especially for the factor ‘enjoyment of school’ which is in line with findings in Year 5 (Sammons et al 2008). In addition:

- differences between schools were found for all the student disposition outcomes except ‘anxiety’ when questionnaires from the EPPSE peers were analysed;
- much larger variation amongst schools was found for students’ reports on the factors, ‘school environment’, ‘poor behaviour climate’ and ‘headteacher qualities’. This demonstrates that secondary schools differ in the quality of educational experiences they provide for students.

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24 Higher attainment in maths was also found to significantly predict lower levels of ‘anxiety’, although the effect size was small. (ES< 0.2). For information on Effect Sizes see Sammons et al., 2011c.

25 Experiences of school were found to predict all of the self perception factors, but only strong effects are reported here.
Earlier educational experiences do not have a lasting impact on students’ dispositions
12) Attendance at pre-school (compared to none) had no influence on later dispositions in KS3.
13) After background factors were taken into account there were few significant effects for the quality and effectiveness of pre-school on students’ dispositions in Year 9.
14) The academic effectiveness of primary school had no lasting effect on student dispositions.

Methodology
The EPPSE research design has been based on an educational effectiveness and mixed methods approach (Sammons et al., 2005; Siraj-Blatchford et al., 2006). This type of design allows for the study of individual, family and home influences, as well as the effect of pre-, primary and secondary school measures on academic and developmental outcomes.


Individual self report questionnaires were completed by EPPSE students at ages 7, 10 and 14. Two separate questionnaires were administered in Year 9; the first asking students’ perceptions of themselves (which we used to identify their dispositions) and the second asking students to report on their school and classroom life (experiences of school). The research is therefore able to link measures of individual students’ dispositions in Year 2 (age 7), Year 5 (age 10) and Year 9 (age 14) to explore change over time.

Factor scores were derived using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) as follows:
- Year 926 - 6 factors: ‘academic self concept’ for English and maths (Marsh, 1990; Marsh & Hau, 2003; Marsh & Craven; 2006), ‘popularity’, ‘anxiety’ (unhappy, worried, nervous in new situations etc.), ‘citizenship values’ (the importance of behaviours such as strong people not picking on weak people, respecting rules and laws etc.) and ‘enjoyment of school’ (liking lessons/school, boredom in lessons, feels school is a waste of time etc.). See Table 1 for details of the items included in each factor.

Year 9 social-behavioural and academic measures were also analysed as predictors of dispositions. Four social-behavioural outcomes derived from assessments made by teachers were analysed: ‘self regulation’ (problem-solving, motivation, self-confidence, assertiveness etc.); ‘pro-social behaviour’ (peer empathy, co-operation, altruism etc.); ‘hyperactivity’ (reduced self-control, impulsiveness etc.) and ‘anti-social behaviour’ (verbal abuse, aggression etc.). National curriculum levels awarded through Teacher Assessment (TA) in English, maths and science were used as measures of students’ academic outcomes in Year 9.

In total, 1766 students (63% of the sample) had at least one disposition outcome measure in Year 9. The sample was broadly in line with the full EPPSE sample (48% girls compared to 52% of the full sample; 13% eligible for FSM compared to 18% of the full sample and 78% of White UK heritage compared to 73% of the full sample). Changes in students’ dispositions over time were investigated using value added analyses to explore how dispositions altered from Year 5.

26 The questionnaires were tailored to reflect the students’ developmental age and as a consequence had fewer items at earlier time points and the wording was also adapted for different age students.
to Year 9. For these analyses we added to the contextualised multilevel models27 a prior measure, using the dispositions collected at Year 5 in addition to the background factors presented above.

In addition to questionnaires from the EPPSE student sample, we collected data from their peers (other students in a Year 9 class from the secondary school attended by an EPPSE student). We sampled 100 secondary schools that were broadly representative (level of disadvantage etc.) of the 800 plus schools attended by EPPSE students. Responses from 66 schools with an average of 24 students per class were analysed. This allowed us to examine the variation between secondary schools in students' views and experiences of school.

Findings
Students' dispositions and attitudes to school

Students were generally confident about their overall ability in Year 9 (93% agreed/strongly agreed that they thought they could do most things well; 76% agreed/strongly agreed that they were clever). This matches findings elsewhere (Kintea et al., 2011), but there was some variation in perceived ability in individual subjects. Students were generally more confident about their ability in sports, science, maths and the arts/creative subjects, and less confident about their ability in modern languages and ICT.

In Year 9 the majority of students still reported they liked school (69% agreed and 20% strongly agreed with this statement), and most liked their lessons (66% agreed and 18% strongly agreed) but boredom in lessons was reported by a substantial minority (36% of students agreeing and 5% strongly agreeing they get bored in class).

In terms of future plans, nearly all students believed it was important to get GCSEs and A levels, and the majority also felt it was important to get a degree. They had high aspirations, in total over three quarters of students felt it was fairly likely, or very likely, that they would apply to university (41% thought it very likely, 36% fairly likely they would apply to go to university)28.

Most students in Year 9 believed they were popular with their friends. Only a minority of students felt they didn’t make friends easily (10%) whereas 62 per cent agreed and 28 per cent strongly agreed that they make friends easily. Around a fifth felt unpopular, whereas 65 per cent agreed and 12 per cent strongly agreed that they were popular with their peers.

Anxious behaviours were a common feature for this age group, with approximately half feeling nervous in new situations and worrying a lot. Approximately one in five students indicated that they felt unhappy (14% agreed/3% strongly agreed they felt unhappy), and a quarter suffered regularly from minor ailments (22% agreed/6% strongly agreed they suffer from minor ailments).

Comparing students’ dispositions in Year 9 with those at earlier time points

At younger ages (Year 2 and Year 5) the EPPSE students were found to be more positive towards school than they were in Year 9. In line with other research (Keys & Fernandez, 1992; Mortimore et al., 1988; MacBeath and Mortimore, 2001; Thomas et al., 2000) students tend to report enjoying school somewhat less as they get older. The results also suggest that students’ academic self concept and the way they view their behaviour also tends to decrease over time. Nonetheless, the majority of students still have fairly positive views in Year 9. For example, 51 per cent of Year 2 students reported liking school ‘all the time’ compared to 24 per cent of Year 5 students. This compares with 20 per cent of Year 9 students who strongly agree that they like

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27 Multilevel models provide accurate estimates of the impact of different individual or school characteristics on student outcomes (Goldstein 1995). They are used to explore institutional influences by partitioning variance into individual and higher levels (e.g. pre-school centre or primary or secondary school) reflecting clustering in the sample.

28 It should be noted that these data were collected before the recent increase in university tuition fees and the abolition of the Educational Maintenance Allowance (EMA).
being at school most of the time. Students’ reported that they felt less clever and less likely to feel safe outside the classroom as they got older. Students were also less likely to want to answer questions in class as they grew older and their perceptions of their popularity with peers became less favourable.

Nonetheless, it is important to note that the majority of students enjoyed school (overall 89% agree/strongly agree that ‘On the whole I like being at school’). Only a small minority disliked school (11% disagree/strongly disagree for the same statement). It may reflect greater self-awareness as well as differences in schooling demands and life pressures, plus the growing importance of the peer group in adolescents’ lives and interest in activities outside of school.

Students’ liking of individual subjects also showed some reduction over time for all subjects. However, the relative popularity of individual subjects remained fairly constant. Sport and the Arts/Creative subjects were still the most popular subjects in Year 9, the least popular being modern languages (58% of students liked sports ‘a lot’, 49% liked arts/creative subjects ‘a lot’ compared to just 20% of students who like modern languages ‘a lot’).

Student, family and out of school learning influences on dispositions
Students’ background
In order to explore the strength of relative influences we use the Effect Size measure (ES). In these analyses we control for the influence of individual student, family and home factors in order to identify the net impact (strength) of different potential predictors of students’ dispositions.

Girls reported significantly different dispositions than boys for four factors. Girls had a lower ‘maths academic self concept’ (ES=-0.38)\(^{30}\), but there were no gender differences for ‘English academic self concept’ (even though girls have significantly higher attainment in English). Girls also tend to have a less positive view of their ‘popularity’ (ES=-0.12) and were more likely to report ‘anxiety’ than boys (ES=0.48) although they showed higher ‘citizenship values’ than boys (ES=0.31).

Most ethnic groups did not differ in their perceptions from the White UK group, but there were some statistically significant patterns\(^{31}\). Students of Pakistani heritage tended to report more favourable outcomes for all dispositions, especially for ‘English and maths academic self concept’ (ES=0.43; ES=0.38) and ‘enjoyment of school’ (ES=0.55). Indian students also reported greater ‘enjoyment of school’ (ES=0.35), had higher ‘maths academic self concept’ (ES=0.42), were more positive in assessing their ‘popularity’ with peers (ES=0.33) and also reported lower levels of ‘anxiety’ (ES=0.47).

Students of Black African heritage also tended to have a higher ‘English academic self-concept’ and ‘maths academic self concept’ (ES=0.56; ES=0.74), and were more positive in assessing their ‘popularity’ than the White UK group (ES=0.60). Similarly, but to a lesser extent, the Black Caribbean heritage group also showed more favourable ‘English academic self concept’ (ES=0.38) and were more positive in assessing their ‘popularity’ with peers than the White UK group (ES=0.44).

Students previously identified by their parents as having behavioural problems in their early years also tended to report enjoying secondary school less (ES=-0.23), were more anxious (ES=0.38), and had a lower ‘maths academic self concept’ than other students in Year 9 (ES=-0.48).

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\(^{29}\) Percentage of students liking other subjects ‘a lot’: Science=35%, ICT=35%, Maths=29%, English=28 %.

\(^{30}\) The strength of an effect is expressed in Effect Sizes. An effect size is a statistical measure representing the strength of the effect of each predictor variable on the outcome after taking account of other predictor variables in the model. An ES of 0.2 can be seen as representing a small to moderate influence while a relatively strong influence would be an ES of 0.6 or above. Only statistically significant effects above 0.20 are reported here.

\(^{31}\) Although significant the results are based on small numbers of students and should be interpreted with caution.
Students who had very low birth weight also felt less ‘popular’ in Year 9 (ES=-0.51). This may reflect long term developmental difficulties. The number of siblings in student had at entry to pre-school was also significant. Students with two or more siblings tended to ‘enjoy school’ somewhat less than singletons (ES=-0.20).

**Family background**

Family poverty was measured by entitlement to Free Schools Meals (FSM) and FSM students had lower ‘maths academic self concepts’ (ES=-0.25). The highest socio-economic level of either parent (family SES) was also explored, based on their occupation in KS2. Students from Other Professional Non-Manual, Skilled Non Manual and Skilled Manual families had a lower ‘maths academic self concept’ than students from a Professional households (ES=-0.21;-0.33; -0.25).

Father’s employment in the early years was also found to be related to ‘maths academic self concept’. Students who had fathers who were employed full-time and those who were studying were found to have higher ‘maths academic self concept’ in Year 9 than students whose fathers were unemployed (ES=0.75). Students from families with the highest earned income band (measured in KS1) were more likely to report higher ‘popularity’ (ES=0.34) and higher ‘enjoyment of school’ than students from a family with no earned income (ES=0.52).

The marital status of parents showed a small but significant effect. Students from households where their parents were living together, but not legally married, reported higher feelings of ‘popularity’ than students from married households (ES=0.21). This is in contrast to findings for both academic attainment and social-behaviour development where differences indicate that students from households where parents were married tended to have better outcomes.

**Home Learning Environment (HLE)**

Students with higher early years HLE scores had significantly higher ‘enjoyment of school’ in Year 9 than students who had the lowest HLE scores (ES=0.26 average; 0.26 high; 0.34 very high). Early learning experiences had given these children a better start to primary school and this advantage continued throughout primary and on into secondary school. (See http://eppe.ioe.ac.uk).

Home and out of school learning indicators (measured in KS1 and KS2) also showed a positive link to ‘popularity’ and ‘English academic self concept’. Students with high and medium levels of parent/child interaction in KS1 reported higher ‘popularity’ levels in Year 9 compared to those with low levels of parent/child interaction (ES=0.23; ES=0.21). In addition, students with high and medium global HLE levels in KS2 also showed more positive views of their ‘popularity’ than students with low levels (ES=0.28; ES=0.19). Students who had high and medium levels of ‘individual child activities’ in the home during KS2 showed higher ‘English academic self concept’ (in Year 9) compared to those with low levels of ‘individual child activities’ (ES=0.52; ES=0.21).

**Special Educational Needs (SEN)**

Students who had been identified as having SEN showed less favourable dispositions for all factors except ‘citizenship values’. SEN students had significantly less favourable scores for ‘academic self concepts’, ‘popularity’ and especially ‘anxiety’. After attainment was taken into account students on the SEN register showed no significant differences in ‘academic self concept’ compared with other students. This suggests that the lower attainment of students with SEN in Year 9 accounts for differences in their ‘academic self concept’ rather than their SEN status per se, although the two (academic attainment and SEN status) are strongly related and so relationships will tend to be reciprocal.
Relationships between students’ dispositions and their attainment and self-regulation
Academic attainment was found to be significantly associated with students’ dispositions for four factors (‘academic self concept’ in English and maths, ‘anxiety’ and ‘enjoyment of school’).

Attainment in maths proved to be a strong predictor of ‘maths academic self concept’ (ES=1.14), ‘anxiety’ (ES=-0.17) and ‘enjoyment of school’ (ES=0.34). Attainment in English was the strongest predictor of ‘English academic self concept’ (ES=0.75). In Year 5, attainment was not found to be related to ‘enjoyment of school’ but by Year 9 it showed a significant association. This may reflect a greater awareness of students’ relative levels of attainment in KS3 and its implications for future educational choices and GCSE entry in secondary schools.

Students rated more highly by their teachers for ‘self-regulation’ in Year 9, after controlling for background characteristics, had higher English and maths ‘academic self concept’ (ES=0.25; 0.44) higher ‘citizenship values’ (ES=0.32) and greater reported ‘enjoyment of school’ (ES=0.41). These findings emphasise the importance of self-regulation in shaping students’ outcomes and predicting success in school (Sammons et al., 2011d).

The influence of secondary school processes on students’ dispositions
There was a strong link between students’ dispositions and their ‘experiences of school’. Various factors were identified from students’ reports of their secondary school experience. These strongly predicted their ‘enjoyment of school’ especially in relation to ‘teacher support’ (ES=1.27), ‘valuing students’ (ES=1.22), ‘emphasis on learning’ (ES=1.11) and the ‘school environment’ (ES=1.01).

Students’ reports on their secondary school’s ‘emphasis on learning’ (ES=1.25), ‘learning resources’ (ES=0.72), how much they ‘valued students’ (ES=0.69) and ‘teacher discipline’ (ES=0.66) were also strong predictors of ‘maths academic self concept’.

‘Teacher support’ and ‘emphasis on learning’ were also predictive of ‘English academic self concept’ (ES=0.43; ES=0.40). Students’ reported experiences of ‘teacher support’, ‘emphasis on learning’ and ‘valuing students’ were also quite strongly predictive of the disposition outcome ‘citizenship values’ (ES=0.62; ES=0.61; ES=0.64 respectively). The link between the students’ views and reports on their secondary school, and their dispositions, was weaker for ‘anxiety’ and ‘popularity’, although less favourable views of the ‘behavioural climate’ of the school were predictive of increased ‘anxiety’ scores (ES=0.58).

Measures of the primary school academic effectiveness were also tested as predictors but these were not found to relate to students’ dispositions in Year 9 (in contrast to findings of continued positive effects for academic outcomes in Year 9).

Substantial variations between secondary schools were found for some factors related to students’ reports in Year 9. The higher the variance between schools the more they differ on students’ reports on their school experiences. Particularly high variation between schools was found for factors that measured students’ views of ‘headteacher qualities’ (15%), ‘poor behaviour climate’ (28%) and ‘school environment’ (28%).
An additional analysis of peer data from 66 schools that EPPSE students attend was also carried out where the average number of students per school was much higher. This analysis also showed significant school level variation for all outcomes except ‘anxiety’ (variation=0.2%). It also pointed to significant variation between schools in ‘learning resources’ and ‘teacher support’. The largest variation between school for dispositions was found for ‘enjoyment of school’ (11%) followed by ‘maths academic self concept’ (6%), ‘English academic self concept’ (5%), ‘popularity’ (5%) and ‘citizenship values’ (3%)32.

Ofsted inspection data was used to provide measures of secondary schools’ quality and effectiveness for a range of areas. Schools that were judged to be ‘outstanding’ in ‘meeting the needs of learners’ (ES=0.31), ‘how well learners achieve’ (ES=0.33), ‘the standard reached by learners’ (ES=0.36), ‘progress made by learners’ (ES=0.37), progress made by students with ‘learning difficulties and disabilities’ (ES=0.46), and in developing student’s skills to promote ‘economic well-being in the future’ (ES=0.52) had students that reported greater ‘enjoyment of school’ than schools judged as ‘inadequate’ in these aspects, controlling for differences in student, family and HLE characteristics.

Schools judged as ‘outstanding’ in the extent to which learners ‘adopt healthy lifestyles’ and ‘developed workplace and other skills that will contribute to their future economic well-being’ had students that reported lower levels of ‘anxiety’ than students who attended schools judged to be ‘inadequate’ in these areas (ES=−0.72; ES=−0.52).

The secondary school overall academic effectiveness measure (derived from DfE CVA scores) was not found to be a significant predictor of any of the disposition outcomes.

Earlier educational experiences and students’ dispositions
The analyses of EPPSE students’ dispositions at the end of KS3 produced little evidence of any continuing pre-school effects (pre-school versus no pre-school) and the quality33 of the pre-school attended in promoting better outcomes for the different dispositions factors.

Estimating changes in dispositions over time
Where similar measures were used at different ages, they proved to be the best predictor of later dispositions. The generally weak relationships found between dispositions in Year 5 and those in Year 9 may reflect high fluctuation in students’ dispositions during adolescence. The results indicate that students’ dispositions show greater variability and are less predictable than measures of their academic and social-behavioural development during KS3. Similar weak relationships between dispositions in Year 2 and Year 5 were reported in an earlier paper (Sammons et al., 2008).

Correlations between students’ dispositions in Year 5 and Year 9 are relatively low compared to those found for attainment or social behaviour across KS3, showing that dispositions change as students move through different phases of education. For instance the correlation between ‘enjoyment of school’ at Year 5 and Year 9 was quite low at r=0.24 (see Sammons et al., 2011a for full details).

32 School level variation is reported for null models for peer data on experiences of school: ‘headteacher qualities’ (19%), ‘poor behaviour climate’ (18%) and ‘school environment’ (22%), ‘valuing students’ (13%), ‘learning resources’ (12%), ‘teacher support’ (9%), ‘teacher discipline’ (6%) and ‘emphasis on learning’ (6%).

33 Measured by the Early Childhood Environment Rating Scales (ECERS-R and ECERS-E - see Sylva et al., 2010).
Conclusions and implications

There is increasing interest in studying a range of student outcomes in educational research because it is recognised that, while promoting good academic attainment is an essential function of schools, the development of favourable dispositions and self-concepts is also very important. Promoting student well-being, social behaviour and positive attitudes towards learning are vital for success in life. Schools are expected to promote positive values relating to citizenship, enjoyment of school and encourage favourable views of learning capabilities amongst students. This research confirms findings elsewhere (Keys and Fernandez, 1992) that student attitudes tend to become less positive over time and that in a number of areas gender differences exist. The tendency of girls to have lower ‘academic self concept’ than boys, feel less popular and have higher self-reported anxiety is something that is relevant to the organisation of school pastoral systems. It should be noted that, although student attitudes get less positive over time, the majority of students in Year 9 still feel positive about themselves and enjoy school.

The findings in this paper reveal important links between features of students’ secondary school experiences, their academic and behavioural outcomes, and their dispositions. This suggests that schools should be encouraged to value students’ views and take steps to collect information about their perspectives on a regular basis. Such information can provide an important source of evidence for school improvement and development planning given the substantial differences between schools in key areas as reported by students (for ‘emphasis on learning’, ‘teacher support’, ‘school environment’, ‘headteacher qualities’, ‘behavioural climate’ and ‘school resources’). There is also evidence of important variation between schools in students’ dispositions for ‘enjoyment of school’. Taken together, the findings suggest that secondary schools differ significantly in various ways that are likely to influence the quality of learning and well-being as perceived by students. Such evidence could provide valuable feedback to schools, especially where they maybe struggling to improve or are rated as inadequate by inspectors.

Students’ background characteristics were shown to have only a small impact on their dispositions compared to the impact of background characteristics on other outcomes (Sammons et al 2011c, 2011d), and is in line with similar findings during Year 5. This may in part be linked to greater changes in self perceptions over time, suggesting concurrent influences may play a larger role. However, gender differences were found for some outcomes, as was the case for EPPSE students’ academic and social-behavioural outcomes in Year 9.

Year 9 student dispositions were found to relate to academic attainment and ‘self-regulation’ (this relationship was not found in Year 5 for ‘enjoyment of school’), suggesting that less academic students also tend to have less positive dispositions. Students with SEN were found to be particularly vulnerable to poorer self-perceptions, and this could be relevant in the development of such student’s personal goals.

Self-perceptions, including items related to ‘enjoyment of school’, become less positive over time, but students are still generally positive in Year 9 about themselves and their school experience, with the majority of students liking school, feeling popular, and feeling that academic success is important. More specifically almost two thirds of students think getting a university degree is very important and have high aspirations. A gender divide is evident, with boys more inclined to like and feel competent in maths, science, ICT and sports and girls in English, the arts and modern languages. These reflect areas in which there are also national differences in subject choices found at GSCE and A level.

A good quality early years HLE has been shown to benefit students’ academic outcomes even in secondary school, and also their social behaviour. The early years HLE also predicts more favourable dispositions in Year 9. Thus, encouraging positive learning experiences in the home
and appropriate parenting skills that facilitate this could also nurture positive views of learning and school more generally in the longer term. Qualitative family and child case studies of resilient and vulnerable children provide further in depth discussion of the influences which enable some children to ‘succeed against the odds’; the sample for this study was drawn from the quantitative analyses. The case studies provide deeper understanding of the parenting and schooling patterns that influence well being and developmental pathways (Siraj-Blatchford et al., 2011).

This paper provides important evidence on educational influences on students’ dispositions. Attending a high quality secondary school (as assessed through Ofsted judgements) appears to have some positive benefit to ‘enjoyment of school’ and lower ‘anxiety’ levels, suggesting that good quality schools also benefit emotional well-being. This highlights the importance of including students’ views in the school evaluation process. Some of the strongest predictors of student dispositions relate to their self reported experiences of key features of secondary schools and classrooms. In particular, the ‘emphasis on learning’, ‘teacher support’ and ‘behaviour climate of the school’ predict more favourable dispositions as well as better academic attainment and social-behavioural outcomes.
Table 1: Items associated with the six disposition factors

<table>
<thead>
<tr>
<th>Student disposition factors in Year 9</th>
<th>Math Academic Self concept</th>
<th>English Academic Self concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Enjoyment of school</td>
<td>* I learn things quickly in my Maths classes</td>
<td>* I learn things quickly in my English classes</td>
</tr>
<tr>
<td>* My school is a friendly place</td>
<td>* I have always done well in my Maths classes</td>
<td>* I have always done well in my English classes</td>
</tr>
<tr>
<td>* On the whole I like being at school</td>
<td>* Compared to others my age I am good at Maths</td>
<td>* Compared to others my age I am good at English</td>
</tr>
<tr>
<td>* School is a waste of time for me</td>
<td>* Work in my Maths classes is easy for me</td>
<td>* Work in my English classes is easy for me</td>
</tr>
<tr>
<td>* I like most of the lessons</td>
<td>* I get good marks in Maths</td>
<td>* I get good marks in English</td>
</tr>
<tr>
<td>* I am bored in lessons</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Citizenship Values</th>
<th>Popularity</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Making sure strong people don’t pick on weak people</td>
<td>* I make friends easily</td>
<td>* In class I worry about what the others think of me</td>
</tr>
<tr>
<td>* Respecting rules and laws</td>
<td>* Other teenagers want me to be their friend</td>
<td>* I get a lot of headaches, stomach aches or sickness</td>
</tr>
<tr>
<td>* Controlling your temper even when you feel angry</td>
<td>* I have more friends than most other teenagers my age</td>
<td>* I worry a lot</td>
</tr>
<tr>
<td>* Respecting other peoples points of view</td>
<td>* Most other teenagers like me</td>
<td>* I am often unhappy, downhearted or tearful</td>
</tr>
<tr>
<td>* Sorting out disagreements without fighting</td>
<td>* I am popular with other students in my students in my age group</td>
<td>* I am nervous in new situations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* I have many fears, I am easily scared</td>
</tr>
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</table>

Table 2: Items associated with the eight experiences of school factors

<table>
<thead>
<tr>
<th>Experiences of school factors in Year 9</th>
<th>Teacher support</th>
<th>School environment</th>
<th>Valuing students</th>
<th>Emphasis on learning</th>
<th>Teacher discipline</th>
<th>School (learning) resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Teacher support</td>
<td>My school has attractive buildings</td>
<td>* My school has attractive buildings</td>
<td>* The school values students’ views</td>
<td>* Most students want to do well in exams</td>
<td>* Teachers make sure that it is quiet during lessons</td>
<td>* There are enough computers</td>
</tr>
<tr>
<td>* Most teachers mark &amp; return my homework promptly</td>
<td>* Classrooms are nicely decorated &amp; clean</td>
<td>* Classrooms are nicely decorated &amp; clean</td>
<td>* Teachers listen to what students say about the school</td>
<td>* Teachers expect me to do my best</td>
<td>* Teachers make clear how I should behave</td>
<td>* Science labs are good</td>
</tr>
<tr>
<td>* Most teachers make helpful comments on my work</td>
<td>* Toilets are well cared for &amp; clean</td>
<td>* My school is well organised</td>
<td>* The teachers in this school show respect for all students</td>
<td>* The lessons are usually ‘challenging’ but ‘do-able’</td>
<td>* Teachers take action when rules are broken</td>
<td>* We have a good library</td>
</tr>
<tr>
<td>* Teachers praise me when I work hard</td>
<td>* People think my school is a good school</td>
<td>* Teachers are unpleasant if I make mistakes</td>
<td>* Most teachers want me to understand something, not just memorise it</td>
<td>* Teachers are friendly towards me</td>
<td>* Teachers are not bothered if students turn up late</td>
<td>* We get enough time using computers in subject lessons</td>
</tr>
<tr>
<td>* Teachers tell me how to make my work better</td>
<td></td>
<td>* Teachers are friendly towards me</td>
<td></td>
<td>* Most teachers believe that mistakes are OK so long as we learn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Teachers make me feel confident about my work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Teachers are available to talk to me privately</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Teachers will help me if I ask for help</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* I get rewarded for good behaviour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor Behaviour climate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Most students want to leave this school as soon as they can</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Students who work hard are given a hard time by others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Most students take no notice of school rules</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>* There are often fights (in or around school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Some kids bring knives or weapons into school</td>
<td></td>
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</table>
Table 3: Summary of the effects of student background characteristics on dispositions in Y9

<table>
<thead>
<tr>
<th>(Only statistically significant effect sizes are reported; comparison group in brackets)</th>
<th>Maths academic self-concept</th>
<th>English academic self-concept</th>
<th>Anxiety</th>
<th>Citizenship values</th>
<th>Popularity</th>
<th>Enjoyment of school</th>
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<tr>
<td><strong>Student characteristics</strong></td>
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<tr>
<td>Gender</td>
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<td>Birth weight</td>
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<td>Foetal infant/very low weight</td>
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<td>Number of siblings</td>
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<td>Birth order (first)</td>
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<td>Third</td>
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<td>Ethnicity (White UK heritage)</td>
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<td>Early behavioural problems (none)</td>
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<td>1 Behavioural Problem</td>
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<td>Free school meals (FSM) Eligibility in Year 9</td>
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<td>Other Professional, Non-Manual</td>
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<td>ns</td>
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<td>Father’s employment status in KS2 (compared to unemployed)</td>
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<td>Full time employed and studying</td>
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<td>Vocational</td>
<td></td>
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<td>Degree or equivalent</td>
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<td>Higher degree</td>
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<td>Father’s Highest Qualification Level (none)</td>
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<td>Vocational</td>
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<td>0.22</td>
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<td>Higher degree</td>
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<td>ns</td>
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<td>Marital Status of Parent/Guardian/Carer (married)</td>
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<td>Living with partner</td>
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<tr>
<td>Widow/Widower</td>
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<td>0.58</td>
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<td>Family salary in KS1 (none)</td>
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<td><strong>Home Learning Environment (HLE)</strong></td>
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<td>Early Years HLE Index (Grouped) (Very low)</td>
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<td>Average (20-24)</td>
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<td>High (25-32)</td>
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<td>Very high (33-45)</td>
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<td>ns</td>
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<tr>
<td>KSI Parent-child interaction (low)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Medium</td>
<td></td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>0.21</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
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<tr>
<td>KS2 Individual-child activities (low)</td>
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</tr>
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<td>Medium</td>
<td></td>
<td>ns</td>
<td>0.21</td>
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</tr>
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<td></td>
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<tr>
<td>KS2 Global index (low)</td>
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<td>ns</td>
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</table>

37
Table 4: Summary of the effects of pre-school, primary and secondary influences on dispositions in Y9

(Only statistically significant effect sizes are reported; comparison group in brackets)

<table>
<thead>
<tr>
<th></th>
<th>Maths academic self-concept</th>
<th>English academic self-concept</th>
<th>Anxiety</th>
<th>Citizenship values</th>
<th>Popularity</th>
<th>Enjoyment of school</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-school influences</strong>*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Pre-school effectiveness</strong></td>
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<td></td>
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<tr>
<td>Early number concepts (home)</td>
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<td>0.23</td>
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<td>ns</td>
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<td>Anti-social behaviour (home)**</td>
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<td>ns</td>
<td>0.23</td>
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<tr>
<td>Independence &amp; concentration (home)</td>
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<td>ns</td>
<td>0.38</td>
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<td><strong>Quality of care (ARNETT)</strong></td>
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<td>Positive relationships (continuous)</td>
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<td>-0.12</td>
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<td>Punitiveness (home)</td>
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<td>Punitiveness (continuous)</td>
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<td><strong>Secondary School Quality</strong>*</td>
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<td>Ofsted judgements</td>
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<td>Healthy lifestyles (inadequate)</td>
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<td>Standards reached by learners (inadequate)</td>
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<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>0.36</td>
</tr>
<tr>
<td>How well learners achieve (inadequate)</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>0.33</td>
</tr>
<tr>
<td>Quality of pupils’ learning (inadequate)</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>0.31</td>
</tr>
</tbody>
</table>

n.b. Results for individual educational quality and effectiveness indicators combined in the table above were tested separately.

*The reference group for pre-school quality and effectiveness comparisons is the ‘home’ group who had very little or no pre-school experience. The effect sizes represent differences between the ‘home’ group and the ‘high quality/effectiveness’ group unless stated otherwise. Continuous scale represents the quality/effectiveness for pre-school group only.

** Comparison between ‘home’ and low effectiveness group.

*** Effect sizes for ‘outstanding’ Ofsted judgements shown.

For full list of references see appropriate Technical Paper at [http://eppe.ioe.ac.uk](http://eppe.ioe.ac.uk)
Overview Symposium 2

**Title:** The Effective Pre-School, Primary and Secondary Education (EPPSE 1997 - 2013)

**Project:** Contextualising the Key Stage 3 Experience (homework, vulnerable groups and views of KS3)

**Convenor:** Brenda Taggart  
Principal Investigator and Research Co-ordinator  
Institute of Education, London

**Discussant:** Professor Daniel Muijs is Chair of Education at the University of Southampton.

**Overview**

This symposium draws on research findings from the Effective Pre-school, Primary and Secondary Education (EPPSE 3-14) project, a longitudinal study commissioned in 1997 by the Department for Education (DfE) which has followed the progress and development of 3,000 students from age 3 – 14. This symposium, links with another EPPSE symposium regarding students' academic, social and dispositional outcomes.

The EPPSE research broke new ground in applying an educational effectiveness methodology to studying pre-school effects and is the largest study in Europe to investigate the continuing effects of pre-school as well as the influence of primary and secondary schooling on outcomes.

The findings presented here further explore some important influences on the student experience in secondary school. The findings provide a broader picture of students' academic and social development over time and contextualise their experience as young people in the first decade of the 21st Century.

The first paper investigates the relationship between students’ reports on time spent on homework and academic attainment. This paper is relevant as it contributes to the international debate on the positive role of homework in academic attainment.

The second presents the views of Head of Year 9 teachers on their school processes and classroom practices and links these with different school-level measures such as percentage of students eligible for free school meals, secondary school academic effectiveness and teaching quality, as rated by Ofsted judgments. It also presents parents’ views on teenagers and their secondary schools. Both papers analyse data taken from questionnaires sent to students, their parents and teachers during Year 9.

The third paper identifies the absolute differences in the academic outcomes for specific key student groups. The key groups (e.g., boys vs. girls, low family SES vs. high family SES, FSM vs. non FSM) are of policy interest, especially in relation to the priority given in promoting educational equity.

This symposium will continue the ‘story’ of EPPSE research for those interested in what matters when educating teenagers. The findings have implications for delegates interested in longitudinal research, educational outcomes, social equity and the development of policy and practice.
Abstract 1 – Homework and academic attainment and progress in secondary school
Katalin Toth*, Pam Sammons§, Kathy Sylva§, Edward Melhuish*, Iram Siraj-Blatchford* and Brenda Taggart*
* Institute of Education, University of London, † Birkbeck, University of London, § University of Oxford

Corresponding author: Brenda Taggart – Institute of Education, University of London
Presenting author: Katalin Toth – Institute of Education, University of London

a) Relevance of the topic to BERA members
This paper explores the relationships between time students spend on homework, their self-regulation and academic attainment and progress in Key Stage 3 (age 14). Although the relationship between homework and academic outcomes has been the subject of previous research, the conclusions are not always convergent. This paper uses statistical models (MLM and SEM) and multiple academic outcomes (English, maths and science) to examine how time spent on homework predicts attainment and progress, both directly and indirectly. The way that homework effects are moderated by gender and other factors is explored and the results contribute to current knowledge about the potential role of homework in shaping educational outcomes.

b) Clarity of the research questions
The main research questions are:
- What are the relationships between time homework and academic outcomes and progress, after controlling for the influence of background factors?
- What are the relationships between self-regulation, time spent on homework and academic outcomes?
- How far does gender moderate the effects of homework on attainment and progress in KS3?

c) Appropriateness of research methods
The sample is drawn from the Effective Pre-school, Primary and Secondary Education Project (EPPSE) conducted in England. The EPPSE research adopts an educational effectiveness and mixed methods approach (Sammons et al., 2005; Siraj-Blatchford et al., 2006).

d) Robustness of analytical framework
The theoretical framework is embedded in the school effectiveness and school improvement tradition that underlies the contribution schools (as well as families) make to students’ outcomes. The analytic framework employs multilevel modeling and SEM to explain the relationships between time spent on homework and academic outcomes and progress controlling for individual and family characteristics.

e) Significance for educational practice, policy or theory
Multilevel analyses show that time spent on homework is a statistically significant, positive and moderately strong predictor of attainment and progress in all three core subjects in KS3 even when students’ individual (age, gender, birth weight etc.), family (SES, FSM, salary) and home learning characteristics are controlled. The SEM models identify important direct and indirect relationships between gender, mother’s qualification level, self regulation, time spent on homework and academic outcomes. Nonetheless, the models indicate that time spent on homework continues to predict better academic attainment and progress in KS3. These findings have implications for educational practice, policy and theory in a context where the positive role of homework has been questioned.
Paper 1- Homework and academic attainment and progress in secondary school

Introduction
The relationship between homework and academic outcomes has been the focus of educational research in many countries and different phases of education. However, the results are not always conclusive and the positive role of homework is often questioned. A meta-analysis of the American educational research showed a modest positive effect of homework on academic outcomes, stronger in the middle and high school (Cooper, Robinson, & Patall, 2006). Nevertheless, the reviewed studies did not control for differences in students’ background characteristics, prior attainment or self-regulation. Additionally, these studies did not take into account the nested nature of the educational data. Recently, more complex statistical models have investigated the relationship between homework and academic progress in maths (Trautwein, Koller, Schmitz, & Baumert, 2002; Trautwein, 2007). These studies found that at school level there was a positive relationship between homework and progress in maths, but at student level this relationship was negative. Dettmers, Trautwein and Ludtke (2008) explored the same relationship in a cross-cultural study and showed that the relationship between homework and achievement is country specific, being positive in some countries and negative in others.

Research questions
To explore the:
- relationship between time spent on homework and academic outcomes (English, maths and science) in Year 9 of secondary school, when controlling for individual, family and home learning characteristics;
- relationship between time spent on homework and academic progress during KS3 when controlling for individual, family, home learning characteristics and prior attainment;
- relationships between self-regulation, homework and academic outcomes in Year 9.

Methodology
The sample is drawn from the Effective Pre-school, Primary and Secondary Education Project (EPPSE) conducted in England. EPPSE is a longitudinal study commissioned in 1997 by the Department for Education (DfE). It has studied the academic and social-behavioural development of 3,000 children from the ages of 3/5 until age 16+ (the end of compulsory schooling). The EPPSE research adopts an educational effectiveness and mixed methods approach (Sammons et al., 2005; Siraj-Blatchford et al., 2006). This allows for the study of individual, family and home influences as well as the effects of pre-school, primary and secondary school measures on academic outcomes and progress. This paper uses MLM and SEM to investigate the relationships between homework and academic achievement and progress in Year 9 English, maths and science during secondary school.

The quantitative data was collected through questionnaires administered in Year 9 to the EPPSE students, their parents, teachers and heads of year. The data on Key Stage 3 National Assessments was obtained from the National Pupil Data. Various background characteristics were obtained either from a parent interview based at the beginning of the study or from questionnaires administered in primary school.

Findings
The results of the multilevel analyses showed that time spent on homework was a statistically significant and positive predictor of attainment (see Tables 1, 2 and 3) and progress (see Tables 4, 5 and 6) in all three core subjects even when students’ individual (age, gender, birth weight etc.), family (SES, FSM, salary) and home learning characteristics were controlled. Additionally, strong effects were obtained even when the students’ perceptions of the attended school’s emphasis on learning and behavioural climate were also controlled for.  

34 Please note that in the tables only the effect sizes for homework are shown.
Table 1: Contextualised models for English Teacher Assessment (TA) levels in Year 9: time spent on homework

<table>
<thead>
<tr>
<th>Time Spent on Homework (compared to none)</th>
<th>Coef</th>
<th>SE</th>
<th>ES</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ½ hour</td>
<td>0.34</td>
<td>0.11</td>
<td>0.41</td>
<td>*</td>
</tr>
<tr>
<td>½-1 hour</td>
<td>0.27</td>
<td>0.10</td>
<td>0.34</td>
<td>*</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>0.33</td>
<td>0.11</td>
<td>0.40</td>
<td>*</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>0.59</td>
<td>0.14</td>
<td>0.73</td>
<td>*</td>
</tr>
<tr>
<td>Over 3 hours</td>
<td>0.57</td>
<td>0.27</td>
<td>0.70</td>
<td>*</td>
</tr>
<tr>
<td>Missing</td>
<td>0.04</td>
<td>0.10</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

% Reduction school variance: 81%
% Reduction student variance: 26%
% Reduction total variance: 39%

* p < 0.05

Table 2: Contextualised models for maths Teacher Assessment (TA) levels in Year 9: time spent on homework

<table>
<thead>
<tr>
<th>Time Spent on Homework (compared to none)</th>
<th>Coef</th>
<th>SE</th>
<th>ES</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ½ hour</td>
<td>0.39</td>
<td>0.15</td>
<td>0.35</td>
<td>*</td>
</tr>
<tr>
<td>½-1 hour</td>
<td>0.40</td>
<td>0.14</td>
<td>0.35</td>
<td>*</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>0.56</td>
<td>0.15</td>
<td>0.49</td>
<td>*</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>0.95</td>
<td>0.20</td>
<td>0.84</td>
<td>*</td>
</tr>
<tr>
<td>Over 3 hours</td>
<td>0.76</td>
<td>0.38</td>
<td>0.68</td>
<td>*</td>
</tr>
<tr>
<td>Missing</td>
<td>0.06</td>
<td>0.14</td>
<td>0.06</td>
<td></td>
</tr>
</tbody>
</table>

% Reduction school variance: 89%
% Reduction student variance: 19%
% Reduction total variance: 31%

* p < 0.05

Table 3: Contextualised models for science Teacher Assessment (TA) levels in Year 9: time spent on homework

<table>
<thead>
<tr>
<th>Time Spent on Homework (compared to none)</th>
<th>Coef</th>
<th>SE</th>
<th>ES</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ½ hour</td>
<td>0.27</td>
<td>0.12</td>
<td>0.31</td>
<td>*</td>
</tr>
<tr>
<td>½-1 hour</td>
<td>0.29</td>
<td>0.11</td>
<td>0.33</td>
<td>*</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>0.42</td>
<td>0.12</td>
<td>0.47</td>
<td>*</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>0.76</td>
<td>0.16</td>
<td>0.85</td>
<td>*</td>
</tr>
<tr>
<td>Over 3 hours</td>
<td>0.39</td>
<td>0.30</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>0.04</td>
<td>0.11</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

% Reduction school variance: 90%
% Reduction student variance: 18%
% Reduction total variance: 35%

* p < 0.05
Table 4: Contextualised value added models for English Teacher Assessment (TA) levels in Year 9: time spent on homework

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Coef</th>
<th>SE</th>
<th>ES</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Spent on Homework (compared to none)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than ½ hour</td>
<td>0.24</td>
<td>0.09</td>
<td>0.39</td>
<td>*</td>
</tr>
<tr>
<td>½-1 hour</td>
<td>0.23</td>
<td>0.08</td>
<td>0.36</td>
<td>*</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>0.26</td>
<td>0.09</td>
<td>0.42</td>
<td>*</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>0.48</td>
<td>0.11</td>
<td>0.76</td>
<td>*</td>
</tr>
<tr>
<td>Over 3 hours</td>
<td>0.46</td>
<td>0.21</td>
<td>0.74</td>
<td>*</td>
</tr>
<tr>
<td>Missing</td>
<td>0.09</td>
<td>0.08</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>% Reduction school variance</td>
<td>89%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Reduction student variance</td>
<td>66%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Reduction total variance</td>
<td>64%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p <0.05

Table 5: Contextualised value added model for maths Teacher Assessment (TA) levels in Year 9: time spent on homework

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Coef</th>
<th>SE</th>
<th>ES</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Spent on Homework (compared to none)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than ½ hour</td>
<td>0.21</td>
<td>0.09</td>
<td>0.31</td>
<td>*</td>
</tr>
<tr>
<td>½-1 hour</td>
<td>0.30</td>
<td>0.09</td>
<td>0.44</td>
<td>*</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>0.36</td>
<td>0.09</td>
<td>0.53</td>
<td>*</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>0.58</td>
<td>0.12</td>
<td>0.84</td>
<td>*</td>
</tr>
<tr>
<td>Over 3 hours</td>
<td>0.70</td>
<td>0.23</td>
<td>1.03</td>
<td>*</td>
</tr>
<tr>
<td>Missing</td>
<td>0.15</td>
<td>0.09</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td>% Reduction school variance</td>
<td>88%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Reduction student variance</td>
<td>71%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Reduction total variance</td>
<td>74%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p <0.05

Table 6: Contextualised value added models for science Teacher Assessment (TA) levels in Year 9: time spent on homework

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Coef</th>
<th>SE</th>
<th>ES</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Spent on Homework (compared to none)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than ½ hour</td>
<td>0.17</td>
<td>0.10</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>½-1 hour</td>
<td>0.21</td>
<td>0.09</td>
<td>0.30</td>
<td>*</td>
</tr>
<tr>
<td>1-2 hours</td>
<td>0.28</td>
<td>0.09</td>
<td>0.39</td>
<td>*</td>
</tr>
<tr>
<td>2-3 hours</td>
<td>0.49</td>
<td>0.13</td>
<td>0.69</td>
<td>*</td>
</tr>
<tr>
<td>Over 3 hours</td>
<td>0.29</td>
<td>0.24</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>0.06</td>
<td>0.09</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>% Reduction school variance</td>
<td>92%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Reduction student variance</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Reduction total variance</td>
<td>60%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p <0.05

Additional SEM modeling showed that the relationships between time spent on homework and academic outcomes in secondary school were positive and statistically significant when Year 6 self-regulation was added to the model which also controlled for gender, SES, mother’s qualification and home learning environment (see, for example, Figure 1 for maths).
A better model fit was obtained when emphasis on learning was added to the previous SEM model (see Figure 2). The strength of the relationship between self-reported time spent on homework and attainment in mathematics reduced slightly, however remained statistically significant. Emphasis on learning had statistically significant and positive effects on time spent on homework and attainment. Similar results were obtained on attainment in science.
Conclusion

EPPSE is innovative in applying an ‘effectiveness’ methodology to the study of what influences learning. The results indicate that self-reported time spent on homework is a strong predictor of both attainment and progress for students in lower secondary education, over and above the influence of their own background characteristics, and for progress models, prior attainment. The effects are the strongest for maths.

Moreover, the SEM shows how there are direct and indirect effects on attainment and reveal that gender moderates such effects. Homework effects are reduced but remained significant when prior self-regulation is added to the model. These findings have implications for educational practice, policy and theory in a context where the positive role of homework has been questioned.

For full list of references see appropriate Technical Paper at http://eppe.ioe.ac.uk

χ²=140.3  
df=14  
RMSEA=0.053  
TLI=.901  
CFI=.961
Abstract 2 – Heads of Year 9 and Parents’ Views of school at the end of Key Stage 3.
Brenda Taggart*, Pam Sammons§, Kathy Sylva§, Edward Melhuish*, Iram Siraj-Blatchford† and Katalin Toth*,

Corresponding author: Brenda Taggart – Institute of Education, University of London
Presenting author: Brenda Taggart – Institute of Education, University of London

a) Relevance of the topic to BERA members
This paper considers the views of Heads of Year 9 (HoY9) in secondary schools and provides insights into school policies/classroom practices during Key Stage 3 (KS3). It also explores parents’ views on teenagers and schools. It provides a ‘snap shot’ of KS3 in the first decade of the 21 century and will be of interest to all involved in research and/or teaching in secondary schools.

b) Clarity of the research questions
1. What can HoY 9 tell us about their:
   • school demographics, support and training, student support services, liaising with parents, school and classroom practices?
2. What can we learn from linking HoY9 views with:
   • school levels disadvantage, academic effectiveness and teaching quality?
3. What can parents tell us about:
   • teenagers home life and attitudes to school and learning
4. What can we learn if we link parents views to students;
   • background characteristics e.g. gender etc.?

c) Appropriateness of research methods
The findings in this paper are taken from analyses of 646 HoY9 and 1689 parent questionnaires administered when students were age 14. The matching of background characteristics to administrative data enables the research to go beyond simple descriptive to look at specific groups of students that are of policy and practice interest.

d) Robustness of analytical and/or theoretical framework
The theoretical framework is embedded in the school effectiveness and school improvement tradition that underlies the contribution schools (as well as families) make to children’s outcomes. Questionnaire data goes beyond descriptive statistics to explore the background and group characteristics of students in relation to HoY 9 and parents’ views.

e) Significance for educational practice, policy or theory
Heads of Year were largely positive about secondary schooling but identified areas for improvement e.g. support for students with English as an Additional Language and ‘looked after’ students. There were also specific school processes and classroom practices which were characteristic of school with: low number of FSM students, high CVA scores, judged as outstanding by Ofsted. Parents were also largely positive about teenagers and secondary schools and most had high aspirations for their children. These findings provide a robust snap shot of KS3 and raises important questions for policy makers and teachers about the influences on young people as learners.
Paper 2- Heads of Year 9 and Parents’ Views of school at the end of Key Stage 3.

Heads of Year 9

Introduction

The Effective Pre-school and Primary Education (EPPE 3-11, 1997 – 2008) study has already reported on the behaviours of teachers in Year 5 classrooms (during Key Stage 2, age 10) and how these relate to student’s academic and socio-behavioural outcomes (Sammons et al., 2008a; 2008b) during their time in primary school. This paper focuses on one aspect of the EPPSE 3-14 research study; the Head of Year 9 (HoY9)’s views about their school, which help to contextualise the experiences of the EPPSE students in secondary school (age 14). For further details of the Key Stage 3 (KS3) analyses and findings see Sylva et al., 2012; Sammons et al., 2011a; 2011b; 2011c.

Research questions

The main research questions focused on associations between schools characteristics of particular policy interest and the views of teachers such as:

- general school information (background of teachers, the Senior Leadership Team, student support etc.);
- classroom organisation (student groupings);
- school and classroom practices (feedback for learning, the personalised learning agenda, and pedagogical strategies).

Methodology

The information in this paper was derived from a questionnaire sent to all Heads of Year 9 (HoY9) in schools containing EPPSE students during their Year 9 academic year (age 14). A total of 1,002 schools were sent questionnaires with a response rate of sixty-four per cent (n=646), which is a good response rate for a postal questionnaire of this length. The analyses was in two parts:

i) descriptive information to help contextualise the experiences of Year 9 students

ii) analyses linking teachers' views of specific school practices with school levels of:
- disadvantage intakes (as measured by the percentage of students enrolled in the school who take up Free school meals [FSM])
- academic effectiveness (as measured by Contextual Value Added [CVA] scores)
- teaching quality (as measured scores from inspections conducted by the Office for Standards in Education [Ofsted]).

For full details of the analyses see Taggart et al. (2012a).

Findings

School Information

There were slightly more women than men who occupied the Head of Year 9 (HoY9) post. Respondents were most likely to be aged between 31 and 40 and have 11-20 years teaching experience.

HoY9s reported that the majority of schools are not involved in any formal school initiative/partnership. However, the most common form of partnership was local/area school partnerships followed by schools being involved in teacher training.

On the whole most HoY9 were very satisfied with the leadership of their Senior Management Team (SMT). The only reported weakness was the extent to which the SMT gave support to teachers who were struggling with low levels of classroom disruption.

Support/training for KS3 staff

Most HoY9 were satisfied with the support/training provided by their school for Key Stage 3 (KS3) staff to enable them to respond effectively to specific groups of students who have particular needs. Those staff dealing with students who had ‘learning’ or ‘behavioural’ needs
seemed to be particularly well supported. However, improving the support/training for staff coping with students who are ‘looked after’ or have English as an additional language (EAL) would go some way to improving the outcomes for these two groups of students. Both of these groups have been shown to have poorer outcomes. For example, in the DfE’s Statistical First Releases (2010, p5) only twenty-six per cent of ‘looked after’ students attained 5 or more GCSEs at grades A*-C, compared with seventy-five per cent of all students; although this is a marked improvement on the results in 2008 when only seventeen per cent of looked after students achieved 5 or more GCSE at grades A*-C (compared to 65% of all students).

**Student support services**

In a very high proportion of schools, HoY9s reported that Year 9 students have private time with an adult available to them during school time, as well as having easy access to an Educational Welfare/School Support Officer. Services which are much less easily accessed included Community Youth Workers, Police Officers and Family Support Services. HoY9s reported that the availability of breakfast provision at schools was variable.

HoY9s reported that the provision of services concerning sexuality and health were less accessible than many other types of services designed to support teenager behaviours (e.g. bullying, etc.). Making these services more accessible is important given current concerns about teenage pregnancy, sexually transmitted diseases and obesity.

There appeared to be much more support accessible for the victims of bullying compared to those services designed to change the behaviour of those who bully others.

HoY9s reported that services for students with English as an Additional Language (EAL) were not very easily accessible and those students in need of speech or language therapy may find accessing these services particularly difficult.

The HoY9s suggested that the majority (although not exceptionally high levels) of students can easily access a place of sanctuary when they are experiencing stress or when they are disrupting lessons.

**Identified group support**

HoY9s reported that low achieving students were most likely to be supported within school by the schools Special Needs Co-ordinator, whereas high achievers were usually part of a Gifted or Talented programme. However, surprisingly few schools offered this support. HoY9s reported that students in the care of social services were most likely to be offered ‘Looked After’ Children Educational Services (LACES) support or ‘other’ central provision provided by Social Services. Student who were academically boarder line were most likely to be offered booster classes or a mentoring services, whilst students with challenging /disruptive behaviour were offered behaviour support or a mentoring service.

**Student activities and challenging profiles**

Where HoY9 reported their school provided particular ‘activities’, take up across the board was low (participation rates ranged between 1-10% of students). Around sixty-five per cent of schools had less than ten percent of students participating in ‘buddying’ schemes involving peer buddies and mentoring schemes involving adults. HoY9 reported low numbers of suspensions and exclusions during Year 9. Almost ninety per cent of schools took 4 or less hard to place students during Year 9.

**Liaising with parents**

The majority of HoY9 thought their school communicated with and listened to parents well. However, parent/school liaison could be improved in the area of the amount of support parents are given from schools to enable them to help their children learn at home.
Class groupings
HoY9s reported that at entry to secondary school most students were placed in mixed ability forms/tutor groups and remained in these groups throughout KS3. Mixed ability groups were less common in the core subjects (English, maths and science) at the end of KS3 when the majority of students were ‘set’ by subject ability. Where schools grouped students by mixed ability or general overall ability just over half of HoY9 reported that their schools used Cognitive Ability Test (CAT) scores to determine groupings. The most popular ‘other’ determinate for grouping students was the use of Key Stage 2 National Assessment (SATs) data/results.

School and classroom practices
On the whole schools have engaged with many of the attributes of the ‘feedback for learning’ agenda explicitly identified in the questionnaire. In most schools HoY9s reported that teachers have easy access to information to support their review of student’s academic and behaviour targets. However, there was less frequent provision for some attributes of the ‘personalised learning’ agenda. These only occurred ‘occasionally’ in the majority of schools except for the use of ICT, which was most often used to support individualised learning. Almost a fifth of HoY9s reported that their school had no specific strategies for developing students’ leadership skills, while a similar proportion reported ‘often’ using training to promote emotional intelligence.

Differences in school policies and practices by school context and performance group
Disadvantage intakes – measured by Free School Meals (FSM)
Feedback for learning
There was very little that separated the views of HoY9 in schools with medium/low or medium/high proportions of FSM students. Where differences did appear it was in comparing schools with High and Low proportions of FSM students.

The HoY9 in schools with low proportions of FSM reported that their school made more use of the following feedback for learning strategies/practices (compared to schools with high proportions of these FSM students):
- students’ taking responsibility for their own learning
- students’ evaluating their own work
- easy access to students’ personal records.

Personalised learning agenda
There were few differences between schools with different levels of FSM and HoY9 reports of their propensity to provide students with personalised learning plans. There was only one notable difference between FSM bands (high and low) with school with low levels of FSM more likely to use personalised learning plans.

Schools with high FSM were slightly more likely to provide individual coaching for students compared to the low FSM group. It is interesting to note that ‘learning intentions are made explicit to all students’ was the only questionnaire response without a ‘never’ response recorded. It would appear that all schools used this strategy at some time.

Pedagogical strategies
There were four questions which showed differences in the pattern of responses between FSM groups. In all cases the HoY9s in low FSM schools reported making more frequent use of the following specific strategies: involved students in school decision making, the development of leadership skills, targeting high achievers, and taking students on educational/extra-curricular visits.
Secondary school academic effectiveness - measured by Contextualised Value Added (CVA)

Feedback for learning
HoY9 in the higher CVA group were more likely to ‘strongly agree’ that their schools ‘supported students in taking responsibility for their own learning’, and ‘encouraged students to evaluate their own work’ compared to schools in the lower CVA group (36% compared to 20% and 37% compared to 20% respectively).

There was very little difference between CVA groups in the extent to which HoY9 agreed their school used assessment for learning strategies. However, higher CVA groups were slightly more likely to ‘strongly agree’ with this statement (46% compared to 37%) and no HoY9 in higher CVA schools disagreed with this statement. The analyses showed no difference between schools of different levels of academic effectiveness in term of HoY9 reports of teachers’ access to student level data.

Personalised learning agenda
There were no differences between schools of different academic effectiveness in many of the domains of the personalised learning agenda, however three questions revealed that the HoY9 in higher academically effective schools reported they ‘often’ personalised the curriculum, provided 1:1 ‘catch-up’, and used ICT in a more personal way, than in schools with lower levels of effectiveness.

Pedagogical strategies
There were very few differences across schools in the extent to which ‘learning intentions were made explicit to students’, ‘students were taken on extra-curricular activities’ and ‘students were trained in ‘thinking skills’. However, HoY9 in more academically effective secondary schools were more likely to ‘encourage students to become involved in decision making’ and more likely to report using ‘specific strategies for developing student’s leadership skills’. They were also more likely to offer strategies for both low and high achievers. There were also differences between schools in the frequency of ‘student training in ‘emotional intelligence’ for use across the curriculum’, with higher effective schools more likely to provide opportunities in KS3 than lower effectiveness schools.

Teaching quality – measured by Ofsted judgements35

Feedback for learning
HoY9 Schools judged by Ofsted as having ‘outstanding’ teaching were more likely to report using feedback for learning strategies, whereas HoY9 in all schools regardless of their ‘quality of teaching’ reported that they had easy access to students’ personal and academic records. Similarly there were no distinctions in the extent to which HoY9 reported that teachers reviewed academic and behaviour targets for students. In all cases the majority of HoY9 reported they ‘often’ had access to student level information

Personalised learning agenda
With regard to the personalised learning agenda there was little that distinguished schools of varying ‘quality of teaching’. Most HoY9 reported that they used these strategies ‘occasionally’. However, there were differences in the extent to which HoY9 reported using ‘one-to-one/small group teaching’ to enable students to ‘catch-up’. HoY9 in schools judged to have ‘outstanding’ teaching reported using this strategy more ‘often’ compare to other Ofsted groups. In contrast, the majority of HoY9 in schools judged as ‘outstanding’ and ‘good’ reported ‘often’ using ‘ICT to support individualised learning’; only HoY9 in schools judged as ‘satisfactory’ reported a different pattern. In ‘satisfactory’ schools the majority of HoY9 reported less frequent use of ‘ICT to support individualised learning’.

35 N.B. due to the low numbers in the inadequate category it is not appropriate to discuss differences in responses.
Pedagogical strategies

When looking at Ofsted’s measure of ‘quality of teaching’, the majority of HoY9 in schools in each group reported that they ‘often’ made their ‘learning intentions explicit to all students’; ‘took students on educational/extra-curricular visits’; had ‘teaching strategies specifically developed for low achievers’. Similarly, there were no differences in HoY9 reports of ‘students being trained in thinking skills’ and ‘emotional intelligence’ across the curriculum although this strategy was only used ‘occasionally’. HoY9 in schools rated as ‘outstanding’, in terms of Ofsted’s measure of ‘quality of teaching’, were slightly more likely to report a higher incidence of ‘encouraging students to get involved in decision making’, and making more use of ‘strategies specifically developed for high achievers’. In addition, HoY9 in ‘outstanding’ schools were more likely to ‘strongly agree’ that their schools had ‘specific strategies for developing students’ leadership skills’ compared to HoY9 in ‘satisfactory’ schools.

Management of the behaviour of learners - measured by Ofsted judgements

Feedback for learning
Nothing differentiated schools in the learning domains ‘supporting students in taking responsibility for their own learning’ and ‘encouraging students to evaluate their own work’; the majority of HoY9 across all of the Ofsted groups reported they ‘agreed’ their schools did these. Similarly there were no differences in the extent to which HoY9 reported that ‘teachers have easy access to a students’ personal records’, ‘review all students’ individual academic targets’, and ‘review some students’ individual behaviour targets’; the majority of HoY9 in each of the Ofsted groups reported that they were ‘often’ involved in these activities. There was only one difference seen when looking at the ‘management of the behaviour of learners’, with HoY9 in schools rated as ‘outstanding’ by Ofsted slightly more likely to ‘strongly agree’ they used ‘Assessment of Learning strategies’ compared to the other Ofsted judgement groups.

Personalised learning agenda
The personalised learning agenda looked similar across all schools with regard to ‘students having personalised learning plans’, ‘a personalised curriculum experience’, ‘availability of individual coaching and timetable adaptations’, with the majority of HoY9 in all Ofsted groups reporting ‘occasional’ use of these strategies in KS3. Similarly, the use of ‘ICT to support individualised learning’ was reported by all HoY9 as most likely to be used ‘often’. Similarly the majority of HoY9 in schools across all of the Ofsted groups reported that ‘often’ ICT was ‘used to support individualised learning’. In contrast, HoY9s in schools judged as ‘outstanding’ were more likely to report that teaching time for ‘one-to-one or small groups for students who need to catch-up’ ‘often’ happened in KS3 compared to HoY9 in schools in other Ofsted groups who reported this happened less frequently.

Pedagogical strategies
Nothing differentiated schools in their use of the following pedagogical strategies: ‘making learning intentions explicit to all students’; ‘taking students on educational/extra-curricular visits’; ‘having teaching strategies specifically developed for low achievers’. The majority of HoY9 in schools in all Ofsted groups reported they ‘often’ used these strategies. Similarly there was little difference in ‘training students’ emotional intelligence’, where the majority of HoY9 in schools in all groups reported using this strategy ‘occasionally’.

HoY9 in schools judged as ‘outstanding’ by Ofsted for their management of student behaviour were more likely to state they made better/more frequent use of ‘involving students in decision making’, ‘the development of leadership skills’, and ‘targeted strategies for high achievers’.

36 N.B. due to the low numbers in the inadequate category (12 out of 470) it is not appropriate to discuss differences in responses.
Whilst the majority of HoY9 in ‘good’ and ‘satisfactory’ schools reported that training students in ‘thinking skills’ for use across the curriculum’ happened ‘occasionally’ in KS3, in comparison half of HoY9 in ‘outstanding’ schools reported using this strategy ‘often’.

**Conclusions and implications**

This paper provides a snapshot of secondary schools during the period when the EPPSE sample of students were in Year 9 (between 2007 and 2010) as reported by their Head of Year (HoY9). It covers a range of topics that help to contextualise young peoples’ experiences at age 14. It not only describes HoY9’s views on their school but relates these reports to key characteristics of their school. Most HoY9 had between 11 and 20 years of teaching experience and are therefore likely to be in the middle management tier of the teaching force.

Overall HoY9 are positive about their schools. Where schools were involved in partnerships these were mostly focussed on providing teacher training rather than specific curriculum or school improvement initiatives. Initiatives such as the London Challenge (Ofsted 2010) have demonstrated that targeted initiatives can make a considerable difference to students’ outcomes and schools may be well advised to consider some of the key features of such initiatives that made a difference to student performance and progress over time. One such initiative might be to explore how the Senior Management Teams can better support more junior colleagues struggling with low level classroom disruption, given that the poor management of bad behaviour can lead to poorer performance (Trembley et al., 1992). Another area for development would be to provide guidance for secondary schools on how to work with parents to support students’ learning outside of school. Whilst this is an increasingly common practice for pre-schools and primary schools, less attention has been given to working with the parents of older students to enhance their learning. The EPPSE study of students at age 14 has shown the impact of doing regular homework (Sylva et al., 2012) on student outcomes. Providing guidance to parents on how they can play a more active role in the completion of homework may have significant benefits for students’ performance over time.

It was encouraging that most HoY9 were satisfied with the support/training they were given to enable them to effectively respond to the needs of their students, particularly those students with learning or behavioural needs. However, three groups of students emerged throughout the report as needing additional attention. These were students with language/speech difficulties, with English as an additional language (EAL) and those in institutional care (looked after students). Both of these latter groups have been shown to have poorer outcomes and whilst their attainment has shown some increases over the last three years they should remain a policy focus for some time to come.

There is a wide range of support services available to most young people when they need help and some additional guidance. However, services concerning sexuality and health were less accessible than other types of services designed to support teenage behaviours (e.g. bullying etc.). Making these services more accessible should be a major policy initiative given the current concerns about teenage pregnancies, sexually transmitted diseases and obesity.

School have always tried to support and stretch their most able students and for many this has been achieved through the national Gifted and Talented scheme. However, & Robinson (The Sutton Trust 2012) reported on many challenges associated with this initiative; a bolt on, tokenistic, elitist and unlikely to benefit the most disadvantaged students. As the gifted and talented academy has closed the CfBT replacement scheme needs to ensure it avoids these problems and delivers a better service to supports exceptional children focussed especially on those from disadvantaged backgrounds.

On the whole schools have engaged with many of the attributes of the ‘feedback for learning’ agenda, with easy access to information to support their review of students’ academic and behaviour targets. This was not the case for some aspects of the ‘personalised learning’ agenda. Given the importance of providing targeted support to learners, particularly those from
disadvantaged background (Siraj-Blatchford 2011b) continuous professional development course, particularly for middle management should include specific training in Feedback for Learning techniques (see Black et al., 2003). Similarly the data would suggest that many schools would benefit their students by giving a greater emphasis on specific strategies for developing students' leadership skills.

Whilst there was little that differentiated schools with medium/high or medium/low proportions of free school meals students or with differing levels of academic effectiveness there were some notable difference between the top and bottom groups on these indicators. The aforementioned emphasis on 'feedback for learning', plus ‘the development of leadership skills’, ‘encouraging students to evaluate their own work’ and ‘supporting students in taking responsibility for their own learning’ were all strategies that were slightly more prevalent in schools with more advantaged intakes. These strategies were also more likely to be used regularly in school that were more academically effective (measured by their contextual value added scores). Schools in disadvantaged areas could benefit their students by including more of these strategies in the day to day delivery of the curriculum.

Targeted support for learners was a key feature in schools judged to be 'outstanding' by Ofsted for their quality of teaching. These schools were also more likely to use ‘feedback for learning’ strategies and engage student more in the ‘development of leadership skills’. ‘Feedback for learning’ strategies were also used more often in schools judged as ‘outstanding’ for their management of the behaviour of learners, as was a greater emphasis on ‘involving students in decision making’ and having ‘targeted strategies for high and low achievers’. These findings suggest that schools who see students as individuals and provide a more personalised service are more successful at promoting good behaviour.

This paper helps to contextualise the Year 9 (age 14) school experiences for the EPPSE sample of approximately 3,000 students at the end of KS3. It should be read in conjunction with other KS3 reports referred to in this handout.

Parents' Views
Introduction
The EPPSE project has a wealth of background information on 3,000 children collected from their parents (or carer/guardians) through interviews (age 3/4) and questionnaires (age 7, 11 and 14). These sources of data have enabled the project to take account of child level information (early developmental problems etc.), family demographics (socio-economic status, mother’s qualifications etc) as well as opportunities for learning within the home in the statistical analyses of a range of student outcomes (see Sylva et al., 2012).

Research questions
The main questions for this paper concerns parents views on a range of familial topics of interest to policy makers including household composition, parent:child interactions, parents’ views of their child’s school etc. to help contextualise the experiences of the EPPSE sample. For full details of the analyses see Taggart et al. (2012b) forthcoming.

Methodology
In order to help contextualise the experiences for the EPPSE young people, a questionnaire was sent to their parents at the end of KS3 (response rate of 53% when sent to 1,689 parents). This paper gives some brief insights into parents’ perceptions about their child’s school and home life and what it is like to bring up a teenager in the first decade of the 21st Century through descriptive analyses of the questionnaire responses.

37Throughout this report the term ‘parents’ refers to: parents, carers and guardians and the small number of relatives (Aunt/Uncle/ Grandparents/ Older Sibling n=13) who have responsibility for EPPSE children. It also includes those in local authority care or ‘looked after’ (n=6).
Findings
The neighbourhood
The questionnaire probed parents’ views about their neighbourhood as a safe and good place to bring up children and their views on teenagers in their area. The majority of parents reported positive views about their neighbourhood as a place to bring up children (74% good/excellent). Only a small number of parents (less than 14%) said they ‘often’ experienced low levels of anti-social behaviour (such as littering, drunkenness etc.). The majority of parents had positive views about the teenagers they knew personally, they thought them well behaved (80%), that they didn’t truant (76%) didn’t smoke (77%) or drink alcohol regularly (74%). Although 58 per cent of parents didn’t think the young people they knew bullied others, almost a third reported that they knew teenagers who engaged in this behaviour.

Parents’ views on their child’s school
All parents want their children to be happy, especially at school. Reassuringly the vast majority (94%) of parents thought their child was always/usually happy in Year 9.

Figure 1 Child happiness

The majority of parents thought their child’s school provided high standards of education (88.8%) and behaviour (84.7%). Similarly the majority of parent thought their children were given good guidance to help them improve their work (83.1%). Whilst just over a fifth of parents (22.3%) did not know what kind of career advice was given to their children, two thirds (67.3%) were content with the career advice given by the school.

Table 1 : School standards / Good guidance/advice

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Total</th>
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<td>Behaviour</td>
<td>480</td>
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<tr>
<td>Improving work</td>
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<td>Careers, jobs &amp; further learning</td>
<td>263</td>
<td>15.8</td>
<td>855</td>
<td>51.5</td>
<td>151</td>
</tr>
</tbody>
</table>

*Education - N=1 for agree and disagree so 0.1%  *Good advice on careers, jobs and further learning: Agree and Disagree N=1 so 0.1%  **3.2% answered ‘Don’t know’ for ‘Behaviour’ and 3.4% answered ‘Don’t know’ for
‘Education’. 4.2% answered ‘Don’t know’ for ‘Improving work’ and 22.3% answered ‘Don’t know’ for ‘Careers, jobs & further learning’.

The vast majority of parents thought their child’s school made them feel welcome when they visited and make it easy to become involved in their child’s education (only 15% how disagreed/strongly disagreed with this statement). In addition they felt that schools also provided a good choice of subjects/qualifications.

Table 2: School ethos

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<td>Easy to be involved in</td>
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<td>Good choice of subjects/</td>
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<td>1081</td>
<td>64.7</td>
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<td>qualification</td>
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Just over 80% of parents thought the school knew their child as an individual. This was not too dissimilar to the proportion that thought their child was set appropriate (not too easy) homework (almost 70%).

Table 3: Child as an individual

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<td>Sets homework that is</td>
<td>69</td>
<td>329</td>
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<tr>
<td>too easy for their child</td>
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Overall parents have a positive view of their child’s school and very few have a negative attitude towards their child’s school regarding standards and ethos, guidance/help offered and the extent to which the school knows their child as an individual.

Parent/school liaison

Figure 2: Parent/school liaison
The majority of parents feel that their child’s school regularly communicates with them about their child. However schools were more likely to contact them about their child’s behaviour rather than their child’s work.

**Child Behaviour/Work**

Figure 3 shows a comparison between parents visiting their child’s school to discuss their child’s work and to discuss their child’s behaviour. It shows that the majority of parents (79%) visited their child’s school 1-3 times during Year 9 to discuss their child’s work. In contrast, nearly three quarters (72%) have never been to their child’s school during Year 9 to discuss their child’s behaviour. This suggests that student behaviour is only a concern for a minority.

Most schools would expect to see parents at least once a year, during a scheduled parents evening. A typical pattern might be to meet parents early in the academic year to discuss how the student is settling in their new form and at the end of the year to discuss progress.

**School Events**

It could be argued that as children get older, parents become less involved with school. The daily routine of delivering/picking-up children from school by parents is less prevalent by age 14. Most students would travel independently to school. Therefore, the questionnaire explored ‘other’ opportunities for parents to be involved in secondary schools.

Most parents do not visit their child’s secondary school at all during Year 9 for ‘any’ events. When they do visit they are most likely to do this for cultural/sports events less than 4 times a
The most frequently reported alternative purposes for parents visiting their child’s school were visits to discuss GCSE options and future academic plans.

**Educational aspirations**

**Figure 5: The importance of qualifications**

The majority of parents feel it is most important for their child to get good GCSEs (Grade A*-C) or equivalent (73%) and especially good GCSE grades in English and maths (78%) while the importance attached to A levels and degrees are somewhat lower (A levels - 54%, good vocational qualifications relevant for a job - 51% or a University degree - 40%). This may reflect that students are still in Year 9 so the most relevant qualification is the GCSE courses to be taken in Year 10.

**Parents’ views on their child’s school**

All parents want their children to be happy, especially at school. Reassuringly the vast majority (94%) of parents thought their child was always/usually happy in Year 9.

**Figure 6: Child happiness**

The majority of parents thought their child’s school provided high standards of education (88.8%) and behaviour (84.7%). Similarly the majority of parent thought their children were given good guidance to help them improve their work (83.1%). Whilst just over a fifth of parents
(22.3%) did not know what kind of career advice was given to their children, two thirds (67.3%) were content with the career advice given by the school.

Table 4: School standards / Good guidance/advice

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*Education - N=1 for agree and disagree so 0.1%  
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4.2% answered 'Don’t know' for 'Improving work' and 22.3% answered 'Don’t know' for ‘Careers, jobs & further learning'.

The vast majority of parents thought their child’s school made them feel welcome when they visited and make it easy to become involved in their child’s education (only 15% how disagreed/strongly disagreed with this statement). In addition they felt that schools also provided a good choice of subjects/qualifications.

Table 5: School ethos

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*Easy to be involved in child’s education- Agree and Disagree N=1 so 0.1%  
**1.5% answered 'Don’t know' for 'Feel welcome', 2.2% answered 'Don’t know' for ‘Easy to be involved in child’s education’ and 1.6 answered ‘Don’t know’ for ‘Good choice of subjects/qualifications’.

Just over 80% of parents thought the school knew their child as an individual. This was not too dissimilar to the proportion that thought their child was set appropriate (not too easy) homework (almost 70%).

Table 6: Child as an individual

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Knows their child as an 'individual'</td>
<td>379</td>
<td>22.7</td>
<td>1011</td>
<td>60.7</td>
<td>178</td>
</tr>
<tr>
<td>Sets homework that is too easy for their child</td>
<td>69</td>
<td>4.2</td>
<td>329</td>
<td>19.8</td>
<td>1058</td>
</tr>
</tbody>
</table>

*Sets homework that is too easy for their child- Agree and Disagree N=1 so 0.1%  
**4.8% answered 'Don’t know' for ‘Knows their child as an ‘individual’ and 6.1% answered ‘Don’t know’ for ‘Sets homework that is too easy for their child’.

Overall parents have a positive view of their child’s school and very few have a negative attitude towards their child’s school regarding standards and ethos, guidance/help offered and the extent to which the school knows their child as an individual.
The majority of parents feel that their child’s school regularly communicates with them about their child. However schools were more likely to contact them about their child’s behaviour rather than their child’s work.

**Child Behaviour/Work**

Figure 8 shows a comparison between parents visiting their child’s school to discuss their child’s work and to discuss their child’s behaviour. It shows that the majority of parents (79%) visited their child’s school 1-3 times during Year 9 to discuss their child’s work. In contrast, nearly three quarters (72%) have never been to their child’s school during Year 9 to discuss their child’s behaviour. This suggests that student behaviour is only a concern for a minority.

Most schools would expect to see parents at least once a year, during a scheduled parents evening. A typical pattern might be to meet parents early in the academic year to discuss how the student is settling in their new form and at the end of the year to discuss progress.

**School Events**

It could be argued that as children get older, parents become less involved with school. The daily routine of delivering/picking-up children from school by parents is less prevalent by age 14. Most students would travel independently to school. Therefore, the questionnaire explored ‘other’ opportunities for parents to be involved in secondary schools.
Most parents do not visit their child’s secondary school at all during Year 9 for ‘any’ events. When they do visit they are most likely to do this for cultural/sports events less than 4 times a year.

The most frequently reported alternative purposes for parents visiting their child’s school were visits to discuss GCSE options and future academic plans.

**Educational aspirations**

**Figure 10: The importance of qualifications**

The majority of parents feel it is most important for their child to get good GCSEs (Grade A*- C) or equivalent (73%) and especially good GCSE grades in English and maths (78%) while the importance attached to A levels and degrees are somewhat lower (A levels - 54%, good vocational qualifications relevant for a job - 51% or a University degree - 40%). This may reflect that students are still in Year 9 so the most relevant qualification is the GCSE courses to be taken in Year 10.
Conclusions and implications
The brief snapshot of parents' views expressed in this paper suggests that most parents are positive about their children and their children’s schooling. They thought their neighbourhoods were good places to bring up children, with little anti-social behavior being reported. Similarly, they were positive about the teenagers they knew, they thought them well behaved, didn’t truant or smoke and drink regularly. Worryingly almost a third of parents knew teenagers who engaged in bullying. Whilst support such as Helpline exist to support children experiencing bullying it is likely that parents and whole families may benefit from a similar support service.

Most parents had high expectations for their children wanting them to get good GCSEs.

Reassuringly the vast majority of parents thought their child was always/usually happy in Year 9 and their school provided a high standard of education, good behavior and career advice as well as being welcoming. In addition parents were reassured that their school knew their child as an individual, communicated regularly with them and set appropriate homework. Student poor behavior concerned only a small number of parents. Most parents, however, did not visit their child’s secondary school at all during Year 9 except for some cultural/sports events or to discuss GCSE options and future academic plans. Providing more access for parents to teachers during the academic year may go some way to improving relationships between home and school and help parents to better support their children’s learning at home.

For full list of references see appropriate Technical Paper at http://eppe.ioe.ac.uk
Abstract 3 – Exploring academic outcomes for vulnerable groups at different key stages
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Corresponding author: Brenda Taggart – Institute of Education, University of London
Presenting authors: Wesley Welcombe

a) Background to the topic
For almost 15 years, EPPSE has contributed to the debate about what influences student outcomes. EPPSE focuses on issues of social inequality and is therefore of interest to a wide range of BERA members. This paper is relevant to colleagues interested in groups at greater risk of lower educational attainment.

b) Research questions/focus of the enquiry
This paper reports on students’ academic outcomes in English and maths at ages 7, 11, and 14 for key groups of students in ‘absolute’ terms. The aims explore:
  • the overall absolute attainment for particular student groups
  • how the overall absolute attainment for key groups of changes over time
  • the likelihood of specific groups ever having been recognised as having a Special Educational Need (SEN) at the end of KS1.

c) Research methods and/or mapping of the literature
This paper provides a summary of the absolute differences in academic outcomes between particular groups of students at three time points, as well as change over time. Key groups of policy interest (e.g., boys vs. girls, low family SES vs. high family SES, FSM vs. non FSM) have been studies in relation to ‘narrowing the gaps’ priority and educational equity. These key groups have been shown to have a greater risk of lower educational attainment. Therefore, there is interest in following up their educational outcomes at different ages in order to examine the ways their patterns change over the course of their school careers. In addition to academic attainment, this paper also explores the likelihood of specific groups of EPPSE students ever having been recognised as having SEN at the end of KS1.

d) Analytical framework
Descriptive statistics are employed to explore academic outcomes at three time points for key groups of students, as well as patterns in these students’ outcomes across their educational careers. Descriptive statistics are also utilized to examine the likelihood of students being recognised as having SEN by the end of KS1 in primary school.

e) Research findings and/or contribution to knowledge
This paper highlights how in absolute terms there are key child, family and home learning environment, characteristics that appear to make children vulnerable to lower academic outcomes and to having a greater likelihood of being recognised as having SEN by the end of KS1.
Paper 3- Exploring academic outcomes for vulnerable groups at different key stages

Introduction

Previous EPPSE research has explored the net differences in academic outcomes for a range of background characteristic (e.g. gender etc.), while controlling for other characteristics (see Sylva et al., 2004; Sammons et al., 2008a; 2008b; 2011a). This paper provides a summary of the differences in attainment between particular groups of EPPSE students in absolute terms at three time points (ages 7, 11 and 14 years old). Thus, the overall attainment gap between different groups is examined, as well as how this changes over time.

Research questions

A number of key groups have been identified that are of policy interest, especially in relation to the 'narrowing the gaps' priority and promoting educational equity (The Equalities Review, 2007; Field, 2010). These key groups have been shown to have a greater risk of lower educational attainment (The EPPE 3-11 Team, 2007). The key research questions concern the educational outcomes of these key groups at different ages in order to examine the ways their patterns change over the course of their school careers.

Methodology

The analyses reported here focus on National Assessment tests and Teachers Assessments (TAs) at Key Stage 1 (KS1; Year 2, age 7), Key Stage 2 (KS2; Year 6, age 11), and Key Stage 3 (KS3; Year 9, age 14). Test levels were assigned according to the students’ scores and in data were also collected on students’ individual test scores within levels. This allowed for more finely differentiated outcome measures, which were also age standardised and normalised (mean=100; standard deviation=15). Using age-standardised scores enables a comparison to be made between the mean average attainments of different groups relative to their performance at other time points. However, when exploring attainment in relation to Term of birth, the raw scores were used so, that any differences between the groups of students born at different times of the year could be identified using the standard deviation (SD) of the outcome in order to compare any gaps between groups across time points. However, because these analyses used the raw test scores, the sample standard deviation changes for each outcome. It should be noted that TA levels are less differentiated measures of attainment compared to test scores.

Findings

Girls achieved higher mean average scores than boys in reading/English at KS1, KS2, and KS3. In contrast, boys achieved higher mean average scores than girls in maths at KS1 and KS2. However, by the end of KS3 girls have caught up, having attained similar average scores to boys.

Autumn born students achieved higher mean average scores than Summer born students in reading/English at the end of all three key stages, although only just at KS3. However, in maths Autumn born pupils outperformed Summer born pupils at the end of only KS1 and KS2. By the end of KS3, Summer born students have caught up in maths. There is evidence that the age gap has narrowed from age 7 to 14.

Students from high socio-economic status (SES) families achieved higher mean average scores than those from Low SES families in reading/English and in maths at the end of all three Key Stages. The differences in mean average scores for family SES were equal to, or above, three quarters (0.74) of one sample standard deviation at all three time points.

Mother’s qualification level showed a consistent pattern; students whose mothers had a degree or higher achieved higher mean average scores than whose mothers had a low qualification

38This measure was calculated by dividing the difference in means for the two groups by the outcome’s standard deviation for the whole sample.
level (None) at all three time points. The differences in mean average scores were particularly large for mother’s qualification level, being equal to more than one sample standard deviation for both English and maths at the end of KS2 and KS3.

At the end of all three key stages, students whose families had a high income (£37,500+) outperformed those whose families had a low income (No earned income), in terms of mean average scores for reading/English and maths. At the end of KS2 and KS3, the differences were close to being equal to one sample standard deviation. A similar pattern was found for free school meals (FSM), with students who had been in receipt of FSM having lower mean average scores for reading/English and maths at all three time points than those not in receipt of FSM; the differences were equal to or above half of one sample standard deviation.

Table 1: Summary of differences* in mean average test scores achieved in National Assessments for key groups

<table>
<thead>
<tr>
<th>Time points</th>
<th>Key Stage 1 (KS1)</th>
<th>Key Stage 2 (KS2)</th>
<th>Key Stage 3 (KS3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome</strong></td>
<td><strong>Reading</strong></td>
<td><strong>maths</strong></td>
<td><strong>English</strong></td>
</tr>
<tr>
<td><strong>Child characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (boys v girls)</td>
<td>0.26</td>
<td>0.05</td>
<td>0.30</td>
</tr>
<tr>
<td>(Girls)</td>
<td>(Boys)</td>
<td>(Girls)</td>
<td>(Boys)</td>
</tr>
<tr>
<td>Term of birth (summer v autumn)</td>
<td>0.08</td>
<td>0.48</td>
<td>0.31</td>
</tr>
<tr>
<td><strong>Key family characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family highest SES (low v high)</td>
<td>0.90</td>
<td>0.74</td>
<td>0.88</td>
</tr>
<tr>
<td>Mother’s qualification (low v high)</td>
<td>1.20</td>
<td>0.98</td>
<td>1.24</td>
</tr>
<tr>
<td>Family earned income (none v high)</td>
<td>0.89</td>
<td>0.76</td>
<td>0.91</td>
</tr>
<tr>
<td>Free school meals (FSM v non)</td>
<td>0.62</td>
<td>0.55</td>
<td>0.58</td>
</tr>
<tr>
<td>Multiple disadvantage (low v high)</td>
<td>1.01</td>
<td>0.80</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>Home Learning Environment (HLE)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early years HLE (low v high)</td>
<td>1.30</td>
<td>0.95</td>
<td>1.14</td>
</tr>
</tbody>
</table>

* The differences are reported as the proportion of the sample standard deviation (SD) - calculated as (Mean1 – Mean2)/SD, where the SD=15. The exception to this is where raw scores were used for Term of birth, and the SD varied for each outcome.
* The groups that had the higher mean average scores are specified.
* Pupils were entered for the Level 2 and/or Level 3 Reading Test at the end of KS1; the Level 2 differences are provided in the table above; The Level 3 difference is 0.22, Autumn born pupils having the higher mean average score.

Students who had a low score on the multiple disadvantage index (i.e. less disadvantaged) had higher mean average scores for reading/English and maths than those students who had a high score on the multiple disadvantage index (i.e. more disadvantaged) at KS1, KS2 and KS3. The differences in mean average scores were above three quarters of one sample standard deviation at all three time points. Those students who had a high score for early years Home Learning Environment (HLE) index had higher mean average scores for reading/English and maths at all three time points than those who had a low score for the HLE index. The differences in mean average scores were above three quarters of one sample standard deviation at all three key stages.

In summary, students from high SES families, whose mothers had a high qualification level (degree or higher), whose families had a high income (£37,500+), who were not in receipt of
FSM, who had a low score on the multiple disadvantage index, and a high scoring early years HLE, had higher mean average scores in reading/English and maths at the end of KS1, KS2 and KS3 when compared to students without these advantages (see Table 1).

When exploring the relationship between the Teacher Assessment (TA) levels and various background characteristics patterns were found that were similar to those from the test score analyses (see Table 2).

Table 2: Summary of differences* in mean average Teacher Assessment (TA) Levels awarded for key groups

<table>
<thead>
<tr>
<th>Time points</th>
<th>Key Stage 1 (KS1)</th>
<th>Key Stage 2 (KS2)</th>
<th>Key Stage 3 (KS3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English</td>
<td>maths</td>
<td>English</td>
</tr>
<tr>
<td><strong>Child characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (Boys vs. Girls)</td>
<td>0.30 (Girls)</td>
<td>No difference (Girls)</td>
<td>0.28 (Boys)</td>
</tr>
<tr>
<td>Term of birth (summer v autumn)</td>
<td>0.38</td>
<td>0.43</td>
<td>0.21</td>
</tr>
<tr>
<td><strong>Key family characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Highest SES (low v high)</td>
<td>0.74</td>
<td>0.75</td>
<td>0.85</td>
</tr>
<tr>
<td>Mother’s qualification level (low v high degree)</td>
<td>0.96</td>
<td>0.88</td>
<td>1.14</td>
</tr>
<tr>
<td>Family earned income (none v high)</td>
<td>0.77</td>
<td>0.68</td>
<td>0.88</td>
</tr>
<tr>
<td>Free school meals (FSM v non)</td>
<td>0.57</td>
<td>0.49</td>
<td>0.56</td>
</tr>
<tr>
<td>Multiple disadvantage (low v high)</td>
<td>0.82</td>
<td>0.75</td>
<td>0.91</td>
</tr>
<tr>
<td><strong>Home Learning Environment (HLE)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early years HLE (low v high)</td>
<td>1.18</td>
<td>0.96</td>
<td>1.14</td>
</tr>
</tbody>
</table>

* The differences are reported as the proportion of the sample standard deviation (SD) - calculated as (Mean1 – Mean2)/SD, where the SD=15. The exception to this is where raw scores were used for Term of birth, and the SD varied for each outcome.
* The groups that had the higher mean average scores are specified.

Girls had a higher mean average TA level for English than boys at the end of KS1, KS2 and KS3. However, the average TA level for maths at the end of KS1 was the same for boys and girls, with boys having a higher TA level for maths at the end of KS2. By the end of KS3, girls were more likely to have a higher mean average TA level in maths than boys (see Table 2). At the end of KS3, a higher percentage of girls compared to boys were awarded a Level 5, or above, for their KS3 TA for both English and maths, although the gap is quite small (a difference of 4%) for maths. A very similar percentage of girls and boys were awarded a KS3 TA for maths that was above the expected level (6 or more), while in contrast girls were still much more likely than boys to be awarded above the expected level (6 or more) for their KS3 TA for English (see Figure 1).
Autumn born students had a higher mean average TA level for English than Summer born pupils at KS1, KS2, and KS3, although the gap narrowed as students got older (see Table 2). Autumn born pupils also had a higher mean average TA level for maths at all three time points than Summer born pupils, although again the gap had narrowed somewhat since the beginning of primary school (see Figure 2).

A higher percentage of Autumn students than Summer born pupils were awarded KS3 TA levels for English and maths at the expected level (5) or more (see Figure 2), although the differences are small (4%). In contrast, a much higher percentage of Autumn born students compared to Summer born pupils were awarded KS3 TAs for English and maths at above the expected level (6 or more).

At all three time points, students who were from high SES families consistently had a higher mean average TA level for both English and maths than those from low SES families (see Table 2). The differences in mean average TA levels were equal to, or above, three quarters (0.74) of one sample standard deviation at all three time points, getting closer to one sample standard deviation by KS3. At KS3, a greater percentage of students from high SES families than low SES families were awarded a TA level for English and maths that was at the expected level or
above. The same pattern is seen when looking at the percentage awarded above the expected level (see Figure 3).

Figure 3: Percentage awarded levels for KS3 Teacher Assessments by socio-economic status (SES)

<table>
<thead>
<tr>
<th>% Awarded Level 5 or more</th>
<th>% Awarded Level 6 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>English</td>
<td>Mathematics</td>
</tr>
<tr>
<td>62</td>
<td>65</td>
</tr>
<tr>
<td>90</td>
<td>91</td>
</tr>
<tr>
<td>76</td>
<td>79</td>
</tr>
</tbody>
</table>

English: N=2644; maths: N=2642

At all three time points, students whose mothers had a degree or higher consistently had higher mean average TA levels for both English and maths than those whose mothers had a low qualification level (None) (see Table 2). The differences in mean average TA levels were particularly large for mother’s qualifications, being equal to more than one sample standard deviation for both English and maths at the end of KS2 and KS3.

When examining the percentages of students awarded KS3 TA levels for English and maths at the expected level or more, and above the expected level, the differences between students whose mothers had a degree or higher and those whose mothers had a low qualification (None) were also large (see Figure 4).

Figure 4: Percentage awarded levels for KS3 Teacher Assessments by mother’s qualification level

<table>
<thead>
<tr>
<th>% Awarded Level 5 or more</th>
<th>% Awarded Level 6 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>English</td>
<td>Mathematics</td>
</tr>
<tr>
<td>59</td>
<td>64</td>
</tr>
<tr>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>76</td>
<td>79</td>
</tr>
<tr>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>16</td>
<td>37</td>
</tr>
</tbody>
</table>

English: N=2644; maths: N=2642
At the end of KS1, KS2, and KS3, pupils whose families had a High income (£37,500+) outperformed the pupils whose families had a Low income (No earned income), in terms of the average TA level awarded to them for English and maths. The differences in mean average TA levels were larger than two-thirds of one sample standard deviation (see Table 2) at all three time points. At KS3, a higher percentage of those pupils whose families had a High income (£37,500+) were awarded a Level 5 or more, and level 6 or more, for their TAs for English and maths, than the percentage of pupils whose families had a Low income (see Figure 5).

Figure 5: Percentage Awarded Levels for KS3 Teacher Assessments by family income

At all three time points, pupils who had been in receipt of free school meals (FSM) were awarded consistently lower mean average TA levels for English and maths than pupils who had not been in receipt of FSM (see Table A5.2). At the end of KS3, a higher percentage of those pupils who had not been in receipt of FSM were awarded a level 5 or more, and level 6 or more, for their TAs for English and Maths, than the percentage of those pupils who had been in receipt of FSM (see Figure 6).

Figure 6: Percentage Awarded Levels for KS3 Teacher Assessments by FSM
Those pupils who had High multiple disadvantage consistently had lower mean average TA levels for both English and maths than those pupils who had Low multiple disadvantage. The differences in mean average TA levels were equal to, or above, three quarters of one sample standard deviation at all three key stages (see Table 2). By the end of KS3, a lower percentage of pupils who had a High multiple disadvantage were awarded a level 5 or more, and level 6 or more, for their TAs for English and maths, than the percentage of pupils who had a Low multiple disadvantage (see Figure 7).

**Figure 7: Percentage Awarded Levels for KS3 Teacher Assessments by Multiple Disadvantage**

![Figure 7: Percentage Awarded Levels for KS3 Teacher Assessments by Multiple Disadvantage](image)

English: N=2644; maths: N=2642

Students whose families had a Low score on the early years home learning environment (HLE) index, also consistently had lower mean average TA levels for both English and maths compared to those pupils whose families had a High score on the early years HLE index. The differences in mean average TA levels were particularly large for the early years HLE, being equal to more than one sample standard deviation for English and more than nine-tenths of one sample standard deviation for maths at all three time points (see Table 2). At the end of KS3, those pupils who had a High score on the early years HLE index were more likely to have been awarded the expected level or above, or above the expected level, for their TA levels for English and maths (see Figure 8).

**Figure 8: Percentage Awarded Levels for KS3 Teacher Assessments by Early Years HLE**

![Figure 8: Percentage Awarded Levels for KS3 Teacher Assessments by Early Years HLE](image)

English: N=2644; maths: N=2642
In summary, pupils who were from High SES families, whose mothers had a High qualification level (degree or higher), whose families had a High income (£37,500+), who had not been in receipt of FSM, who had a Low score on the multiple disadvantage index, and who had a High scoring Early years HLE were awarded higher mean average TA levels for English and maths at KS1, KS2 and KS3 than pupils who were from Low SES families, whose mothers had a Low qualification level (None), whose families had a Low income (No earned income), who had been in receipt of FSM, who had a High score on the multiple disadvantage index, and who had a Low scoring Early years HLE (see Table 2).

EPPSE has previously explored characteristics associated with pupils having SEN (see Taggart et al., 2006; Anders et al., 2010). Class teachers completed a social-behavioural profile for each EPPSE child in Year 2, at the end of KS1. This profile included a question that asked whether the child had, ‘ever been recognised as having special educational needs?’ According to their class teachers, nearly three out of ten EPPSE pupils had been recognised as having special educational needs (SEN) by the end of KS1. Differences in this measure were explored in relation to various child, family and home learning environment (HLE) characteristics: gender, family SES, mother’s qualification level, early years HLE, family income, FSM, multiple disadvantage index and term of birth.

By the end of KS3, boys, children who were born in the summer, who were from Low SES families, whose mothers had a Low qualification level (None), whose parents had a Low income (None), who had been in receipt of FSM, who had a High score on the multiple disadvantage index, and whose families had a Low scoring early years HLE, were more likely to ‘have ever been recognised as having special educational needs’ (SEN), than girls, children who were born in the autumn, who were from High SES families, whose mother had a High qualification level (degree or higher), whose parents had a High income (£37,500+), who had not been not in receipt of FSM, who had a Low score on the multiple disadvantage index, and whose families had a High scoring Early years HLE.

Conclusions and implications

These analyses highlight in absolute terms the key child, family, and home learning environment (HLE), characteristics that appear to be linked to children’s vulnerability for lower attainment and greater likelihood of being recognised as having special educational needs (SEN) by the end of KS1. These analyses also illustrate that the gaps are significantly larger in relation to some characteristics than others (e.g. mother’s qualification level and early years HLE), and the way they change across students’ educational careers. For example, gender differences are modest but increase for English to KS3, whereas the pattern for maths is different. Term of birth age effects lessen by KS3; the ‘gap’ remains stable for early years HLE and mother’s qualification level.

Additional EPPSE analyses (Sammons et al., 2011a) have explored the same relationships between these key child, family and home learning environment (HLE) characteristics and KS3 cognitive outcomes but in terms of net differences rather than absolute differences. Similar analyses have previously been conducted using outcomes from the end of KS1 and KS2 (Sammons et al., 2004a; 2008a; 2008b).

The size of the absolute attainment gap has important implications for students’ longer term educational and employment prospects. Successive UK governments have paid attention to this important topic during the time the EPPSE students were in school. However, other research (Sammons, 2008) has shown that there has been greater success in raising standards of attainment for all groups, and reducing the number of poorly performing schools during the period 1996 to 2008, than in narrowing the equity gap related to social disadvantage.

For full list of references see appropriate Technical Paper at http://eppe.ioe.ac.uk
Additional sources of information

The EPPSE website at http://eppe.ioe.ac.uk contains information on the sample, methodology, and many other aspects of the project. The website also contains links to the information listed below (see the ‘Publications’ sections of each phase of the study). For further information contact Brenda Taggart, Principal Investigator/Research Co-ordinator, 0207 612 6219, b.tagggart@ioe.ac.uk

The Pre-school phase:
End of pre-school phase report and research brief
Final report of the pre-school phase:
Research brief on the pre-school phase:

There are twelve technical papers associated with this phase of the research - see http://eppe.ioe.ac.uk

Technical Paper 7 (2001) Social/Behavioural and cognitive development at 3-4 years in relation to family background.


Pre-school pedagogy
The Primary Phase:
End of primary school phase report and research brief
Final report from the primary phase: Pre-school, school and family influences on children’s development during Key Stage 2 (2008). Research Report RR061

Final Report from the Primary Phase: Pre-school, School, and Family Influences on Children’s development during Key Stage 2 (Age 7-11 (2008). Research Brief RB061

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