
EFFECTIVE PRE-SCHOOL, PRIMARY AND SECONDARY EDUCATION PROJECT (EPPSE 3-14)

Influences on students' dispositions in Key Stage 3: Exploring enjoyment of school, popularity, anxiety, citizenship values and academic self-concepts in Year 9

Pam Sammons[§], Kathy Sylva[§], Edward Melhuish⁺, Iram Siraj-Blatchford⁺, Brenda Taggart⁺, Rebecca Smees[§], Diana Draghici⁺ and Katalin Toth^{*}

^{*}Institute of Education, University of London, ⁺ Birkbeck, University of London,

[§]University of Oxford

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 Research Brief 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.

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'¹.
- 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'.²

¹ 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.

² Experiences of school were found to predict all of the self perception factors, but only strong effects are reported here.

- 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.

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.

Background and Aims

Previous phases of the EPPSE project have reported on the influences of a range of child, family, neighbourhood, home/out of school learning, pre- and primary school influences on children's attainment, progress and development during pre-school and primary school up to age 11. For full details about earlier phases of the EPPSE study see Sylva et al. (2010) and <http://eppse.ioe.ac.uk>.

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).

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 Research Brief focuses on statistical trends and quantitative analyses of six disposition factors: *'enjoyment of school'*, *'anxiety'*, *'popularity'*, *'citizenship values'*, and *'academic self concept'* in both English and maths, and eight domains of the student/school experience: *'teacher support'*, *'school environment'*, *'valuing students'*, *'headteacher qualities'*, *'poor behaviour climate'*, *'emphasis on learning'*, *'teacher discipline'* and *'learning resources'*.

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 2 - 4 factors: 'enjoyment of school', 'behavioural self concept', 'academic self concept' and 'alienation'.
- Year 5 - 4 factors: 'enjoyment of school', 'behavioural self concept', 'academic self concept and 'anxiety and isolation'.
- Year 9³ - 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 to Year 9. For these analyses we added to the contextualised multilevel models⁴ a prior measure, using the dispositions collected at Year 5 in addition to the background factors presented above.

³ 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.

⁴ 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.

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)⁵.

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 being at school most of the time. Students' reported that they felt less clever

⁵ 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).

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')⁶.

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)⁷, 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 patterns⁸. 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).

⁶ Percentage of students liking other subjects 'a lot': Science=35%, ICT=35%, Maths=29%, English=28 %.

⁷ 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.

⁸ Although significant the results are based on small numbers of students and should be interpreted with caution.

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).

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://eippe.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 analyses 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%)⁹.

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 quality¹⁰ 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).

⁹ 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%).

¹⁰ 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 Research Brief, and the two accompanying Research Briefs on academic and social-behavioural development, 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 Research Brief 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.

References

Goldstein, H. (1995). *Multilevel Statistical Models*. (2nd Ed.). London: Arnold.

Keys, W. and Fernandez, C. (1992). *What do students think about school?* Slough: National Foundation for Educational Research.

Kintrea, K., St Clair, R. and Houston, M. (2011). *The influence of parents, places and poverty on educational attitudes and aspirations*. York: Joseph Rowntree Foundation.

MacBeath, J. and Mortimore, P. (Eds) (2001), *Improving School Effectiveness*. Buckingham: Open University Press.

Marsh, H. W. (1990). 'The structure of academic self-concept: The Marsh/Shavelson Model'. *Journal of educational psychology*, 82 (4), 623-636.

Marsh, H. W. and Hau, K. T. (2003). 'Big fish little pond effect on academic self concept: A cross cultural (26 country) test of the negative effects of academically selective schools.' *American Psychologist*, 58, 364-376.

Marsh, H. W. and Craven, R. G. (2006). 'Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives.' *Perspectives on Psychological Science*, 1, 133 - 163.

Mortimore, P., Sammons, P., Stoll, L., Lewis, D. and Ecob, R. (1988). *School matters: The Junior Years*. Wells: Open Books.

Sammons, P., Siraj-Blatchford, I., Sylva, K., Melhuish, E., Taggart, B. and Elliot, K. (2005). 'Investigating the Effects of Pre-school Provision: Using mixed methods in the EPPE research'. *International Journal of Social Research Methodology special issue on Mixed Methods in Educational Research*, 8 (3), 207-224.

Sammons, P., Sylva, K., Siraj-Blatchford, I., Taggart, B., Smees, R. and Melhuish, E. (2008). *Effective Pre-school and Primary Education 3-11 Project (EPPE 3-11) Influences on pupils' self-perceptions in primary school: Enjoyment of school, Anxiety and Isolation, and Self-image in Year 5*. London: Institute of Education, University of London.

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Smees, R., Draghici, D. and Toth, K. (2011a). *Effective Pre-school, Primary and Secondary Education 3-14 Project (EPPSE 3-14): Influences on students' dispositions in Key Stage 3: Exploring Enjoyment of school, Popularity, Anxiety, Citizenship Values and Academic self-concept in Year 9*. London: Institute of Education, University of London / Department for Education. <http://eppe.ioe.ac.uk>

Sammons, P., Sylva, K., Siraj-Blatchford, I., Taggart, B., Smees, R., Draghici, D. and Toth, K. (2011b). *Effective Pre-school, Primary and Secondary Education 3-14 Project (EPPSE 3-14): Students' Reports of Their Experiences of School in Year 9*. London: Institute of Education, University of London / Department for Education <http://eppe.ioe.ac.uk>

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Toth, K., Draghici, D. and Smees, R. (2011c). *Effective Pre-School, Primary and Secondary Education Project (EPPSE 3-14): Influences on students' attainment and progress in Key Stage 3: Academic outcomes in English, maths and science in Year 9*. London: Institute of Education, University of London / Department for Education. <http://eppe.ioe.ac.uk>

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Draghici, D., Smees, R. and Toth, K. (2011d). *Effective Pre-School, Primary and Secondary Education Project (EPPSE 3-14): Influences on students' development in Key Stage 3: Social-behavioural outcomes in Year 9*. London: Institute of Education, University of London / Department for Education. <http://eppe.ioe.ac.uk>

Siraj-Blatchford, I., Mayo, A., Melhuish, E., Taggart, B., Sammons, P. and Sylva, K. (2011). *Performing against the odds: developmental trajectories of children in the EPPSE 3-16 study*. DfE Research Report DFE-RR128. Department for Education:

<https://www.education.gov.uk/publications/standard/publicationDetail/Page1/DFE-RR128>

Siraj-Blatchford, I., Sammons, P., Taggart, B., Sylva, K. and Melhuish, E. (2006). 'Educational Research and Evidence-Based Policy: The Mixed-method Approach of the EPPE Project'. *Evaluation of Research in Education*, 19 (2), 63-82.

Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. and Taggart, B. (Eds) (2010), *Early Childhood Matters: Evidence from the Effective Pre-school and Primary Education project*. London: Routledge.

Thomas, S., Smees, R., MacBeath, J., Robertson, P. and Boyd, B. (2000). 'Valuing Pupils' Views in Scottish Schools'. *Educational Research and Evaluation*, 6 (4), 281-316.

Table 1: Items associated with the six disposition factors

Student disposition factors in Year 9		
<p>Enjoyment of school</p> <ul style="list-style-type: none"> * My school is a friendly place * On the whole I like being at school * I like to answer questions in class * School is a waste of time for me * I like most of the lessons * I am bored in lessons 	<p>Maths Academic Self concept</p> <ul style="list-style-type: none"> * I learn things quickly in my Maths classes * I have always done well in my Maths classes * Compared to others my age I am good at Maths * Work in my Maths classes is easy for me * I get good marks in Maths 	<p>English Academic Self concept</p> <ul style="list-style-type: none"> * I learn things quickly in my English classes * I have always done well in my English classes * Compared to others my age I am good at English * Work in my English classes is easy for me * I get good marks in English
<p>Citizenship Values</p> <ul style="list-style-type: none"> * Making sure strong people don't pick on weak people * Respecting rules and laws * Controlling your temper even when you feel angry * Respecting other peoples points of view * Sorting out disagreements without fighting 	<p>Popularity</p> <ul style="list-style-type: none"> * I make friends easily * Other teenagers want me to be their friend * I have more friends than most other teenagers my age * Most other teenagers like me * I am popular with other students in my students in my age group 	<p>Anxiety</p> <ul style="list-style-type: none"> * In class I worry about what the others think of me * I get a lot of headaches, stomach aches or sickness * I worry a lot * I am often unhappy, downhearted or tearful * I am nervous in new situations * I have many fears, I am easily scared

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

Experiences of school factors in Year 9			
<p>Teacher support</p> <ul style="list-style-type: none"> * Most teachers mark & return my homework promptly * Most teachers make helpful comments on my work * Teachers praise me when I work hard * Teachers tell me how to make my work better * Teachers make me feel confident about my work * Teachers are available to talk to me privately * Teachers will help me if I ask for help * I get rewarded for good behaviour 	<p>School environment</p> <ul style="list-style-type: none"> * My school has attractive buildings * Classrooms are nicely decorated & clean * Toilets are well cared for & clean * My school is well organised * People think my school is a good school 	<p>Valuing students</p> <ul style="list-style-type: none"> * The school values students' views * Teachers listen to what students say about the school * The teachers in this school show respect for all students * Teachers are unpleasant if I make mistakes * Teachers are friendly towards me 	<p>Headteacher qualities</p> <ul style="list-style-type: none"> * I often see the headteacher around the school * The headteacher makes sure students behave well * The headteacher is interested in how much we learn
<p>Poor Behaviour climate</p> <ul style="list-style-type: none"> * Most students want to leave this school as soon as they can * Students who work hard are given a hard time by others * Most students take no notice of school rules * There are often fights (in or around school) * Some kids bring knives or weapons into school 	<p>Emphasis on learning</p> <ul style="list-style-type: none"> * Most students want to do well in exams * Teachers expect me to do my best * The lessons are usually 'challenging' but 'do-able' * Most teachers want me to understand something, not just memorise it * Most teachers believe that mistakes are OK so long as we learn 	<p>Teacher discipline</p> <ul style="list-style-type: none"> * Teachers make sure that it is quiet during lessons * Teachers make clear how I should behave * Teachers take action when rules are broken * Teachers are not bothered if students turn up late 	<p>School (learning) resources</p> <ul style="list-style-type: none"> * There are enough computers * Science labs are good * We have a good library * We get enough time using computers in subject lessons

Table 3: Summary of the effects of student background characteristics on dispositions in Y9

(Only statistically significant effect sizes are reported; comparison group in brackets)	Maths academic self-concept	English academic self-concept	Anxiety	Citizenship values	Popularity	Enjoyment of school
Student characteristics						
Gender (girls)	0.38	ns	-0.48	-0.31	0.12	ns
Age (continuous)	0.16	ns	ns	ns	ns	ns
Birth weight (normal)						
Foetal infant/very low weight	ns	ns	ns	ns	-0.51	ns
Number of siblings (none)						
2+ siblings	ns	ns	ns	ns	ns	-0.20
Birth order (first)						
Third	ns	-0.24	ns	ns	ns	ns
Ethnicity (White UK heritage)						
White European heritage	ns	ns	ns	0.39	ns	ns
Black Caribbean heritage	ns	0.38	ns	ns	0.44	ns
Black African heritage	0.74	0.56	ns	ns	0.60	ns
Indian heritage	0.42	ns	-0.47	ns	0.33	0.35
Pakistani heritage	0.38	0.43	-0.24	0.33	0.34	0.55
Early behavioural problems (none)						
1 Behavioural Problem	ns	ns	ns	ns	ns	-0.23
2+ Behavioural Problems	-0.48	ns	0.38	ns	ns	ns
Early developmental problems (none)						
1 Developmental Problem	ns	ns	ns	0.19	ns	ns
Special Educational Needs (none)						
School Action	-0.24	-0.41	ns	ns	ns	-0.29
School Action plus	-0.45	-0.46	0.76	ns	-0.34	-0.54
Statement	ns	-0.39	0.77	ns	-0.69	ns
Family characteristics						
Free school meals (FSM) Eligibility in Year 9						
Eligible (not eligible)	-0.25	ns	ns	ns	ns	ns
Parents' Highest SES at KS2 (Professional, Non-Manual)						
Skilled, Manual	-0.25	ns	ns	ns	ns	ns
Skilled, Non-Manual	-0.33	ns	ns	ns	ns	ns
Other Professional, Non-Manual	-0.21	ns	ns	ns	ns	ns
Father's employment status in KS2 (compared to unemployed)						
Full time employed and studying	0.75	ns	ns	ns	ns	ns
Mother's Highest Qualification Level (none)						
Vocational	ns	ns	ns	-0.32	ns	ns
16 academic	ns	ns	ns	-0.21	ns	ns
Degree or equivalent	ns	ns	ns	ns	-0.34	ns
Higher degree	ns	ns	ns	ns	-0.39	ns
Father's Highest Qualification Level (none)						
Vocational	ns	0.23	ns	ns	ns	ns
18 academic	ns	0.22	ns	ns	ns	ns
Higher degree	ns	0.35	ns	ns	ns	ns
Marital Status of Parent/Guardian/Carer (married)						
Living with partner	ns	ns	ns	ns	0.21	ns
Widow/Widower	ns	ns	0.58	ns	ns	ns
Family salary in KS1 (none)						
£37,500-£66,500	ns	ns	ns	ns	0.18	0.17
£67,500+	ns	ns	ns	ns	0.34	0.52
Home Learning Environment (HLE)						
Early Years HLE Index (Grouped) (Very low)						
Average (20-24)	ns	ns	ns	0.26	ns	0.26
High (25-32)	ns	ns	ns	ns	ns	0.26
Very high (33-45)	ns	ns	ns	ns	ns	0.34
KS1 Parent-child interaction (low)						
Medium	ns	ns	ns	ns	0.21	ns
High	ns	ns	ns	ns	0.23	ns
KS2 Individual-child activities (low)						
Medium	ns	0.21	ns	ns	ns	ns
High	ns	0.52	ns	ns	ns	ns
KS2 Global index (low)						
Medium	ns	ns	ns	ns	0.19	ns
High	ns	ns	ns	ns	0.28	ns

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)

	Maths academic self-concept	English academic self-concept	Anxiety	Citizenship values	Popularity	Enjoyment of school
Pre-school influences*						
Pre-school effectiveness						
Early number concepts (home)	ns	ns	-0.27	0.23	ns	ns
Anti-social behaviour (home)**	ns	ns	0.23	ns	ns	ns
Independence & concentration (home)	ns	ns	ns	0.38	ns	ns
Quality of care (ARNETT)						
Positive relationships (continuous)	ns	0.13	-0.12	ns	ns	ns
Punitiveness (home)	ns	-0.27	ns	ns	ns	ns
Punitiveness (continuous)	ns	-0.12	ns	ns	ns	ns
Detachment (continuous)	ns	-0.15	ns	ns	ns	-0.11
Primary school influences						
Science CVA	ns	ns	ns	0.38	ns	ns
Secondary School Quality*** Ofsted judgements						
Healthy lifestyles (inadequate)	ns	ns	-0.72	ns	ns	ns
Future economic well-being (inadequate)	ns	ns	-0.52	ns	ns	0.52
Learning difficulties & disabilities progress (inadequate)	0.42	ns	ns	ns	ns	0.46
Progress of learners (inadequate)	ns	ns	ns	ns	ns	0.37
Standards reached by learners (inadequate)	ns	ns	ns	ns	ns	0.36
How well learners achieve (inadequate)	ns	ns	ns	ns	ns	0.33
Quality of pupils' learning (inadequate)	ns	ns	ns	ns	ns	0.31

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.

Additional Information

This research brief can be accessed at <http://publications.education.gov.uk>.
The full report of the same name can be accessed from the EPPSE Website:
<http://eppe.ioe.ac.uk>

Research Reports investigating the EPPSE students' academic and social-behavioural outcomes in KS3 are also available (see Sammons et al., 2011c; 2011d).

Further information about this research can be obtained from
Deborah Wilson, 2 St Paul's Place, 125 Norfolk Street, Sheffield, S1 2FJ
Deborah.WILSON@education.gsi.gov.uk

For further information about the EPPSE project contact: Brenda Taggart, Institute of Education, University of London, Room G2, 15 Woburn Square, London WC1H 0NS.
Enquiries to: b.taggart@ioe.ac.uk

This research report was commissioned before the new UK Government took office on 11 May 2010. As a result the content may not reflect current Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DFE).

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