
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

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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 Research Brief 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.).

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.

Individual student, family and home influences

- 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.

Background and Aims

This Research Brief explores the influences of a range of background characteristics and educational experiences on four student behaviours (2 positive and 2 negative) at the end of KS3, as well as students' developmental progress from the age of 11 to age 14. It investigates how the secondary school environment shapes students' social-behavioural outcomes. The four social behaviours are 'self-regulation' (problem-solving, motivation, self-confidence, assertiveness etc.), 'pro-social' (peer empathy, co-operation, altruism etc.), 'hyperactivity' (reduced self-control, impulsiveness etc.) and 'anti-social' behaviour (verbally abusive, aggressive etc.), derived from teachers' ratings. In addition, the analyses explore students' own views of their school and themselves as learners.

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.

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 Research Brief 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)¹.

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').

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 age². 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.

¹ 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.

² As measured by the Multiple Disadvantage Index generated by EPPSE based on students' own background factors (Sammons et al., 2003).

Poverty and neighbourhood influences

The level of neighbourhood disadvantage³ 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-school⁴ 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' group⁵ 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 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).

³Measured by the Index of Multiple Disadvantage (Noble et al., 2004) and the IDACI (Noble et al., 2007) using student's postcodes.

⁴ Measured by the ECERS-R and ECERS-E (see Sylva et al., 2010).

⁵ The 'home' group are those students who had little or no pre-school experience.

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'⁶ 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 schools⁷ 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 experiences⁸ 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 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-

⁶ 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.

⁷ Using overall CVA measures derived from the DfE's National Pupil Database.

⁸ Students' secondary school experiences were measured by self-reported questionnaire in Year 9.

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'⁹ (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

⁹ 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.

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 Research Brief 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 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.

References

- Anders, Y., Sammons, P., Taggart, B., Sylva, K., Melhuish, E. and Siraj-Blatchford, I. (2010). *'The influence of child, family, home factors and pre-school education on the identification of special educational needs at age 10'*. British Educational Research Journal, 36 (3), 421–441.
- Goodman, R. (1997). *'The Strengths & Difficulties Questionnaire: A Research Note'*. Journal of Child Psychology & Psychiatry, 38, 581-586.
- Melhuish, E., Phan, M., Sylva, K., Sammons, P., Siraj-Blatchford, I. and Taggart, B. (2008). *'Effects of the Home Learning Environment and Preschool Center Experience upon Literacy and Numeracy Development in Early Primary School'*. Journal of Social Issues, 64 (1), 95-114.
- Noble, M., Wright, G., Dibben, C., Smith, G. A. N., McLennan, D., Anttila, C., Barnes, H., Mokhtar, C., Noble, S., Gardner, J., Braswell, S., Covizzi, I. and Lloyd, M. (2004). *The English Indices of Deprivation 2004*. London: Office of the Deputy Prime Minister.
- Noble, M., McLennan, D., Wilkinson, K., Whitworth, A., Barnes, H. and Dibben, C. (2007). *The English Indices of Deprivation 2007*. London: Office of the Deputy Prime Minister.
- Sammons, P., Sylva, K., Melhuish, E. C., Siraj-Blatchford, I., Taggart, B. and Elliot, K. (2003). *The Effective Provision of Pre-School Education (EPPE) Project: Technical Paper 8b - Measuring the Impact of Pre-School on Children's Social/Behavioural Development over the Pre-School Period*. London: DfES / Institute of Education, University of London.
- 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., Melhuish, E., Siraj-Blatchford, I., Taggart, B. and Jellicic, H. (2008a). *Effective Pre-school and Primary Education 3-11 Project (EPPE 3-11): Influences on Children's Development and Progress in Key Stage 2: Social/behavioural outcomes in Year 6. Research Report No. DCSF-RR049*. Nottingham: DCSF Publications.
- Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B. and Hunt, S. (2008b). *Effective Pre-school and Primary Education 3-11 Project (EPPE 3-11): Influences on Children's Attainment and Progress in Key Stage 2: Cognitive Outcomes in Year 6. Research Report No. DCSF-RR048*. Nottingham: DCSF Publications.
- Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Jellicic, H., Smees, R., Barreau, S. and Grabbe, Y. (2008c). *Effective Pre-school and Primary Education 3-11 Project (EPPE 3-11): Pupils' self-perceptions and views of primary school in Year 5. DCSF-RBX-15-08*. Nottingham: DCSF Publications.

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Draghici, D. and Smees, R. (2011a). *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>

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Toth, K., Draghici, D. and Smees, R. (2011b). *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., Smees, R., Draghici, D. and Toth, K. (2011c). *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., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Smees, R., Draghici, D. and Toth, K. (2011d). *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>

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.

Taggart, B., Sammons, P., Smees, R., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Elliot, K. and Lunt, I. (2006). 'Early Identification of Special Needs and the Definition of 'At Risk': The Early Years Transition and Special Education Needs (EYTSN) Project'. *British Journal of Special Education*, 33 (1), 40-45.

Table 1 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>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 | <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>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 |

Table 2 Items associated with the six disposition factors

| 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 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 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)

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

*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.

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 outcomes and dispositions in KS3 are also available (see Sammons et al., 2011b; 2011c).

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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.