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## EFFECTIVE PRE-SCHOOL, PRIMARY AND SECONDARY EDUCATION PROJECT (EPPSE 3-16+)

### Influences on students' dispositions and well-being in Key Stage 4 age 16

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#### Introduction

The Effective Pre-school, Primary and Secondary Education Project (EPPSE) has investigated the academic attainment and progress, social-behavioural development and affective outcomes of a national sample of approximately 3,000 children followed across different phases of education, from the age of 3+ years into adolescence up to the end of compulsory education at age 16. This Research Brief (RB) summarises some of the main findings about students' dispositions and well being in Key Stage 4 (KS4) of secondary schooling. The RB reports results for a number of measures based on a questionnaire survey in Year 11: *Mental well-being*, *School enjoyment*, *Disaffected behaviour*, *General Academic self-concept* and students' relationships with their peers (*Resistance to Peer Influence*). In addition it explores these young peoples' perceptions of their own health, involvement in 'risky' behaviours, educational and employment aspirations and out of school activities. For the full details of the findings and other analyses of these students' educational outcomes at age 16 outcomes see Sammons et al., 2014a, 2014b, 2014c, 2014d; Siraj et al, 2014; Sylva et al., 2014 and Taggart et al., 2014.

#### Summary of findings

##### School life, academic self concepts and aspirations

The vast majority of young people were positive about school (over 80%) but around 1 in 10 felt out of place. Most felt safe and liked lessons although just over a third found lessons 'boring' some or most of the time. Students were also generally positive about their academic work with over two thirds thinking they were doing well in most of their subjects. Very few thought school was a waste of time.

Levels of truanting were low (around 1 in 5 reported they had truanted one at least one occasion) but where it did occur the main reasons given were because they didn't like lessons, teachers or were bored. Students from more disadvantaged backgrounds and those whose parents had low levels of educational qualifications were more likely to report they had played truant.

Gaining five good GCSE's was believed to very important for the vast majority of students (90%) and nearly three quarters thought getting A-Levels was also very important. Going on to study for a degree was thought to be very important for just over half of the sample, with girls being slightly more likely to expect to go to university.

Students were very optimistic that they would get 5 A\*-C GCSE grades, a higher proportion than actually achieved this in practice (21% over-estimated their chances compared with their actual results).

Nearly six in ten (59%) reported doing at least one hour or more of homework on an average school day in Year 11. Girls reported spending significantly more time on homework than boys (21% of girls but only 9% of boys reported spending more than two hours on a typical school day on homework).

## **Mental well-being, physical health and risky behaviours**

Responses to the Warwick-Edinburgh Mental Well-being scale revealed significant gender differences. Overall girls had lower scores for Mental well-being than boys. Boys were significantly more positive than girls in their responses and notable gender differences were found for items such as feeling good about themselves, feeling confident and feeling relaxed. For example, 67% of boys reported feeling good about themselves 'often' or 'all the time' compared to only 43% of girls.

The vast majority of students (more than 90%) reported that their health was 'very' or 'fairly' good. Girls were less likely to report being in good health (39% rated their health as very good compared to 54% of boys). Just over one in ten students (13%) reported that they had a longstanding illness, disability or infirmity during the last year.

One in ten students reported smoking daily, with girls more likely to be regular smokers than boys (11 versus 8%).

Cannabis was the most commonly reported drug used by students (around one in five students had used it) but there were few habitual users. Very few students had ever used 'hard' drugs (3%). There were no gender differences in reported drug usage but students with more highly educated parents were more likely to admit they had tried drugs (approximately 14% of students whose parents had no qualifications reported taking any drugs compared to 26% of students whose parents have a degree or higher degree level qualification).

A large majority of students reported that they had drunk alcohol at some point (80%), and approximately one in ten (9%) had been drinking regularly (at least once a week). Boys were more likely to indicate they were regular drinkers than girls.

An EPPSE 'risky' behaviour index was constructed from six behaviours that could put students at risk of poorer educational and health outcomes including anti-social behaviours (truancy, antisocial behaviour, having been in trouble with the police/law) and health risk behaviours (smoking, drinking, substance use). Although many of these behaviours co-occur, the number of risks engaged in ranged from zero (59% of students) to six risky behaviours (under 1%). One in five students (19%) engaged in two or more risky behaviours and one in ten engaged in three or more (11%). The following characteristics predicted higher engagement in 'risky' behaviours, being: a boy, older in the year group (Autumn born), from a single parent or reconstructed family, engaging in high computer use and having lower levels of academic supervision at home. Students for whom English was an Additional Language showed lower levels of multiple risk behaviours than White UK students. Engaging in risky behaviours was associated with poorer self reported health, lower GCSE attainment, poorer social behaviour (as rated by teachers) and less favourable dispositions.

Most students indicated they were more likely to engage in risky behaviours when with their peers but very few felt they would break the law. Girls reported greater resistance to peer pressure than boys.

## Out of school activities

The majority of students said they spent most of their spare time with their peers. Nonetheless, over two thirds still went on regular family outings and a quarter of students spent most of their time with their families.

Technology was used regularly for leisure but there were some gender differences in patterns of use. Boys reported higher levels of computer gaming whereas girls were more likely to use social networking sites. Nearly two thirds of students reported reading for pleasure, but this figure was much lower for boys than girls (approximately half of boys indicated they rarely read for pleasure). Just one in five students had visited a library in the last month.

Nearly half of students did not take part in any regular sporting activities outside of school, with girls less likely to participate than boys (43% of girls compared to 69% of boys had taken part in a sports activity outside of school in the previous month). Disadvantaged students and those with parents with lower qualifications were more likely to take part in sports outside school than students who were more advantaged.

## The influence of student, family and HLE characteristics on dispositions in Year 11

Statistical models were used to establish the influence of different characteristics in accounting for students' dispositions at age 16. Each predictor is tested while controlling for the influence of other individual, family, HLE or neighbourhood background characteristics (so the influence for family SES or parents' qualifications, for example, is reported net of other predictors). The following findings describe the 'net' influences of different characteristics in predicting a range of outcomes.

### *Student background*

Gender predicted *Mental well-being* with boys showing significantly lower scores than boys. Gender also predicted *Disaffected behaviour* and *Resistance to peer influence* but for these two outcomes being a girl predicted better outcomes than being a boy. Both sexes had similar perceptions of their *General Academic self-concepts*. However, when gender differences in GCSE attainment were taken into account, boys reported significantly more favourable beliefs in their general academic ability (despite girls out performing boys in their GCSE results).

Being older for the year group (Autumn rather than Summer born) was a positive predictor of *General academic self-concept*.

Students with poorer health had lower scores for *Mental well-being*, *General academic self-concept*, *School enjoyment* and greater *Disaffected behaviour*.

Being on the SEN register predicted lower scores for *School enjoyment*, and *General academic self-concept* and higher levels of *Disaffected behaviour*. In contrast, students with higher attainment had better *General academic self-concepts*, greater *School enjoyment*, and less *Disaffected behaviour*, taking account of other influences.

### *Family background*

Students whose mothers had worked full time during their pre-school years showed higher *School enjoyment* in Year 11 and those whose fathers were not working during this same period had higher levels of *Disaffected behaviour*. Being a student who was born to a younger mother also predicted lower scores for *General academic self-concept*.

Students from single parent families (measured at entry to pre-school) showed poorer *Mental well-being* than those from married households. Family structure in Year 11 was also found to predict some dispositions. Being a student in a household that contained a step-parent predicted lower *School enjoyment* and higher levels of *Disaffected behaviour*.

Parents' qualification levels (high versus low qualifications) predicted more favourable *General Academic self-concept*, greater *School enjoyment* but lower *Resistance to Peer Influence*.

The experience of family discord, regular quarrelling with parents, and families seldom eating together all predicted poorer *Mental well-being*, whereas having parents who set clear boundaries (e.g. regular times to be in) predicted more favourable *Mental well-being*.

### *Home Learning environment (HLE)*

The experience of a more favourable early years HLE (high versus low group) in the pre-school period was a positive predictor of *General academic self-concept* and *School enjoyment*. Higher levels of parent-child interaction in primary school also predicted lower levels of *Disaffected behaviour* whilst higher levels of parental academic supervision (measured in KS3) predicted better outcomes in KS 4 for *Mental well-being*, increased *School enjoyment* and *General academic self-concept*, increased *Resistance to peer influence* and lower levels of *Disaffected behaviour*. Higher levels of HLE enrichment activities (in KS3) also predicted more favourable outcomes for *School enjoyment* and *General academic self-concept* and lower levels of *Disaffected behaviour*.

### *Neighbourhood*

Neighbourhood influences were relatively weak, and external measures of the levels of disadvantage in the neighbourhood (e.g. IDACI, IMD, crime) did not predict students' dispositions. However, perceptions of safety in the neighbourhood did show a significant association with some outcomes. Students who felt their neighbourhood was unsafe had significantly lower *Mental well-being* and *School enjoyment*. Living in an area that parents had rated as unsafe predicted higher scores for students' reported *Disaffected behaviour* compared with living in an area where parents had rated their neighbourhood as safer

### *Pre-school, primary and secondary school influences*

Pre-school attendance, quality and effectiveness showed little or no continuing association with dispositions at age 16 (in contrast to findings for academic outcomes).

Having attended a more academically effective primary school predicted better *General Academic self-concept* in Year 11 (this is in accord with findings on this measure as a predictor of GCSE attainment)..

Attending a more academically effective secondary school also predicted greater *School enjoyment* and decreased *Disaffected behaviour* and attending one rated better by Ofsted predicted greater *School enjoyment* and better *Mental well-being*.

Educational experiences during secondary school were also significant predictors of students' dispositions, particularly in shaping *School enjoyment*. *School enjoyment* was boosted by attending a secondary school where there were good relationships between teachers and students (*Positive relationships*) and a school rated more highly for *Teacher professional focus*.

There were also significant associations between school experiences and *General academic self-concept*, *Disaffected behaviour* and *Mental well-being*. The most consistent associations for these dispositions

*Positive relationships and Teacher professional focus.* Higher levels of either predicted more positive dispositions.

## **Aims and methodology**

The overall aims of this aspect of the study were to:

- provide a of student life and adolescent behaviours at the end of compulsory education;
- create measures of students' dispositions and Mental well being based on self report questionnaires at age 16;
- explore the influence of student, family, HLE and neighbourhood characteristics as predictors of students' dispositions and Mental well being;
- explore the influence of pre-school, primary and secondary school measures as predictors of students' dispositions and Mental well being;
- investigate the effects of students' relationships and experiences of secondary school as predictors of their dispositions and Mental well being.

## **Methodology**

The findings reported here are taken from an analyses of 1675 students' responses to a questionnaire 'Life in Year 11' (these represent 60% of the tracked sample of 2810 EPPSE members). Interviews and questionnaires completed by parents at earlier time points and Pupil Profiles completed by school personnel provided data for many of the background characteristics and were complemented by measures from administrative datasets. A range of statistical techniques including exploratory and confirmatory factor analysis and multilevel regression were used to create the disposition factors, measures of school experiences and processes and to investigate variation in outcomes across the sample and the strength of the influence (in Effect Sizes: ES) of background characteristics in predicting the different outcomes. It should be noted that an ES of 0.2 is considered small, 0.5 'medium' and 0.8 as 'large' (Cohen 1969).

## **The findings explained**

### **School life, academic self-concept and aspirations**

The majority of students in Year 11 generally liked their secondary school and lessons. Less than one in ten felt out of place and an even smaller proportion thought school was a waste of time (6%). Comparing views in Year 11 with those recorded in Year 9, students were slightly more likely to view school as friendly and less likely to be unhappy at school in Year 11. Behaviour in class was also reported as slightly better in Year 11. Although the majority found lessons interesting a significant minority (over a third) were bored some of the time or in some lessons. This was a reduction from KS3 (36% were bored in Year 11 compared to 41% in Year 9). Students mostly felt very safe in school in Year 11, with only a tiny minority (less than 5%) reporting feeling unsafe in either lessons or during break times.

Students were generally positive about their academic ability and two thirds said they had always done well in school. Only a very small proportion (5%) felt 'hopeless' in school subjects. Most students acknowledged the importance of high attainment with ninety per cent considering it very important to gain five good GCSEs and believing they would attain this. This is a higher proportion than the actual national success

rate. Just over twenty per cent inaccurately predicted that they would get 5 A\*C GCSE grades with a tendency for overestimation.

Over two thirds had similar beliefs about the importance of getting A-levels (72% felt this was very important) and just over half (56%) thought it very important to get degree. These findings reflect the high proportion of students (72%) that expected to go to university (higher for girls: 74% compared to 68% of boys). The results are in line with earlier findings in KS3 that also showed EPPSE students had high aspirations (Sammons et al., 2011a, Baker et al., 2014). Taken together, these findings challenge simplistic assumptions that lack of social mobility is largely a problem caused by the 'low aspirations' of young people (see Baker, 2014).

Nearly sixty per cent of students reported doing at least one hour of homework on an average school day, with girls doing significantly more (21% of girls vs. 12% of boys spending more than two hours on homework on a typical school day). The EPPSE research has shown that, over and above students' own backgrounds (income, SES, parent's qualifications etc.), time students report they spent on homework predicts better attainment and progress in secondary school in both KS3 and KS4 (Sammons et al., 2011b; 2014b; Toth et al., 2012).

### **Mental well-being**

Overall scores on the Warwick-Edinburgh Mental Well-being scale were lower for girls than boys in Year 11 which is consistent with girls showing higher scores for *Anxiety* measured during Year 9. Boys were more positive about most aspects of their *Mental well-being* but particularly large gender differences were found for responses to the items 'feeling good about themselves' most of the time (67% boys compared to only 43% of girls) and feeling relaxed more often (53% compared to 32% of girls).

### **Resistance to peer influence**

Nearly two thirds of students (64%) indicated they would probably take more risks when with their peers but only five per cent would consider breaking the law when with their friends. Girls were more resistant to peer pressure than boys. Overall a third (34%) thought they would tend to go along with their friends to keep them happy.

### **Physical Health**

The vast majority of students (over 90%) thought they were in very or fairly good health although the proportion who thought they were in very good health was much lower for girls (39% girls compared to 54% of boys). Just over one in ten students (13%) reported having a longstanding illness or disability, with around a half of those in this group reporting their condition limited their daily activity (52%) and a substantial minority reporting it also affected their going to school (41%).

### **Out of school activities**

The use of technology for leisure was high (95% regular users) but there were strong gender differences. Boys were significantly more likely to 'game' (58% of boys compared to 29% of girls) whilst girls were more likely to use social network sites. Over two thirds of students reported reading for pleasure (69%), but there was a gender gap (48% of boys reporting rarely reading for pleasure compared with 34% of girls).

Less than twenty per cent (18%) of students had participated in religious activities in the last month whereas eighty per cent has social lives that included partying, the cinema, theatre or concert going. A third of students reported going to a club occasionally whereas nearly one in ten (9%) were frequent 'clubbers' (3 or more times per month).

Nearly half of students had not taken part in any sporting activities outside of school in the previous month (45%) with girls less likely to have participated than boys (57% of girls compared to 31% of boys) did not participate. However, disadvantaged students (FSM) and students with parents with lower qualifications were more likely to have taken part in sport outside of school than other students.

A minority (1 in 5) of students reported infrequent truanting in Year 11, although only one per cent indicated they had truanted for several days at a time. For the minority who had truanted their explanations included because they didn't like particular lessons (40%), particular teachers (26%), were bored (26%), upset over a personal matter (25%) or just didn't like school (23%). Students from more disadvantaged (eligible for FSM) and less qualified families were more likely to have truanted in Year 11 (30% of FSM entitled students compared to 18% of non-FSM students).

### **Peer group and family dynamics**

Two thirds of students indicated they spent most of their spare time with friends (65%) but family time was also important for most students and two thirds took part in family outings and a quarter spent most of their time with their families. Three quarters had a 'best friend', however, a minority of students (12%) spent most of their spare time alone.

### **Risky behaviours in Year 11**

One in ten students reported smoking daily with girls more likely to be regular smokers (11% of girls compared to 8% of boys) and to have ever tried a cigarette (41% compared to 34% of boys). Most students had tried alcohol (80%) with nine per cent drinking alcohol regularly, at least once a week. Boys were more likely to be regular drinkers.

No gender differences were found for drug usage but students with more highly educated parents were more likely to have tried drugs. Approximately 14 per cent of students whose parents had no qualifications reported taking drugs compared to 26 per cent of those whose parents had a degree or higher degree. Approximately one in five students had tried Cannabis (Class B drug) but only three per cent had tried a Class A drugs (Cocaine, Ecstasy or Amphetamines). Very few (less than ten students) reported taking solvents, LSD, Magic mushrooms, Steroids, Crack or Heroin. The most commonly reported drug was Cannabis, but only one per cent reported using Cannabis every day.

Students were asked about several activities considered 'risky' and the responses were combined into a 'risky behaviour index' which included anti-social behaviours (truanting, involvement with police) and health risks (smoking, drinking, substance use). The number of risks ranged from zero (59% of students) to six risky behaviours (<1%). One in five students (19%) engaged in two or more risky behaviours, and one in ten engaged in three or more (11%).

The characteristics that predicted increased engagement in multiple risky behaviours included gender, and being an older student in the year group (Autumn born), White UK heritage. Those with EAL had lower engagement in risky behaviours. Having the following family and home learning characteristics also predicted the likelihood of risky behaviour: being in a single parent/reconstructed family (step parents), having high computer use, and lower levels of parental 'academic supervision'. Engagement in risky behaviours was associated with poorer perceived health, lower GCSE attainment, poorer social behaviour in teacher ratings and less favourable dispositions.

### **The impact of student, family and HLE influences on dispositions in Year 11**

Five disposition outcomes were created using confirmatory factor analyses: *Mental well-being*, *School enjoyment*, *Disaffected behaviour*, *Resistance to peer influence* and *General academic self-concept*. The

findings below show the net influence of student, family and home learning influences in predicting students' dispositions in Year 11.

### *Student background*

Girls showed lower levels of *Mental well-being* (ES=-0.45) but also lower levels of *Disaffected behaviour* (ES=-0.23), and higher *Resistance to peer influence*. (ES=0.34) than boys.

Both boys and girls reported similar levels of *General Academic self-concepts* which may appear surprising given that girls significantly out-performed boys in their overall GCSE results (Sammons 2014b). However, once differences in their GCSE attainment was taken into account, being a boy predicted a more positive *General academic self-concept* (ES=0.20). Similar findings were also noted in KS3 when these students were age 14 (Sammons et al., 2011b). Being old for the year group (Autumn born) also predicted higher scores for *General academic self-concept* (ES=0.17) and links with findings on higher attainment for these older students.

Students from different ethnic groups were compared to the White UK and some differences were found but given the small numbers in some groups the findings should be treated with caution.

- Black African heritage students had more positive *Mental well-being* scores than the White UK group (ES=0.52).
- Pakistani heritage students showed more favourable scores for *School enjoyment* (ES=0.59) higher *General academic self-concept* (ES=0.35) and lower levels of *Disaffected behaviour* (ES=-0.56) than the White UK group.
- Indian heritage students also showed greater *School enjoyment* than White UK students (ES=0.60).
- Being of Mixed race heritage predicted poorer *Mental well-being* (ES=-0.27) and lower *School enjoyment compared to White UK students* (ES=-0.29).

### *Family background*

Students whose mothers had worked full time (during their pre-school years) showed greater *School enjoyment* in Year 11 (ES=0.19) whereas having an unemployed fathers (during pre-school) predicted higher levels of *Disaffected behaviour* (ES=0.21).

Higher parental qualifications predicted higher *General Academic self-concept* (mothers with degrees ES=0.42), greater *School enjoyment* (father's with degrees ES=0.31) and lower *Resistance to Peer Influence* (mother or father with degree ES=-0.20). The children of older mothers had higher *General academic self-concept* (mothers age at start of study: 25-36 years ES=0.19, mother age 36+ years ES=0.20) than students whose mothers were younger (under 25 at the start of the study).

Students from single parent families showed poorer *Mental well-being* compared to those from families where parents were married in the pre-school period (ES=-0.33). Being in a household that contained a step-parent (re-partnered) predicted lower *School enjoyment* (ES=-0.17), lower *General Academic self-concept* (ES=-0.18) and higher levels of *Disaffected behaviour* (ES=0.17).

### *Home Learning environment (HLE)*

Having experienced a more stimulating early years HLE (high versus low group) predicted more favourable *General academic self-concept* and greater *School enjoyment* (ES=0.26) in KS4. More of parent-child

interaction in primary school also predicted lower levels of *Disaffected behaviour* (Medium ES=-0.23, High ES=-0.33 versus the reference group Low).

More parental academic supervision in KS3 predicted better *Mental well-being* (ES=0.43), increased *School enjoyment* (ES=0.59), *General academic self-concept* (ES=0.22) and *Resistance to peer influence* (ES=0.48) and lower levels of *Disaffected behaviour* (ES=-0.47). High levels of enrichment activities in the KS3 HLE also predicted better *School enjoyment* (ES=0.37), *General academic self-concept* (High ES=0.39) and lower *Disaffected behaviour* (ES=-0.40).

### *Neighbourhood*

Students who thought their neighbourhood was unsafe had significantly lower *Mental well-being* (ES=0.60) and lower *School enjoyment* (ES=0.53) than those who felt safe in their neighbourhood. Students whose parents had rated their neighbourhood the lowest in terms of safety had greater levels of *Disaffected behaviour* than those whose parents had rated their neighbourhood most favourably for safety (e.g. Low safety ES=0.17).

### Special Educational Needs (SEN)

Students with a SEN had significantly lower scores for *School enjoyment* (ES=-0.66), lower *General academic self-concept* (ES=-0.68), and higher levels of *Disaffected behaviour* (ES=0.54), after controlling for the effects of the other individual family, HLE and neighbourhood influences.

### **Additional factors associated with reported dispositions in Year 11**

Unlike academic attainment and to a lesser extent the social-behavioural outcomes, the contextualised multilevel analyses of dispositions account for only a small proportion of the variance in students' self-reported dispositions. Additional analyses explored the association between a number of other student variables, once student, family and home learning factors had been accounted of. Many of these patterns of association may reflect reciprocal influences.

### *Health status and Year 11 dispositions*

Students with poorer health had much lower scores *Mental well-being* (ES=-1.37), *General academic self-concept* (ES=-0.54), *School enjoyment* (ES=-0.50) and increased *Disaffected behaviour* (ES=0.34).

### *Peer relationship and family dynamics for Mental well-being*

Information from both parent and student surveys was explored in relation to *Mental well-being*. Family discord (ES=-0.27) and regular quarrelling with parents predicted poorer *Mental well-being* (ES=-0.22). Students who rarely ate an evening meal with their family reported lower levels of *Mental well-being* (ES=-0.13). Students with stricter boundaries (e.g. set times to return home on an evening) had more favourable *Mental well-being* (ES=0.30).

Friendship groups were important for *Mental well-being* with lower *Mental well-being* found for students who spent most of their time alone (ES=-0.27), or who felt they were excluded from friendship groups in Year 9 (ES=-0.32).

## *Associations with attainment*

After controlling for background influences, students with higher attainment tended to have more favourable views of their *General academic self-concept*, greater *School enjoyment*, and less *Disaffected behaviour*. In addition, GCSE attainment predicted better *Mental well-being* and higher *Resistance to peer influence*, although the size of the effect is small ( $ES < 0.20$ ).

## **Educational influences**

### *Pre-school, primary and secondary school*

Subjective well-being measures are known to be less stable over time than other measures such as attainment and behaviour. So it is perhaps not surprising that earlier educational experiences did not appear to be particularly influential in shaping dispositions. This is in contrast to findings for academic and social-behavioural outcomes at the age (Sammons et al 2014b;c). Primary schooling was found to be related to just one disposition outcome. Students who had attended a high academic effectiveness primary school for *English or Maths* were found to have a more favourable *General academic self-concept* than those who had attended a low effectiveness primary school (English  $ES = 0.23$ , Maths  $ES = -0.30$ ). This is likely to reflect the boost attending a more academically effective primary school made to EPPSE students' attainment in KS3 and KS4.

Educational experiences during secondary school were found to be important, particularly in shaping *School enjoyment*. Attending a more academically effective secondary school ( $ES = 0.18$ ) one judged highly by Ofsted predicted greater *School enjoyment* ( $ES = 0.32$ , overall effectiveness,  $ES = 0.41$ , Learner's achievement). Additional and strong predictors of students' *School enjoyment* was their experiences of good relationships between teachers and students (*Positive relationships*) and being in a secondary school with a strong *Teacher professional focus*.

In addition, smaller but still significant associations were found between school experiences and *General academic self-concept*, *Disaffected behaviour* and *Mental well-being*. For example, attending a more academically effective secondary school predicted lower levels of *Disaffected behaviour* ( $ES = -0.14$ ). Attending a secondary school judged highly by Ofsted predicted more favourable scores for *Mental well-being* ( $ES = 0.27$ , Overall effectiveness,  $ES = 0.27$ , Learner's achievement). The most consistent associations between school experiences (self report) and these three dispositions was found between how much students felt they got on with school staff (*Positive relationships*) and their views on the *Teacher professional focus*. Higher levels of either were associated with more positive outcomes.

## **Conclusions**

It can be seen that individual student, family, HLE and neighbourhood influences were generally fairly weak predictors of EPPSE students' dispositions, Mental well being, perceptions of their own health and involvement in risky behaviours. Nonetheless, some student groups show significantly better or poorer outcomes. For example, gender differences were noticeable in many of the student outcomes investigated (e.g. dispositions, Mental well-being and risky behaviours, health) at age 16. Although girls and boys reported similar levels of *School enjoyment*, girls had significantly poorer *Mental well-being*. Girls also reported being in poorer health than boys, were more likely to smoke and were much less likely to take part in physical activity outside school. When account was taken of their attainment levels, girls had less positive estimations of their own academic ability than boys. In contrast, girls were less likely to report that they engaged in poor behaviour (*Disaffected behaviour*, multiple risky behaviours) and showed greater *Resistance to peer influence*. This is in line with teachers' ratings of EPPSE students' social behaviour at

age 16 where girls, as a group, were consistently rated more favourably on all measures (Sammons et al., 2014c). Girls were more likely to spend time on homework than boys and to plan to go to university. Elsewhere we show that over and beyond students' own background and family characteristics or those of their schools, spending time on homework in both Year 9 and Year 11 was a strong predictor of better GCSE results and academic progress in secondary school. Part of the gender gap in GCSE results is explained by extra time on study. (Sammons et al, 2014c)

Educational capital, in terms of parental qualifications and the opportunities for learning at home as measured by the early years HLE and the KS3 enrichment measure, has been shown to strongly influence academic attainment and shape EPPSE students' social-behavioural outcomes at age 16 (Sammons et al 2014b; c). The present analyses provide evidence that early home learning experiences and parental qualification levels also show a lasting influence on students' perceptions of their *General Academic self-concept* and *School enjoyment* in Year 11. In addition, parental academic supervision and engagement in enrichment activities in KS3 had a strong positive impact on all five dispositions and lowered the likelihood of students engaging in multiple risky behaviours.

One powerful message from the findings presented here is that students are strongly engaged in their education, have high educational aspirations and place a great value on gaining academic qualifications. Nearly three quarters expected to attend university. These high aspirations and hopes for the future are not necessarily in line with students' GCSE results as we report elsewhere (see Sammons et al, 2014 b). There is a significant gap between aspirations and academic outcomes for some groups. These EPPSE research findings challenge somewhat simplistic assumptions that attribute the equity gap in achievement and problems of social mobility on 'low aspirations' of young people (for further discussion of this issue see Baker, 2014).

The findings also reveal that many features of students' secondary school experiences also predict better disposition outcomes at age 16, particularly in shaping *School enjoyment*. Attending a more academically effective secondary school (measured by the DfE's CVA indicator) or one judged highly in terms of quality by Ofsted inspectors predicted better outcomes for especially for School enjoyment. In addition, other features of their secondary school experiences also predicted students' dispositions. Taken together the findings indicate that the secondary school's socio-emotional climate in terms of good relationships between teachers and students (*Positive relationships*) and attending a secondary school rated more favourably in terms of *Teacher professional focus* are important factors in shaping positive dispositions in KS4.

**Table 1: Summary of background influences on dispositions in Year 11 age 16**

Factors	Mental well-being	School enjoyment	Disaffected behaviour	Resistance to peer influence	General academic self-concept
<b>Student Factors</b>					
<b>Gender (boys)</b>	-0.45	Ns	-0.23	0.34	Ns
<b>Age (within the years group)</b>	ns	Ns	ns	ns	0.17
<b>Ethnicity (White UK heritage)</b>					
White European heritage	ns	Ns	ns	ns	Ns
Black Caribbean heritage	ns	ns	ns	0.44	Ns
Black African heritage	0.52	ns	ns	ns	Ns
Any other ethnic minority	ns	ns	ns	ns	Ns
Indian heritage	ns	0.60	ns	ns	Ns
Pakistani heritage	ns	0.59	-0.56	ns	0.35
Bangladeshi heritage	ns	ns	ns	ns	ns
Mixed race	-0.27	-0.29	ns	ns	ns
<b>Family factors</b>					
<b>Parent's Highest SES at age3/5 (professional non-manual)</b>					
Other Professional, Non-Manual	ns	ns	ns	ns	ns
Skilled; Manual or Non-manual	ns	ns	ns	ns	-0.17
Semi-skilled	ns	ns	ns	ns	ns
Unskilled	ns	ns	ns	ns	-0.41
Not working/never worked	ns	ns	ns	ns	ns
<b>Mother's employment in the early years (not working)</b>					
Working full-time	ns	0.19	ns	ns	ns
Working part-time	ns	ns	ns	ns	ns
<b>Father's employment in the early years (working full-time)</b>					
Working part-time	ns	ns	ns	ns	ns
Not working	ns	ns	0.21	ns	ns
Father absent	ns	ns	ns	ns	ns
<b>Mother's age (Grouped) (16-25)</b>					
26-35 years old	ns	ns	ns	ns	0.19
36+ years old	ns	ns	ns	ns	0.20
<b>Mother's /Father's/Parent's Highest Qualification Level (no qualifications)<sup>1</sup></b>					
Other Professional/Misc.	ns	ns	ns	ns	ns
Vocational	ns	0.27	ns	ns	ns
16 academic	ns	0.28	ns	ns	ns
18 academic	ns	0.22	ns	ns	ns
Degree or equivalent	ns	0.31	ns	-0.20	0.42
Higher degree	ns	0.33	ns	-0.30	0.44
<b>Family structure in Year 11 (living with both natural parents)</b>					
Living in reconstituted family	ns	-0.17	0.17	ns	-0.18
Living with single parent	ns	ns	ns	ns	ns
Other arrangement	ns	ns	0.57	ns	ns
<b>Marital Status of Parent/Guardian/Carer (married)</b>					
Single	-0.33	ns	ns	ns	ns
Separated/Divorced	ns	ns	ns	ns	ns
Living with partner	ns	ns	ns	ns	ns
Widow/Widower	ns	ns	ns	ns	ns
Free School Meals (No)	ns	ns	ns	ns	ns
<b>Home Learning Environment</b>					
<b>Early Years Home Learning Environment Index (Grouped) (Very low)</b>					
Low (Index values: 14-19)	ns	ns	Ns	ns	ns
Average (Index values: 20-24)	ns	ns	Ns	ns	ns
High (Index values: 25-32)	ns	ns	Ns	ns	ns

<sup>1</sup> Father's highest qualification level predicted School enjoyment; Mother's highest qualification level predicted General academic self-concept; and highest qualification of either parent predicted Resistance to peer influence.

Very high (Index values: 33-45)	ns	0.26	Ns	ns	0.26
<b>KS2 Parent-child interaction (grouped) (low)</b>					
Medium	ns	ns	-0.23	ns	ns
High	ns	ns	-0.33	ns	ns
<b>KS3 Academic supervision (Grouped) (Low)</b>					
Medium	ns	0.23	-0.15	0.33	ns
High	0.43	0.59	-0.47	0.48	0.22
<b>KS3 Academic enrichment (Grouped) (Low)</b>					
Medium	ns	0.18	-0.17	ns	0.16
High	ns	0.37	-0.40	ns	0.39

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

## References

Baker, W., Sammons, P., Blatchford, I., Sylva, K., Melhuish, T and Taggart, B. (2014). Aspirations, education and inequality in England: Insights from the Effective Provision of Pre-school, Primary and Secondary Education Project, *Oxford Review of Education*. Vol. 40 (2).

Cohen, J (1969) *Statistical Power Analysis for the Behavioral Sciences*. NY: Academic Press.

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Smees, R. and Toth, K. (2014a) The Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+) *Influences on students' dispositions and well-being in Key Stage 4 at age 16*. Institute of Education, University of London / Department for Education <http://www.ioe.ac.uk/research/153.html>

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Toth, K. and Smees R., (2014b) The Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+) *Influences on students' GCSE attainment and progress at age 16*. Department for Education RR 352.

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Smees, R. and Toth, K. (2014c) The Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+) *Influences on students' social-behavioural development at age 16*. Department for Education RR 351.

Sammons, P., Sylva, K., Melhuish, E., Siraj, I., Taggart, B., Smees, R. and Toth, K. (2014d) The Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+) *Students' views of school in Key Stage 4 at age 16*. Institute of Education, University of London / Department for Education <http://www.ioe.ac.uk/research/153.html>

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 Institute of Education, University of London / Department for Education <http://www.ioe.ac.uk/research/153.html>

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Toth, K., Draghici D., and Smees. R. (2011b) The 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*. Institute of Education, University of London / Department for Education <http://www.ioe.ac.uk/research/153.html>

Sylva, K., Melhuish, E., Sammons, P., Siraj, I. and Taggart, B. (2014) The Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+) *Students' educational outcomes at age 16*. Department for Education. RR 354

Taggart, B., Sammons, P., Siraj, I., Sylva, K., Melhuish, E., Toth, K. Smees, R. and Hollingworth. K. (2014) The Effective Pre-school, Primary and Secondary Education Project (EPPSE 3-16+) *Report on post 16 destinations*. Institute of Education, University of London / Department for Education <http://www.ioe.ac.uk/research/153.html>

Toth, K., Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., and Taggart. B. (2012). Homework and academic attainment and progress in secondary school. Conference Paper presented at EARLI 29-31 August 2012 Zurich Switzerland