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School–family relationships, school satisfaction and the academic achievement of young people

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ABSTRACT

Families' perceptions of, and interactions with, schools and teachers can play an essential role in young people's educational outcomes. According to Bronfenbrenner's ecological systems theory, young people grow within multiple nested systems of influence interacting with each other. Thus, their development is affected by persons, processes, and institutions at all levels, from their family, to the school they attend, to society. This study examined the role of school–family relationships, parents' school satisfaction, and their associations with educational achievement. Drawing upon data from over 10,000 students from the Longitudinal Study of Young People in England, the results of the multivariate analysis indicated that while positive school–family relationships are a predictor of achievement, this association is mediated by the degree of parents' satisfaction with their child's school. We concluded that the combination of strong school–family relationships and high levels of school satisfaction provides a boost for young people's academic success. Therefore, school policies and practices that enhance relationships with families and improve levels of parent satisfaction can result in rewards for all young people including those from poor backgrounds.

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School–family relationships; school satisfaction; achievement; parental involvement; young people

Introduction

While many families have always been actively involved in their children's schooling, national policy on school–family relationships is relatively recent. The 1997 White Paper, "Excellence in Schools," outlined the then Labour government's strategy for encouraging school–parent partnerships (Department for Education and Employment 1997). This was followed by a 2005 White Paper titled "Higher Standards, Better Schools for All – More choice for parents" (Department for Education and Skills 2007b). Throughout this period and until today, there has been significant focus and investment at both national and local levels in the implementation of programmes aimed at increasing parent involvement (Department for Children, Schools and Families 2008; Department for Education and Skills 2007a; Desforges and Abouchaar 2003). While research has indicated that overall levels of parental involvement in England have increased between 2001 and 2007 (see Peters et al. 2008), there is relatively

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little large-scale research in the United Kingdom (UK) that examines the impact parent involvement has had on young people's educational outcomes. As Desforges and Abouchaar (2003) pointed out in their report for the Department for Education and Skills, "most of the large-scale and technically sound studies on the impact of parental involvement on pupil achievement and adjustment have been conducted in the USA" (p. 18). Furthermore, a considerable amount of the research on parental involvement and its influences on educational outcomes focuses on the early years (for an English longitudinal study see Sylva et al. [1999]) with less research conducted on adolescence and youths (e.g. Hartas 2012). Lastly, to the best of our knowledge, no research in England has framed research on parental involvement in terms of school–family relationships and parents' levels of school satisfaction.

In order to contribute to and fill gaps in this body of research, we examined the influence of school–family relationships and parents' school satisfaction on young people's educational achievement. Guided by an ecological theoretical perspective (Bronfenbrenner 1979), we considered, as others have done (see for example Crosnoe 2009; Epstein 2010; Sonnenschein and Galindo 2014), the intersections between schools and families in fostering the academic well-being of young people in England. We also used school climate literature to highlight the complexities of school–family relationships and parents' school satisfaction. Specifically, we addressed the following research questions: (1) What is the association between school–family relationships and children's academic achievement? (2) To what extent does parents' school satisfaction mediate the association between school–family relationships and children's academic achievement?

To describe school–family relationships, we were particularly interested in examining parents' reports of the quality of school communications and their interactions with their child's school. We conceptualized school satisfaction as a broad measure that includes parents' levels of satisfaction with subject choice, discipline, peer relationships, teacher–student relationships, and their child's overall progress in school. Our research aimed to inform educational policy and practice about the potential benefits of school efforts to facilitate positive relationships with families and therefore improve young people's opportunities for upward mobility through academic success.

School–family relationships as a component of school climate

School climate, for example the physical, academic and social atmosphere that schools foster, has important influences on students, teachers, and families and has been observed by researchers for decades (Cohen et al. 2009; Epstein et al. 1997; Epstein 1991). Studies have shown that school climate is related to all aspects of school life including leadership style, sense of community, expectations for students, an ethos of caring, and a variety of students' outcomes (Goddard, Sweetland, and Hoy 2000; Gottfredson et al. 2005; National Research Council 2003; Sweetland and Hoy 2000).

According to Cohen et al. (2009) there are four salient aspects of school life that shape school climate: safety, teaching and learning, relationships, and physical environment (see also Emmons, Comer, and Haynes 1996; Sweetland and Hoy 2000). The first dimension, safety, refers to the degree to which schools provide physical safety and social-emotional support for students. The second dimension, teaching and learning, refers to quality of instruction, school leadership, and provision of professional development for teachers. The relationship dimension includes schools' respect for diversity, collaboration with family and community

partners, and ability to connect young people to adults and other possible mentors. Finally, the environmental dimension of school climate relates to a school's provision of clean and adequate physical space and having adequate supplies needed for instruction and learning.

Much of the research on school climate has focused on the school safety or teaching and learning dimensions. It is well demonstrated, for example, that schools in which students experience bullying or physical violence have poorly performing students (Card and Hodges 2008; Leventhal and Brooks-Gunn 2004). Similarly, schools characterized by high expectations, academic rigor, professional support for teachers, and strong school leadership tend to have higher performing students (Battistich et al. 1995; Koth, Bradshaw, and Leaf 2008).

Much related work has been conducted on schools' efforts to involve and engage parents and families (Abd-El-Fattah 2006; Barnard 2004; Goodall and Montgomery 2014; Goodall and Vorhaus 2011; Hampden-Thompson, Guzman, and Lippman 2013; Hango 2007; Harris and Goodall 2008; Jeynes 2007; Spera 2005) and these efforts' association with various educational outcomes (Epstein 1991, 2010; Keith 1991; McNeal 2012; Muller 1995). For example, research on United States (US) schools have shown that a more positive overall school climate existed in schools that were more welcoming to parents and community partners (Desimone, Finn-Stevenson, and Henrich 2000; Haynes, Comer, and Hamilton-Lee 1989).

For the most part, good school–family relationships result in positive outcomes for young people. Some studies have also shown positive effects of what Epstein and Sheldon (2006) refer to as "School, Family and Community Partnerships" on students' achievement. For example, Galindo and Sheldon (2012) established that schools' efforts to engage families was associated with higher levels of student achievement in reading and mathematics at the end of kindergarten. These school–family relationships (or, partnerships) have also influenced other student outcomes such as attendance and behaviour problems (Epstein and Sheldon 2002; Sheldon 2007).

Most of the research on school–family partnerships has focused on primary grades (see Sheldon 2003; Sheldon, Epstein, and Galindo 2010). Far less research has been conducted at the secondary school level. Prior research has indicated that the nature of school–family relationships appears to have changed between primary and secondary school levels, as parental involvement tends to be more formal (e.g. parent evenings) and less frequent in later school years (Catsambis 2002; Crozier and Davies 2007). Coupled with this, little research has investigated if positive school–family relationships are associated with parents' satisfaction with their child's schooling. This association is an important component that deserves greater attention.

School satisfaction

Parents' satisfaction with their children's schooling is an area that has received some research attention in the UK and US (Friedman, Bobrowski, and Geraci 2006; Friedman, Bobrowski, and Markow 2007; Gibbons and Silva 2009; Griffith 1997, 2000; Hausman and Goldring 2000; Ofsted 2005). In a report published by Ofsted (2005) utilizing parents' data collected from nearly 7000 inspections as part of the inspection framework in the UK, they found that overall parents were "very satisfied" with their child's school.

Research by Gibbons and Silva (2009) used the Longitudinal Study of Young People in England (LSYPE) data to examine the extent to which parent satisfaction, measured by

parents' judgement of the quality of their child's school, and young peoples' happiness and satisfaction with their learning environment, influenced overall academic performance as measured by Key Stage 2 and 3 scores. Unsurprisingly, the link between young peoples' happiness and satisfaction was unrelated to their average test results after controlling for background characteristics such as ethnicity, gender, and whether or not the child received free meals at school. However, the case for parent satisfaction was different. There was a positive association between parents' satisfaction and schools that posted higher test scores. This was found to be the case irrespective of their child's individual performance. Put differently, an association was found between school achievement and levels of satisfaction rather than individual achievement and satisfaction. The researchers suggested three possible explanations. First, they thought parents may recognize that going to a good school may not necessarily result in unrealistic gains for their own child. Second, that parents may be satisfied simply because their child attends a good school. Lastly, they argued, parents may believe that their child will eventually benefit academically from being in a good school.

Parents' levels of satisfaction with their children's school was influenced by different factors; with poverty and education being very important. As part of their analysis, Gibbons and Silva (2009) found that parents' education and their satisfaction with schools were highly and negatively correlated; as parents' educational levels increased, satisfaction with their child's school decreased. The researchers suggested that this may be because parents with higher levels of education have greater expectations for their child's school. Similar findings were observed in a study in the US where the researchers discovered that parents' satisfaction with school quality was higher among low-income parents (Falbo et al. 2003). Other research by Ofsted (2005), has shown a non-linear relationship between parent satisfaction and school-level poverty (measured by the percentage of young people on free schools meals). The association between these variables can be characterized as U-shaped; satisfaction is higher for schools with low numbers (up to 5%) of young people on free schools meals and also for schools with high numbers (more than 50%), but satisfaction is lower for schools with moderate numbers of young people on free school meals.

Besides parents' education and poverty, research conducted in the US by Friedman and colleagues (Friedman, Bobrowski, and Geraci 2006; Friedman, Bobrowski, and Markow 2007) reported there were three salient factors that predicted parent satisfaction with their child's school. Using data collected between 2002 and 2004 from over 30,000 parents and the Harris Interactive School Poll, they established that the salient factors were (1) school and teacher communication and involvement with parents, (2) school resources, including buildings, library, and textbooks, and (3) school leadership. To measure school–teacher communication, parents were asked about how well informed they were about school activities (e.g. parent evenings) or about their child's performance and progress. To measure the school's role in encouraging involvement, parents were asked to report the extent to which their child's school facilitated their involvement in their child's education and decision-making concerning their child's schooling. Thus, parents' satisfaction is related to their backgrounds and their own expectations about schools, as well as the interactions that they have with schools and teachers.

Conceptual model and research questions

According to the early writings of Bronfenbrenner (1979) with regard ecological systems theory, young people learn and grow in the context of multiple nested systems

(i.e. microsystem, mesosystem, exosystem, and macrosystem), interacting with each other. A young person's development is affected by persons and experiences at different levels of the system, from the family (microsystem) to the school they attend (microsystem), relations between family and school (mesosystem), and culturally-situated norms and practices (macrosystem). Not only does each context uniquely influence young people's development, but the nature and quality of interactions between parents, teachers, and schools also have consequences for a variety of outcomes. It is within this theoretical context that we argue that parents' satisfaction and interactions with schools and teachers play an essential role in the educational outcomes and experiences of young people.[1] We hypothesized that there is a positive association between school–family relations and young people's achievement. As other research has shown, the stronger the relationship between these two institutions, the better the achievement outcomes of young people (see for example, Epstein and Sheldon 2002; Sheldon 2007). Nevertheless, we also hypothesize that the association between school–family relationships and young people's achievement is partially mediated by parents' satisfaction with their child's school. We argue that school–family partnerships have a direct influence on young people's educational outcomes, and also an indirect one through their influence of parents' satisfaction. Furthermore, we suggest that parents' satisfaction is a key mechanism through which school–family relations impact achievement.

To reiterate, two main research questions guide this study. First, what is the nature of the association between school–family relationship and academic achievement? Second, to what extent does parents' school satisfaction mediate the association between school–family relationships and academic achievement?

Data and methods

This study draws upon data from the LSYPE. Commissioned by the former Department of Education and Skills (DfES), LSYPE measures the factors that affect young peoples' transition through secondary schooling, further education, higher education or entry into the labour market. Started in 2004, the first wave of data was collected when the students were ages 13 and 14. In total, seven waves of data have been collected on an annual basis from a nationally representative cohort of 15,770 students.[2] As an illustration, if a young person had remained in education through the seven waves of data collection, s/he would have been in their second year of university by wave seven (19 or 20 years of age). A further wave of data was collected in 2015 when most of the cohort was 25 years of age. For the first four years (waves one to four), both the young people and their parents were interviewed face-to-face at their home. The interviews largely took place from April to October so some young people were interviewed towards the end of one academic year while others were interviewed at the beginning of the next academic year. We restricted our analysis to those young people who participated in wave one and wave four, which resulted in an analytical sample of 10,572 participants.

Academic achievement was the dependent variable for the main analysis and was measured by General Certificate of Secondary Education (GCSE) point score (ptscnewe) at wave four from the National Pupil Database (NPD) reduced file.[3] The GCSE point score is a continuous variable constructed by taking the number and grade of the GCSE attained by each young person and converting these into a points system. The new style points system that came into place in 2003/2004 assigns 58 points for an A*, 52 points for an A, 46 points for a

Table 1. Summary statistics for all variables.

Variable	Mean	SD
Dependent variable		
GCSE point score	294.75	107.527
Main variables of interest		
School–family relationships	2.37	0.676
School satisfaction	2.39	0.473
Control variables		
Prior achievement (Key Stage 2 combined score)	27.07	4.063
Parents' education		
Degree or equivalent	0.16	0.366
Higher education below degree level	0.15	0.351
GCE A level or equivalent	0.17	0.370
GCSE grade A–C or equivalent	0.27	0.435
Qualifications at Level 1 and below	0.07	0.245
Other qualifications	0.01	0.108
No qualification	0.14	0.338
Household income	29,397	33,244
Sex		
Male	0.49	0.494
Female	0.49	0.494
Ethnicity		
White	0.86	0.343
Mixed	0.03	0.160
Indian	0.02	0.152
Pakistani	0.02	0.148
Bangladeshi	0.01	0.098
Black Caribbean	0.01	0.115
Black African	0.02	0.135
Other	0.02	0.145
Family structure		
Two-parent family	0.66	0.469
Non two-parent family	0.34	0.469
Special educational need		
Yes	0.22	0.412
No	0.22	0.412
Language spoken at home		
English only	0.93	0.249
Other language	0.03	0.164
Bilingual	0.01	0.106

Note: Analytical sample was 10,572. Means may not sum to 100 due to rounding.

B, etc. The number of GCSEs is capped at eight so the young person's best eight GCSE grades are selected. Therefore, a point score of 464 is assigned to a young person who achieved at least eight GCSEs all at A* grades. As Table 1 indicates, the average point score for the analytic sample of 10,572 participants was 295 points with a standard deviation (SD) of 108.

There were two main variables of interest gathered at wave one: school–family relationships and parents' school satisfaction. The school–family relationships variable consisted of the mean scale response across three items: (1) school gives parent clear information on how young person is getting on at school, (2) school makes it easy for parent to be involved, and (3) parent finds it easy to deal with staff at young person's school (0 = strongly disagree to 3 = strongly agree, four point scale) (mean = 2.37, SD = 0.676, Cronbach's alpha = 0.786). School satisfaction consisted of the mean of five items: Parent satisfaction with (1) the young person's school progress in general, (2) the subjects the young person has on offer at school, (3) how much interest the teachers show in the young person, (4) discipline at the young person's school, and (5) how well the young person gets on with the other students at school (0 = very dissatisfied to 3 = very satisfied, four point scale) (mean = 2.39, SD = 0.47, Cronbach's

Table 2. Percentage distribution for the individual measures for school–family relationships and parent satisfaction.

	Disagree strongly	Disagree a little	Agree a little	Agree strongly
School–family relationships				
Easy to deal with people at young person's school	3.0	6.8	30.1	60.1
School gives me clear information on how young person is getting on	4.5	10.0	26.7	58.8
School makes it easy for me to get involved in young person's education	6.0	15.0	36.4	42.6
	Very dissatisfied	Fairly dissatisfied	Fairly satisfied	Very satisfied
School satisfaction				
Level of satisfaction with:				
Young person's progress	2.4	7.0	44.5	46.1
Subjects offered	1.2	4.5	43.5	50.9
How much interest the teachers show in young person	2.6	8.8	46.6	42.0
Discipline at school	6.3	11.8	39.7	42.2
How well young person gets on with the other young people	1.4	3.3	29.9	65.5

alpha = 0.71). For the multivariate analyses, both of these variables were centred on their means (Table 3).

In addition to school–family relationships and school satisfaction variables, the multivariate analyses included a number of control covariates collected at wave one. To minimize the risk of confounding effects when estimating the association between school–family relationships and school satisfaction with academic achievement, we included individual and family factors as control variables (e.g. socio-economic status [SES]). These variables are commonly used when studying the educational achievement of young people (for an example using a similar data-set see Crosnoe and Huston [2007]) and have been well established since the early work of Coleman et al. (1966) and Plowden (1967). We included a cognitive control in the form of the young person's prior achievement (Key Stage 2 combined mathematics, science, and English scores) and seven non-cognitive controls (parents' education, household income, language that is spoken in the home, and the young person's sex, ethnicity, family structure, and special educational needs status). The mean and SD values for all variables used in the analysis can be found in Table 1. All variables with the exception of academic achievement (measured by the wave four GCSE point score) are from wave one of LSYPE and only those young people who have data for both wave one and wave four are included in this analysis. Therefore, we examined the lagged effect of school–family relationships and school satisfaction when the young people were 13 to 14 years of age on young people's academic achievement as measured by GCSEs performance at age 16.

We included a measure of prior achievement in these models to control as rigorously as possible for the potential bias influence of unobservable variables. Controlling for prior achievement is important to neutralize the possibility that perceptions of school satisfaction and climate could be a reaction to young people's academic skills. By including previous achievement, we are also able to examine change in achievement (between wave one and wave four).

The household income variable is part of the LSYPE wave one data file and was constructed from the W1inc1estMP and W1inc2estMP variables from the wave one family background file. Household income is comprised of parent-reported data about the total gross

yearly income from work, benefits and any other sources of income for the main parent and their partner. The data in wave one were collected from the main parent/care-provider using a two-part show card question. They were asked to estimate their total gross yearly income. The first card showed amounts from zero through to over £36,400. If the top category was chosen then the parent was shown a second card with income bands up to £400,000 (see LSYPE User Guide, Department for Education 2011).

We employed a two-stage strategy for preparing the income data for analyses. First, because income data in the file are in detailed bands (e.g. £13,520 less than £14,560, £14,560 less than £15,600, £15,600 less than £16,640), we recoded the income into a continuous variable and second, we imputed missing data. Given that income span of each band was narrow, we recoded the data into a continuous variable by choosing the midpoint for each income bracket. For example, for the £13,520 to less than £14,560 income bracket an income of £14,040 was assigned. Following Piesse and Kalton (2009), we implemented a model-based strategy of multiple imputation to compensate for missing household income data. Of the 10,572 cases used in our analyses, just under 20% had imputed income data.

The analysis plan consisted of a two-step process. First, we conducted descriptive analysis in which we calculated the mean and SD values for all variables analysed (see Table 1). Bivariate analyses using the overall means for our main variables of interest (i.e. school–family relationships and school satisfaction) were examined taking into account the variation by academic achievement as measured by GCSE point score (see Figure 1). Second, we specified a series of ordinary least squares (OLS) regression models in order to determine the association between school–family relationships, school satisfaction and the academic achievement of young people, and the extent to which school satisfaction mediates the relationship between school–family relationships and academic achievement (see Table 3, models 1–6). We used the Karlson/Holm/Breen (KHB)-method based on the Sobel test (Sobel 1982) to formally test the mediation. This approach allows for the comparison of different models that include different variables, error distributions, and variance of dependent variables.

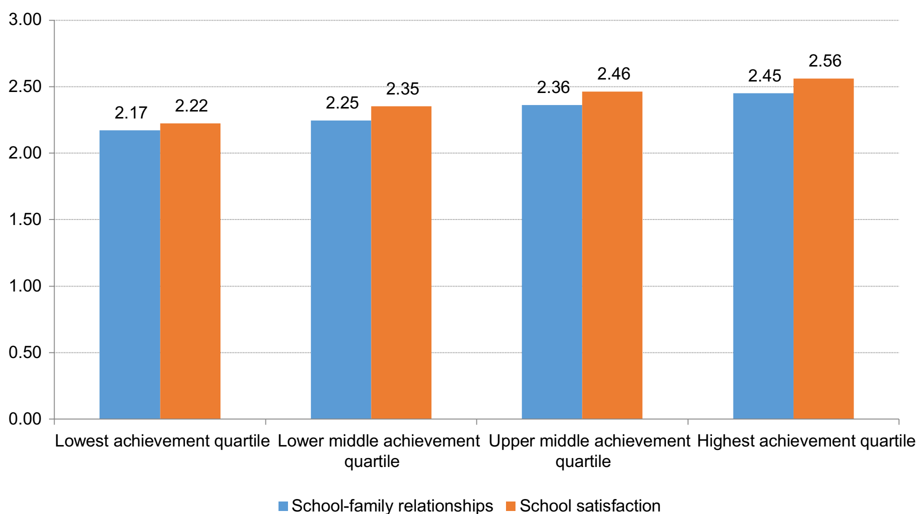

Figure 1. Mean levels of school–family relationships and school satisfaction by young person GCSE achievement quartiles.

Table 3. OLS regression coefficients for GCSE achievement.

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variables	*β*	SE	*β*	SE	*β*	SE	*β*	SE	*β*	SE	β	SE
Control variables												
Prior achievement (Key Stage 2 combined score) (ref: highest quartile)												
Lowest quartile	−188.58	3.604**	−142.79	3.338**	−142.03	3.378**	−143.19	3.447**	−153.10	3.260**	−150.50	3.355**
Lower middle quartile	−104.69	2.623**	−77.73	2.426**	−77.24	2.477**	−78.74	2.586**	−84.15	2.473**	−81.74	2.463**
Upper middle quartile	−57.82	2.425**	−46.28	2.141**	−46.08	2.136**	−47.73	2.400**	−49.75	2.218**	−48.80	2.212**
Parents' education (ref: Degree or equivalent)												
Higher education below degree level			−12.70	2.618**	−12.60	2.668**	−12.81	2.687**	−10.54	2.687**	−10.04	2.708**
GCE A level or equivalent			−22.28	2.732**	−22.26	2.797**	−22.40	2.806**	−21.19	2.858**	−20.61	2.906**
GCSE grade A–C or equivalent			−31.33	2.734**	−31.70	2.767**	−31.81	2.765**	−31.63	2.862**	−31.48	2.880**
Qualifications at Level 1 and below			−47.93	4.717**	−46.11	4.504**	−46.29	4.495**	−46.10	4.763**	−44.54	4.641**
Other qualifications			−42.26	7.260**	−42.06	7.410**	−42.54	7.541**	−39.92	7.107**	−39.14	7.171**
No qualifications			−60.10	4.099**	−59.14	4.235**	−59.26	4.248**	−58.28	4.002**	−56.55	4.188**
Household income			0.0002	0.00003**	0.0002	0.00003**	0.0002	0.00003**	0.0002	0.00003**	0.0002	0.00003**
Sex (ref: male)												
Female			18.40	1.978**	18.46	1.985**	18.44	1.981**	19.38	2.041**	19.38	2.035**
Ethnicity (ref: white)												
Mixed			8.80	5.524	7.50	5.662	7.79	5.639	7.35	5.677	8.38	5.541*
Indian			33.32	3.796**	32.49	3.828**	32.58	3.838**	32.91	3.676**	30.84	3.783**
Pakistani			20.07	4.722**	19.12	4.819**	19.17	4.842**	20.89	4.775**	18.31	4.863**
Bangladeshi			21.21	8.158**	18.14	8.648*	18.20	8.689*	24.37	7.331**	22.10	7.850**
Black Caribbean			7.35	5.497	7.05	5.558	7.04	5.572	5.82	6.129	3.65	5.983
Black African			24.87	7.073**	23.19	7.170**	23.32	7.178**	30.27	6.823**	24.69	6.800**
Other			34.30	7.940**	31.86	8.314**	32.36	8.287**	36.15	7.633**	33.66	8.148**
Two-parent family (ref: non two-parent family)			22.33	2.241**	22.24	2.304**	22.28	2.301**	24.99	2.213**	23.67	2.265**
Special educational need (SEN) (ref: non SEN)			−30.20	3.596**	−29.61	3.625**	−29.52	3.680**	−33.54	3.501**	−32.91	3.611**
Language spoken at home (ref: English only)												
Other language			−0.12	6.253	4.72	6.012	4.28	6.011	7.67	5.893	12.23	5.784**
Bilingual			27.35	7.402**	30.01	7.621**	29.44	7.628**	30.02	7.127**	31.28	7.310**

(*Continued*)

Table 3. (*Continued*).

Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
Main variables of interest												
School–family relationships (centred)					−3.62	1.921	0.50	2.732			15.14	1.636**
School satisfaction (centred)			39.32	2.735**	43.25	3.358**	31.23	4.361**				
Interactions (ref: highest prior achievement quartile)												
School–family relationships (centred)												
Lowest quartile*school–family relationships							−3.91	4.511				
Lower middle quartile*school–family relationships							−5.73	4.013				
Upper middle quartile*school–family relationships							−6.40	5.285				
School satisfaction (centred)												
Lowest quartile*school satisfaction							13.61	7.183				
Lower middle quartile*school satisfaction							11.50	6.525				
Upper middle quartile*school satisfaction							20.56	8.351**				
Constant	388.57	1.740**	368.57	3.538**	367.53	3.502**	368.98	3.585**	370.04	3.518**	369.05	3.500**
R^2	0.431		0.547		0.547		0.548		0.518		0.526	
N	10,572		10,572		10,572		10,572		10,572		10,572	

$^{*}p < 0.05$; $^{**}p < 0.01$.

As an add-on to our analytical strategy, we specified interaction terms to explore whether school–family relationships and academic achievement are moderated by levels of prior achievement (see model 6 in Table 3). Although prior achievement is considered an important control for isolating the influence of our key variables on young people's achievement, we hypothesized that this variable could also interact with school and family relations and parents' satisfaction and therefore modify their potential influence on current achievement. Prior research has indicated that parents' levels of involvement in school may vary as a function of their child's educational achievement (Horn and West 1992; Huh et al. 2006; McNeal 1999; Muller 1995). For example, the "reactive hypotheses" argue that parents increase their levels of involvement if their child is performing poorly at school. However, research by Huh et al. (2006) discovered that in some circumstances, parents essentially give up and "checked out" if their child is doing poorly. This additional analysis was not part of our original strategy but given these conflicting findings, it was deemed important to examine differences by prior achievement and include interactions in our multivariate analyses (Cohen and Cohen 1983). In addition, the availability of high quality prior achievement data in LSYPE made this exploratory analysis possible.

All statistical analyses were weighted using the W4Weight_MAIN weight, which is recommended for waves one to four longitudinal analyses (Department for Education 2011). While the independent variables were measured at wave one, the dependent variable (GCSE point score) was measured at wave four. Analyses were conducted with SAS 9.3 SURVEYMEANS and SURVEYREG procedures in order to account for design effects. Comparisons made in the text were tested for statistical significance to ensure that the differences are larger than might be expected due to sampling variation. The statistical significance of the differences between estimates is at the 0.05 level as measured by two-tailed Student's *t*-tests. It should be noted that unstandardized coefficients are reported in Table 3.

Results

The means for school–family relationships and school satisfaction by GCSE achievement can be viewed in Figure 1. For both school–family relationships and school satisfaction, there were differences by GCSE achievement. Parents' reports of school–family relationships were less favourable and school satisfaction was lower for children in the lower achievement quartiles when compared with children who had higher levels of achievement. Statistically significant differences were observed for all achievement quartiles in both variables when conducting paired contrasts. While differences appear to exist, it should be noted that overall parents were positive about their relationships with their child's school and also reported high levels of satisfaction (see Table 2).

We specified a series of six individual-level OLS regressions to examine the association between school–family relationships and young people's academic achievement (research question one) and the extent to which parents' reports of satisfaction with their children's school mediates this association (research question two). In model 1, we only included our prior achievement measure (Key Stage 2 combined mathematics, science, and English scores expressed in quartiles) because achievement in wave one is highly correlated with achievement in wave four.

In model 2, we added a series of background characteristics that along with prior achievement are the controls for our analyses. While these variables were not the focus of this study, it is worth discussing some interesting trends. After controlling for previous achievement

and other covariates, all ethnic minorities, with the exception of the mixed group and Black Caribbeans, outperformed their White peers. For example, young Indians, on average, score around 33 points (see model 2, $b = 32.91$, $p < 0.001$) more than their White peers. Consistent with prior research females outperformed males ($b = 19.38$, $p < 0.001$) and those young people with less educated parents had a lower GCSE point score, on average. Also, young people who resided in two-parent families fared better than their counterparts who reside in other family structures ($b = 24.99$, $p < 0.001$).

Model 3 shows a statistically significant, positive association between GCSE score points and school–family relationships after controlling for covariates. This finding is meaningful when GCSE outcomes are translated to GCSE grade level outcomes. For example, a 15-point GCSE score difference represents a one grade higher result in two GCSE subjects (i.e. an A* instead of an A). In the next model (model 4), we examined the association between parents' reports of school satisfaction and GCSE achievement. The results show that, as parents' satisfaction with schools increased, so did young people's GCSE scores. The coefficient is significant and the magnitude is such that a 39 score point difference, for example, represents a one grade higher result in six subjects.

In model 5 we examined the mediational effect of parents' school satisfaction on predictors of GCSE achievement in the school–family relationships and other covariates. After adding school satisfaction into the model, the coefficient was significantly reduced (the model 3 coefficient was 15.14 versus the model 5 coefficient of −3.62) and no longer statistically significant. Thus, school satisfaction dispelled the association between school–family relationships and young peoples' GCSE achievement. This result was verified by using Sobel's test (test statistic = 24.22, $p = 0.01$).

In the final model we examined moderation patterns between prior achievement and school–family relationships and school satisfaction (see model 6). Results indicate that the association (or lack of) between school–family relationships and GCSE achievement is consistent across different levels of prior achievement, but this was not the case for school satisfaction. The general pattern indicates that young people with lower prior achievement appeared to benefit the most (in terms of GCSE achievement) when their parents were more satisfied with the school. However, the results are only statistically significant for those in the upper-middle prior achievement quartile, which indicates that students in this quartile benefited more from the positive influence of school satisfaction when compared to those in the highest prior achievement quartile.[4]

Discussion

Families' perceptions of, and interactions with, schools and teachers can play an essential role in young people's educational outcomes and experiences. According to ecological systems theory, young people grow in multiple nested systems interacting with each other (Bronfenbrenner 1979). Thus, development is affected by persons and processes at different institutions and levels of society, from the family, to the school they attend, and by cultural norms. In this article, we argued that the interactions between systems that are proximal to young people, such as the school and family, are key contributing components to young people's educational success. Positive interactions between schools and families lead to higher levels of parental satisfaction and, in turn, better educational achievement among young people.

Parental involvement is an area which has received significant research attention, particularly in the US. However, a more recent education policy focus in the UK on increasing parental involvement (i.e. Department for Children, Schools and Families 2008; Department for Education and Skills 2007a) and Ofsted assessment of parents' school satisfaction, are pushing schools to implement strategies to build effective relationships with parents. In England, there has also been a growing awareness among parents about the potential advantages gained for their children when parents work in partnership with their child's school (Peters et al. 2008).

In this article, we set out to answer two questions. First, what is the nature of the association between school–family relationships and academic achievement? Second, to what extent does parents' school satisfaction mediate the association between school–family relationships and academic achievement? As other research in the US has shown, we found there is a positive association between strong family and school relationships and young people's academic achievement, even when we controlled for previous achievement and other background covariates. When parents feel welcomed at their children's schools and two-way channels of communication are established, parents can gain knowledge, practice, and confidence to help them provide effective supports for their children's learning (Epstein 2010; Sanders 2013; Sanders and Galindo 2014). Furthermore, we hypothesized that those parents who perceived stronger connections with their child's school, would feel stronger levels of satisfaction and therefore be more open and responsive to school supports that facilitate learning alignment between the family and school. As expected, we found that school satisfaction, as reported by parents, was a mediator of the association between school–family relationships and GCSE achievement. However, and contrary to our hypothesis, school satisfaction entirely explained the influence of partnerships and achievement. Therefore, while positive school–family relationships are a predictor of GCSE achievement, this association is governed by the degree of parents' satisfaction with their child's school. The combination of strong school–family relationships and high levels of school satisfaction provides a significant boost for young people's GCSE success. It is unlikely that schools would look to improve their communication and interaction with parents and to increase school satisfaction solely to raise achievement scores. Instead, schools likely value non-academic as well as academic benefits to having positive relationships with parents. However, this research does provide evidence to suggest that positive school–family relationships and high levels of school satisfaction do have the ability to raise achievement. So, the benefits of school policies and practices at the secondary school level that enhance relationships with families and improve levels of parent satisfaction can result in rewards for all young people and assist schools in achieving their performance goals.

While not the focus of our analyses, it is important to highlight the enduring impact of SES on young people's educational outcomes. It is palpable from the results shown in Table 3 that young people from low SES (as measured by parental education and household income) face an educational penalty. Engaging with low SES families is not always easy for schools, especially in light of research that indicates that working class or poor students show limited involvement in structured learning activities, and parents intervene less frequently in their child's school, than those families from high SES background (Crozier and Davies 2007; Lareau 2003). Middle- to upper-income and well-educated parents tend to develop egalitarian relationships with their children's schools and feel comfortable, integrated, and respected by the teachers (Lareau 2003). These relationships and perceptions are not as common among poor parents.

In addition, parents with higher levels of education tend to be more proactive with respect to school decisions than working class or poor parents (Horvat, Weininger, and Lareau 2003; Stevenson and Baker 1987) in part because many poor families are unfamiliar with schools, and unsure of their roles in their children's education. It is important to note that we do not want to perpetuate messages of blaming parents for not interacting and being more involved in their child's education. On the contrary, we believe that there are important structural and cultural barriers that preclude poor parents from engaging and interacting with schools (Galindo and Pucino 2012). These barriers include, for example, lack of resources, multiple jobs and lack of time. Despite these barriers, when schools implement meaningful practices they succeed in promoting family engagement, as Galindo and Sheldon (2012) found in their study of parental involvement. Research has shown, for example, that when schools implement practices with the intention of welcoming all families – improving two-way communication, building trustworthy relations, and empowering families – poor parents show higher levels of involvement at school (Galindo and Pucino 2012). Given issues surrounding poor families and their relationships with schools and teachers, it becomes increasingly important for future research to examine further how these families perceive their interactions and relationships with their child's school, especially at the secondary school level. Future research should also identify the most effective strategies that schools could implement to facilitate parental engagement for poor families.

This article has important contributions to the field of education. First, we expand traditional frameworks of school–family relationships by theoretically framing it as a dimension of school climate. Second, most of the research on school–family partnerships has focused on the early years or elementary grades. Research on secondary education has shown conflicting results. Our analyses of young people in English secondary schools showed a positive association between school–family relations, after including a rigorous set of covariates, including previous academic achievement.

Our third contribution relates to the interplay between school–family relationships and parents' satisfaction with their child's school. We found that the association between school–family relationships is fully mediated by school satisfaction. This is an interesting and potentially important finding especially in light of the limited research that has explored this relationship.

Along with the contributions of this article, it is also important to highlight the limitations of this research. Foremost, the results of this study describe associations between the variables examined and cannot support causal inferences. Second, although the LSYPE is longitudinal, we did not exploit this design feature fully in this study. We recognize and acknowledge that a cross-sectional snapshot of the key variables of interest does not capture the dynamic nature of relationships and changes in parents' satisfaction with their child's school, but this next step in the research was beyond the scope of the analysis for this article. This article provides a good indication of the mechanisms at play with regard school–family relationships, school satisfaction and young people's achievement and for future research to look at the impact of changes in these relationships and perceptions over time. In addition, more research is needed to unpack the factors that predict school satisfaction, which is an area of secondary school research that has not been a major focus in large-scale student and parent data analyses.

Notes

1. We are keen to express that we are not testing Bronfenbrenner's (1979) ecological systems theory in our analysis, instead we are guided by the overarching concept of the importance of contexts and the interrelatedness of the individual within them. Tudge et al. (2009) have indicated the great potential of Bronfenbrenner's work and theories in helping understand human development processes. We are mindful of their criticisms of the misuses of his work and, therefore, want to be clear about which theory we are guided by and what role it is playing in our analysis. While we do not draw upon Bronfenbrenner's later work, it should be noted that he continued to develop his ideas with the development of the bioecological model (see Bronfenbrenner 2005). Within this theory, he explores the interrelatedness of the four concepts of process, person, context, and time.
2. Thus 21,000 young people were sampled with 15,570 responses achieved. This represents an initial unit non-response of 26%. (Department for Education 2011, 13).
3. The reduced NPD file is supplied alongside the LSYPE datasets.
4. In analyses not reported here, the coefficients for the interaction effects produced a similar result for parent satisfaction and prior achievement when entered separately from the school–family relationship interactions. In other words, the inclusion of the interactions for parental satisfaction and prior achievement were not impacted by the inclusion of the interactions for school–family relationship and prior achievement.

Disclosure statement

No potential conflict of interest was reported by the authors.

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