**Can schools reduce bullying? The relationship between school characteristics and the prevalence of bullying behaviours.**

**Abstract**

**Background**

Bullying remains a persistent phenomenon in schools, but the extent to which day-to-day policies and practices relate to bullying prevalence has not been widely studied. In this study we use an educational effectiveness framework to interrogate this relationship.

**Aims**

The aim is to study the relationship between school factors and prevalence of bullying in primary schools. We hypothesize that school conditions (e.g. size), school policies (e.g. behavior policies) and school processes (e.g. teaching quality) are related to bullying prevalence.

**Sample**

Surveys were administered to pupils in 35 primary schools in 4 local authorities in England. Pupils (N=1411) and teachers (N=68) in the final year of primary school (year 6) were surveyed.

**Methods**

This study drew on the following data sources:

* A pupil survey on bullying behaviours
* A survey of teachers on school policies and processes
* Analysis of data on school processes from school inspection reports
* Analysis of secondary data on school conditions and pupil characteristics.

3-level multilevel models were used to analyse the data.

**Results**

Results show a substantial school and classroom level effect on prevalence of bullying. Effective school policies were found to be related to levels of bullying.

**Conclusions**

The study provides support for the importance of schools’ embedded policies and practices in relation to bullying prevalence, and provides evidence for policy on the importance of focusing on a broad range of outcomes.

**Can schools reduce bullying? The relationship between school characteristics and the prevalence of bullying behaviours.**

**Introduction**

Bullying remains a persistent and worrying phenomenon in (and outside) of schools. While there is no convincing evidence that the overall prevalence of bullying is increasing, there is also little evidence of a decrease, notwithstanding the range of initiatives that have sought to address this harmful phenomenon (Smith, 2015). As such, it is worth exploring the extent to which school and classroom factors, such as behavior policies, school climate and teaching quality may be associated with attenuating bullying prevalence, and this should therefore be a topic of relevance to researchers in the field of educational effectiveness. Educational effectiveness research has frequently been criticised for a lack of attention to non-cognitive outcomes, defined as those outcomes that are not related to curriculum subjects such as attainment in Maths (which are known as cognitive outcomes), but relate to broader aspects such as social and emotional development. While Reynolds et al (2011) have argued this critique is only partially justified, recent overviews have shown that the majority of studies in the field still relate to cognitive outcomes by a ratio of about 4 to 1 (Chapman et al, 2016). Bullying, as a persistent and highly harmful phenomenon in schools, is therefore both a majorly important factor in in its own right and an outcome that presents us with an important test of the existence of a relationship between school and classroom processes and non-cognitive outcomes (Kyriakides et al, 2014).

**School factors related to bullying**

In this paper we will use the widely accepted definition of bullying developed by Olweus (1993): ‘A student is being bullied or victimized when he/she is exposed, repeatedly and over time to negative actions on the part of one or more other students. It is a negative action when someone intentionally inflicts, or attempts to inflict, injury or discomfort upon another. (p. 9).’ This definition emphasises intentionality, implies a power imbalance between bully and victim, and can equally be applied to face-to-face bullying situations and to increasingly common forms of cyberbullying (Smith et al, 2008).

Of course, we can never simply assume that any phenomenon is affected by schools and schooling. A range of studies have found that patterns of bullying behaviour are relatively stable over time, and related to a number of individual personality characteristics which generally lie outside of the control of the school, such as social competence, externalizing behavior, other-related cognitions (Cook et al, 2010), poorer psycho-social adjustment (Nansel et al, 2001), and lack self-esteem (Zapf & Einarson, 2011). Other non-school factors such as parental support, which has been found to be associated with lower involvement in bullying, and gender which has been found to be related to type of bullying, have also been found to be significant (Wang et al, 2009). However, an ecological developmental perspective, which posits that individuals are nested within a range of interlocking settings including families and schools in the case of children, would support the possibility that schools may affect bullying prevalence (Bronfenbrenner, 1979).

Research on school factors related to bullying is somewhat limited. Most correlational studies focus on school climate (Galand et al, 2014). School climate is an umbrella term that covers different aspects of the school environment, including physical aspects such as school size and state of the buildings, social aspects such as the quality of relationships between staff and students and the extent of competitive behaviour, and academic dimensions such as the extent of ‘academic press’ (emphasis on attainment in the school) (Loukas & Robinson, 2004). Cook et al (2010) in their meta-analysis found school climate to be a significant predictor of both bully and victim status, with an effect size of .19 and .16 respectively making it one of the most influential contextual factors, albeit of lower importance than peer-related variables (peer status and influence). Galand et al (2014), in their study of secondary school students in Belgium found 5% of variance in bullying at the classroom level (attributable to the fact that pupils attended different classes within school) and less than 0.5% at the school level (attributable to the fact that pupils attend different schools), while Kyriakides & Creemers (2013), in a study of primary school children in Cyprus, found 20% school level and 25% classroom level variance in bullying prevalence. A European study conducted among primary age students in four countries reported 24% school level variance (Kyriakides et al, 2014). In all three cases the remaining variance was at the individual pupil level. All three studies used the Olweus (1993) self-report scales (also used in this study) to measure the outcome variables. These studies suggest that there is likely to be at least some variance that is explained at institutional (school and classroom) levels, though, as Galand et al (2014) point out, this variance does not necessarily result from differential school and classroom processes, as the homogeneity of schools and classrooms with regards to pupil characteristics such as social class mean that similar intakes could equally be an explanation. Indeed, when studying school and classroom level factors hypothesised to be related to bullying prevalence these have often been found to be insignificant, school and class size being cases in point. Other school factors, such as attainment are significant in some, but not other, studies (Swearer et al, 2010; Galand et al, 2014). The variance explained at the school level also differs strongly between these studies. This may result from the different contexts in which the studies took place, with the higher levels of variance found in studies of primary schools, but the limited number of studies make overly strong conclusions in this regard unwarranted.

There do appear to be some school factors that are more consistently related to bullying outcomes. Cook et al (2010) in their meta-analysis suggest that bullying is more prevalent in ‘schools with a negative atmosphere’, while a recent large-scale study in Colorado found perceptions of a negative school climate measured at time 1 to be significantly related to self-reported bullying perpetration 1 year later (time 2), controlling for time 1 bullying. School climate also moderated the relationship between self-esteem and bullying, in that where school climate was perceived negatively there was a positive relationship between self-esteem and bullying perpetration and vice versa (Gendron, Williams & Guerra, 2011)*.* As well as school climate, some evidence of relationships with other school and classroom practices exist. Galand et al (2014) found that classrooms where teachers were reported as directly intervening in bullying situations showed less instances of bullying, while the inverse was the case where the class goals were strongly oriented towards attainment. Kyriakides & Creemers (2013) found that teacher-student relationships, policies for behaviour outside the classroom (e.g. fighting in the playground), partnerships between school and parents, and evaluation of the quality of the school learning environment were significantly related to lower levels of bullying.

More evidence comes from school-based interventions. In their systematic review Ttofi & Farrington (2011) found that school-based interventions could decrease bullying by over 20%, and victimization by up to 20%, though the more rigorous the study design the smaller the intervention effects found. Parent training/meetings and disciplinary methods were found to be significant components of successful interventions. More recent studies cast some doubt on the latter finding, however, with sanctioning and disciplinary approaches not generally found to be more effective than less confrontational approaches in two recent large-scale interventions (Smith et al, 2012). Some whole-school intervention programmes, such as the Olweus Bullying Prevention Programme and the Finnish KiVa approach have gained widespread acceptance and shown positive effects across a number of contexts and evaluations (Black, Washington, Trent, Harner, & Pollock, 2010;Salmivalli, Kärnä, & Poskiparta, 2011).

A key element in understanding the role of schools in relation to bullying is to look at bullying as a social rather than as an individual phenomenon. The role of peers in bullying situations has been found to be key to the prevalence thereof, and their role in preventing the phenomenon has been increasingly acknowledged. Bullying normally takes place in social situations, and even in instances of cyber-bullying are played out to an implicit and expected audience of peers (Salmivalli et al, 1996). While the majority of peers may not participate in the bullying behaviour, their acquiescence, support or resistance to the bullying activity is a key factor in its occurrence, with one study in primary education showing that peers were present in 85% of bullying incidents (Sutton & Smith, 1999). It has therefore become apparent that social and group norms are important in terms of children’s’ reactions and resilience to bullying, and a number of interventions have focussed on changing such group norms (e.g. Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009). If group norms matter, it follows that the culture of the school and the classroom may influence the prevalence of bullying behaviours, as school culture may influence the willingness of bystanders to intervene in the bullying situation and their attitudes towards it Some authors have posited that the shared ethos in faiths schools may enhance the development of a shared school culture, though research findings in this area are somewhat inconclusive (Glover & Coleman, 2005).

**Theoretical framework**

Theoretical models of educational effectiveness (though tending, in line with the majority of research in the field, to concentrate primarily on cognitive outcomes) provide further reasons to hypothesise a relationship between school characteristics and bullying prevalence. One of the most influential current theories in educational effectiveness is the Dynamic Model of Educational Effectiveness (DMEE) which was developed by Creemers and Kyriakides (2008) to build on previous theories in the field, and has received significant empirical support (Chapman et al, 2015). This model provides a description of the ways different factors at the school, context and classroom level interact to affect pupil outcomes. Essentially, schools are seen as influencing what teachers do, and teachers in turn influence pupil outcomes, primarily through classroom practices (e.g. teaching strategies). A key characteristic of the Dynamic Model is therefore its multilevel nature. Classroom factors are emphasised, but school-level factors are seen as providing conditions under which the effectiveness of classroom level factors can be maximised by developing and evaluating policies on teaching and creating a positive learning environment in the school. The model also takes into account that the school is influenced by the wider educational context in which it is expected to operate. Factors such as societal values and government policies play an important role in shaping teacher and student expectations. The two key school-level factors in the DMEE are school policies on teaching and school policies for creating an effective school learning environment (SLE). These policies can in turn be subdivided into a number of different elements according to the outcome of interest, and affect teacher and pupil behaviours in the school.

Of course, not all factors and dimensions of the DMEE are likely to be relevant to bullying, and we have therefore focussed on those that we hypothesise to be the key school level factors. In particular, we focus on school conditions, school policies and school processes, leading us to propose the following theoretical model:

Figure 1 about here

We hypothesise that school conditions such as school size and intake will be related to school policies, as well as potentially to bullying outcomes (e.g. schools with a more heterogeneous intake may show greater levels of bullying). In terms of policies we distinguish between three main areas. In accordance with the Dynamic Model, we look at policies relating to teaching and learning and policies relating to the school learning environment. In addition, we have looked specifically at school policies on bullying. These school policies are in turn expected to be related to school processes, but are also hypothesised to be related to bullying outcomes, this in particular for policies on bullying. We hypothesise that school processes will be related to bullying prevalence, in that schools in which teaching quality is high, students feel safe, behaviour is good, and which emphasise social cohesion and equality of opportunity will show lower levels of bullying. In summary, our hypotheses therefore are:

1. School conditions (e.g. school size) will be related to school policies and to bullying outcomes;
2. School policies will be related to bullying outcomes, this in particular for policies on bullying;
3. School processes (e.g. teaching quality) will be related to bullying prevalence.

In addition, a number of pupil level characteristics have been included in the model, to ensure that variance is not wrongly attributed to school characteristics. These relate primarily to pupil demographics, in particular gender, poverty (eligibility for Free School Meals), ethnic group, special needs status and attainment level. As the primary interest of this paper lies in the school-level factors, they act primarily as control variables here.

**Methods**

This study follows a quantitative approach drawing on analysis of newly administered survey data and existing secondary data sources. The main data sources were:

- A survey of bullying behaviours administered to pupils in 35 English primary schools

- A survey of teachers and leaders in these schools

- Analysis of school inspection data for the 35 schools in the study

- Analysis of secondary data at school and pupil levels taken from the National Pupil Database

***Sample***

The surveys were administered to pupils in 35 primary schools in four large local education authorities (school districts). The Local Authorities were purposively selected to be contrasting, representing two urban, disadvantaged areas and two suburban/semi-rural areas of greater socio-economic advantage. Disadvantage was measured using the percentage of pupils eligible and claiming for Free School Meals (free lunch) in each local authority, with LA’s containing 30% or more pupils eligible for or claiming a Free School Meal defined as disadvantaged (the national average is 15.6%, Department for Education, 2015). This cut off point was used as it represents approximately twice the national average (which over recent years has varied between 14% and 16%), and thus represents substantially greater levels of disadvantage than would be found in the average local authority. Schools were selected within authorities on the basis of having been inspected in the past three years (so we had access to relatively recent inspection evidence), and then using simple random sampling. However, as only 35 schools out of 63 schools originally contacted agreed to participate, the final cannot be described as a purely random sample. Of the 35 participating schools 15 were Faith schools (11 Church of England and 4 Catholic).

All pupils in year 6 (the final year of primary school, catering for pupils typically aged 10-11) in each of the 35 schools that agreed to participate were surveyed, the total sample size being 1411 (a response rate of 86%). 54% of pupils were female, 46% male.

***Data sources***

*Pupil survey*

The revised Olweus (1993) bully-victim questionnaire (OBVQ), a self-report questionnaire for pupils, was used to measure bullying prevalence. The OBVQ contains two components, consisting of eight items on the extent to which students are victims of bullying and eight items on the extent to which students initiate an act of bullying against other children. Previous research (Kyriakides et al, 2014) used Rasch modelling to construct two scales from these items, based on the log odds of students´ opinions about the extent to which they were either being bullied or were bullying others. These scales order the items by prevalence (how often they are reported as happening) on a continuous scale. These Rasch scales were employed as the dependent variables in this study.

*Teacher survey*

School characteristics were collected through a survey of year 6 teachers in the schools involved (N=68, representing a response rate of 79%). Variables were based on components of the Dynamic Model of Educational Effectiveness (Creemers & Kyriakides, 2008). The questionnaire contained a total of 65 items, and was based on the shortened English version of the Kyriakides et al (2014) scales. Scales were constructed for:

* school policies on teaching;
* school policies on opportunity to learn;
* school policies on behaviour;
* school policies on teacher collaboration;
* school policies on partnership with parents;
* school policies on bullying;
* school policies on targeting groups (differentiation); and
* school policies on dealing with bullying.

Cronbach’s Alpha for the scales varied between .79 and .88, showing good levels of internal consistency. Construct validity of the scales has been demonstrated in a number of previous studies using the Dynamic Model of Educational Effectiveness (Kyriakides et al, 2006). The items for each scale are designed to capture the extent and depth of policies, rather than just the existence of broad policies, which is key in light of Smith et al’s (2012) finding that school policies on bullying in England varied widely, with some showing a distinct lack of specificity.

Within each of the 8 scales (see above) items focused on five key areas:

* recording (e.g. ‘information on bullying is collected from non-teaching staff’);
* implementation (e.g. ‘All children were told that they have to immediately report any bullying incident they may detect to a teacher’);
* evaluation (e.g. ‘Aspects of my school’s policy on dealing with bullying which are considered problematic are evaluated more often and/or in more detail’);
* adaptation (e.g. ‘My school differentiates handling the bullies according to the type of bullying they apply’); and
* involvement of pupils and parents (e.g. ‘In my school, we consider break time an opportunity for contact between teachers, bullies and/or the victims of bullying’).

Items are 5-point Likert scales, with 1 representing a ‘very low extent’ and 5 a ‘very great extent’. While focusing on school approaches, some of the items inevitably have an attitudinal component in that they relate to perceptions of school approaches. Factor analytic studies have, however, shown the items to load on the eight components, and not to form separate factors based on differences in the extent of attitudinality of the items (Kyriakides et al, 2006). Teacher survey results were converted to school scales by calculating the mean score for each school, this as the variables themselves were school-level factors.

Confirmatory factor analysis was used to study the validity of the proposed scale structure, which was supported. A factor structure consisting of the abovementioned scales, made up of five items each, showed that while the Chi Square test was significant (Chi Square = 364.3, p<.05) indicating misfit between model and data, this is likely to be due to the large sample size, which inflates statistical significance, and thus renders even limited misfit between the model and covariance matrix significant. For this reason, it is common within Structural Equation Modelling (of which CFA forms a subset) to use alternative fit indices that correct for sample size. Three fit indices were chosen to represent a range of approaches to measuring fit: the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). All showed good fit (GFI=0.96, CFI=0.95, RMSEA =0.067).

*Secondary data sources*

In addition, we collected data from two secondary data sources: The National Pupil Database (NPD), a dataset containing performance and social background data on all pupils in the UK, and school inspection data from Ofsted (the national school inspectorate agency) which contains inspector judgements on a range of school quality factors. The NPD was used to look at pupil background using a number of indicators: Free School Meal eligibility, a proxy measure of poverty, Special Educational Needs classification, a variable indicating level of special educational needs on a four-point scale, ethnic group recoded into three main groups: Asian, Black, White British and Other (the latter category consisting mainly of White Europeans), gender, a measure of child poverty (eligibility for Free School Meals), and prior attainment, measured by level attained at Key Stage 1 (this is a national assessment conducted at the end of the second year of primary school, and the only standard assessment data available, as statutory assessment in England happens in years 2 and 6 of primary school only). These variables were collected at the individual pupil level, following a request to the Department for Education who collect this dataset. In addition, these individual level variables were aggregated to construct school level variables, providing percentages for variables such as gender (% girls) and pupils eligible for Free School Meals, and means for continuous variables such as IDACI. This was done to control for school context effects, which have in some studies been found to have a relationship with pupil outcomes over and above that of the individual pupil variables, the theoretical basis for this being that school composition may affect school culture and norms (Thrupp. 1997). In addition, we used school-level performance at KS2 as a measure of school attainment.

In England, every school is inspected by the school inspectorate, known as the Office for Standards in Education (Ofsted). The reports from the inspection are publically available, and alongside qualitative description also contain numerical ratings of the overall effectiveness and specific characteristics of the school, such as quality of teaching. These are graded on a four-point scale from 1 (inadequate) to 4 (outstanding). These Ofsted inspection reports were used to collect further data on school quality factors. In particular, we used inspection scores on teaching quality, leadership, pupil behaviour, whether pupils feel safe, and the effectiveness with which the school promotes community cohesion and equal opportunities.

Clearly, there are some limitations to these data sources. Self-report may not always result in entirely accurate estimates of behaviour, and some previous studies have shown that bullying may be underreported when using such methods (Samivalli et al, 1996). However, they do tend to be more accurate than ratings by adults, whereas peer ratings have been differentially evaluated with regards to accuracy (Smith, 2015). The teacher questionnaires likewise may suffer from self-report bias, while the reliability of Ofsted reports has been questioned in light of their susceptibility to changing priorities at the Department for Education (education ministry) and reliance on school performance data, which may create halo effects (Author, 2006). Nevertheless, the combination of data sources should enhance overall reliability of this study.

*Data analysis*

Three-level multilevel statistical methods were used for the analyses, taking into account the fact that pupils were nested in classrooms which in turn were nested in schools (i.e., as well as attending different schools, pupils attend different classes within schools). Multilevel modelling is an adaptation of the general linear model for hierarchical datasets, which partitions the variance in the dependent variable across the relevant levels. Here these are the pupil, classroom and school levels respectively. This solves the problem of attenuation of standard errors in standard linear regression models, which results from hierarchical samples where, for example, individuals within a school may be more similar to one another than they would be to the population of pupils as a whole. Multilevel modelling also allows us to more accurately model the data by taking its structure into account, and provides answers to important substantive questions such as the research questions above. Data were analysed using the MLWin software programme (version 2.34). IGLS estimation[[1]](#footnote-1) was used, all models converged and no non-admissible parameters were generated. Throughout the analyses we did not use centering, as we contend that the interpretation of regression coefficients and variance estimates will be more meaningful without.

Analyses were undertaken for both Rasch scales (bully and victim).

*Ethical approval*

Ethical approval was obtained through the University ethics committee. Participants were provided with information sheets and were informed of their right to withdraw from the study at any time. Passive consent procedures were used to gain parental consent. An information sheet was sent to parents via the school, and parents were given the right to opt out their children. 56 parents chose to do so. Pupil questionnaires were administered by the teachers, who received a briefing on how to administer the survey. Schools were given the option to use either online or pencil and paper versions, with most opting for the latter.

**Results**

In terms of prevalence, 21% of our sample reported being bullying victims, while 11% reported being perpetrators of bullying. This shows reasonable congruence with the national picture, where estimates of the prevalence of being bullied vary between 7% and 24%, and prevalence of bullying between 3% and 15%, though rates in our study are at the higher end of the spectrum. This is likely to be specific to this sample (Office for National Statistics, 2015; Rigby & Smith, 2011).

Descriptive statistics are shown in table 1. Missing data were under 5% for each scale. Little’s MCAR test showed that the hypothesis of data missing completely at random (MCAR) was not rejected for any of the scales, so the EM algorithm was used to replace missing values. The other variables in the respective questionnaires were used as predictors.

Table 1 about here

Three-level multilevel models were used to analyse the data, with pupils nested in classrooms and classrooms in schools. The first model is an empty one, in which only a constant is entered as a predictor. This will allow us to look at the variance to be explained at each of the three levels. In the next model we have added the pupil-level variables and the aggregated school context variables, whether or not the school was a faith school, school size (number of pupils) and Ofsted inspection grade for quality of leadership and management. In the final model the school policies and school process variables were added. For school policies, these were the scales derived from the teacher questionnaire, for school processes the Ofsted gradings (see above). Results are presented in tables 2 (for prevalence of being bullied) and 3 (prevalence of bullying) below.

Table 2 about here

The first key finding is that there does appear to be substantial school and classroom variance in the prevalence of being bullied in this sample. The school level explains 19.5% of variance, the classroom level 12.6%, and the pupil level 67.8%. In the second model, individual pupil background and school context factors were added. Of the individual pupil level variables, only SEN status was significant, with pupils with SEN more likely to report being bullying victims. Of the school context variables, Ofsted grades for leadership and management and being a Faith school were significant, with pupils in schools graded more highly and in Faith schools less likely to report being victims of bullying. These variables explained 17% of the school-level variance, but only 3.4% of individual-level variance and none of the classroom-level variance. In the next model we added school policies and processes. These showed stronger explanatory power, explaining almost half of school-level variance and over a third of classroom level variance. In terms of policies, the strongest relationships with outcomes were with the scales related to bullying and behaviour. In addition, school policies on teacher collaboration and relationships with parents were significantly related to outcomes, though the relationship here was weaker. School policies on teaching and opportunity to learn were not significant. Of the three variables taken from the Ofsted inspection grades, only the grade for equality of opportunity and community cohesion was significantly related to reported prevalence of being bullied.

Table 3 about here

The findings for the bullying perpetrator scale, shown in table 2, were largely similar, albeit that both school and classroom level variance, at 16.4% and 11.5% respectively, and effect sizes as measured by explained variance, were lower than they were for being bullied. None of the individual pupil level variables were significant. Of the school context variables, Ofsted grades for leadership and management and being a Faith school were again significant, with pupils in schools graded more highly and in Faith schools less likely to report being perpetrators of bullying. These variables taken together explained 15.4% of school level variance, 1.7% of pupil-level variance and 3.8% of total variance. School policies on behaviour and bullying were again significant, with behaviour policies having the strongest relationship with the outcome variable. There was a weaker but still significant association between bullying and relationships with parents. This was no longer the case for policies on teacher collaboration. These variables explained far less variance for the perpetrator than for the victim scale: 36.4% of school-level and 22.2% of classroom level variance.

Returning to the three hypotheses, the data therefore show that hypothesis 1, that school conditions are related to bullying, was only very partially supported, with only being a Faith school and quality of leadership being (weakly to modestly) related to bullying outcomes. Hypothesis 2 was supported, with school policies, in particular on bullying, significantly related to bullying outcomes. Hypothesis 3 was only partially supported, with only equality of opportunity and social cohesion being related to bullying outcomes. These findings therefore essentially support a proximity model, whereby it is those factors most proximal to the outcome measured that have the strongest relationship with it (Author, 2002).

**Discussion**

A number of key findings follow from this study. Firstly, the study affirms that both school and classroom factors may be related to non-cognitive as well as cognitive factors, and produced percentages of variance at school and classroom levels that were more similar (albeit somewhat lower) to the Kyriakides & Creemers (2013) study, also conducted in primary schools, than to the Galand et al (2014) study conducted in secondary schools. This study thus contributes to a growing body of evidence, not least that emerging from intervention studies (e.g. Ttofi & Farrington, 2011), suggesting that schools can make a difference to bullying prevalence.

Secondly, the study sheds some light on what factors at the school level are related to bullying prevalence. Here we find that school conditions, such as size or type, appear to be only weakly or not related to bullying prevalence, while school policies are far more significant. In particular, policies on behaviour and bullying, those, therefore, that are most proximal to the outcome being measured, may help to reduce bullying in schools. These policies relate to a number of different elements, taking in a holistic view of policy that encompasses the five key facets mentioned above (recording, implementation, evaluation, adaptation and involvement of pupils and parents). Thus, with regards to bullying, schools with lower prevalence of bullying are more likely to keep records on bullying incidents not just during lessons, but also on those occurring outside of the classroom and school. Teachers and parents are more likely to know school policies relating to bullying, and pupils are more likely to record incidents. Schools with lower levels of bullying are more likely to organize professional development activities around combatting bullying, and to talk to parents of bullies and victims. They are more likely to evaluate policies and their implementation, and do so more frequently. Schools with lower levels of bullying prevalence are more likely to report school-wide behavior policies that are systematically implemented and shared, and include factors such as the teacher’s role during break, and orderly transitions between lessons and classrooms. They are more likely to have developed a code of behaviour with pupil input. Policies are more likely to have been collaboratively developed and implemented.

Levels of bullying are also lower in schools which have created an environment in which equality of opportunity and social cohesion are strong, which may reflect the specific culture and ethos of the school. That faith schools have lower rates of bullying in this study may be related to the shared values and ethos such schools are hypothesized to have, but due to the small numbers in the samples these findings must remain tentative. Importantly, the key here is not of course the presence or absence of policy (as a statutory duty, all schools in England have both bullying and behaviour policies). Rather, the key here is the quality of these policies in terms of implementation, evaluation, adaptation and pupil and parental involvement, as described above. It is in teachers’ perceptions of these elements that we found significant variance between the schools in our study, suggesting that in some cases policies are enacted far more, and far more effectively, than in others. Furthermore, it appears from this study that schools may be able to influence bullying prevalence through routine practices and policies, as well as through programmatic interventions.

The study also provides further support for the use of the Dynamic Model of Educational Effectiveness as a framework to study a range of outcomes and their relationship to school and classroom processes. Increasingly, it has become clear that the complexity of school and classroom processes requires a comprehensive, integrated theoretical approach, such as the model provides. Clearly, not all factors could be studied in this piece of research, and not all studied factors were supported. It was indeed those school factors closest to the outcome measured that proved significant, suggesting as other studies in educational effectiveness have done, that a goal-focussed approach is necessary if schools are to achieve desired outcomes, and that this is true of non-cognitive as well as cognitive outcomes.

While some studies have found a negative relationship between policies and effectiveness (Klieme et al, 2008), the opposite was the case here, as it has been in other studies using the Dynamic Model framework (e.g. Kyriakides et al, 2014). This is likely to result from the specific nature of the items which allow a greater focus on quality rather than just existence of policies, and points to the importance of focussing on quality rather than occurrence or quantity when studying school processes. As has also been found in some studies focussing on school improvement, ‘it’s not what we do, it’s the way that we do it’, i.e. effectiveness and fidelity of implementation of strategies, policies and interventions appear to be the key to impact (Noell & Gansle, 2009; Eck et al, 2011).

This study contributes to our knowledge in a number of ways. In terms of educational effectiveness, it provides a counterweight to views stating that schools can only affect cognitive outcomes (Reynolds et al, 2016). This is important, as such views can have the effect of skewing policies away from a focus on the broader wellbeing of pupils to a more narrow focus on attainment. Of course, this does beg the question of the possible. Schools face multiple, competing demands, and organisational theory and research suggests that it is not possible for an organisation to successfully focus on all (Eck et al, 2011). Research looking in particular at the relationship between effectiveness in cognitive and non-cognitive domains suggests that there is no trade-off between the two. On the other hand, the relationship between cognitive and non-cognitive outcomes, though significant and positive, is not strong enough to suggest that effectiveness in one domain automatically leads to effectiveness in the other (Knuver & Brandsma, 1993; Opdenakker & Van Damme, 2000). This poses a dilemma for educators and policymakers, not least in an education system like that of England, where policy focus and accountability measures are strongly framed in terms of attainment. Of course, we are not suggesting here that attainment is not a key and central outcome of schooling, but rather that it is not the sole desirable outcome we may seek. Bullying is a scourge that affects not only pupils’ temporal well-being but their future. Being bullied in childhood has been found to be correlated to depression, anxiety, relational difficulties and low self-esteem in adulthood (Carlisle & Rofes, 2007; Rigby, 2007; Smith, 2015), and in that light a focus on this area is clearly important.

In terms of research and policy on bullying, this study contributes by situating differences in bullying prevalence within a broader theoretical understanding of school processes, and clarifies the importance of embedded practices and policies that are part of the day-to-day functioning and climate of the school. Moreover, what these findings suggest is that some of the school policies and practices that are associated with reduced levels of bullying are likely to have positive relationships to other desirable outcomes. Well monitored, implemented and co-constructed behaviour policies are likely to be beneficial across a range of areas and behaviours, while the finding that schools that effectively promote equality and social cohesion see reduced levels of bullying (albeit that a study of this nature of course cannot demonstrate causality) points to relationships with other key non-cognitive indicators such as positive relationships between different ethnic groups.

There are, of course, obvious limitations to the study. Firstly, the local authorities, while representative of the region, were not randomly selected, limiting generalisability. Secondly, the secondary data sources have obvious weaknesses. In terms of pupil background, the definitions given to variables like SEN and free school meal eligibility inevitably limit the conceptualisation of these variables and provides us with relatively weak proxies for factors such as social background. Therefore, it is entirely possible that if we had more accurate measures of parental SES (such as occupation and education levels) we may have found a stronger relationship with bullying. Similar difficulties obtain with the inspection reports, and here an additional and key issue is the fact that inspection frameworks change over time and that schools are inspected at different time points. It is for this reason that we sampled schools inspected in the three years leading up to data collection through the surveys, but this still leaves time differences in inspections between schools. Furthermore, the reliability of inspections has been questioned (Chapman, 2002). This study is also fundamentally correlational, which means that what we are finding are relationships, rather than causal mechanisms. We cannot, for example, discount the possibility of non-measured underlying factors affecting both the independent and dependent variables in the study. Another limitation is that we did not survey schools on whether they were employing a particular anti-bullying strategy, or were part of an anti-bullying programme. This is a design weakness, as some of the relationships found (e.g. those with anti-bullying policies) may be due to their involvement in such a programme.

Nevertheless, this study does provide some suggestive evidence for the possibility that schools can affect non-cognitive outcomes, and specifically bullying, not just through targeted interventions, but through their day-to-day policies and practices, and thus provides a call-to-arms for educators and, not least, policymakers to continue to focus on pupil wellbeing as well as on high standards in cognitive attainment.

**References**

Author (2002)

Author (2006) XXX

Author (2014)

Black, S., Washington, E., Trent, V., Harner, P. & Pollock, E. (2010). Translating the Olweus Bullying Prevention Program into real-world practice. *Health Promotion in Practice,* 11(5), 733-740. doi: 10.1177/1524839908321562

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press

Carlisle, N. & Rofes, E. (2007). School bullying: Do adult survivors perceive long-term effects?

*Traumatology,* 13(1), 16-26. doi:10.1177/1534765607299911

Chapman, C. (2002). Ofsted and School Improvement: Teachers' perceptions of the inspection process in schools facing challenging circumstances. *School Leadership and Management,* 22(3), 257-

272. doi: 10.1080/1363243022000020372

Chapman, C., Muijs, D., Reynolds, D., Sammons, P & Teddlie, C. (2016). *Routledge International*

*Handbook of Educational Effectiveness and Improvement Research*. Abingdon: Taylor and Francis.

Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly, 25*(2), 65-83. doi: [org/10.1037/a002014](http://psycnet.apa.org/doi/10.1037/a0020149)9

Creemers, B. P. M. & Kyriakides, L. (2008). *The dynamics of educational effectiveness: a contribution to policy, practice and theory in contemporary schools.* London: Routledge.

Department for Education (2015). *Schools, Pupils and their Characteristics.* Statistical First Release 16/2015. Retrieved 12/9/16 from https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/433680/SFR16\_2015\_Main\_Text.pdf

Eck, J., Stringfield, S., Reynolds, D., Schaffer, E., & Bellamy, G. T. (2011). *Noteworthy Perspectives: High Reliability Organizations in education*. Denver, CO: McREL.

Flaspohler, P., Elfstrom, J., Vanderzee, K., Sink, H., & Birchmeier, Z. (2009). Stand by me: The effects of peer and teacher support in mitigating impact of bullying on quality of life. *Psychology in the Schools, 46*(7), 636-649. doi: 10.1002/pits.20404

Galand, B., Hospel, V. & Baudoin, N. (2014). Prévenir le harcèlement via les pratiques de classe? Une étude multiniveaux [Bullying prevention through classroom practices? A multilevel analysis]. *Revue Québécoise de Psychologie*, 35(3):137-156.

Gendron, B. P., Williams, K. R., & Guerra, N. G. (2011). An analysis of bullying among students within schools: Estimating the effects of individual normative beliefs, selfesteem, and school climate. *Journal of School Violence, 10*(2), 150-164. doi: 10.1080/15388220.2010.539166

Glover, D. & Coleman, M. (2005). School Culture, Climate and Ethos: interchangeable or distinctive concepts? *Journal of In-service Education*, 31(2), 251-271. doi: 10.1080/13674580500200278

Klieme, E., Hartig, J. & Rauch, D. (2008). The concept of competencies in education. In: Hartig, J., Klieme, E. & Detlev, J. (Eds.). *Assessment of competencies in educational contexts.* Gottingen: Hogrefe & Huber Publishers, pp. 3-22.

Knuver, A. & Brandsma, H. (1993). Cognitive and Affective Outcomes in School Effectiveness

Research. *School Effectiveness and School Improvement,* 4(3), 189-204. doi: 10.1080/0924345930040302

Kyriakides, L., Kaloyirou, C., & Lindsay, G. (2006). An analysis of the Revised Olweus Bully/Victim Questionnaire using the Rasch measurement model. *British Journal of Educational Psychology,* 76(4), 781-801. doi: [10.1348/000709905X53499](http://dx.doi.org/10.1348/000709905X53499)

Kyriakides, L. & Creemers, B. P. M. (2013). Characteristics of effective schools in facing and reducing bullying. *School Psychology International,* 34(4), 248-368. doi: 10.1177/0143034312467127

Kyriakides, L., Muijs, D., Papadastiou, P., Pearson, D., Reekers-Mombers, L., & van Petegem, P. (2014). Using the Dynamic Model of Educational Effectiveness to Design Strategies and Actions to Face Bullying. *School Effectiveness and School Improvement.* 24(1), 83-104. doi:

10.1080/09243453.2013.771686

Loukas, A., & Robinson, S. (2004). Examining the moderating role of perceived school climate in early adolescent adjustment. *Journal of Research on Adolescence*, 14 (2), 209−233. doi: 10.1111/j.1532-7795.2004.01402004.x

Nansell, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B. & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. The *Journal of the American Medical Association,* 285(16), 2094-2100. doi: 10.1001/jama.285.16.2094

Noell, G. H. & Gansle, K. A. (2009). Moving from good ideas in educational systems change to sustainable program implementation: Coming to terms with some of the realities. *Psychology in the Schools,* 46(1), 79-89. doi: 10.1002/pits.20355

Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Cambridge: Blackwell

Opdenakker, M. C. & Van Damme, J. (2000). Effects of Schools, Teaching Staff and Classes on Achievement and Well-Being in Secondary Education: Similarities and Differences Between School Outcomes. *School Effectiveness and School Improvement,* 11(2), 165-196. doi: 10.1076/0924-

3453(200006)11:2;1-Q;FT165

Reynolds, D., Chapman, C., Kelly, A., Muijs, D. & Sammons, P. (2011). Educational Effectiveness: the development of the discipline, the critiques, the defence, and the present debate. *Effective Education,* 3(2), 109-127*.* doi: 10.1080/19415532.2011.686168

Reynolds, D., Teddlie, C., Chapman, C. & Stringfield, S. (2016). Effective school processes. In Chapman, C., Muijs, D., Reynolds, D., Sammons, P & Teddlie, C. (Eds). *Routledge International*

*Handbook of Educational Effectiveness and Improvement Research* (pp. 77-99). Abingdon: Taylor and Francis

Rigby, K. (2007). Consequences of Bullying. In: Rigby, K. (Ed). *Bullying in Schools: And What to Do about It.* Camberwell, Vic.: ACER Press, pp. 48-66.

Salmivalli, C., Lagerspetz, K., Bjorkqvist, K., Osterman, K. & Kaukiainen, A. (1996). Bullying as a group process: participant roles and their relations to social status within the group. *Aggressive Behavior,* 22(1), 1-15. doi: DOI: 10.1002/(SICI)1098-2337(1996)22:1<1::AID-AB1>3.0.CO;2-T

Salmivalli, C., Kärnä, A., & Poskiparta, E. (2010). From peer putdowns to peer support: A theoretical model and how it translated into a national anti-bullying program. In S. R. Jimerson, S. M. Swearer & D. L. Espelage (Eds.), Handbook of bullying in schools: An international perspective (pp. 441–454). New York: Routledge.

Smith, P. K. (2015). *Understanding School Bullying. Its nature and prevention strategies.* London: Sage Publications.

Smith, P. K., Mahdavi, J., Carvalho, M. & Tippett, N. (2008). *An investigation of cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying.* London: Department for Children, Schools and Families. doi: 10.1002/(SICI)1098-2337(1999)25:2<97::AID-AB3>3.0.CO;2-7

Smith, P., Salmivalli, C. & Cowie, H. (2012). Effectiveness of school-based programs to reduce bullying: a commentary. *Journal of Experimental Criminology,* 8(4), 433-441. doi: 10.1007/s11292-012-9142-3

Sutton, J. & Smith, P. K. (1999). Bullying as a group process: An adaptation of the participant role approach. *Aggressive Behavior,* 25(3), 97-111.

Swearer, S. M., Song, S. Y., Cary, P. T., Eagle, J. W., & Mickelson, W. T. (2010). Psychosocial correlates in bullying and victimization: The relationship between depression, anxiety, and bully/victim status. In R. A. Geffner, M. Loring, & C. Young (Eds.), *Bullying behavior: Current issues, research, and interventions* (pp. 95–121). Binghamton, NY: Haworth Press.

Thrupp, M., Lauder, H. & Robinson, A. (2002) School composition and peer effects. *International Journal of Educational Research*, 37(5), 483-504. doi: [10.1016/S0883-0355(03)00016-8](http://dx.doi.org/10.1016/S0883-0355(03)00016-8)

Ttofi, M. M. & Farrington, D. P. (2011). Effectiveness of school-based programs to reduce bullying: a systematic and meta-analytic review. *Journal of Experimental Criminology,* 7(1), 27-56. doi: 10.1007/s11292-010-9109-1

Wang, J., Ianotti, R. J. & Nansel, T. R. (2009). School bullying among US adolescents: physical, verbal and cyber. *Journal of Adolescent Health,* 45(4), 368-375. doi: [10.1016/j.jadohealth.2009.03.021](http://dx.doi.org/10.1016%2Fj.jadohealth.2009.03.021)

Zapf, D., & Einarsen, S. (2011). Individual antecedents of workplace bullying. In S. Einarsen, H. Hoel, D. Zapf, & C. L. Cooper (Eds.), *Bullying and harassment in the workplace* (pp. 177–200). London: Taylor & Francis.

Figure 1: The Dynamic Model of Educational Effectiveness applied to this evaluation

**School conditions**:

* Intake
* Type of school (e.g. faith school)
* Quality of management and Leadership
* School size

**School policies**

School policies on teaching and learning

* School policies on teaching
* School policies on opportunity to learn

School policies on the learning environment

* School policies on behaviour
* School policies on teacher collaboration
* School policies on pupil behaviour
* School policies on partnership with parents

School policies on bullying

* School policies on targeting groups
* School policies on dealing with bullying

**Bullying prevalence**

* Perpetrating bullying
* Suffering bullying

**School Processes**

* Quality of teaching and learning
* Pupil behaviour and safety
* Equality of opportunity and community cohesion

**Pupil Characteristics**

* Gender
* Attainment level
* Social background, SEN, ethnicity

**Table 1.** Descriptive statistics.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Percentage | Mean | SD |
| Girls | 54.0 |  |  |
| FSM eligible | 21.3 |  |  |
| SEN | 11.5 |  |  |
| Non White British | 15.9 |  |  |
| Faith schools | 42.8 |  |  |
| Number of pupils/school |  | 40.3 | 4.6 |
| Leadership & management |  | 2.9 | 0.5 |
| School policies on: |  |  |  |
| Teaching |  | 3.8 | 1.1 |
| Opportunity to learn |  | 4.1 | 0.9 |
| Behaviour |  | 4.2 | 0.8 |
| Teacher collaboration |  | 3.4 | 1.1 |
| Partnership with parents |  | 3.8 | 1.2 |
| Targeting groups re. bullying |  | 3.7 | 0.8 |
| Dealing with bullying |  | 3.9 | 0.7 |
| Quality of teaching and learning |  | 4.0 | 0.6 |
| Pupil behaviour and safety |  | 4.1 | 1.0 |
| Equality of opportunity and community cohesion |  | 3.3 | 0.7 |

**Table 2**. Multilevel models for OBVQ Rasch victim scale (\*=statistically significant at .05 level).

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Model 1 – Empty model* | *Model 2 – Pupil and school context* | *Model 3 – School policies and processes* |
| Variables | Coefficient (S.E.) | Coefficient (S.E.) | Coefficient (S.E.) |
| *Fixed effects* |  |  |  |
| Constant | 3.57 (0.14) | 3.04 (0.20)\* | 2.71 (0.37)\* |
| FSM eligibility |  | 0.02 (0.02) | 0.02 (0.02) |
| SEN |  | 0.04 (0.01)\* | 0.04 (0.01)\* |
| Gender |  | -0.03 (0.02) | -0.03 (0.02) |
| Asian |  | -0.02 (0.02) | -0.02 (0.02) |
| White British |  | -0.03 (0.02) | -0.03 (0.02) |
| Other |  | 0.03 (0.02) | 0.03 (0.02) |
| Key Stage 1 level |  | 0.10 (0.07) | 0.10 (0.07) |
| % FSM eligible |  | 0.17 (0.18) | 0.16 (0.18) |
| % SEN |  | 0.29 (0.30) | 0.29 (0.30) |
| % Ethnic minority |  | 0.26 (0.23) | 0.25 (0.23) |
| Faith school |  | -0.80 (0.12)\* | -0.40 (0.11)\* |
| Number of pupils |  | 0.36 (0.28) | 0.32 (0.25) |
| Leadership & mgt grade |  | -0.14 (0.04)\* | 0.11 (0.05)\* |
| School policies on: |  |  |  |
| Teaching |  |  | 0.01 (0.04) |
| Opp. to learn |  |  | -0.06 (0.07) |
| Behaviour |  |  | -0.09 (0.01)\* |
| Teacher collab |  |  | -0.06 (0.03)\* |
| Partnership with  parents |  |  | -0.06 (0.03)\* |
| Targeting groups re.  bullying |  |  | -0.02 (0.01)\* |
| Dealing with bullying |  |  | -0.03 (0.01)\* |
| Quality of teaching and learning |  |  | 0.19 (0.18) |
| Pupil behaviour and safety |  |  | 0.08 (0.10) |
| Equal of opportunity &  community cohesion |  |  | 0.16 (0.04)\* |
|  |  |  |  |
| *Random effects (Variance to be*  *Explained)* |  |  |  |
| School | 0.17 (0.05) | 0.14 (0.03) | 0.08 (0.02) |
| Classroom | 0.11 (0.02) | 0.11 (0.02) | 0.08 (0.02) |
| Pupil | 0.59 (0.02) | 0.57 (0.02) | 0.56 (0.02) |
| *Variance explained* |  |  |  |
| School |  | 17.6% | 46.4% |
| Classroom |  | 0.0% | 31.8% |
| Pupil |  | 3.4% | 1.7% |
| Total |  | 5.7% | 13.4% |
| *-2loglikelihood* | 1256.0 | 1246.3 | 1127.6 |

**Table 3**. Multilevel models for OBVQ Rasch perpetrator scale (\*=statistically significant at .05 level).

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Model 1 – Empty model* | *Model 2 – Pupil and school context* | *Model 3 – School policies and processes* |
| Variables | Coefficient (S.E.) | Coefficient (S.E.) | Coefficient (S.E.) |
| *Fixed effects* |  |  |  |
| Constant | 3.42(0.13) | 2.91 (0.18)\* | 2.66 (0.27)\* |
| FSM eligibility |  | 0.01 (0.02) | 0.01 (0.02) |
| SEN |  | 0.02 (0.02) | 0.02 (0.02) |
| Gender |  | 0.03 (0.02) | 0.03 (0.02) |
| Asian |  | -0.01 (0.02) | -0.01 (0.02) |
| White British |  | -0.02 (0.02) | -0.02 (0.02) |
| Other |  | 0.03 (0.02) | 0.03 (0.02) |
| Key Stage 1 level |  | 0.07 (0.05) | 0.60 (0.07) |
| % FSM eligible |  | 0.12 (0.16) | 0.12 (0.16) |
| % SEN |  | 0.15 (0.17) | 0.15 (0.17) |
| % Ethnic minority |  | 0.20 (0.19) | 0.20 (0.19) |
| Faith school |  | -0.45 (0.14)\* | -0.41 (0.15)\* |
| Number of pupils |  | 0.31 (0.27) | 0.29 (0.27) |
| Leadership & mgt grade |  | -0.11 (0.05)\* | -0.11 (0.05)\* |
| School policies on: |  |  |  |
| Teaching |  |  | 0.01 (0.03) |
| Opp. to learn |  |  | -0.05 (0.07) |
| Behaviour |  |  | -0.06 (0.01)\* |
| Teacher collab |  |  | -0.05 (0.03) |
| Partnership with  parents |  |  | -0.07 (0.03)\* |
| Targeting groups |  |  | -0.02 (0.01)\* |
| Dealing w bullying |  |  | -0.03 (0.01)\* |
| Quality of teaching and learning |  |  | 0.15 (0.17) |
| Pupil behaviour and safety |  |  | 0.11 (0.10) |
| Equal of opportunity & commun. cohesion |  |  | 0.13 (0.05)\* |
|  |  |  |  |
| *Random effects (Variance to be*  *Explained)* |  |  |  |
| School | 0.13 (0.04) | 0.11 (0.03) | 0.07 (0.02) |
| Classroom | 0.09 (0.02) | 0.09 (0.02) | 0.07 (0.02) |
| Pupil | 0.57 (0.02) | 0.56 (0.02) | 0.55 (0.02) |
| *Variance explained* |  |  |  |
| School |  | 15.4% | 36.4% |
| Classroom |  | 0.0% | 22.2% |
| Pupil |  | 1.7% | 1.8% |
| Total |  | 3.8% | 9.2% |
| *-2loglikelihood* | 1482.3 | 1473.0 | 1308.5 |

1. IGLS (iterative generalized least squares) is a maximum likelihood (ML) method based on estimating the random and fixed parts of the multilevel model alternately assuming the estimates for the other part are correct. This involves iterating between two GLS model fitting steps until the estimates converge to ML estimates. [↑](#footnote-ref-1)