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Title: Teacher Efficacy and Pupil Behaviour: the structure of teachers' individual and collective efficacy beliefs and their relationship with numbers of children excluded from school.

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This study aimed to investigate the relationship between teachers' individual and collective beliefs about their efficacy with children's behaviour and whether these beliefs were associated with the use of exclusion as a sanction.

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Participants responded to questionnaires to assess their individual and collective efficacy beliefs. Demographic and school level data was also collected.

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Factor analysis indicated that teachers' individual efficacy beliefs were best represented by three factors: 'Classroom Management', 'Children's Engagement', 'Instructional Strategies' that corresponded well to previous findings. Analysis of collective efficacy beliefs showed a similar structure that differed from previous findings. Individual efficacy was not associated with numbers of children excluded whereas one factor 'Addressing External Influences' in the collective beliefs was negatively correlated with numbers of children excluded and appeared to mitigate the deleterious effects associated with socio-economic deprivation.

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This study adds weight to the importance of understanding and supporting teachers' beliefs in their collective efficacy. In particular, this study underlines the need for strategies that will endorse and develop teachers' beliefs in their ability to manage children's behaviour successfully.

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Teacher efficacy and pupil behavior: the structure of teachers' individual and collective beliefs and their relationship with numbers of pupils excluded from school

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Abstract

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Introduction

Concerns about children's behaviour in school have been – and continue to be - widely reported and debated (Grieve, 2009; Klassen & Anderson, 2009; Martin, Linfoot & Stephenson, 1999; Miller, 2003; Steer, 2009). Over time, concerns have also been raised

about how well prepared teachers believe they are and how effective they might be in dealing with problematic behaviour (Brophy & Rohrkemper, 1981; Giallo & Little, 2003).

While some research has indicated that teachers believe the causes of children's misbehaviour lie outside their responsibility or control (Gibbs & Gardiner, 2008; Miller, 2003; O'Brien & Miller, 2005), Miller (1995) found that when teachers were successful in managing behaviour they were likely to attribute the success to their own efforts. It is evident that the beliefs that teachers hold can be powerful determinants of both their professional commitment, as well as the outcomes in terms of children's learning and achievement (Caprara *et al,* 2006; Tschannen-Moran & Woolfolk Hoy, 2001). More specifically it seems teachers' belief in their confidence and determination to succeed is a primary requirement for skilful classroom practice and successful management of the learning environment (Martin *et al,*1999; Muijs & Reynolds, 2002; Woolfolk Hoy & Weinstein, 2006).

Although studies reveal a range of beliefs about teachers' responsibility for 'problematic' children (for instance Jordan & Stanovich, 2003; Stanovich & Jordan, 1998), the work by Miller (2003) highlighted the role of the collective staff group in a school (the culture of the staffroom) that may contextualise teachers' beliefs in their ability to manage children's behaviour successfully.

In an attempt to provide further understanding of teachers' beliefs and their effectiveness in managing classroom behaviour, the research reported in this paper examines in some detail the relationship between teachers' individual and collective beliefs and the numbers of children excluded from their schools.

Teacher efficacy beliefs

Theories of '*Teachers' self-efficacy beliefs'* (Bandura, 1993; Ross *et al,* 2004; Tschannen-Moran & Woolfolk Hoy, 2001) refer to the strength of the beliefs that teachers hold that they can positively influence aspects of children's educational development. Importantly, as Bandura and others have stressed, self-efficacy beliefs are domain specific (Bandura, 1997; Goddard *et* al, 2004).

There is a wealth of research into aspects of teachers' beliefs in their individual efficacy. Some of this deals with methodological and conceptual matters (for example: Klassen *et* al, 2009; Tschannen-Moran & Woolfolk Hoy, 1998, 2001). Other researchers have investigated the relationship between individual teachers' beliefs and the impact these may have on classroom practice and, ultimately, children's achievement (Ashton and Webb, 1986; Caprara *et* al, 2006; Ross, 1992; Tournaki & Podell, 2005). However, while teachers' ability to manage pupils and the classroom environment is clearly a pre-requisite for the creation of a good learning environment (Bandura, 1997; Muijs and Reynolds, 2002; Skinner and Belmont, 1993), there is little empirical evidence about the impact of teachers' efficacy beliefs on their management of children's behaviour.

Development of efficacy beliefs

Whilst studies that demonstrate the association of individual efficacy beliefs with outcomes are important, of arguably equal, if not greater, importance is the need for further research to investigate the 'sourcing and processing of efficacy beliefs' (Labone, 2004, p357). It has been suggested that greater understanding of the conditions that support teachers' efficacy beliefs would facilitate educational reform, enhance the development of inclusive education and reduce exclusion (Gibbs, 2007; Labone, 2004).

Clearly the development of belief in one's personal efficacy will change in response to experience and cognition (Bandura, 1997). Unsurprisingly, therefore, experienced teachers were found to have higher efficacy beliefs than novice teachers (Tschannen-Moran & Woolfolk Hoy, 2007). However, in that study the relative importance of different variables associated with efficacy beliefs varied between the two groups.

A primary source of efficacy beliefs is successful 'mastery' experience (Bandura, 1977; 1997; Knoblauch & Woolfolk Hoy, 2008; Mulholland & Wallace, 2001). Accordingly, as predicted, mastery experience has been found to be the most salient contributor to efficacy beliefs amongst both novice and experienced teachers (Tschannen-Moran & Woolfolk Hoy, 2007). However, since mastery experience made a much greater contribution to novice teachers' beliefs, Tschannen-Moran and Woolfolk Hoy speculated that experienced teachers, 'with an abundance of mastery experiences, may have a fairly stable sense of efficacy' (ibid, p944) and not be as readily influenced in their beliefs by experience or feedback from others.

Other sources of influence on individual efficacy beliefs include vicarious experience, social persuasion and affective states (Bandura, 1997). Whilst studies such as that by Tschannen-Moran and Woolfolk Hoy (2007) suggest these factors are of lesser importance than mastery experience, professional development and training activities involving social persuasion and vicarious experience have been found to increase teachers' beliefs in their professional role, responsibility and efficacy (Stanovich & Jordan, 2004; Tschannen-Moran & McMaster, 2009).

A plausible and potentially critical additional psychosocial source for *individual teacher efficacy* beliefs appears to reside within the staff and school ethos. The prevalent attitudes that school staff hold about roles and responsibilities with regard to certain groups of children can clearly influence the beliefs of individual teachers (Jordan & Stanovich, 2003). In his study of teachers' attributions for behaviour, Miller (2003) commented on the potential power of the staffroom culture. Subsequent work illustrated how teachers' discourses may construct their attitude toward behaviour (O'Brien & Miller, 2005). From such discourse amongst colleagues (in the milieu of the staff room, for instance) may arise shared beliefs in the *collective efficacy* of the school staff (Goddard & Goddard, 2001; Goddard, Hoy & Woolfolk Hoy, 2000, 2004; Goddard & Skrla, 2006; Hoy & Miskel, 1996; Kurz & Knight, 2004; Parker *et al,* 2006; Tschannen-Moran & Barr, 2004).

A 'nested' relationship between individual teacher efficacy beliefs and the collective efficacy beliefs of the staff group was investigated by Goddard and Goddard (2001) who found collective efficacy beliefs to be predictive of individual teacher efficacy beliefs. It has also been shown that the relationship between individual and collective efficacy beliefs may be mediated by individuals' sense of themselves as members of the organisation (Friedman & Kass, 2002). It seems possible, therefore, that the nature and management of the school as an organisation may be highly influential on individual beliefs in efficacy (Bandura, 1997; Chen & Lee, 2007; Goddard & Goddard, 2001; Ross & Gray, 2006; Stanovich & Jordan, 1998).

Teacher Efficacy and Children's Behaviour

As we have already noted, the ability to provide confident management of the classroom is a primary requirement for successful teaching (Woolfolk Hoy & Weinstein, 2006). There is evidence that suggests not all teachers are equally motivated to attempt to manage

children's behaviour (Brophy & Rohrkemper, 1981; Jordan and Stanovich, 2003). Teachers with greater belief in the efficacy are more likely to be motivated to manage the classroom and learning environment successfully (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2007).

Emmer and Hickman (1991) investigated teachers' beliefs about their efficacy for classroom management and discipline. Although the efficacy beliefs of the student teachers in Emmer and Hickman's study were predictive of their responses to problems presented in vignettes, they were not related to judgements made about the student teachers' actual performance in the classroom. However, in one of the only empirical studies of children's actual behaviour in this context, Almog and Shechtman (2007) looked at teachers' efficacy beliefs and responses to children's observed behaviour. Their findings indicated the existence of significant positive correlations between individual teachers' self rating of their efficacy beliefs and their responses to the actual behaviours shown in the classroom.

It also seems that teachers who express little belief in their efficacy are less tolerant of unusual behaviour or patterns of learning and are more likely to seek exclusion of 'problematic' students from their classroom (Jordan & Stanovich, 2003; Podell & Soodak, 1993). Teachers may experience significant stress from children's behaviour in schools where perceptions of collective efficacy are low (Klassen, 2010). In such circumstances, a solution to the teacher's difficulties may be to seek the removal of a child from the classroom. This may result in the formal exclusion of the child from the school. Whilst children's poor behaviour may be an issue for teacher recruitment and retention, and associated costs (Ingersoll & Smith, 2003), children excluded from classrooms or schools implicate considerable additional costs for alternative provision (Parson, 1998; Vulliamy & Webb, 2000).

Exclusion

The 'rate' at which children are excluded from school appears to fluctuate with time and across countries. This appears to be at least partly in response to changes in policy and practice (Gilliam & Shahar, 2006; Imich, 1994; Theriot, Craun & Dupper, 2010).

Many researchers have also noted that children's age, race and socio-economic status are all important factors implicated in the way that school staff deal with behaviour (Bourne *et al,* 1994; Gillborn & Gipps, 1996; McLean, 1987; Noltemeyer & McLoughlin, 2010; Osler et al, 2001; Social Exclusion Unit, 1998; Wright *et al*, 2000). Much of that body of work makes use of the characteristics of children. It thus demonstrates how certain groups (racial, social, economic) are disproportionately represented amongst all those excluded from schools. However, when conceptualised as being due to within child characteristics it is probable that teachers will regard children's behaviour as beyond their influence (Grieve, 2009; Miller, 1995). Such a position might be found to mitigate against increased inclusion (Gibbs, 2007). In this context it is appropriate to seek alternative explanations.. As we have indicated above, a plausible relationship between teachers' beliefs, attitudes and their practices may be associated with increased exclusion or inclusion of children.

There is, in any case, evidence that the characteristics of neither children nor schools fully account for rates of exclusion. Thus, it has been found that schools with very similar characteristics and intakes may differ significantly in the rate at which children are excluded because of their behaviour (Galloway, Martin & Wilcox, 1985; Munn *et al*, 2001; Osler *et al,* 2001, Vulliamy & Webb, 2000). As suggested in the preceding review, an alternative

possibility lies in the relationship between teachers' beliefs and practices, the organisational ethos of schools, and rates of exclusion.

Summary

There is a body of evidence suggesting that individual teacher's beliefs in their efficacy will be enhanced by a positive sense of the collective staff efficacy. Positive teaching efficacy beliefs are likely to be associated with greater motivation to engage successfully in managing the classroom and children's behaviour.

We reasoned, therefore, that in schools where collectively teachers had high efficacy beliefs, there would be fewer exclusions.

In summary, the purpose of the investigation reported in this current paper was threefold.

First, in relation to the specific domain of teachers' classroom management and children's behaviour, to determine to what extent the underlying structure of teachers' beliefs matched the more general patterns of individual beliefs as found by Tschannen-Moran and Woolfolk Hoy (2001) and the collective beliefs reported by Goddard (2002).

Second, to investigate the relationship between collective and individual efficacy beliefs and to test the hypothesis that high collective efficacy beliefs would be associated with enhanced individual teacher efficacy beliefs.

Finally, in relation to teachers' specific beliefs about their efficacy in managing children's behaviour, we were interested in the extent to which positive efficacy beliefs might be associated with lower rates of exclusion from school. We expected that in line with earlier work the exclusion rates would be higher in urban settings and in schools in relatively poor socio-economic areas (as indicated by eligibility for free school meals). We hypothesised that in schools where teachers expressed positive beliefs in their classroom management efficacy children would be excluded less often.

Whilst attention has rightly been drawn to the behaviour that may be associated with other special needs (see, for instance, Cole, 1998) in this study we focussed on teachers' expectations that they could manage the behaviour of children who showed no other specific identifiable need for additional or different provision. Other papers (in preparation) will provide case-study material based on interviews with individual teachers and illustrate influences on the development of efficacy beliefs. This paper in intended, therefore, to provide some contextual foreground for the reports of qualitative studies that are in preparation.

Method

Participants

Following initial discussion between the second author and the head teacher of each school, all teachers in an opportunity sample of 57 primary and nursery schools in the North of England were invited to participate. The schools were located across a mixed demographic area and were classified as being in either inner city (57%) or rural settings (42%). A total of 197 responses were received from staff in these schools. Other than data linking respondents to their school, participants remained anonymous.

Information was gathered about the respondents' gender, role in school, and years of experience as a teacher. School level data was also collected for the number of children on role (NOR), the number of children eligible for free school meals (FSM) and the number of fixed-term exclusions in the previous year (FTE). The number of children eligible for free school meals (FSM) is used here as a proxy for the socio-economic status of the community served by each school but we acknowledge that there is debate about its suitability as a measure of the characteristics of any given cohort of children (Croxford, 2000; Goldstein & Noden, 2003; Hobbs & Vignoles, 2007). The number of children receiving fixed-term exclusions is taken as an index of the extent to which pupils' behaviour in each school had been deemed to be unacceptable to the staff.

The majority (84%) of respondents were women and had been teaching for at least 7 years (71%). 20% were the head or deputy head of the school,74% were class teachers and 6% were nursery teachers.

Teachers were asked to complete 2 questionnaires. One surveyed individual efficacy beliefs; the second sought data revealing beliefs in the collective efficacy of the teaching staff in that school.

Measures

The survey of beliefs in individual efficacy was carried out using an adaptation of the Teachers Sense of Efficacy Scale (TSES, Tschannen-Moran & Woolfolk Hoy, 2001). In an international, cross-cultural study (Klassen *et* al, 2009) this instrument has been shown to have good reliability and validity. However, for the purposes of the present study some minor changes were made to adapt terms for UK participants and to draw attention to the specific domain of children's behaviour. The items are shown in Table 1, below. Teachers were asked to respond on a 6-point scale that ranged from 'Nothing' to 'A great deal'. A pilot trial of the revised scale was conducted in a school not subsequently involved. This showed the scale could be considered as being highly reliable (α=.92) and no further modifications were made.

The same teachers were also asked to complete a questionnaire based on Goddard's (2002) 12 item scale, also adapted for UK teachers with items (shown below in Table 2) designed to gauge their perception of the *collective efficacy* of teachers in the school with regard to the management of problematic behaviour. The questionnaire developed by Goddard (2002) was chosen as the basis for our work because it specifically includes items that gauge teachers' perceptions of the influence of environmental factors (eg children's home and community circumstance) on their beliefs (*pace* Tschannen-Moran & Barr, 2004). Teachers were asked to respond to a 6-point scale that ranged from 'Strongly disagree' to 'Strongly agree'. A trial of this questionnaire in one school (not subsequently used in the main study) indicated adequate reliability (α=.78). Feedback did not suggest any further modifications were required.

This scale provided data indicating individual teacher's sense of the collective efficacy in their school. However, Goddard and colleagues (Goddard, 2001; Goddard and Goddard, 2001; Goddard, 2002; Goddard, Hoy and Woolfolk Hoy, 2004) have emphasised the conceptual and psychometric importance of aggregating individual perceptions within each school to obtain, via the group mean of all teachers' individual responses to items about the collective efficacy of staff, a school level measure of group-referent collective efficacy. As Goddard (2002, p99) reasoned, 'the group mean effectively captures the behavioural and

normative influence that collective efficacy exerts.' This strategy was adopted here and the mean (group-referent) responses were calculated and used in subsequent analyses.

Results

In order to examine the underlying structure of the beliefs expressed by teachers in this study, Exploratory Factor Analysis (EFA) was carried out using the data from each of the two scales. The analysis of the responses to the *Teachers' Individual Sense of Efficacy Scale* will be presented first.

For responses to the *Teachers' Individual Sense of Efficacy* questionnaire preliminary tests indicated the data was suitable for EFA (KMO=.93). The questionnaire showed strong internal consistency (α =.92). Factors were extracted using principle component analysis with varimax rotation applied to reveal the simple structure. Inspection of the scree plot and consideration of previous research (Klassen *et* al, 2009; Tschannen-Moran & Woolfolk Hoy, 2001) confirmed that a three-factor solution should be requested. The factors were, in our view, indicative of teachers' beliefs in their efficacy for: *Classroom Management, Children's Engagement* and *Instructional Strategies.* This solution (see Table 1) was dominated by an initial large eigenvalue of 6.5. This in itself may indicate that a solution based on a single factor would be the best explanation of these data and that a total Individual Teacher Efficacy score might have some validity. However, the three factor solution requested was similar to the three factor solution identified by Tschannen-Moran and Woolfolk Hoy (2001). The single discrepancy between the solution found in the present study and that first reported by Tschannen-Moran and Woolfolk Hoy (2001) was with respect to the item 'How much can you assist families in helping…' In the work reported by Tschannen-Moran and Woolfolk Hoy (2001) and Klassen *et al* (2009) this item was found to load onto the factor 'Efficacy for student engagement'. In our study this item was found to load onto 'Efficacy for Instructional Strategies' with no significant cross-loadings.

Although, as can be seen in Table 1 there were a number of significant cross-loadings, elimination of those items (singly or severally) did not yield any easily interpretable solutions and, therefore, in light of this solution's proximity to that found by Tschannen-Moran and Woolfolk Hoy, and Klassen *et al* this solution was retained for discussion.

Table 1: Factor Loadings of items in the Teachers' Individual Sense of Efficacy Scale

(about here)

Teachers' total responses to the items in each of the three scales were converted to proportions of their maximum (since the scales were not all the same length) and a one-way within subjects ANOVA performed to see if the teachers perceived any difference in the importance of the factors. This analysis indicated a significant main effect ($F=15.8$, $p<.001$). Pairwise comparisons (with Bonferroni adjustment for multiple comparisons) suggested that teachers had a significantly more positive belief in 'Efficacy for Classroom Management' efficacy than either 'Efficacy for Children's engagement' or 'Efficacy for Instructional Strategies', and that the difference between these latter two factors was not significant.

A series of MANOVAs were also performed in order to make comparisons across sub-groups. No significant differences were found due to the teacher's role (head-teacher, deputy, class-teacher etc) years of teaching experience or school setting.

For individuals' responses to the *Collective Efficacy* questionnaire, preliminary analyses indicated the data was suitable for EFA (KMO=.750). The questionnaire showed adequate internal consistency (α =.79). Factors were extracted using principle component analysis with varimax rotation applied to reveal the simple structure. There were three factors with eigenvalues greater than 1. Cumulatively these accounted for 59.4% of the variance in the data. This three factor solution is presented below in Table 2. That a three factor solution was indicated as a viable solution is in contrast to Goddard's (2002) finding of a single factor solution. This will be discussed below. On inspection of the constituent items we considered the three factors to represent the teachers' beliefs in their efficacy for use of *Teacher Skills*, *Motivating Pupils* and in addressing *External Influences*.

Table2: Factor Loadings of items in the individual Teacher's Sense of Collective Efficacy scale

(about here)

Teachers' total responses to the items in each of the three subscales were converted to proportions of their maximum and a mixed design MANOVA was also performed using the subscales as the within subject variables and teacher's role, years of experience and school setting as independent variables. This analysis indicated a significant main effect of Collective Efficacy ($F=213.5$, $p<.001$) and a significant interaction with school setting ($F=8.9$, $p<.001$). Pairwise comparisons (with Bonferroni adjustment for multiple comparisons) suggested that these teachers perceived themselves as equally efficacious in their use of Skills and in Motivating children. In comparison, it appears that they believed they had significantly less efficacy in addressing 'External Influences'. A summary of the relevant means and standard deviations for this aspect of the data are shown in Table 3a, below. Again no significant differences were found due to the teacher's role (head-teacher, deputy, class-teacher etc), years of teaching experience or school setting and these variables were not included in any subsequent analyses.

Table 3: Means and standard deviations of teacher's collective efficacy subscales by setting.
(about here)

Following this, as described above, using the procedure advocated by Goddard and colleagues, the *group-referent* collective efficacy data was calculated and submitted for exploratory factor analysis. Preliminary tests indicated this data was suitable for analysis (KMO=.739). Factors were extracted using principal component analysis. Four factors were found to have eigenvalues greater than 1 and cumulatively accounted for 85.3% of the variance. This solution was not, however, finally requested since one factor had loadings on just two items and interpretation of factors was not straightforward. Instead, a three factor solution was selected as providing the best fit between interpretability, conceptual integrity and empirical loadings (see Table 4). This solution accounted for 76.6% of the variance in the data. On inspection of the constituent items we again considered the three factors to represent the teachers' beliefs in their collective efficacy in the use of *Teacher Skills*, *Motivating Pupils* and in addressing *External Influences*.

Table 4: Factor loadings of items for the group-referent teachers' sense of collective efficacy (about here)

Once again, teachers' total responses to the items in each of the three subscales were converted to proportions of their maximum and a mixed design MANOVA was performed using the group referent subscales as the within subject variables and teacher's role, years of experience and school setting as independent variables. This analysis indicated a significant main effect of group referent collective efficacy ($F=602.8$, $p<.001$) and a significant interaction of collective efficacy with school setting ($F=16.1$, $p<.001$).The relevant means are shown in Table 3b. Pairwise comparisons (with Bonferroni adjustment for multiple comparisons) suggested there was no significant difference between the strength of group beliefs in the staff efficacy with regard to 'Teacher Skill' and 'Motivating Pupils' but there was a significantly weaker belief in their efficacy in addressing 'External Influences'.

As we were also interested to see if teachers' individual efficacy beliefs were affected by the group referent collective beliefs in each school, we next conducted a series of exploratory hierarchical regressions. Since the relationship of individual and group referent efficacy beliefs might, we thought, be mediated by individual perceptions of collective efficacy, these variables were included in the analysis. Thus, with each of the individual efficacy factors (Classroom Management, Children's Engagement, Instructional Strategy) in turn as the dependent variable, following entry of NOR, School Setting and FSM, the independent variables were entered in the order: Collective Efficacy 1 (Teaching Skill), Collective Efficacy 2 (Motivating Pupils), Collective Efficacy 3 (External Influences), Group Referent Teaching Skill, Group Referent Motivating Pupils, Group Referent External Influences. Durbin-Watson and multi-collinearity tolerance statistics did not indicate any serious violations of underlying assumptions. The analyses suggested that of the IVs, teachers' individual perception of Collective Efficacy 2 (Motivating Pupils) alone accounted for significant proportions of variance in the dependent variables and this was quite consistent across all three regressions ($\Delta R^2=.127$, $F_{\text{to enter}}=27.9$, $p<.01$; $\Delta R^2=.123$, $F_{\text{to enter}}=29.5$, $p<.01$; $\Delta R^2=.148$, $F_{\text{to enter}}=33.3$, $p<.01$ respectively for the addition of this variable in each regression).
Finally, we wanted to assess whether teachers' beliefs might be related to responses to children's behaviour as expressed by the numbers of children given fixed term exclusions from each school. An examination of simple bivariate correlations indicated no association between the size of school (NOR) and numbers of exclusions. However, significant associations were found between socio-economic status (FSM), numbers of exclusions (FTE) and group referent collective efficacy beliefs. The means and bi-variate correlation coefficients are shown in Table 5, below.

Table 5: Correlation of Fixed Term Exclusions (FTE), Individual, Collective (CE), and Group-Referent Collective Efficacy Factors

(about here)

Taking account of School Setting (rural or urban), and variations in FSM and Group Referent Collective Efficacy, we then conducted a series of exploratory hierarchical regressions of the number of exclusions (FTE). On inspection of the raw data it was found necessary to perform a logarithmic transformation of the independent variable (FTE) to correct for a positive skew. The transformed variable was used in all the following regression analyses. Following entry of School Setting, and FSM, each of Group Referent Collective

Efficacy factors: Teaching Skill, Motivating Pupils, External Influences were entered in turn as the final predictor variable. It can be seen that in line with our expectations, there were significant relationships between the number of exclusions, the setting (urban or rural), free school meals, schools and collective efficacy (r=-.30, p<.01; r=.47, p<.01; r=-.35, p<.01 respectively). Having taken account of school size ($F_{to\ enter}$=3.3 ns), significant additional variance in the regression of exclusions was associated with the entry of school setting ($F_{to\ enter}$=16.6, p<.01) and then FSM ($F_{to\ enter}$=32.8, p,.01). When the final predictor variable was entered we found that of the three factors implicated in teachers' collective efficacy beliefs only 'External Influences' was associated with significantly more variance between schools in the number of exclusions ($F_{to\ enter}$=5.07, p=.03). However, a one-way ANCOVA was also performed to test if exclusions were higher in urban areas than in rural areas. FSM and group referent collective efficacy for addressing External Influences were entered as covariates. This analysis indicated that having taken account of the covariates, the mean numbers of exclusions by schools in urban and rural settings were not significantly different from what might be expected by chance.

Summary and Discussion

197 primary and nursery school teachers in the North of England responded to a questionnaire survey of their efficacy beliefs. We also collected data regarding the number of pupils, the number of pupils eligible for free school meals and the number of pupils receiving fixed term exclusions from each school. In order to structure the ensuing discussion we will deal first with the findings with regard to teachers' individual and collective efficacy and the inter-relationship between these before considering the relationship with the number of exclusions from each school.

Teacher Efficacy

Analysis of the data indicated that the teachers' beliefs in their *individual efficacy* in managing children's behaviour consisted of three factors. These factors coincided almost exactly with the underlying structure first presented by Tschannen-Moran and Hoy (2001) and subsequently confirmed by Klassen *et* a (2009). In the present study the item 'How much can you assist families in helping their children…' was associated with the items classified by Tschannen-Moran and Hoy (2001) as '*Efficacy for instructional strategies*', whereas that item in their study was found to be closely associated with items relating those they labelled as '*Efficacy for student engagement.*' In all other respects the items from the TSES that were adapted for the present study to explore teachers' beliefs in their efficacy at managing children's behaviour provided the same underlying structure of three factors. In order to emphasise the similarity and to imply the constancy of teacher's efficacy beliefs across domains and cultures we also labelled the factors as '*Efficacy for Classroom Management,' 'Efficacy for Children's Engagement'* and '*Efficacy for Instructional Strategies'.* The first of these factors was found to be the area in which the teachers expressed the highest efficacy beliefs. A limitation of the present study is that unlike Almog and Shechtman (2007) we did not collect observational data about teachers' classroom practices. Thus, it is perhaps unsurprising that no aspect of teachers' individual efficacy beliefs was associated with the number of children excluded from the schools. Thus, while belief in classroom management efficacy is clearly important in support of how teachers manage children's behaviour, it seems this does not directly affect whether or not children are excluded from school.

The teachers' responses to the survey of their *collective efficacy* beliefs were analysed firstly to capture each teacher's individual belief in the collective efficacy of staff. Secondly, in line with the strategy adopted by Goddard and colleagues (Goddard & Goddard, 2001; Goddard, 2002; Goddard, Hoy & Woolfolk Hoy, 2004) analysis was undertaken of aggregated scores representing the typical (group mean referent) collective efficacy beliefs of the teachers in each school. Whereas Goddard and colleagues identified a single factor (accounting for just over 64% of the variance), in the present investigations both sets of analyses of the collective efficacy data yielded parsimonious three factor solutions (accounting for 59% and just under 77% of the variance respectively).

In considering the difference between the present findings with regard to collective efficacy and those of Goddard and colleagues, there is a need to acknowledge the influence of different domains. Thus, Goddard and colleagues investigated teachers' efficacy beliefs in relation to children's academic achievement. This is plausibly a task with greater unity and coherence that easily accords with teachers' explicit professional duty. In contrast, as Miller (1995) and others have shown, teachers may have a range of causal attributions for pupils misbehaviour. Since efficacy beliefs are necessarily domain specific (Bandura, 1997), it follows that in line with the underlying structure of teachers' attributions for the causes of problematic behaviour, efficacy would be required in each of the specific areas of concern.

In the present study the three factors were identified as representing teacher's collective beliefs with regard to *Efficacy for Teacher Skill, Efficacy for Motivating Pupils* and *Efficacy for addressing External Influences*. Of these factors, *External Influences* appears to have been the area of professional activity in which the teachers' believed they had least efficacy. When teachers feel they are unsuccessful in managing children's behaviour they are, according to Miller (1995), likely to attribute the cause of the misbehaviour to sources outside their direct control. The finding that teachers have weaker beliefs in their efficacy to address external influences is in line with Miller's view. However, over and above the influence of the setting of the school and the level of deprivation in the community, teachers' collective belief in their efficacy for addressing the effects of '*External Influences'* was significantly related to the number of children excluded from each school. This suggests that when the staff corporately believes it can address influences that might otherwise undermine classroom practices, teachers may be ultimately more successful in avoiding recourse to exclusion as a way of 'solving' behaviour problems.

The nested relationship of collective and individual efficacy was elaborated by Goddard and Goddard (2001). However, the Goddards' study only considered unitary constructs in teachers' individual and collective efficacy. Our investigations demonstrated firstly that both individual and collective efficacy beliefs with respect to the management of children's behaviour should be considered as having more complex underlying structures that evoked different aspects of efficacy. However, in partial confirmation of the Goddard and Goddard (2001) finding, in the current investigation we found several significant bivariate associations between collective and individual efficacy beliefs. It is noteable that with respect to teachers' management of children's behaviour, teacher beliefs in their individual efficacy in the classroom appear to have been related specifically only to the corporate belief in the staff's efficacy for motivating children to learn. It seems to us that the motivation to help children learn may be one of the principal drivers for choosing teaching as a career. Further, a strong sense of collective efficacy, inspired by a transformational leadership style has, elsewhere, been found to reinforce the shared goals of staff teams (Chen & Lee, 2007). A more detailed exposition of the links between leadership style, collective efficacy and teachers'

commitment in schools was provided by Ross and Gray (2006). The influence on the development of efficacy beliefs of a cooperative staff group may also be significant (Knoblauch & Hoy, 2008). We wonder, therefore, if a strongly shared belief in the staff's collective efficacy exists amongst a staff group, then staff confidence will provide a supportive context in which mastery experience may be had (Bandura, 1997; Knoblauch & Woolfolk Hoy, 2008). Such a context could then enable individual teachers to develop a positive belief in their own efficacy to manage and teach children whose behaviour might be seen as difficult. Almost certainly such a context will provide vicarious experiences that too support the development of efficacy beliefs (Tschannen-Moran & McMaster, 2009; Tschannen-Moran & Woolfolk Hoy, 2007).

Exclusion and Efficacy

In line with previous findings (Noltemeyer & McLoughlin, 2010), more children were excluded from schools in urban settings than in rural settings. Likewise, schools in socio-economically deprived areas were more likely to be formally excluding children than schools in more prosperous communities. In schools where the group mean collective efficacy (ie the measure of the central tendency of the staff group in each school) for addressing external influences (from home and community circumstances) was higher, exclusions were used less. More detailed analyses showed that while indications of socio-economic deprivation (Free School Meal eligibility) and collective efficacy were associated with the number of fixed-term exclusions used by schools (in opposing ways), if the effect of those factors was taken into account, there were no significant differences in the number of exclusions between school in urban and rural settings. This suggests that a more complex investigation is required to separate out differential effects of School Setting, Socio-economics, and teachers' Efficacy beliefs.

However, the study does suggest that in schools where the typical beliefs of the staff are that it is possible to address the adverse influence of home and community, fewer children will be excluded as a consequence of their behaviour. It is beyond the scope of this paper to establish what supported the positive belief of the staff in this respect. It is, however, possible that in schools where there is a positive, transformational style of leadership that supports the professional development of all staff, staff will be more likely to demonstrate inclusive beliefs and practices (Jordan & Stanovich, 2003; Knoblauch & Woolfolk Hoy, 2008; Ross & Gray, 2006; Stanovich & Jordan, 1998). We intend to address this in a companion paper (Powell & Gibbs, in preparation).

Conclusions

Further to studies of both the structure of teachers' individual efficacy beliefs (Tschannen-Moran & Hoy, 2001) and the consistency of this structure across cultures (Klassen *et al*, 2009), this study shows that the structures may also be consistent across domains. This emphasises the generality and importance of the construct of teacher efficacy. In light of concerns about standards in schools, teacher stress and children's behaviour (Caprara *et* al, 2006; Grieve, 2009; Klassen, 2010; Tournaki & Podell, 2005), these findings reinforce the need for work that can provide support for the professional development of teachers as indicated by Stanovitch & Jordan (2004) and Jordan, Schwartz and McGhie-Richmond (2009), for instance.

Although the evidence indicates remarkable consistency in the structure of teachers' individual beliefs, the structure of teachers' collective efficacy beliefs suggests a more

complex picture than with that found by Goddard and colleagues (Goddard, *passim*). Goddard and colleagues were, however, primarily interested in teachers' efficacy at raising children's levels of academic performance. We suggest that since teachers' attributions about behaviour are more complex (Miller, 1995), teachers may hold a matching set of beliefs about their efficacy in managing children's behaviour. Thus, it seems quite plausible to us that when individual teachers hold beliefs about the collectively ability of the staff to motivate children, individual teacher's own beliefs in their personal classroom efficacy will be more positive.

School level outcomes were related to the group referent collective efficacy beliefs. Group referent efficacy beliefs represent something of the 'ethos' of the school with regard to the management of children's behaviour. It is likely that this also represents the views of the leadership of the school (Chen & Lee, 2007; Ross & Gray, 2006). The analyses of our data indicate that for teachers and schools involved in this study, when staff views are that teachers believe they can successfully address external influences, less use is made of exclusion as a sanction. Encouragingly, but with implications for policy, leadership, staff development and professional practice, the findings here indicate that positive collective efficacy beliefs about addressing external influences can counteract some of the deleterious effects of urban socio-economic deprivation.

This study, therefore, adds to what is already known about the importance of understanding and supporting teachers' beliefs in their efficacy. The study also suggests ways that might avert the use of exclusion and the associated social, educational and financial costs that arise when children are excluded from schools.

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	Classroom management	Children's engagement	Instructional strategies
How much can you do to calm a pupil who is disruptive or noisy?	**.788**	.245	.241
How much can you do to get pupils who you consider to be presenting difficult behaviour to follow classroom rules?	**.761**	.295	.282
How well can you establish a classroom management system with pupils who you consider to be presenting difficult behaviour ?	**.647**	.341	.384
How much can you do to control disruptive behaviour in the classroom?	**.640**	.574	-.079
How much can you do to get pupils who you consider to be presenting difficult behaviour to believe they can do well in schoolwork?	.230	**.789**	.339
How much can you do to help pupils who you consider to be presenting difficult behaviour value learning?	.210	**.765**	.407
How much can you do to motivate pupils who present difficult behaviour and show a low interest in schoolwork?	.418	**.708**	.235
How much can you assist families in helping their children do well in school, specifically children who you consider to be presenting difficult behaviour?	.021	.223	**.795**
How well can you implement alternative strategies in your classroom?	.357	.305	**.602**
To what extent can you craft good questions for pupils who you consider to be presenting difficult behaviour?	.399	.374	**.589**
To what extent can you provide an alternative explanation or example when pupils who you consider to be presenting difficult behaviour are confused?	.511	.041	**.566**
How much can you use a variety of assessment strategies when teaching pupils who you consider to be presenting difficult behaviour?	.405	.331	**.526**
Eigenvalue	3.01	2.70	2.57
α	.833	.861	.820
Mean percent of maximum	84.3	81.3	80.8

Table 1: Factor Loadings of items in the Teachers' Individual Sense of Efficacy Scale

	Teacher Skills	Motivating Pupils	Addressing External Influences
If a pupil who presents difficult behaviour does not want to learn, teachers here give up	**.845**	.140	.114
Teachers at this school do not have the skills needed to produce meaningful student learning, specifically with pupils who they consider to be presenting difficult behaviour in class	**.828**	.228	-.094
Teachers in this school do not have the skills to deal with pupil disciplinary problems	**.742**	.369	.111
For pupils considered to be presenting difficult behaviour, learning is more difficult at this school because they are worried about their safety	**.682**	-.179	.204
Teachers here are confident they will be able to motivate pupils who they consider to be presenting difficult behaviour in class	.145	**.862**	.082
Teachers in this School are able to get through to the most difficult students	.150	**.855**	.080
Teachers in this school really believe that every pupil who they consider to be presenting difficult behaviour in class can learn	.051	**.559**	.076
Home life provides so many advantages these pupils are bound to learn	-.108	-.024	**.728**
Pupils who are considered to be presenting difficult behaviour in class come to school ready to learn	.080	.238	**.714**
The opportunities in this community help ensure that pupils who are considered to present difficult behaviour will learn	.092	.223	**.659**
Drug and alcohol abuse in the community make learning difficult for pupils presenting difficult behaviour here	.163	-.178	**.621**
Pupils who present difficult behaviour in this School just aren't motivated to learn	.349	.308	**.527**
Eigenvalue	2.64	2.26	2.23
α	.79	.78	.82
Mean percent of maximum	60.9	60.4	39.7

Table 2: Factor Loadings of items in the individual Teacher's Sense of Collective Efficacy scale

	School Setting	Mean	sd	N*
Teacher Skills	Urban	58.0	14.8	94
	Rural	65.2	8.84	64
	Total	60.9	13.2	158
Motivating Pupils	Urban	59.4	9.8	94
	Rural	61.8	9.6	64
	Total	60.4	9.7	158
Addressing External Influences	Urban	35.2	11.2	94
	Rural	46.4	11.6	64
	Total	39.7	12.6	158

Table 3a: Means and standard deviations of individual teacher's collective efficacy subscales by school setting.

	School Setting	Mean	sd	N*
Teacher Skills	Urban	58.3	13.3	108
	Rural	65.0	4.8	82
	Total	61.2	11.0	190
Motivating Pupils	Urban	59.6	5.0	108
	Rural	61.4	5.5	82
	Total	60.4	5.3	190
Addressing External Influences	Urban	35.4	6.6	108
	Rural	44.2	9.3	82
	Total	39.2	9.0	190

Table 3b: Means and standard deviations of group referent teacher's collective efficacy subscales by school setting.

**The different values for N (urban and rural) arise because although there were some missing responses from individual teachers the Group Referent scores derive from the mean response from all staff in a school.*

	Teacher Skills	Motivating Pupils	Addressing External Influences
Teachers at this school do not have the skills needed to produce meaningful student learning, specifically with pupils who they consider to be presenting difficult behaviour in class	**.923**	.301	.137
If a pupil who presents difficult behaviour does not want to learn, teachers here give up	**.920**	.162	.191
Teachers in this school do not have the skills to deal with pupil disciplinary problems	**.894**	.332	.139
For pupils considered to be presenting difficult behaviour, learning is more difficult at this school because they are worried about their safety	**.784**	-.156	.265
Teachers in this School are able to get through to the most difficult students	.169	**.914**	.061
Teachers here are confident they will be able to motivate pupils who they consider to be presenting difficult behaviour in class	.224	**.911**	.074
Teachers in this school really believe that every pupil who they consider to be presenting difficult behaviour in class can learn	.061	**.796**	.263
The opportunities in this community help ensure that pupils who are considered to present difficult behaviour will learn	.125	.323	**.808**
Drug and alcohol abuse in the community make learning difficult for pupils presenting difficult behaviour here	.031	-.332	**.758**
Pupils who are considered to be presenting difficult behaviour in class come to school ready to learn?	.243	.289	**.728**
Pupils who present difficult behaviour in this School just aren't motivated to learn	.358	.345	**.727**
Home life provides so many advantages these pupils are bound to learn	.123	.052	**.547**
Eigenvalue	3.41	2.97	2.81
α	.931	.894	.815
Mean percent of maximum	61.2	60.4	39.2

Table 4: Factor Loadings of items for the Group-Referent Teachers' Sense of Collective Efficacy

	FTE	FSM	Individual Teacher Efficacy			Individual Teacher's CE			Group-Referent CE		
	1	2	3	4	5	6	7	8	9	10	11
1. FTE	1										
2. FSM	.499**	1									
3. Classroom management	-.137	-.048	1								
4.Children's engagement	-.095	.003	.718**	1							
5. Instructional strategies	-.097	.057	.695**	.725**	1						
6. Teacher Skills	-.032	-.122	.035	-.030	.055	1					
7. Motivating Pupils	-.057	-.068	.350**	.343**	.413**	.325**	1				
8. Addressing External Influences	-.292**	-.399**	.197*	.163*	.219**	.324**	.265**	1			
9. Teacher Skills	-.013	-.141	.029	.035	.084	.837**	.198**	.318**	1		
10. Motivating Pupils	-.091	-.134	.244**	.236**	.270**	.289**	.557**	.170*	.354**	1	
11. Addressing External Influences	-.368**	-.520**	.117	.041	.124	.344**	.143	.724**	.405**	.259**	1
Mean	1.67	29.3	84.1	80.8	80.9	61.6	60.7	39.5	61.6	60.6	39.3
sd	.85	19.1	11.3	12.2	10.5	12.8	9.5	12.8	11.0	5.4	9.0

*** p<.01; *p<.05*

Table 5: Correlation of Fixed Term Exclusions (FTE), Individual, Collective (CE), and Group-Referent Collective Efficacy Factors