

An examination of teacher efficacy

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Overarching Abstract

Efficacy beliefs can determine how environmental opportunities and obstacles are perceived and affect choice of activities. They can determine the amount of effort which is given to an activity and how long people will persevere when faced with difficulties and failures (Bandura, 1997). Perceived self-efficacy is reported to be an important stress resource factor in mitigating teacher burnout (Schwarzer & Hallum, 2008). This paper includes a systematic review which reviews eleven published studies that look at the relationship between self-efficacy and burnout in teachers. A number of findings were made including all studies having a negative relationship between teacher self-efficacy and burnout and all studies having a negative relationship between teacher self-efficacy and the burnout dimension depersonalisation.

This paper also includes a bridging document of how the findings from the systematic review led to the empirical piece of research. As part of this explanatory link between the two the theoretical underpinnings of the research and the research paradigm are considered.

The aim of the empirical piece was to explore the influence of a teacher's role on collective efficacy beliefs and teachers' perception of possible collective efficacy sources. Participants were 178 teachers from primary, secondary and special schools in a small local authority in the North East of England. The research had two phases, quantitative and qualitative. Analysis of teacher collective efficacy beliefs found that those teachers who had an extra role of responsibility within school or were a member of senior management reported higher collective efficacy scores than those teachers who did not have such roles. Thematic analysis found four themes: communication, learning, supporting roles and stress management. This study adds to the under researched area of how teacher collective efficacy beliefs are formed and how they could be enhanced.

Keywords: Teacher self and collective efficacy, burnout, senior management, role of responsibility and sources

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**A systematic review of the relationship between self-efficacy
and burnout in teachers**

Abstract

Self-efficacy beliefs can determine how environmental opportunities and obstacles are perceived and affect choice of activities as well as the amount of effort which is given to an activity (Bandura, 1997). Perceived self-efficacy is reported to be an important stress resource factor in mitigating teacher burnout (Schwarzer & Hallum, 2008).

This paper reviews eleven published studies which look at the relationship between self-efficacy and burnout in teachers. Reviews of the literature to date have tended to look at burnout as a unitary concept whereas this paper seeks to review it as a multi-dimensional concept. A number of findings were made including all studies having a negative relationship between teacher self-efficacy and burnout and all studies having a negative relationship between teacher self-efficacy and the burnout dimension depersonalisation. Recommendations for further research include exploring the relationship between self-efficacy and depersonalisation and the effect the organisation could have on teachers' self-efficacy.

Keywords: self-efficacy, teacher and burnout

Introduction

Self-efficacy

Self-efficacy is grounded in the theoretical framework of social cognitive theory which emphasises that people can exercise some control over what they do (Bandura, 1997). Bandura (1997) maintains that people are self-organising, proactive, self-regulating and self-reflecting. From this perspective self-efficacy affects one's goals and behaviours and is influenced by one's actions and conditions in the environment (Goddard, Hoy & Hoy, 2004). Efficacy beliefs determine how environmental opportunities and obstacles are perceived and affect choice of activities, the amount of effort which is given to an activity and how long people will persevere when faced with difficulties and failures (Bandura, 1997). Self-efficacy beliefs can enhance or hinder motivation (Bandura, 1997). People with high self-efficacy may choose to perform more challenging tasks, set themselves higher goals and stick to them and anticipate

either optimistic or pessimistic scenarios in line with their level of self-efficacy (Bandura, 1997). According to Bandura (1997) self-efficacy beliefs are constructed from four sources of information; 'enactive mastery experiences', 'vicarious experiences', 'verbal persuasion' and 'physiological and affective states'. 'Enactive mastery experiences' are 'the most influential form of efficacy information as it provides the most authentic evidence as to whether one can muster whatever it takes to succeed' (Bandura, 1997, p. 80). However, people do not rely solely on 'enactive mastery experiences' to construct their self-efficacy beliefs. 'Vicarious experiences' relate to modelling as a tool to promote self-efficacy and 'verbal persuasion' refers to others' feedback strengthening peoples' beliefs in their capabilities. 'Physiological and affective states' refers to enhancing one's physical status by reducing stress levels and negative emotions (Bandura, 1997). Efficacy beliefs produce their effects through four mediating processes i.e. cognitive, motivational, affective and selective processes (Bandura, 1997).

Bandura (1997) argues that self-efficacy is domain specific. However, some researchers have conceptualised a generalised sense of self-efficacy. It refers to a global confidence in one's coping ability across a wide range of demanding novel situations (Schwarzer, Schmitz & Tang, 2000). Teacher self-efficacy may be conceptualised as their belief in their own ability to plan, organise and carry out activities which are required to attain educational goals (Skaalvik & Skaalvik, 2010). Self-efficacy has been shown to predict teachers' goals and aspirations (Muijs & Reynolds, 2002), teachers' attitudes towards innovation and change (Fuchs, Fuchs & Bishop, 1992), teachers' tendency to refer students with difficulties to special education (Podell & Soodak, 1993), teachers' use of teaching strategies (Allinder, 1994) and the likelihood that teachers will stay in the profession (Skaalvik & Skaalvik, 2010). In addition to self-efficacy the teacher may also have beliefs about the ability of the team of teachers in a department at the school to execute courses of action required to produce given results (Bandura, 1997). Such beliefs may represent collective teacher efficacy. However, there are few studies which look at this relationship (Skaalvik & Skaalvik, 2010). Teacher self-efficacy may be of importance to Educational Psychologists, as a teacher who does not believe in their capabilities to teach

particular children may be less likely to implement strategies and persevere when encountering obstacles.

Definitions of teacher self-efficacy have become more complex in terms of scope and the facets they embrace (Friedman & Kass, 2002). For example, Cherniss (1993) suggested teacher self-efficacy should consist of three domains: task (the level of teachers' skill in teaching, disciplining and motivating of students), interpersonal (teachers' ability to work harmoniously with others particularly service recipients, colleagues and direct supervisors) and organisation (teachers' ability to influence the social and political powers of the organisation). Friedman and Kass (2002) designed a conceptual model of teacher self-efficacy which comprised two basic domains: the classroom where the teacher works with the students and the school where the teacher functions as a member of an organisation.

Burnout

There is increasing evidence that teachers in the course of their careers experience a great deal of stress and this may have implications for their physical and mental health (Borg, Riding & Falzon, 1991; Byrne, 1999; Kyriacou, 2001; Tang, Au, Schwarzer & Schmitz, 2001). The stressors teachers may have to face include students with behavioural difficulties, problems with parent-teacher relationships, conflict with colleagues or having to organise teaching in a new way as a consequence of working in teams or governmental change (Skaalvik & Skaalvik, 2007). Most teachers cope successfully with stress, for instance through active problem solving, social and emotional support from colleagues, cooperating with parents or changing their teaching strategy (Skaalvik & Skaalvik, 2007). Some teachers may develop more psychological symptoms than others varying from mild frustration and anxiety to more severe symptoms such as burnout (Chan, 2007; Dunham, 1992; Schonfeld, 1992). Burnout in teachers represents teachers' negative responses to the mismatch between job requirements and their perceived abilities (Tang et al., 2001).

The term burnout was initially used in the 1970s to describe the phenomenon of physical and emotional exhaustion with associated negative attitudes (Maslach & Schaufeli, 1993). The phenomenon was found to be quite common in a

number of human service occupations (Chan, 2007). Burnout has been described as a 'syndrome of emotional exhaustion, depersonalisation and reduced accomplishment which is a special risk for individuals who work with other people in some capacity' (Leither & Maslach, 1988, p. 347). Burnout can develop over a long period of stressful encounters (Cherniss, 1993). According to Maslach and Jackson (1986) the three dimensions of burnout can be described as follows. *Emotional exhaustion* is seen as the stress component. It includes feelings of being emotionally overextended and depleted of one's emotional resources. Fatigue, debilitation, loss of energy are characteristics of emotional exhaustion. *Depersonalisation* is an evaluation component which refers to the loss of idealism and being negative and detached towards one's work and recipients of the services. *Lack of personal accomplishment* (or reduced accomplishment) is the self-evaluation component, it represents a decline of one's perceptions of effectiveness and competence of work in working with people (Maslach & Jackson, 1986).

To foster systematic research on burnout Maslach and Jackson (1986) developed the Maslach Burnout Inventory (MBI), a standardised measure that has gained widespread acceptance in studies of burnout (Chan, 2007). The MBI is considered the standard in the field. The extensive interest in teacher burnout led to the development of a special version of the MBI for teachers (MBI-Education Form) (Maslach & Jackson, 1986).

Self-efficacy and burnout

Burnout is a breakdown of the occupational domain of a person's sense of their own efficacy (Friedman, 2003). According to Schwarzer et al. (2000) perceived self-efficacy is an important stress resource factor in mitigating teacher burnout. Individuals with a low sense of self-efficacy tend to have low self-esteem and have pessimistic thoughts about their accomplishments and personal development (Tang et al., 2001). On the other hand, individuals with a high level of self-efficacy will be motivated to perform more challenging tasks and demonstrate better decision making abilities (Tang et al., 2001). Self-efficacious teachers may perceive the objective demands of daily teaching as being less threatening than those teachers who do harbour self-doubts about their professional performance. Being able to manage stressful demands could

prevent the emergence of teacher burnout (Schwarzer & Hallum, 2008). Kelchtermans and Strittmatter (1999) have suggested that the symptoms of burnout could be reduced in environments in which teachers experience personal growth, self-efficacy and perceived success in their career progression. Accordingly intervention efforts which could involve Educational Psychologists could centre on providing opportunities for individual development, perhaps through training sessions on teacher emotional well-being.

Focus on this review

Research evidence discussed above appears to indicate that there is a relationship between self-efficacy and burnout but no systematic review of the research has been carried out at the time of carrying out this review. Reviews of the literature to date have tended to look at burnout as a unitary concept rather than a multi-dimensional concept. This review sought to look at the relationship between self-efficacy and the three dimensions of burnout which are emotional exhaustion, depersonalisation and reduced or lack of personal accomplishment.

Method

The systematic method outlined by Petticrew and Roberts (2006) guided the method of this review. This method involves a number of stages which are outlined in Table 1.

1	Define the question
2	Carry out the literature search
3	Screen the references
4	Assess the remaining studies against the inclusion/exclusion criteria
5	Data extraction
6	Critical appraisal
7	Synthesis of primary studies
8	Consider the effects of publication bias and other internal and external biases
9	Writing up of the report

Table 1: The main stages of Petticrew and Roberts' (2006) systematic method

Defining the question and the literature search (step 1 and 2)

Before electronic databases were searched the question was defined and the population of teachers (primary and secondary) was decided upon. Electronic

databases were searched to locate relevant studies. The search terms used were self-efficacy, teacher and burnout. Synonyms were not used for these words as they are specific terms with no appropriate synonyms. The following electronic databases were searched: Web of Knowledge, Scopus, CSA Illumina, Psychinfo and ERIC (Educational Resource Index and Abstracts). In addition UK and non-UK funded research databases were searched which included: ESRC (Economic and Social Research Council), Society Today, CORDIS (European Community's Research and Development Information Service), Joseph Rowntree Foundation, Intute, Research Councils UK, University of York and American Institute for Research. Hand searches were also conducted in the following journals which were of relevance to this particular review: British Journal of Educational Research, Anxiety, Stress and Coping, Educational Psychology and School Psychology International. All searches were conducted between 26th September and 17th October 2010.

Screen the references and assess the remaining articles against the inclusion and exclusion criteria (step 3 and 4)

The literature search identified references and abstracts which needed to be screened using the inclusion criteria. According to Petticrew and Roberts (2006) the 'inclusion criteria describes clearly which study designs, populations, interventions and outcomes are included and excluded from the review' (p.75). The following were used for the initial screening of the studies identified from the literature search:

- Participants had to be teachers (there was no age limit), both primary and secondary school teachers were included
- All countries were included
- Studies were reported in English
- Self-efficacy and burnout were the key terms so a measurement or assessment of them had to be evident.

This process identified fifteen articles which met the initial set of inclusion criteria. At the next stage the following criteria were added to identify the studies for inclusion in this review. The criteria was:

- The relationship between self-efficacy and burnout had to be measured

- MBI had to be used as a measure of burnout. MBI is based upon the widely used definition of burnout by Maslach and Jackson (1986) which defined it as a multi-dimensional construct and therefore the standardised inventory enables a measure of the three constructs (emotional exhaustion, depersonalisation and reduced or lack of personal accomplishment as well as on overall measure of burnout).

This left eleven studies to be included in the in-depth review.

Data extraction (step 5)

Studies identified as meeting the inclusion criteria were reviewed systematically to extract the relevant information from the studies. This involved developing a data extraction form which was completed for every study. This is outlined in Table 2 (pg.11). The description of each study included information on:

- The number of participants, their age and gender
- Type of school (primary/secondary) and geographical location of the schools
- Details about how the teachers were selected
- The measures of self-efficacy and burnout which were used
- The theoretical underpinnings of self-efficacy each study adhered to
- The results of the relationship between self-efficacy and burnout.

Critical appraisal (step 6)

The quality of the studies in the review were analysed using the EPPI-Centre Weight of Evidence (WoE) tool. Three criteria are considered to make it possible to assess the overall quality of each study in a transparent way (EPPI-Centre, 2007) (for a copy of the WoE tool see Appendix A). These weights of evidence are based on:

A. Soundness of studies (internal methodological coherence) based upon the study only

B. Appropriateness of the research design and analysis used for answering the review question

C. Relevance of the study topic focus (from the sample, measures, scenario, or other indicator of the focus of the study) to the review question

D. An overall weight, taking into account A, B and C.

This is illustrated in Table 3 (pg.14).

Results

Synthesis of studies (step 7)

General characteristics of the studies included in the in-depth review

Table 2 (pg.11) summarises the characteristics of the eleven studies included in the in-depth review. The synthesis table shows that five of the studies included in the in-depth review were solely conducted in Europe. More than half the studies used primary school teachers, although three studies (Chan, 2007; Schwarzer & Hallum, 2008; Schwarzer et al., 2000) did not specify if the teachers were primary or secondary. Four of the eleven studies claimed to have used random sampling (Evers, Brouwers & Tomic, 2002; Friedman, 2003; Skaalvik & Skaalvik, 2007; Tang et al., 2001) and one study used stratified random sampling (Skaalvik & Skaalvik, 2010). Three of the studies did not use random sampling (Chan, 2007; Schwarzer & Hallum, 2008; Schwarzer et al., 2000). The samples were taken from teachers who were involved in a specific project. Three of the studies did not indicate how the samples were chosen (Betoret, 2009; Brudnik, 2009; Egyed & Short, 2006). Sample sizes varied widely (range= 106-2249), with a median of 404. The age range for participants in the majority of studies was between 20-65 years. Three of the studies did not give an age range but did give a mean age which was within the above age range (Brudnik, 2009; Egyed & Short, 2006; Friedman, 2003). Nine of the studies had a female dominated sample ranging from 62%-88.6%. One study did not provide the number of female and male participants (Tang et al., 2001). In one study the percentage of females included in the sample was small, 23.3%, this study was in the Netherlands and the teachers were from secondary schools (Evers et al., 2002).

Design of the studies included in the in-depth review

All studies included in the in-depth review used questionnaires to measure self-efficacy and burnout. Ten of the eleven studies used the three dimensions of the MBI (emotional exhaustion, depersonalisation and lack of personal or reduced accomplishment). One study (Skaalvik & Skaalvik, 2010) only used two dimensions of the MBI (emotional exhaustion and depersonalisation). Four of the studies cited the dimension personal accomplishment or personal achievement (Chan, 2007; Egyed & Short, 2006; Evers et al., 2002; Schwarzer et al., 2000) instead of the lack of or reduced personal accomplishment which is in the original MBI. Five studies indicated that adapted versions of MBI were used (Evers et al., 2002; Friedman, 2003; Schwarzer & Hallum, 2008; Schwarzer et al., 2000; Skaalvik & Skaalvik, 2010).

Within the eleven studies there were seven different measures of self-efficacy. The most common measure was the General Self-Efficacy Scale by Schwarzer and Jerusalem (1995) which was used by three studies (Brudnik, 2009; Schwarzer et al., 2000; Tang et al., 2001). This scale is reported as demonstrating good internal consistency, satisfactory test-retest reliability and construct validity (Schwarzer et al., 2000; Tang et al., 2001).

Seven of the eleven studies adopted Bandura's (1997) model of self-efficacy which is domain specific, the domain being teaching (Betoret, 2009; Egyed & Short, 2006; Evers et al., 2002; Friedman, 2003; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007, 2010). Four of the studies view self-efficacy as being a generalised belief (Brudnik, 2009; Chan, 2007; Schwarzer et al., 2000; Tang et al., 2001). This means it is a global confidence in one's coping ability across a wide range of demanding novel situations and this is reflected in the choice of questionnaire (Bandura, 1997). Two studies (Evers et al., 2002; Friedman, 2003) adopted Bandura's (1997) model of domain specific teacher self-efficacy and broke it down into three separate domains relevant to each study. Although perhaps Friedman's (2003) is more generalisable as its domains are classroom and organisational self-efficacy.

Study	Age Group	Number	Participants	Sample selected strategy	Dependent measure	Study materials & instruction	Results	Self- efficacy theory
Betoret (2009)	20-65yrs	724 30% (primary was male) 70% (primary was female) 43.2% (male in secondary) (56.8% were female in secondary)	Primary (43.8%) (317 from 16 school) and secondary teachers from Spain (56.2%) (407 from 21 schools)	Doesn't say	Teacher perceived self-efficacy Burnout	Questionnaires administered anonymously and participation was entirely voluntary Teacher perceived teaching self-efficacy (Scharwzer, Schmitz & Daytner, 1999) Maslach Burnout Inventory (Education form)	Teaching self-efficacy is negatively correlated to emotional exhaustion ($r=-.324$)($p<0.007$), depersonalisation ($r=-.296$)($p<0.007$) and reduced accomplishment ($r=-.639$)($p<0.007$),	Bandura self-efficacy theory and specifically Bandura's teacher self-efficacy
Brudnik (2009)	Mean age 38.4 Doesn't say age range	404 76.7% female 23.3% male	22 secondary schools from Poland	Doesn't say	Burnout Perceived self-efficacy	Maslach Burnout Inventory General Self-Efficacy Scale (Jerusalem & Schwarzer, 1995)	Self-efficacy correlates negatively with emotional exhaustion (-.282) ($p<0.01$), depersonalisation (-.179)($p<0.01$) and sense of negative personal accomplishment (-.399)($p<0.01$)	Schwarzer (1994) General self-efficacy (not domain specific)
Chan (2007)	21-50yrs Mean age 27.5	267 98 men 169 women	30% prospective teachers and 70% were teachers Doesn't say what type of school	They formed the teacher education programme at Chinese University	Burnout Perceived self-efficacy	Participants responded in small groups Questionnaires English version used Maslach Burnout Inventory (Education form) Self-efficacy toward helping scale (perceived self-efficacy) (Schwarzer, 1993)	Perceived self-efficacy is negatively correlated to emotional exhaustion (-.12) ($p<0.05$), depersonalisation (-.21) ($p<0.001$) and positively correlated to personal accomplishment (.40) ($p<0.001$)	Schwarzer (1994) General self-efficacy (not domain specific)
Egyed and Short (2006)	Mean age 43 Doesn't give age range	106 88.6% female	Teachers –United States (elementary schools) 38 from urban, 40 from suburban & 28 from rural	Doesn't say	Teacher self-efficacy Burnout	Sent a pack of questionnaires Maslach Burnout Inventory Teacher Efficacy Scale (Gibson & Dembo, 1984). Entered into a draw to win \$150	Correlations between subscales on the MBI and TES found: emotional exhaustion and TES (.014) (ns), depersonalisation and TES (-.039) ns personal accomplishment (.159) (ns)	Bandura self-efficacy theory and specifically Bandura's teacher self-efficacy
Evers, Brouwers & Tomic (2002)	23-64yrs Mean age 47.23yrs	490 23.3% female and 76.7% male	Secondary school teachers (higher end of school) 33 schools Netherlands	Randomly selected schools	Burnout Teacher perceived self-efficacy	Questionnaires were mailed to schools Maslach Burnout Inventory (Education form)- Dutch version Perceived self-efficacy-tool designed for this study (Evers, Brouwers & Tomic, 2002)	Self-efficacy beliefs towards guiding groups is negatively correlated with emotional exhaustion (-.28) ($p<0.01$), depersonalisation (-.36)($p<0.01$) and positively correlated to personal achievement (.55)($p<0.01$) Self-efficacy towards using tasks is negatively correlated with emotional exhaustion (-.20)($p<0.01$), depersonalisation (-.26)($p<0.01$) and positively correlated to personal accomplishment (.44)($p<0.01$)	Bandura self-efficacy theory and specifically Bandura's teacher self-efficacy Domain Specific

Table 2: Descriptions of the methods and outcomes from the studies

							Self-efficacy towards using innovations is negatively correlated to emotional exhaustion (-.61)(p<0.01), depersonalisation (-.45)(p<0.01) and positively correlated to personal accomplishment (.53)(p<0.01)	
Friedman (2003)	Mean age 37.62 Doesn't say age range	322 85.7% female 8.19% male 6.2% no disclosure	Teachers in Israel Primary school	21 primary schools selected at random	Teacher perceived self-efficacy Burnout	Questionnaires were mailed to teachers Measure based on Friedman and Kass (2002)-classroom efficacy and organisation efficacy An adaptation of Maslach Burnout Inventory	Teacher's sense of instruction efficacy is negatively correlated to emotional exhaustion (-.10) (p<0.05), depersonalisation (-.24) (p<0.01) and unaccomplishment (-.17) (p<0.01) Teacher's sense of consideration efficacy is negatively correlated to emotional exhaustion (-.15)(p<0.01), depersonalisation (-.38)(p<0.01) and unaccomplishment (-.21)(p<0.01) Teacher's sense of discipline control efficacy is negatively correlated to emotional exhaustion (-.12) (p<0.05), depersonalisation (-.26)(p<0.01) and unaccomplishment (-.18)(p<0.01) Teacher's sense of influence efficacy is negatively correlated to emotional exhaustion (-.21) (p<0.01), depersonalisation (-.21) (p<0.01) and unaccomplishment (-.24) (p<0.01) Teacher's sense of inclusion efficacy is negatively correlated to emotional exhaustion (-.08)(ns), depersonalisation (-.20)(p<0.01) and unaccomplishment (-.14)(p<0.01)	Classroom efficacy and organisation efficacy based on Friedman and Kass (2002) Domain Specific
Schwarzer & Hallum (2008) 2 studies	21-50+ yrs	1203 311 male 892 female	Teachers from Syria (608) and Germany (595) Doesn't say which type of school	Syrian teachers were approached German teachers were part of a project called Self Efficacious schools	Teacher self-efficacy Burnout	A scale was developed to measure Teacher Self-Efficacy (Scharwzer, Schmitz & Daytner, 1999) Maslach Burnout Inventory (adapted)	Syrian Teachers- Teacher self-efficacy is negatively correlated MBI subscales: Emotional exhaustion (-.17)(p<0.01), depersonalisation (-.24)(p<0.01) and reduced accomplishment (-.66) (p<0.01) German Teachers- Teacher self-efficacy is negatively correlated MBI subscales: Emotional exhaustion (-.48)(p<0.01), depersonalisation (-.56)(p<0.01) and reduced accomplishment (-.75) (p<0.01)	Teacher self-efficacy (Bandura)

Table 2: descriptions of the methods and outcomes of the studies

Schwarzer, Schmitz & Tang (2000)	20.8% 21-30yrs 30.3% 31-40 30.8% 41-50 15.7% older than 50	518 62% female 34.7% male 3.3% did not report gender	Hong Kong teachers sample 261 German teachers subsample 257 Doesn't say what type of school	German subsample were taking part in a project called Self-Efficacious School	Burnout Perceived self-efficacy	Maslach Burnout Inventory (English version for the Chinese and adapted version for Germans) General perceived self-efficacy scale (Jerusalem & Schwarzer, 1995)	MBI subscales are related significantly to self-efficacy in the German sample. Emotional exhaustion ($r=-0.5$) ($p<0.01$), depersonalisation ($r=-0.36$) ($p<0.01$) personal accomplishment ($r=0.58$) ($p<0.01$). In the Chinese sample the correlations between self-efficacy and MBI were: Emotional exhaustion ($r=-0.36$) ($p<0.01$), depersonalisation ($r=-0.26$) ($p<0.01$), personal accomplishment ($r=0.31$) ($p<0.01$)	Schwarzer (1994) General self-efficacy (not domain specific)
Skaalvik & Skaalvik (2007)	27-65yrs	244 63% female	Teachers from 12 elementary and middle schools in Norway	Schools drawn at random from two cities and one rural area	Teacher self-efficacy Burnout	Norwegian Teacher Self-Efficacy Scale (Skaalvik & Skaalvik, 2007) Maslach Burnout Inventory (Education form) Questionnaires were completed in 10 of the schools, 2 of the schools completed them at home	Significant negative correlation between: Emotional exhaustion and teacher self-efficacy (-0.32) ($p<.001$), Depersonalisation and teacher self-efficacy (-0.40) ($p<.001$) Reduced personal accomplishment (-0.35) ($p<.001$) and teacher self-efficacy	Bandura self-efficacy theory and specifically Bandura's teacher self-efficacy
Skaalvik & Skaalvik (2010)	24-69 yrs Mean age 45	2249 68% female	113 primary and middle schools in Norway Drawn from city, one town and two rural areas	By a stratified random procedure	Teacher self-efficacy Burnout	Questionnaires were completed in school Norwegian Teacher Self-efficacy scale (Skaalvik & Skaalvik, 2007) Modified Maslach Burnout Inventory (Education form) (2 dimensions used)	Teacher self-efficacy correlated negatively with both emotional exhaustion (-0.29) and depersonalisation (-0.41)	Bandura self-efficacy theory and specifically Bandura's teacher self-efficacy
Tang, Au, Schwarzer & Schmitz (2001) 2 studies	21-60yrs Mean age 37.09	269 Doesn't say the % of male and female	Chinese teachers from Hong Kong. Elementary 47%, secondary, 21% & tertiary 32%	Forty schools randomly selected	Perceived self-efficacy Burnout	Questionnaires packages sent to schools Generalized Self-efficacy scale (Jerusalem & Schwarzer, 1995) Maslach Burnout Inventory	Self-efficacy was negatively correlated to MBI subscales: Emotional exhaustion ($r= -0.306$), ($p<0.01$), depersonalisation ($r= -0.249$) ($p<0.01$) and lack of personal accomplishment ($r= -0.304$) ($p<0.01$)	Schwarzer (1994) General self-efficacy (not domain specific)

Table 2: descriptions of the methods and outcomes of the studies

Weight of evidence (step 8)

Following the in-depth review of the studies judgements were then made about the weight of evidence of all eleven studies as well as an overall weight for each study. These are summarised in Table 3.

	A (Trustworthy in terms of own question)	B (Appropriate design and analysis for this review question)	C (Relevance of focus to review question)	D (Overall weight in relation to review question)
<i>Friedman (2003)</i>	Medium/High	High/Medium	Medium/High	Medium/High
<i>Betoret (2009)</i>	High/Medium	Medium/High	Medium/High	Medium/High
<i>Skaalvik and Skaalvik (2010)</i>	High/Medium	Medium/High	Medium/High	Medium/High
<i>Schwarzer and Hallum (2008)</i>	Medium/High	Medium	Medium/High	Medium/High
<i>Skaalvik and Skaalvik (2007)</i>	Medium/High	Medium	Medium	Medium
<i>Tang, Au, Schwarzer and Schmitz (2001)</i>	Medium/High	Medium	Medium	Medium
<i>Chan (2007)</i>	Medium	Medium	Medium	Medium
<i>Evers, Brouwers and Tomic (2002)</i>	Medium	Medium	Medium	Medium
<i>Egyed and Short (2006)</i>	Medium	Medium/Low	Low/Medium	Medium/Low
<i>Schwarzer, Schmitz and Tang (2000)</i>	Medium	Medium/Low	Low/Medium	Medium/Low
<i>Brudnik (2009)</i>	Low	Low	Low/Medium	Low

Table 3: EPPI-Centre Weight of Evidence

The synthesis table (Table 3) indicates that eight of the studies were seen as providing medium to high overall weight of evidence (D). Four of the eight studies were seen as providing medium/ high overall weight of evidence due to the primary aim of their study focusing on the relationship between self-efficacy

and burnout. The studies also explored what factors could increase self-efficacy and what impact this may have on the level of burnout experienced by teachers.

Four studies were seen as providing medium overall weight of evidence. These four studies looked at the relationship between self-efficacy and burnout although this was not the main aim of those studies. All of the eight studies (rated from medium to high) had relatively large sample sizes and cited limitations of their methodologies. Two studies were seen as providing medium/low overall weight of evidence as neither study's aim was to specifically explore the relationship between self-efficacy and burnout. Egyed and Short (2006) focused on how the factors which contributed to the decision to refer a disruptive student and Schwarzer et al.'s (2000) study focused on validating the MBI.

One study was seen as providing low overall weight of evidence. The study by Brudnik (2009) was given an overall weight of low as the interpretation of the results did not make reference to a theoretical framework and it did not cite any limitations of the study.

Discussion

Relationship between self-efficacy and burnout

As can be seen in Table 2 (pg.11), eleven studies found a relationship between self-efficacy and burnout in teachers. Eight studies found statistically significant negative correlations between self-efficacy and all three burnout dimensions (Betoret, 2009; Brudnik, 2009; Chan, 2007; Evers et al., 2002; Schwarzer & Hallum, 2008; Schwarzer et al., 2000; Skaalvik & Skaalvik, 2007; Tang et al., 2001). In one study it was not evident as to whether the correlations were statistically significant or not (Skaalvik & Skaalvik, 2010). Egyed and Short (2006) did not find statistically significant correlations between total self-efficacy scores and the dimensions of the MBI. Friedman (2003) did not find a statistically significant correlation between one of the subscales of the organisation efficacy scale and emotional exhaustion.

Ten studies found a negative correlation between self-efficacy and the dimension emotional exhaustion and eleven studies found a negative correlation between self-efficacy and the dimension depersonalisation. Six of

the eleven studies found a negative correlation between self-efficacy and lack of or reduced personal accomplishment (Betoret, 2009; Brudnik, 2009; Friedman, 2003; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007; Tang et al., 2001). However, four studies found positive correlations as they converted lack or reduced accomplishment to positive statements which made it a dimension called personal accomplishment (Chan, 2007; Egyed & Short, 2006; Evers et al., 2002; Schwarzer et al., 2000). Figure 1 shows the negative correlations for the three dimensions from MBI and their relationship with self-efficacy.

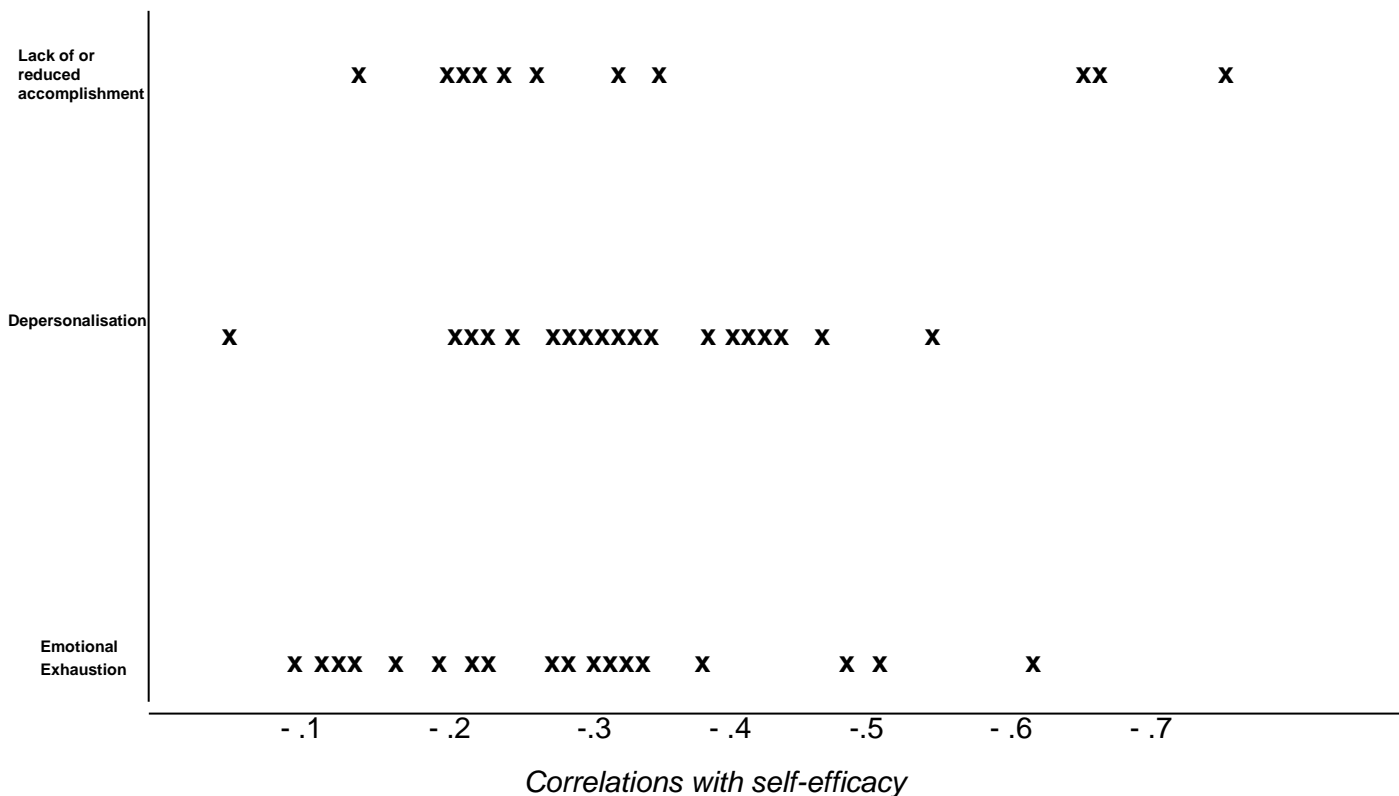


Figure 1: Correlations with the three dimensions from MBI and self-efficacy

Exploration of the correlations

According to Figure 1 the majority of the correlations between self-efficacy and emotional exhaustion appear to fall between -0.1 and -0.35. These results indicate a negative relationship between a teacher’s level of emotional exhaustion and their level of self-efficacy. The less control the teacher feels they have over their abilities the more emotionally overextended they can become and eventually become depleted of one’s emotional resources (Maslach & Jackson, 1986). According to Figure 1 there are three outliers. On

closer inspection two of the outliers (-0.5, -0.48) are from studies (Schwarzer & Hallum, 2008; Schwarzer et al., 2000) which used two different sets of teachers from two different countries. The outliers were both from the German samples which were taking part in a project. Therefore, it appears the samples were not random and perhaps this had an effect on the correlations as non-random sampling can be problematic (Field, 2009). The studies did not give information on what type of schools these teachers taught at, which limits the generalisations which can be made from these studies. The remaining outlier was -0.61 and was found in Evers et al.'s (2002) study. This study looked at self-efficacy as being domain specific and found correlations between emotional exhaustion and self-efficacy to be similar to the other studies when it looked at 'self-efficacy beliefs towards guiding groups' and 'self-efficacy towards using tasks'. However, when it looked at 'self-efficacy between using innovations' and emotional exhaustion the correlation was much higher. This score was possibly due to the focus of the study which was implementing an innovative educational system in the Netherlands and perhaps the teachers were anxious about this which could have affected their emotional exhaustion score. This study also had 76.7% male participants which may indicate male teachers experience more stress with this particular self-efficacy domain.

The lower correlations (-0.08, -0.1) are from one study (Friedman, 2003) which again looks at self-efficacy being domain specific however the authors have further developed Bandura's (1997) model of self-efficacy to look specifically at the two domain areas of classroom efficacy and organisational efficacy. Similar to Evers et al.'s (2002) study it is the only other study in the review to look at self-efficacy in two separate domains which may have impacted on the correlations. Perhaps further research could shed some more light on the relationship between self-efficacy and emotional exhaustion when self-efficacy is measured as different domains.

According to Figure 1 the majority of the correlations between self-efficacy and depersonalisation fall between -0.2 and -0.5. These results appear to indicate that there is a negative relationship between a teacher's level of depersonalisation and their level of self-efficacy. The lower a teacher's self-efficacy the more negative and detached the teacher could become towards their work and recipients of the services. According to Figure 1 the two main

outliers were -0.039 and -0.56 (Egyed & Short, 2006; Schwarzer & Hallum, 2008). Egyed and Short (2006) found the smaller correlation between self-efficacy and depersonalisation. No other study in the review used their measure of teacher self-efficacy so perhaps this affected the score. Or perhaps it was due to the small sample size compared to the other studies in the review. The higher correlation was found in the Schwarzer and Hallum's (2008) study which had a non-random sample which may have impacted on the scores (Field, 2009).

Six of the eleven studies used the dimension lack of or reduced personal accomplishment therefore only these scores could be compared (Betoret, 2009; Brudnik, 2009; Friedman, 2003; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007; Tang et al., 2001). According to Figure 1 the majority of the correlations between self-efficacy and reduced or lack of personal accomplishment fell between -0.1 and -0.35 . These results appear to indicate that a low self-efficacy affects a teacher's perceptions of effectiveness and competence of their ability in working with people. According to Figure 1 there are three outliers (-0.639 , -0.66 , -0.75) (Betoret, 2009; Schwarzer & Hallum, 2008). The three outliers come from two studies which use the same assessment of self-efficacy called the Teacher Self-Efficacy Scale (Schwarzer, Schmitz & Daytner, 1999). Perhaps the strong correlations are related to this specific measurement of self-efficacy. Unfortunately there is no reference in the articles of the construct validity of this tool which leaves unanswered questions regarding its convergent and discriminant validity.

Conclusions and Recommendations

Conclusions of this review

A number of conclusions can be drawn from the existing literature on the relationship between self-efficacy and burnout in teachers. All studies in the in-depth review found a negative relationship between self-efficacy and burnout in teachers. Ten of the studies found a negative correlation between self-efficacy and emotional exhaustion in teachers. All of the studies found a negative correlation between self-efficacy and depersonalisation in teachers. Six of the

eleven studies found a negative correlation between self-efficacy and lack of or reduced personal accomplishment in teachers. The results are in keeping with the theory that self-efficacy beliefs are heavily based on experiences and on 'physiological and affective states' therefore it is reasonable to postulate that burnout may affect teacher self-efficacy (Bandura, 1997).

In addition it appeared the strength of the relationship between self-efficacy and depersonalisation appeared to be higher in the majority of the studies than the two other dimensions of the MBI. Depersonalisation refers to an individual feeling they do not have control over their work situation and this can cause anxiety for that individual. Teachers could become detached from their job and lose their idealism. If a teacher feels they are becoming detached from the school it may be due to them feeling like they no longer feel part of that organisation. As referred to in the introduction a lot of the research focuses on the link between teacher self-efficacy and burnout as a single concept usually focusing on the classroom as the teacher's sole domain of functioning (Friedman, 2003). However, depersonalisation could come about through a lack of knowledge and opportunity to become a valued member of the organisation both within and outside of the classroom (Friedman & Kass, 2002). Teachers' beliefs about the value of their role may be challenged by the performance culture which exists within schools (Ball, 2003). Teachers can find themselves having to re-negotiate their role as they are subjected to regular appraisal, review and performance comparisons (Ball, 2003). This may lead to teachers feeling they have less control and are becoming detached from the organisation. A possible way to overcome this may be a supportive school leadership which provides norms, goals and values which are shared by all or most teachers at school may increase the teachers' beliefs of their own ability and those of others within the school. Perhaps this is an area where Educational Psychologists could begin to play more of an integral role. Therefore, more research to look at ways to prevent depersonalisation from occurring could be beneficial.

Although the studies included in the in-depth review used different measures of self-efficacy the majority of the correlations between self-efficacy and the three dimensions of burnout were similar. However, differences appeared to emerge when studies looked at self-efficacy being domain specific and focusing on two

domains. Bandura (1997) argued that self-efficacy is domain specific and as such should be measured separately. Perhaps if the other studies had been more specific in measuring teacher self-efficacy the findings may have been different and this is a possible area of future research.

Limitations of this review

Several limitations of this review need to be acknowledged. The first limitation is in relation to the way the studies which were included in the in-depth review were coded. Though some attempt was made to use a transparent system both to code the studies and to attribute a weight of evidence judgement conclusions are necessarily limited by the fact that multiple coders were not employed. A further limitation is related to the variability between studies in the measure of self-efficacy. Although the inclusion criteria did insist on the use of MBI it did not stipulate a particular measurement for self-efficacy and this will affect the generalisability of the findings. The literature search, screening of references and carrying out the synthesis of the studies was only carried out by one person which will bias the articles chosen, how they were ranked and the conclusions that were made.

Recommendations for further research

There are numerous directions which future research into the relationship between self-efficacy and burnout in teachers may follow. Some of these have already been discussed, notably focusing more on burnout as three dimensions and the relationship between them and self-efficacy. Specifically the relationship between self-efficacy and depersonalisation leads to an interesting hypothesis relating to the effect the organisation could have on the teacher's belief that they have control and an important role to play outside of the classroom. Only one study (Friedman, 2003) looked at classroom and organisational efficacy. The organisation can be a source of support offering the teacher a feeling of job security and professionalism (Smylie, 1999). Friedman's (2003) study was carried out in Israel so it would be interesting to replicate it within European schools. If looking at schools as organisations it may prove interesting to explore collective teacher efficacy, which is an area where research is reported to be currently lacking (Skaalvik & Skaalvik, 2010). None of the eleven studies

were carried out within the United Kingdom (UK) or Ireland. It is interesting to wonder why; perhaps the priority for British and Irish research in education is more with the children than with teachers. It could be beneficial to carry out research in the UK or Ireland to compare the results with the rest of Europe and internationally. Finally only two studies (Evers et al., 2002; Friedman, 2003) were precise in their efficacy domain specificity when assessing teacher self-efficacy and these studies had some differing correlations to the other studies. This may mean more about self-efficacy could be discovered by being more domain specific which would be in keeping with Bandura's (1997) original concept of self-efficacy. Research into teacher self-efficacy and burnout could be important for the work of Educational Psychologists as supporting teachers to develop their self-efficacy could reduce teacher burnout and this could have positive implications for the teachers and the children they teach.

Bridging Document

Introduction

As a requirement of the Doctorate in Applied Educational Psychology I carried out a systematic review and a piece of empirical research. In this paper I will seek to elaborate on how findings from the systematic review led to the empirical piece of research. As part of this explanatory link between the two I will consider my interest in the research area, the political context, the theoretical underpinnings of the research and the research paradigm.

How I became interested in the research area

My interest in teacher efficacy arose from my own experiences as a teacher and a Trainee Educational Psychologist (TEP). In both professions I have experienced teacher efficacy as a teacher and observed teacher efficacy in consultations as a TEP. During these experiences I have reflected on what factors can enhance and diminish individual and collective teacher efficacy. My interest in burnout arose from my experiences working as an Occupational Psychologist. One of my roles was to provide training to organisations on managing stress in the hope of reducing the likelihood of burnout. When I facilitated this training I did not have the experience of being a teacher and a TEP. If I designed training on stress management now it would be different as my beliefs have transformed due to these professional experiences. My interest focuses on reflecting on what factors may support teachers' emotional well-being. I was able to use this interest when I began to work as a TEP in an Educational Psychology Service (EPS). Promoting teachers' emotional well-being is one of the goals of the project TaMHS (Targeted Mental Health in Schools) in which my EPS is actively involved in. Therefore, my research area reflected not only with my interest but mirrored one of the Local Authority's aims.

According to the Independent Review of Sickness Absence by Sector, teaching is rated as the third most prevalent sector for work-related stress, depression or anxiety (Black & Frost, 2011). In my practice I work with a lot of teachers and have at times supported teachers who may be experiencing stress. With teachers more likely to work overtime than staff in any other profession, more strain could be placed on teachers' physical and emotional well-being (Bamber,

2012). Therefore, I wanted the research which I would be undertaking to add to the body of literature on how to support teachers' emotional well-being.

Developing a research focus

My systematic review looked at the relationship between self-efficacy and burnout in teachers. Amongst the findings of the review the negative relationship between self-efficacy and depersonalisation appeared to be higher in the majority of the studies than the two other dimensions (emotional exhaustion and reduced personal accomplishment) of the Maslach Burnout Inventory. Depersonalisation refers to an individual's loss of idealism and being negative and detached towards one's work and recipients of the services (Leither & Maslach, 1988). Depersonalisation can come about through a lack of knowledge and opportunity to become a valued member of the organisation both within and outside of the classroom (Friedman & Kass, 2002). Therefore, I wanted the empirical study to focus on factors which may prevent a teacher from feeling as though they are becoming detached from their work. According to the Currie Report (SEED, 2002) one of the recommendations was that Educational Psychologists continue to attempt to enhance school environments and support schools in seeking to make a reduction in teacher stress.

The relationship between self-efficacy and depersonalisation led me to reflect on the effect the organisation could have on the teacher's belief that they have an important role to play outside of the classroom. In my own practice as a TEP I have observed the influence the organisational culture can have on teachers and vice versa. Definitions of culture vary but typically include concepts such as shared beliefs, values and assumptions which are reflected in attitudes and behaviour (Kopleman, Brief & Guzzo, 1990). An example of shared beliefs within an organisation would be teacher collective efficacy. Therefore, when trying to understand the influence of the organisational culture on teachers, their collective efficacy could be studied. Collective efficacy is associated with the organisation's core values, commitment to its goals, how well group members will work together and the group's resilience in the face of difficulties (Goddard, LoGerfo & Hoy, 2004). Therefore, higher teacher collective efficacy may help to reduce teachers becoming detached from the organisation. In my research I

was interested in the possible factors which may be associated with higher teacher collective efficacy.

Political context

It is important to acknowledge the legislation relating to teaching and specifically teacher efficacy. The TaMHS project ran between 2008 and 2011 and formed the government's wider programme of work developed to improve psychological wellbeing. TaMHS was funded by the Department for Children, Schools and Families and aimed to transform the way that mental health support is delivered to children aged 5 -13. Although TaMHS was targeted at children the EPS I worked in acknowledged the influence teacher well-being could have on children therefore they extended the focus of the project.

The recent Education Act (2011) legislation states that good performance in schools will be rewarded and poor performance will be addressed (DfE, 2011). Collective efficacy has been found to be related to higher levels of student achievement (Goddard, Hoy & Hoy, 2000; Goddard, LoGerfo, et al., 2004; Parker, Hannah & Topping, 2006; Ross, Hogaboam-Gray & Gray, 2004; Tschannen-Moran & Barr, 2004). If Head Teachers want to try to develop student achievement then a higher collective efficacy may be one way which could support this goal.

Other changes which are recent in teaching is the current government's drive to encourage the opening of academies. As of 1 March 2012 there are 1635 academies open in England (DfE, 2012). Academies will have the ability to set their own pay and conditions for staff and the ability to change the lengths of terms and school days (DfE, 2012). These changes could have an impact on teaching as a profession therefore this empirical piece is aptly timed in exploring how to support an important aspect of teaching which is their collective belief in their school's ability.

Theoretical Perspectives

Bandura's (1997) social cognitive theory provides the theoretical framework underlying both teacher self and collective efficacy. In my empirical research and in my practice as a TEP I adopt social cognitive theory. A fundamental

assumption of social cognitive theory is human agency (Bandura, 1997). My understanding of human agency is that people have influence over what they do. People are self-organising, proactive, self-regulating and self-reflecting (Bandura, 1997). Similar to the solution oriented principle that people have the necessary resources to make changes (Harker, 2001). However, this relationship between what an individual wants to do and what they do do is complex. Personal factors (cognitive, affective and biological events) and behaviours interact with the environment to influence each other resulting in a reciprocal relationship (Tschannen-Moran & Hoy, 2007). Therefore, the participants in my research and the information I collected in my research is influenced by a number of factors.

A model which I adopted in this research process and one which I also use in my practice as a TEP is Bronfenbrenner's Social Ecological Model (1979). 'People do not live their lives in isolation; they work together to produce the results they desire' (Bandura, 1997, p. 475). Bronfenbrenner's Social Ecological Model (1979) can be applied when attempting to understand the interaction of factors within the school environment. The system will vary from person to person, depending on the ecology around them (Bronfenbrenner, 1979). For example, efficacy may be affected by an array of organisational factors ranging from power struggles to poor decision making which may result in consequences such as time constraints, unreasonable deadlines and increase on observations in their classes (Grayson & Alvarez, 2008). On the other hand social processes that generate peer support are likely to reduce the effects of negative emotions on teacher collective efficacy beliefs (Ross & Gray, 2006; Tobin, Muller & Turner, 2006). Teacher collective efficacy can also interact with the student as it has been found to be related to student achievement (Goddard et al., 2000; Goddard, LoGerfo, et al., 2004; Parker et al., 2006; Ross et al., 2004; Tschannen-Moran & Barr, 2004). Therefore, when researching efficacy I found it useful to apply the Social Ecological Model (Bronfenbrenner, 1979) as it highlighted how beliefs can be developed through the interaction of environmental systems.

The third influential perspective I adopted in my empirical piece was the importance of a school culture. Culture has been described as 'one of the most powerful and stable forces operating in organisations' (Schein, 1996, p. 231).

The influence of the collective on the individual is likely to be higher in schools in which teachers share a common vision about school directions (Ross et al., 2004). Knowledge about collective efficacy beliefs is important when attempting to understand the influence of a school's culture on teachers' professional work and in turn student achievement (Goddard & Skrla, 2006). Through interviewing the teachers I began to have an awareness of how cultures impacted on teachers' responses.

Research Paradigm

A research paradigm refers to a model for inquiry that specifies particular inquiry purposes, it also takes a stance on the possibility of achieving objectivity and offers a position on the nature of truth (Greene, 2007). It is the researcher who decides what is 'important' and what is 'appropriate' and this will be based on personal history, social background and cultural assumptions (Johnson & Onwuegbuzie, 2004). Therefore reflecting on what is studied and how it is studied can be beneficial (Willig, 2008).

In the empirical research I was interested in the influence of a teacher's role on collective efficacy beliefs and their perception of possible collective efficacy sources. I believe that the teachers' realities are experienced whether I ask about them or not. This can be referred to as ontology as it is concerned with the nature of the world (Willig, 2008). This then leads to epistemology which refers to how can we know? (Willig, 2008). I acknowledge that the teachers' realities may alter by their involvement in the research. My understandings of the teachers' realities are based on my own theories, beliefs and choice and my knowledge is fallible (López & Potter, 2001). My beliefs are congruent with a critical realist view of the world (Bhasker, 1975; Sayer, 2000).

Epistemology

According to Scott (2007) critical realism argues that 'objects in the world, and in particular social objects, exist whether the observer or researcher is able to know them or not: and secondly knowledge of these objects is always fallible because any attempts at describing them needs to take account of the transitive nature of knowledge' (p. 14). My understanding of critical realism in relation to

research is a perspective which seeks to gain a better understanding of what is happening whilst acknowledging the research data may not provide direct access to this reality (Willig, 2008). Referral to realities refers both to natural and social realities and their realms of structures and powers (Sayer, 2000). In the empirical study I acknowledge the meanings teachers create of their own experiences and the impact the wider social context has on those meanings while still acknowledging the limits of reality (Braun & Clarke, 2006).

With critical realism a wide range of research methods can be employed but the choices should 'depend upon the nature of the object and what one wants to learn about it' (Sayer, 2000, p. 19). This fits with the mixed methods paradigm and pragmatic philosophy which postulates that research methods should follow the research questions in a way which offers the best chance to obtain useful answers (Johnson & Onwuegbuzie, 2004).

Methodology

When choosing a methodology it must marry the epistemological assumptions held by the researcher, have a focus and aim that matches the purpose of the study and be consistent with the time constraints of a Doctorate (Glatthorn & Joyner, 2005).

For me the most fundamental thing is the research question and the research methods should follow the research question in a way which offers the best chance to obtain useful answers (Johnson & Onwuegbuzie, 2004). However, the influence of the researcher's ontology and epistemology on the choice of methods should be acknowledged. A mixed methods paradigm more accurately reflects my ontological and epistemological beliefs. By adopting a mixed methods paradigm it enabled me to select the research methods with respect to the research questions. This paradigm gives the researcher the task to examine the specific contingencies to inform the decision about research approach or which combination of approaches (Johnson & Onwuegbuzie, 2004). In the empirical piece I adopted a mixed methods approach which consisted of the use of a questionnaire and semi-structured interviews. To be a true mixed methods design rather than a mixed model the findings must be mixed or integrated at some point (Morse, 1991). The empirical piece integrated the

findings as the questionnaire results were used to inform the choice of participants for interview.

'Philosophically, mixed methods research makes use of the pragmatic method and system of philosophy' (Johnson & Onwuegbuzie, 2004, p. 17). Pragmatism asserts that there is both a 'single "real world" and that all individuals have their own unique interpretations of that world' (Morgan, 2007, p. 72). This fits with my epistemological stance of critical realism. A pragmatic method appeals to me as it offers an immediate and useful middle position philosophically and methodologically; it offers a practical and outcome oriented method; it endorses fallibilism and it offers a method for selecting methodological mixes that can help researchers better answer their research questions (Johnson & Onwuegbuzie, 2004).

Ethics

This research was conducted in way which adhered to the British Psychological Society and Health Professionals Council's code of ethics and conduct (BPS, 2010; HPC, 2010).

It was important that the participants for the questionnaires and interviews did not feel they were only being used to help me complete my Doctorate. To overcome this I ensured participants were informed both in written format on the questionnaires and in person at the interviews that the research was a joint process. The research was an attempt to find out, through their own experiences what might be beneficial to them and in turn to others (Guillemin & Gillam, 2004).

According to Payne (2000) there are power dynamics between interviewers and participants. I endeavoured to empower the participant by making it clear to them they could withdraw from the project at any time, giving them a copy of the questions I would be asking, allowing them the freedom to say as little or as much as they wanted and the choice to decline from answering. According to Willig (2008) the use of interviews can enable discussion of sensitive issues which may lead to emotions the participant may not have acknowledged. Ultimately any such effect is the responsibility of the researcher. I assured the

participant they could withdraw at any time and following the interview I ensured they were comfortable with everything we had discussed.

Reflexivity

According to Denscombe (2007) 'no research is ever free from the influences of those who conducted it' (p.300). Reflexivity involves reflecting on the way in which research is carried out and understanding how the research process shapes the outcomes (Hardy, Phillips & Clegg, 2001). This leads me to consider the ways in which I may have influenced this research. I considered my own experiences as a teacher and how this influenced the topic of research. I have studied psychology for a number of years and through this I have become more familiar with particular theoretical frameworks and how they appeal to my beliefs. The choice of theoretical frameworks which were considered in this research will have been influenced by these experiences. I also accept my choice to adopt a mixed methods approach will have impacted on the data and that another researcher could adopt a different methodology and produce different findings.

I tried to minimise the influence of my own beliefs on the research by:

- Looking for diversity of experience
- Avoiding neglecting data that does not fit a general pattern by including all data in the analysis
- Ensuring explanations were given of key terms
- Including a copy of the questionnaire and examples of quotes to increase transparency

Concluding Comments

In this paper I have sought to elaborate on how findings from the systematic review led to the empirical piece of research. This included a discussion of how my research interests arose and the approach I undertook while carrying out the research. The aim of this paper was to provide an account of the foundations on which the research paper itself is founded.

**The influence of a teacher's role on collective efficacy beliefs
and their perception of possible collective efficacy sources**

Abstract

Previous work has yielded knowledge on the relationship between teacher collective efficacy and outcomes such as student achievement (Goddard et al., 2000) and teacher commitment (Jex & Bliese, 1999). However, less work has been undertaken on how teacher collective efficacy is formed. The aim of this study was to explore the influence of a teacher's role on collective efficacy beliefs and their perceptions of possible collective efficacy sources. Participants were 178 teachers from primary, secondary and special schools in a small local authority in the North East of England. The research had two phases. Firstly, participants responded to a questionnaire to assess their teacher collective efficacy beliefs. Secondly, nine teachers were interviewed regarding possible sources of teacher collective efficacy. Analysis of teacher collective efficacy beliefs found that those teachers who had an extra role of responsibility within school or were a member of senior management reported higher collective efficacy scores than those teachers who did not have such roles. Thematic analysis found four themes: communication, learning, supporting roles and stress management. This study adds to the under researched area of how teacher collective efficacy beliefs are formed and how they could be enhanced.

Keywords: Teacher collective efficacy, role of responsibility, senior management and sources

Introduction

Teacher self-efficacy refers to the teacher's belief in his or her own ability to 'plan, organise and carry out activities which are required to attain educational goals' (Skaalvik & Skaalvik, 2010, p. 101). Self-efficacy has been shown to predict teachers' goals and aspirations (Muijs & Reynolds, 2002), teachers' attitudes towards innovation and change (Fuchs et al., 1992), the likelihood teachers will stay in the profession (Skaalvik & Skaalvik, 2010) and reduction in teacher burnout (Schwarzer et al., 2000). Recent research has added an organisational dimension to the inquiry about efficacy beliefs in schools (Goddard & Skrla, 2006). This organisational dimension can be referred to as teacher collective efficacy.

Bandura (1997) defined collective efficacy as 'a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given results' (p.475). Teacher collective efficacy refers to the belief of teachers in a school that as a whole they can 'organise and execute the courses of action required to have a positive effect on students' (Goddard, Hoy, et al., 2004, p. 4).

Collective efficacy has been found to be related to higher levels of organisational commitment (Jex & Bliese, 1999; Mulvey & Klein, 1998), job satisfaction (Jex & Bliese, 1999; Zellars & Perrewé, 2001) and student achievement (Goddard et al., 2000; Goddard, LoGerfo, et al., 2004; Parker et al., 2006; Ross et al., 2004; Tschannen-Moran & Barr, 2004). The search for factors which enhance effectiveness is pertinent due to the current government's drive to 'reward good performance in schools and address poor performance' (DfE, 2011). Current research on teacher collective efficacy has mainly focused on outcomes such as student achievement. Less is known about the antecedents which may influence collective efficacy and in turn school effectiveness (Walumbwa, Wang, Lawler & Shi, 2004). This study hopes to address this by exploring how teacher collective efficacy is influenced and the possible sources which underlie it.

Role of responsibility within schools

Bandura's (1997) social cognitive theory provides the theoretical framework underlying both teacher self and collective efficacy. Social cognitive theory suggests personal factors and behaviours interact with the environment to influence each other resulting in a reciprocal relationship (Tschannen-Moran & Hoy, 2007). Bandura (1997) suggested teacher efficacy should comprise seven categories including efficacy in influencing decision making, efficacy in the use of resources, teaching efficacy and efficacy in classroom management. Efficacy studies have gone on to examine teacher efficacy beyond the classroom focusing on the teachers' ability to influence the organisation (Cherniss, 1993; Friedman & Kass, 2002). Goddard, Hoy, et al. (2004) argued teacher collective efficacy beliefs may be formed through the interaction between collective efficacy beliefs, teachers' self-efficacy, teachers' professional practice and teachers influence over school decisions. Teachers who can influence school

decisions may have higher collective efficacy beliefs (Raudenbush, Rowan & Cheong, 1992). Thus, it could be argued the more teachers have the opportunity to influence school decisions the more likely a school is to be characterised by a high collective efficacy (Goddard, Hoy, et al., 2004). Ross, Cousins and Gadalla (1999) similarly found teacher efficacy beliefs were influenced by teacher leadership roles. Teachers who were subject heads had higher levels of teacher efficacy beliefs compared to those who did not hold a leadership role. Shared leadership can be defined as teacher's influence over and participation in school decisions (Wahlstrom & Louis, 2008). This highlights the possible importance of shared responsibility within schools. Bandura (1997) referred to such efforts as 'group enablement'. According to Bandura (1997) 'collective enablement programs take many different forms but the shared assumption is that they work in part by enhancing people's sense of efficacy to bring about change in their lives' (p.503). Therefore, schools which share responsibility may have higher levels of perceived collective efficacy. This study aimed to explore the relationship between teacher collective efficacy and a teacher's role of responsibility within the school.

Sources of collective efficacy

Bandura (1982) asserts collective efficacy is rooted in self-efficacy. According to Bandura (1997) the four sources of collective efficacy beliefs are: 'enactive mastery experiences', 'vicarious experiences', 'verbal persuasion' and 'physiological and affective states'.

Bandura's sources of collective efficacy

The first source 'enactive mastery experiences' is argued to be the most important, as it provides the 'most authentic evidence of whether one can muster whatever it takes to succeed' (Bandura, 1997, p. 80). An example of an 'enactive mastery experience' would be when teachers perceive a performance to have been successful. Student achievement is commonly cited as an example of an 'enactive mastery experience' (Goddard et al., 2000; Goddard, LoGerfo, et al., 2004; Parker et al., 2006; Ross et al., 2004; Tschannen-Moran & Barr, 2004). However, Ross (1994) argued it needs to be more than exposure to information to influence collective efficacy, the knowledge needs to be used

by the teachers. Bandura's (1997) second source of collective efficacy is known as 'vicarious experiences'. This is when teachers have the opportunity to observe other teachers performing both in their own school and other schools. Being able to observe other teachers in different schools may have its benefits but finding the time in a tight school day to achieve this could be difficult. Bandura's (1997) third source of teacher collective efficacy is 'verbal persuasion'. It is when encouragement or specific performance feedback from a supervisor or a colleague is given. The potency of persuasion depends on the credibility, trustworthiness and expertise of the persuader (Goddard, Hoy, et al., 2004). Bandura's (1997) fourth source is 'physiological and affective states'. Positive emotions which emerge after group successes reinforce members' beliefs in their collective capabilities (Goddard, LoGerfo, et al., 2004). Disappointment or other stressors may lead to affective reactions which undermine perceived collective efficacy (Goddard, LoGerfo, et al., 2004).

These four sources are commonly cited to be the sources of collective efficacy however there is now a call to identify the sources in relation to teaching (Klassen, Tze, Betts & Gordon, 2011). Although self and collective efficacy appear to have a strong positive relationship they are distinct constructs which may mean they have differing sources (Jex & Gudanowski, 1992; Skaalvik & Skaalvik, 2007). Hence further studies of teacher collective efficacy sources are required (Klassen et al., 2011). This present study aimed to meet the request to identify the possible sources of teacher collective efficacy.

Rationale

Research indicates that teacher collective efficacy beliefs can foster commitment to school goals and gains in student achievement (Goddard, 2002). Therefore, it may be beneficial to obtain a greater understanding of the factors linked to higher collective efficacy (Tschannen-Moran & Hoy, 2007). Current research has mainly focused on outcomes such as student achievement, commitment and job satisfaction (Goddard et al., 2000; Goddard, LoGerfo, et al., 2004; Jex & Bliese, 1999; Parker et al., 2006; Ross et al., 2004; Tschannen-Moran & Barr, 2004; Zellars & Perrewé, 2001). Therefore, the literature may require more of an exploration of the factors which could enhance teacher collective efficacy. Social cognitive theory postulates that efficacy is

formed through a reciprocal relationship of personal factors, behaviours and the environment (Tschannen-Moran & Hoy, 2007). Therefore, more of an understanding of the factors involved in this relationship could be beneficial. Recent literature has begun to explore one of these factors; teachers' role in decision making within schools and how it is related to teacher collective efficacy. This study aimed to extend this by exploring the relationship between having a role of responsibility within school and a teacher's perception of the collective efficacy of the school. Bandura (1997) cited the four sources of collective efficacy. However, Klassen (2011) suggested that research evidence in support of these four sources in teaching is lacking, this study sought to add to this under researched area.

Aims of the current study

The literature review indicated collective efficacy can be influenced by teachers' involvement in decision making (Goddard, Hoy, et al., 2004; Raudenbush et al., 1992). The aim of this study was to extend this research by exploring the factor of extra responsibility in teaching. Therefore, the first aim of this study was to investigate the influence of having extra responsibilities in school on teacher collective efficacy. In this study two factors were explored: having an extra role of responsibility within the school and being a member of senior management.

The first research question was:

- 1a. Will teachers who have an extra role of responsibility report higher teacher collective efficacy scores?
- 1b. Will teachers who are a member of senior management report higher teacher collective efficacy scores?

The literature review highlighted the lack of research into the possible sources of teacher collective efficacy especially using a qualitative approach (Labone, 2004; Tschannen-Moran, Hoy & Hoy, 1998). Adopting a qualitative approach can provide understanding and description of teachers' personal experiences (Johnson & Onwuegbuzie, 2004). The second aim of this study was to identify the sources which may underlie teacher collective efficacy using a qualitative

approach. This study sought to add to this underrepresented area within collective efficacy research.

The second research question was, therefore:

2. What sources do teachers believe enhance teacher collective efficacy?

In summary the research aims were based on the results of prior research and the desire to generate knowledge about factors which could be associated with teacher collective efficacy and the sources which may underlie it.

Method

Participants

Participants were 178 teachers from primary (n =90), secondary (n=51) and special (n=37) schools in a small local authority in the North East of England. It is ranked as the ninth most deprived community out of 354 districts in England (Rollings & Carr, 2008). The schools were chosen using the socio-economic status (SES) measure which was the proportion of children eligible for Free School Meals (FME) entitlement. This measure was used in an attempt to achieve a more representative sample of the schools in that borough. The author acknowledges that there is a debate about its suitability as a measure of the characteristics of a given cohort of children (Croxford, 2000; Goldstein & Noden, 2003).

The average FME for the North East of England is 34% therefore schools with a FME below this threshold and above were approached (Palmer, 2011). The schools were invited by the author to participate in the study. Twenty primary schools were invited to participate in the study however only 14 primary schools agreed. This may be regarded as being an opportunity sample. 7 of the primary schools had a FME below 34% and 7 primary schools had a FME above 34%. Although, two secondary schools were invited to participate in the study only one agreed. Its FME was 53% and the two special schools FME were 66% and 39%. The FME range for the study was 4.2% to 66%. It was possible to recruit

the secondary school and special schools as the author was the Educational Psychologist for the schools.

The response rate for return of the questionnaire was 50%. Information was gathered about the participants' gender, age, years of experience and role in school. Participants were 73% female. 49% of teachers had been teaching between 1-10 years and 51% for 11-30+ years. 26.3% were a member of senior management and 73.6% were not. 51% had extra role of responsibility in school and 49% did not. To ascertain if teachers were a member of senior management they were asked 'Are you a member of senior management?' The two answers to choose from were 'yes' or 'no'. To ascertain whether the teacher had extra responsibilities within the school they were asked 'Do you have extra roles of responsibility within the school?' and again the answers to choose from were 'yes' or 'no'.

Research Design

The research had two phases and adopted a different research approach (quantitative and qualitative) for each phase.

Procedure

Phase One:

All teachers in the schools were asked to complete a questionnaire on teacher collective efficacy. Teachers were also asked to put their name on the questionnaire if they would consider being interviewed at a later date. They were assured confidentiality. The interview would form the second phase of the study.

Measure

There has been a call in recent years for increased attention to the measurement of teacher efficacy (Klassen et al., 2011; Wheatley, 2005). The request is for measures of efficacy to reflect judgements of forward-looking capability not current ability (Klassen et al., 2011). The measure chosen reflects this request and is recommended by Klassen et al. (2011).

The Collective Teacher Beliefs measure was created by Tschannen-Moran and Barr (2004). It contains 12 items, with 9-point items representing each of the two factors: instructional practice (item example: 'How much can teachers in your school do to produce meaningful student learning?') and student discipline (item example: 'How well can adults in your school get students to follow school rules?') The measure chosen has been described as 'displaying closer congruence' to Bandura's (1997) definition of teacher collective efficacy (Klassen et al., 2011, p. 35) (For a copy of the measure see Appendix B). A teacher collective efficacy score can be calculated for the two subscales and a total teacher collective efficacy score can also be calculated. The scale was constructed to reflect teachers' individual perceptions about their school's collective capabilities to influence student achievement and is based on teachers' analysis of the teaching staff's capabilities to effectively teach all students (Tschannen-Moran & Barr, 2004). The measure recognises that although collective beliefs are shared beliefs they are held by individuals (Tschannen-Moran & Barr, 2004). Across 66 schools, the measure demonstrated reliability of 0.97, the instructional practice subscale had a reliability of 0.96 and the student discipline subscale had a reliability of 0.95 (Tschannen-Moran & Barr, 2004). A study by Klassen (2010) reported a stable factor structure of the measure across both primary and secondary schools.

Phase two:

Following Phase 1 the teachers who were interviewed were selected from those who had volunteered to be interviewed. To try to achieve a range of possible views teachers were chosen by their TCE score. The TCE scores of the 21 teachers who volunteered to be interviewed ranged from 3.4 -9 (the highest TCE score possible is 9 and the lowest is 1). Nine participants were interviewed. The author chose the nine participants from the 21 volunteers as those nine included teachers from primary, secondary and special schools and provided a range (3.4-9) of TCE scores. Of the 9 teachers, 3 were members of senior management, 3 had extra roles of responsibility within the school and 3 did not have any extra roles. The interview was based on Bandura's (1997) sources of collective efficacy: 'enactive mastery experiences', 'verbal persuasion', 'vicarious experience' and 'physiological and affective states' (Bandura, 1997). A semi-structured interview format was adopted as it enabled

set questions to be asked which can be open ended and can lead to further exploration (Howitt, 2010) (for a copy of the questions see Appendix C). The teachers were contacted by the researcher, verbal consent was sought on the phone and this was followed up by gaining written consent (for a copy of the consent form see Appendix D). The interview was audio recorded with the consent of the participant and later transcribed and analysed. The interview schedules were analysed using the theory-led thematic analysis approach (Braun & Clarke, 2006) (for examples of data extracts see Appendix E). Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data. Thematic analysis was chosen as it fitted with the author's epistemological thinking and enabled acknowledgement of the meanings teachers create of their own experiences and the impact the wider social context has on those meanings while still acknowledging the limits of reality (Braun & Clarke, 2006).

Results

Research question 1

1a. Will teachers who have an extra role of responsibility report higher teacher collective efficacy scores?

The quantitative data was analysed using SPSS. The data was tested for normality using the Kolmogorov-Smirnov test and it was found to be not normally distributed. The means, medians, standard deviations and minimum and maximum scores for the variable 'extra role of responsibility (or not)' are shown in Table 4. To compare the two conditions a Mann-Whitney test was used. The Total Teacher Collective Efficacy Scores for teachers who have an extra role of responsibility (Mdn= 8.2) differed significantly from those teachers who did not have an extra role of responsibility (Mdn= 7.6), $U= 2966.00$, $z= -2.88$, $p < .004$. A small to medium effect size was found (-0.22) (Field, 2009).

<i>Extra role of responsibility within school</i>	<i>Number</i>	<i>Median</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Yes	92	8.2	7.94	1.03	3.4	9
No	86	7.6	7.45	1.18	3.9	9

Table 4: Data Analysis

1b. Will teachers who are a member of senior management report higher teacher collective efficacy scores?

The means, medians, standard deviations and minimum and maximum scores for the variable 'member of senior management (or not)' are shown in Table 5. To compare the two conditions a Mann-Whitney test was used. The Total Teacher Collective Efficacy Scores for teachers who were a member of senior management (Mdn= 8.4) differed significantly from those teachers who were not a member of senior management (Mdn= 7.7), $U= 2038.50$, $z= -3.437$, $p < .001$. A small to medium effect size was found (-0.26) (Field, 2009).

Member of senior management	Number	Median	Mean	Standard Deviation	Minimum	Maximum
Yes	47	8.4	8.18	0.81	5.9	9
No	131	7.7	7.54	1.19	3.4	9

Table 5: Data Analysis

The measure used has two subscales, Instructional Practice and Student Discipline. Table 6 illustrates the medians, means and standard deviations for these two subscales. As may be seen in Table 6, the dispersion of scores for the subscale Student Discipline was wider for teachers who did not have a role of responsibility. Table 6 indicates that there is a wider dispersion of scores in both subscales for teachers who were not members of senior management.

Role	Extra role of responsibility	No extra role of responsibility	Member of senior management	Not a member of senior management
Median	8.2	7.3	8.3	7.5
Mean	7.8	7.2	8.1	7.4
Standard Deviation	1.27	1.25	0.91	1.36
Median	8.3	7.9	8.6	8
Mean	8	7.6	8.3	7.6
Standard Deviation	0.99	1.11	0.81	1.41

Table 6: Summary of subscales descriptive results

The shaded rows are Instructional Practice and the non-shaded rows are Student Discipline

Research question 2

2. What sources do teachers believe enhance teacher collective efficacy?

Analysis of the interview responses was carried out using the theory-led thematic analysis approach (Braun & Clarke, 2006). A separate thematic analysis was carried out for teachers, teachers with an extra role of responsibility and teachers who were members of senior management. The three sets of themes were compared and the same themes were found in each of the three analyses. The author and a colleague carried out the thematic analysis independently which should increase inter-rater reliability and both found similar sets of themes.

After completing phase one, two and three of the thematic analysis which involved '*Familiarising yourself with your data*', '*Generating initial codes*' and '*Searching for themes*', 5 themes were produced. This is illustrated in Table 7.

Themes	Sub themes
Communication	<i>Senior management's feedback</i> <i>Sharing information</i> <i>Expectations being communicated to staff</i>
Team Work and Team Meetings	<i>Learning from each other</i>
Observations	<i>A form of learning</i> <i>Sometimes stressful</i>
Supporting roles	<i>Senior management are available</i> <i>Peers are supportive</i>
Stress management	<i>Guidance on how to manage stress</i>

Table 7: Initial thematic map

Stage four looked again at all the data to ensure no themes had been missed. Stage five involved defining and refining the themes. As a result theme 2 and 3 could be merged to form a new theme entitled *learning*. This is illustrated in Table 8.

Themes	Sub themes	Responses
Communication	<ul style="list-style-type: none"> • Senior management's feedback • Sharing information • Expectations being communicated to staff 	<p>"You have to be a detective to find out what is going on" (T, P7.L14)</p> <p>"Sharing my planning and the thought process behind it" (SM, P1.L29)</p> <p>"Senior management will walk around the school and see people" (SM, P8.L174)</p> <p>"I'd like more reassurance from senior management we are doing the right thing" (R, P4.L94)</p>
Learning	<ul style="list-style-type: none"> • Learning from each other • A form of learning • Sometimes stressful 	<p>"Our meetings are useful as problems are resolved there and then" (R, P6.L83)</p> <p>"Bad observations can really lower morale in school" (T, P9.L281)</p> <p>"Teachers find observations stressful but valuable" (SM, P2.L51)</p> <p>"Peer observations would be good" (T, P7.L52)</p>
Supporting roles	<ul style="list-style-type: none"> • Senior management are available • Peers are supportive 	<p>"Senior management are very supportive" (T, P9.L26)</p> <p>"So I suppose as a senior manager, when somebody comes and talks to you about it, you actually know where they're coming from" (SM, P8.L123)</p> <p>"We look after each other's well-being" (SM, P2.L94)</p> <p>"Support each other emotionally" (R, P6.L9)</p>
Stress management	<ul style="list-style-type: none"> • Guidance on how to manage stress 	<p>"Stress management is a bit haphazard" (SM, P1.L42)</p> <p>"Feeling overloaded with work is kind of the biggest contributing factor" (SM, P3.L83)</p> <p>"We are never given advice on how to manage stress" (T, P5.L25)</p>

Table 8: Final thematic map with examples of teachers' responses
(The initials stand for T -Teacher, SM - Senior Management, R - extra role of Responsibility, P - Participant number and L – Line on transcript)

Stage six 'Producing the report' provides evidence of the themes within the data. Examples of the responses can be found in Table 8.

The first theme **communication** referred to the communication between senior management and teachers which appeared to be lacking for some teachers. It also referred to the teachers' need for positive reinforcement. Examples of the responses can be found in Table 8 (pg.43).

The second theme was **learning** and this referred to ways in which teachers suggested they learnt. The two dominant methods of learning appeared to be through team meetings and observations. Teachers suggested peer observations may be more beneficial. Teachers also suggested negative feedback from observations could lead to low collective efficacy beliefs and senior management failed at times to give reasons for observations.

The third theme **supporting roles** referred to how supportive senior management were to the teachers. This related to how visible and approachable senior management were. This theme also referred to how teachers supported each other.

The final theme **stress management** refers to guidance on how to manage stress. It appears guidance on how to manage stress was lacking.

In the Discussion section of this paper stage six, '*Producing the Report*' will be continued by relating the themes back to the research question and literature (Braun & Clarke, 2006).

Discussion

This study sought to identify if a teacher's role in school influenced their perception of teacher collective efficacy and what they perceived the possible collective efficacy sources to be. This study opted for a mixed methods approach in order to provide a varied view of teacher collective efficacy and address the gap of a lack of qualitative or mixed methods research (Labone, 2004; Tschannen-Moran et al., 1998).

Research question 1

The first aim of this study was to investigate whether a teacher's role influenced their perception of teacher collective efficacy. The teacher's role was studied by investigating an extra role of responsibility and being a member of senior

management. Analysis found having an extra role of responsibility or being a member of senior management significantly effected perceptions of teacher collective efficacy. Teachers who reported having extra responsibilities within school reported higher teacher collective efficacy scores than teachers without extra responsibilities. The median score for the teachers who had an extra role of responsibility was higher (8.2) than those teachers without such a role (7.6). The sample size for both was similar. According to Table 4 (pg.40) the dispersion of scores was similar for both data sets indicating that the perception of teacher collective efficacy beliefs although statistically significant did not appear vastly different. According to Table 6 (pg.41) the dispersion of scores for the subscale Student Discipline was wider for teachers who did not have a role of responsibility. This indicates there is a wider dispersion in teachers' perception of the collective efficacy of student discipline for those without roles of responsibility in the school. The difference does support the literature which suggests teacher collective efficacy beliefs are influenced by their role within the organisation (Bandura, 1997; Friedman & Kass, 2002; Goddard et al., 2000). By having more responsibilities within school they may have more opportunities to influence school decisions (Goddard, Hoy, et al., 2004; Raudenbush et al., 1992). It could be argued the more opportunities a teacher has to influence school decisions the more likely a school is to be characterised by a high collective efficacy (Goddard, Hoy, et al., 2004). This suggests the possible importance of shared responsibility within schools also referred to as 'group enablement' by Bandura (1997). Schools which share responsibility through more control over school decisions or extra responsibilities may have higher levels of perceived teacher collective efficacy.

In order to further investigate the influence of extra responsibility on teacher collective efficacy more analysis was carried out and a similar finding was made. Analysis found being a member of senior management significantly effected perceptions of teacher collective efficacy. Table 5 (pg.41) illustrates a larger standard deviation for those teachers who were not members of senior management compared to those teachers who were. Table 6 (pg.41) confirms this dispersion for both subscales. The wider dispersion of scores appears to indicate that teachers who were not members of senior management have a greater range of collective efficacy beliefs than those who were. This appears to

indicate senior management typically report higher collective efficacy scores. This supports the literature which suggests a teacher's role within the organisation may influence their perception of collective efficacy (Bandura, 1997; Friedman & Kass, 2002; Goddard et al., 2000). It also supports the literature which suggests teacher efficacy is influenced by teacher leadership roles (Ross et al., 1999). However, it is not possible to generalise the study's finding to members of senior managements in all schools as the number of teachers who were a member of senior management was small compared to those who were not (Field, 2009).

Research question 2

The second phase of this research sought to ascertain potential sources of teacher collective efficacy by interviewing teachers. Four themes emerged from the interviews: communication, learning, supporting roles and stress management (please see Table 8 pg.43). The first theme ***communication*** referred to the communication between senior management and teachers. This appeared to be lacking for some teachers, "You have to be a detective to find out what is going on" (T, P7.L14). It also referred to the teachers' need for positive reinforcement. Performance feedback could be described as Bandura's (1997) collective efficacy source 'verbal persuasion'. The potency of persuasion depends on the credibility, trustworthiness and expertise of the persuader (Goddard, Hoy, et al., 2004). The teachers in this study reported that they wanted "more reassurance from senior management that we are doing the right thing" (R, P4.L94). However, 'verbal persuasion' could not be used as an umbrella term for the theme ***communication*** which was found in this study. Although the theme ***communication*** acknowledged performance feedback the theme centred on the importance of transparent communication between senior management and peers. This study found ***communication*** to be a possible source of teacher collective efficacy.

The second theme from the interviews was ***learning*** and this referred to teachers' methods of learning. The two dominant methods of learning appeared to be through team meetings where they would learn from each other and by observations from senior management. However, teachers did suggest peer observation could be a more beneficial way of learning. This theme could be

described as an example of Bandura's (1997) collective efficacy source 'vicarious experience'. Head Teachers could further strengthen teacher efficacy through 'vicarious experience', for example by making it easier through the timetabling for teachers to observe each other (Watson, Chemers & Preiser, 2001). This study may have extended Bandura's (1997) theme of 'vicarious experience' by centring more on how teachers could learn from each other in different formats.

The third theme **supporting roles** referred to how supportive senior management were for the teachers. This related to the visibility and approachability of senior management. This theme also referred to how teachers supported each other, "We look after each others' well-being" (SM, P2.L94). This theme could be described as an example of Bandura's (1997) collective efficacy source 'physiological and affective states'. Supporting each other has been acknowledged as a way to help teachers cope with stress (Bakker, Hakanen, Demerouti & Xanthopoulu, 2007). Teachers with support particularly from their Head Teachers report job satisfaction (Burke, Greenglass & Schwarzer, 1996; Schonfeld, 2001; Zellars & Perrewé, 2001) and less burnout (Cox & Leiter, 1992). However, the theme **supporting roles** does not fit accurately with Bandura's (1997) collective efficacy source 'physiological and affective states' as it also focuses on the availability of senior management for support. The final theme which was found in this study fits more accurately with Bandura's (1997) source.

The fourth theme that emerged from the interviews was **stress management**. It appeared guidance from senior management for staff on how to manage stress was lacking, "Stress management is a bit haphazard" (SM, P1.L42). Teachers also reported Ofsted was a potential stress contributor and experiencing stress can be isolating. Being able to manage stressful demands could prevent the emergence of teacher burnout (Schwarzer & Hallum, 2008). A systematic review by Brown (in press) found the burnout dimension depersonalisation had a higher negative correlation to teacher self-efficacy than the other two burnout dimensions (emotional exhaustion and reduced personal accomplishment). Depersonalisation refers to an individual feeling they have become detached from their job (Maslach & Jackson, 1986). If a teacher feels they are becoming detached from the school it may be due to them feeling like they no longer feel

part of that organisation. Depersonalisation can come about through a lack of knowledge and opportunity to become a valued member of the organisation both within and outside of the classroom (Friedman & Kass, 2002). Therefore, providing teachers with opportunities to participate in school decisions may have a positive influence on efficacy beliefs and in conjunction reduce teacher burnout. This theme **stress management** aligns itself with Bandura's (1997) collective efficacy source 'physiological and affective states'.

In summary variants of the three out of the four of Bandura's (1997) collective efficacy sources were suggested by teachers in this study. The missing source was 'enactive mastery experiences'. This is argued to be the most important source of efficacy beliefs (both self and collective) (Bandura, 1997; Tschannen-Moran & Barr, 2004). Yet the teachers in this study did not refer to past experiences as being a source which enhanced their sense of teacher collective efficacy. Perhaps as Ross (1994) argued it needs to be more than exposure to information to influence collective efficacy, the knowledge needs to be used by the teachers. One of the themes in this study was **communication** so perhaps there was a failure by senior management in communicating successful past performances thus the collective efficacy source 'enactive mastery experiences' is unlikely to be found. This study found the same four themes for teachers regardless of their role. Although having a role of responsibility may influence a teacher's perception of collective efficacy the sources which enhance it appear to be similar. This study has attempted to extend information on sources of teachers' collective efficacy beliefs. The themes found in this study are possible sources of collective efficacy for teachers.

Implications for Educational Psychologists

Collective efficacy has been found to be related to student achievement (Goddard et al., 2000; Goddard, LoGerfo, et al., 2004; Parker et al., 2006; Ross et al., 2004; Tschannen-Moran & Barr, 2004) therefore, Educational Psychologists (EPs) may wish to play a role in supporting schools to enhance it. Collective efficacy is an example of a shared belief within an organisation. Culture has been described as 'one of the most powerful and stable forces operating in organisations' (Schein, 1996, p. 231). The influence of the collective on the individual is likely to be higher in schools in which teachers

share a common vision about school directions (Ross et al., 2004). Knowledge about collective efficacy beliefs is important when attempting to understand the influence of a school's culture on teachers' professional work and in turn student achievement (Goddard & Skrla, 2006). EPs could support schools in exploring how their collective efficacy beliefs are formed and shared. The findings from this study highlighted a number of ways collective efficacy beliefs could be formed. EP's could play a role in supporting schools to become organisations where not only students learn but the teachers as well. EP's could work in collaboration with schools to support them in becoming learning communities (Goddard & Skrla, 2006). This could entail mapping a framework to enhance learning effectiveness which would explore such factors as the sociocultural environment, mediums for learning and the learning process (Timperley, Wilson, Barrar & Fung, 2007).

This study also found that teachers suggested support and stress management were possible teacher collective efficacy sources. EP's could support the implementation of measures such as peer supervision and/or coaching to help schools address these sources (Gibbs & Miller, in press). EP's could also support schools in identifying the factors which were creating stress for teachers. This study identified the pressure of performativity through the overuse of observations from senior management. The increase on performativity within education could affect a teacher's agency over how they perform as a teacher which could impact on their self and collective efficacy beliefs (Ball, 2003). An EP could support schools in identifying the ways in which performativity occurs and how to manage it so it does not have a detrimental effect on teachers. One way may be by focusing on leadership styles which could enhance teachers self and collective efficacy beliefs.

Limitations

The current study has some limitations which should be noted. The cross-sectional design of the study restricts the sample to teachers in a local authority in the North East of England. Therefore, the participants in this study may not represent other samples of teachers in different settings (Cohen, Manion & Morrison, 2007). The sampling strategy used failed to provide a sufficient number of teachers who were members of senior management which again

effects the generalisability of the findings. Another limitation is the use of self-reports, teachers' answers could be influenced by self-selection bias. The researcher was also not present for the administration of the questionnaires which prevented opportunities for question clarification and ensuring the participants had time to complete it. This study did attempt to obtain a more diverse analysis of teacher collective efficacy by adopting a mixed methods approach however qualitative methods are also subjective to bias (Todd, Nerlich, McKeown & Clarke, 2004). The final limitation is the reported effect sizes were small to medium indicating more research will need to be carried out to confirm these findings (Howitt, 2010).

Future research

The results in Table 6 (pg.41) illustrated that regardless of whether a teacher has a role of responsibility or not teacher's perceptions of collective efficacy for Student Discipline were higher than their perceptions for Instructional Practice. A follow up study could look at which schools rated collective efficacy beliefs for Student Discipline higher as those schools may have lower exclusion rates. This study identified four possible sources of teacher collective efficacy. 'Enactive mastery experiences' was not reported to be a collective efficacy source within this study. Therefore future research could continue to explore possible teacher collective efficacy sources and try to ascertain if 'enactive mastery experiences' are a potential source for other teachers. As this research was carried out in the North East of England future research in other regions and countries would add to this growing body of research.

Conclusion

This study sought to identify if a teacher's role influenced their perception of teacher collective efficacy. It also sought to identify possible teacher collective efficacy sources. The findings from this study suggest teachers who had extra responsibilities within school or were a member of senior management reported higher teacher collective efficacy. This supports literature which indicates that a teacher's role within school may influence their perception of teacher collective efficacy (Bandura, 1997; Friedman & Kass, 2002; Goddard et al., 2000). It also supports the research which indicated collective efficacy can be influenced by

teachers' involvement in decision making (Goddard, Hoy, et al., 2004; Raudenbush et al., 1992). This study also added to the underrepresented research of teacher collective efficacy sources. The teachers in this study suggested four sources of teacher collective efficacy: communication, learning, supporting roles and stress management. This research may be beneficial to schools, governing bodies and psychological services as it provides more light on the factors associated with developing teacher collective efficacy. If teacher collective efficacy is linked with higher student achievement then surely all of these professional bodies would have a vested interest in how to enhance it.

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Appendices

Appendix A

EPPI Centre Weight of Evidence (WoE) tool

<p>N.1 Are there ethical concerns about the way the study was done? <i>Consider consent, funding, privacy, etc.</i></p>	<p>N.1.1 Yes, some concerns (please specify) N.1.2 No (please specify)</p>
<p>N.2 Were students and/or parents appropriately involved in the design or conduct of the study? <i>Consider your answer to the appropriate question in module B.1</i></p>	<p>N.2.1 Yes, a lot (please specify) N.2.2 Yes, a little (please specify) N.2.3 No (please specify)</p>
<p>N.3 Is there sufficient justification for why the study was done the way it was? <i>Consider answers to questions B1, B2, B3, B4</i></p>	<p>N.3.1 Yes (please specify) N.3.2 No (please specify)</p>
<p>N.4 Was the choice of research design appropriate for addressing the research question(s) posed?</p>	<p>N.4.1 yes, completely (please specify) N.4.2 No (please specify)</p>
<p>N.5 Have sufficient attempts been made to establish the repeatability or reliability of data collection methods or tools? <i>Consider your answers to previous questions:</i> <i>Do the authors describe any ways they have addressed the reliability or repeatability of their data collection tools and methods (K7)</i></p>	<p>N.5.1 Yes, good (please specify) N.5.2 Yes, some attempt (please specify) N.5.3 No, none (please specify)</p>
<p>N.6 Have sufficient attempts been made to establish the validity or trustworthiness of data collection tools and methods? <i>Consider your answers to previous questions:</i> <i>Do the authors describe any ways they</i></p>	<p>N.6.1 Yes, good (please specify) N.6.2 Yes, some attempt (please specify) N.6.3 No, none (please specify)</p>

<p><i>have addressed the validity or trustworthiness of their data collection tools/ methods (K6)</i></p>	
<p>N.7 Have sufficient attempts been made to establish the repeatability or reliability of data analysis? <i>Consider your answer to the previous question:</i></p> <p><i>Do the authors describe any ways they have addressed the repeatability or reliability of data analysis? (L7)</i></p>	<p>N.7.1 Yes (please specify) N.7.2 No (please specify)</p>
<p>N.8 Have sufficient attempts been made to establish the validity or trustworthiness of data analysis? <i>Consider your answer to the previous question:</i></p> <p><i>Do the authors describe any ways they have addressed the validity or trustworthiness of data analysis? (L8, L9, L10, L11)</i></p>	<p>N.8.1 Yes, good (please specify) N.8.2 Yes, some attempt (please specify) N.8.3 No, none (please specify)</p>
<p>N.9 To what extent are the research design and methods employed able to rule out any other sources of error/bias which would lead to alternative explanations for the findings of the study? <i>e.g. (1) In an evaluation, was the process by which participants were allocated to, or otherwise received the factor being evaluated, concealed and not predictable in advance? If not, were sufficient substitute procedures employed with adequate rigour to rule out any alternative explanations of the findings which arise as a result?</i></p> <p><i>e.g. (2) Was the attrition rate low and, if applicable, similar between different groups?</i></p>	<p>N.9.1 A lot (please specify) N.9.2 A little (please specify) N.9.3 Not at all (please specify)</p>
<p>N.10 How generalisable are the study results?</p>	<p>N.10.1 Details</p>
<p>N.11 In light of the above, do the reviewers differ from the authors over the findings or</p>	<p>N.11.1 Not applicable (no difference in conclusions)</p>

conclusions of the study? <i>Please state what any difference is.</i>	N.11.2 Yes (please specify)
N.12 Have sufficient attempts been made to justify the conclusions drawn from the findings, so that the conclusions are trustworthy?	N.12.1 Not applicable (results and conclusions inseparable) N.12.2 High trustworthiness N.12.3 Medium trustworthiness N.12.4 Low trustworthiness
N.13 Weight of evidence A: Taking account of all quality assessment issues, can the study findings be trusted in answering the study question(s)? <i>In some studies it is difficult to distinguish between the findings of the study and the conclusions. In those cases, please code the trustworthiness of these combined results/conclusions.</i>	N.13.1 High trustworthiness N.13.2 Medium trustworthiness N.13.3 Low trustworthiness
N.14 Weight of evidence B: Appropriateness of research design and analysis for addressing the question, or sub-questions, of this specific systematic review.	N.14.1 High N.14.2 Medium N.14.3 Low
N.15 Weight of evidence C: Relevance of particular focus of the study (including conceptual focus, context, sample and measures) for addressing the question of this specific systematic review	N.15.1 High N.15.2 Medium N.15.3 Low
N.16 Weight of evidence D: Overall weight of evidence <i>Taking into account quality of execution, appropriateness of design and relevance of focus, what is the overall weight of evidence this study provides to answer the question of this specific systematic review?</i>	N.16.1 High N.16.2 Medium N.16.3 Low

Appendix B

Questionnaire

Collective Teacher Beliefs

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by circling any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the *current* ability, resources, and opportunity of the teaching staff in your school to do each of the following.

	None at all	Very Little	Some Degree	Quite A Bit	A Great Deal				
1. How much can teachers in your school do to produce meaningful student learning?	1	2	3	4	5	6	7	8	9
2. How much can your school do to get students to believe they can do well in schoolwork?	1	2	3	4	5	6	7	8	9
3. To what extent can teachers in your school make expectations clear about appropriate student behaviour?	1	2	3	4	5	6	7	8	9
4. To what extent can school staff in your school establish rules and procedures that facilitate learning?	1	2	3	4	5	6	7	8	9
5. How much can teachers in your school do to help students understand the complex content of subjects?	1	2	3	4	5	6	7	8	9
6. How much can teachers in your school do to promote deep understanding of academic concepts?	1	2	3	4	5	6	7	8	9
7. How well can teachers in your school respond to defiant students?	1	2	3	4	5	6	7	8	9
8. How much can school staff in your school do to control disruptive behaviour?	1	2	3	4	5	6	7	8	9
9. How much can teachers in your school do to help students think critically about what they learn?	1	2	3	4	5	6	7	8	9
10. How well can adults in your school get students to follow school rules?	1	2	3	4	5	6	7	8	9
11. How much can your school do to foster student creativity in their work?	1	2	3	4	5	6	7	8	9
12. How much can your school do to help students feel safe while they are at school?	1	2	3	4	5	6	7	8	9

Appendix C

Questions for interviews

1. Do you think staff in your school can work together to overcome difficulties?
 - Can you give me a recent example?
 - What factors supported or hindered this?

2. Do you think teachers in your school can learn from other members of staff?
 - Can you give me a recent example?
 - What factors supported or hindered this?

3. What was your last professional development opportunity?
 - Can you give me a recent example?
 - What factors supported or hindered this?

4. Do you think senior management in your school can support staff members?
 - Can you give me a recent example?
 - What factors supported or hindered this?

5. Do you think teachers experience stress in your school?
 - Can you give me a recent example?
 - What factors supported or hindered this?

Appendix D

Information Sheet for Participants

What factors could contribute to raising the collective efficacy of teachers?

Research Summary

My research is to look at the collective efficacy of schools in Middlesbrough. Collective efficacy refers to teachers' belief that their team of staff can work together to achieve results. Collective efficacy is about what a teacher thinks their team can do not what they have done. A high collective efficacy can have a positive impact on emotional well-being. I am trying to identify what makes a school have a high collective efficacy so best practice can be shared therefore your input is vital.

- **Research Methods**

Questionnaires were distributed to both primary and secondary school teachers in Middlesbrough. It was at this point teachers were invited to participate in an interview at a later date.

Each interview will last between 30 and 40 minutes. Questions will relate to your experiences of collective efficacy. All participants are assured anonymity.

This study has received full ethical approval from Newcastle University's Ethical Approval Committee.

- **Relationship Between Researcher and Participants**

The researcher is aware of her responsibilities to all research participants. She will endeavour to ensure minimal disruption to the work of participants.

Interviews will be arranged for a time and place of the participants' convenience.

The researcher believes that research should be of benefit to both the researcher and participants and as such she would be very happy to present the findings to participants upon completion of the research. This may take the form of a written report and/or a presentation depending on the wishes of the participants.

- **Information on the Researcher**

My name is Carol Brown, I am a Trainee Educational Psychologist working for Middlesbrough Psychological Team and completing a Doctorate in Applied Educational Psychology at Newcastle University.

Contact details:

CONSENT FORM

What factors could contribute to raising the collective efficacy of teachers?

If you are happy to participate in this study, please read the statements below and tick the corresponding boxes if you agree with them. Then print your name, sign, and date below.

If you have any queries about this form or the study please contact Carol Brown. She can be emailed at c.g.brown@newcastle.ac.uk or her direct telephone number is 01642 201853.

Participation Consent Form

(Please tick the boxes if you agree with the following statements)

I have been informed of the nature of this study.

I have been informed that participation in this interview is completely voluntary and that I may withdraw from it at anytime.

I am happy for the interview to be recorded, with anything I say treated confidentially.

PRINT NAME.....

SIGNATURE.....

DATE.....

Appendix E

Extracts from Interviews

Interview	Data Extracts	Coded for
1 Line 29-34	So for me it was just sharing my planning and the thought process behind it and her modelling my behaviour in the classroom. My questioning, my structure of the lesson. I've learnt from this school , because this school was a failing school before I came, but the school I was at previously two years ago, yes I was in year six with a very good friend of mine, she was the year six teacher, she was the Deputy Head and I learnt a lot from her just through working and observing her in lessons, pinching her ideas putting them in with mine	Learning Communication
2 Line 33-34	I call team meetings where we all have lunch together in my team and I'll say can we all have lunch together which also takes the pressure off a little bit when you're sharing you're eating, you're sharing.	Supporting roles Stress management
3 Line 29-30	I learnt so much from her about why we needed all this you know the personalised learning and the outdoor learning and environments, I learnt huge amounts about that and I feel that I've got a much better overview.	Learning
6 Line 200	Because there had been quite a lot of people had a very high amount of stress here a massive amount and the staff turnover is vast.	Stress management
7 Line 202-205	I think sort of our senior management team is very close ; it's very unusual for somebody to do something on their own and then just get on with it. Obviously somebody always takes to lead, but there will be a team of people behind that and that's something that we're trying to adopt throughout school	Supporting roles
8 Line 307-310	I need ten adults and you're taking three of them because they're going earlier and it's just like oh hang on that was meant to be nine. It's just keeping that sort of central view and really good overview of what's going on and being aware of who is doing what and what they're actually doing.	Communication