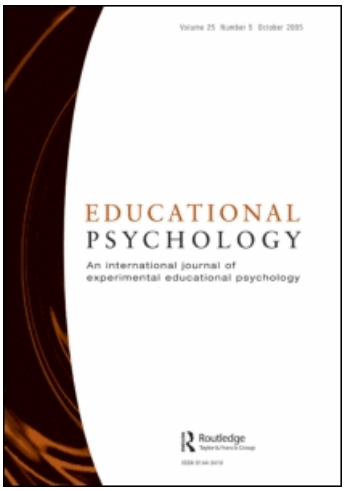

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Self-efficacy, school resources, job stressors and burnout among Spanish primary and secondary school teachers: a structural equation approach

Fernando Doménech Betoret [a]
[a] Department of Educational and Developmental Psychology, Universitat Jaume I, Castellón, Spain

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Self-efficacy, school resources, job stressors and burnout among Spanish primary and secondary school teachers: a structural equation approach

Fernando Doménech Betoret*

Department of Educational and Developmental Psychology, Universitat Jaume I, Castellón, Spain

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This study examines the relationship between school resources, teacher self-efficacy, potential multi-level stressors and teacher burnout using structural equation modelling. The causal structure for primary and secondary school teachers was also examined. The sample was composed of 724 primary and secondary Spanish school teachers. The changes occurring in the Spanish teacher role in the last decade were taken into account to select job stressors. The results obtained revealed that external (school support resources) and internal (management classroom self-efficacy and instructional self-efficacy) coping resources have a negative and significant effect on job stressors. In turn, job stressors have a positive and significant effect on teachers' burnout considering it as both a unidimensional and multidimensional construct. Furthermore, the hypothesised structure of burnout dimensions revealed that emotional exhaustion plays a key role in explaining Spanish school teachers' burnout. Practical implications of these findings are discussed.

Keywords: teacher burnout; job stressors; self-efficacy; school resources; structural equation modelling; secondary education; primary education

In recent years, the teacher stress and burnout phenomenon has received increasing attention by researchers from many countries. These international concerns have been evidenced by research works conducted in China (e.g., Chan, 1998, 2002), Germany (e.g., Van Dick & Wagner, 2001; Van-Der-Doef & Maes, 2002), the Netherlands (e.g., Brouwers, Evers, & Tomic, 2001; Evers., Brouwers, & Tomic, 2002), the UK (e.g., Hastings, & Bham, 2003; Moriarty, Edmonds, Blatchford & Martin, C., 2001), the USA (e.g., Abel, & Sewell 1999; Brewer & Mahan, 2003, Dworkin, Saha, & Hill 2003), Australia (e.g., Dorman, 2003), Israel (e.g., Friedman, 2003), and Spain (e.g., Calvete & Villa, 1999; Doménech-Betoret, 2006; Flores & Fernandez-Castro, 2004).

However, despite the large number of studies conducted, and the progress made in this area, a universally accepted theoretical model of teacher burnout still does not exist. This is mainly because there is still no consensus either on the decisive factors causing burnout in teachers (De Heus & Diekstra, 1999) or what the central symptoms of burnout syndrome actually are. While the early frameworks and models of burnout focused exclusively on work-related stressors, recent research adopts a more integrated

*Email: betoret@psi.uji.es

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approach which considers both the personal and environmental variables (Kokkinos, 2007). Therefore, teachers' personal variables as well as job-related stressors should be taken into consideration when studying the burnout phenomenon (Kokkinos, 2007).

Kyriacou and Sutcliffe (1978) adopted the theoretical conceptualisation put forward by Richard Lazarus and co-workers to predict school teachers' reactions. According to this model, potential stressors are seen as antecedents of teacher stress. Kyriacou and Sutcliffe (1978) distinguish between physical (e.g. large numbers of pupils in the class) and psychological stressors (e.g. poor relationships with colleagues). The effect of job stressors are mediated by coping mechanisms. If coping mechanisms are inappropriate, stress occurs. According to the model, teacher stress is considered to have a negative effect on several dimensions. These include psychological (e.g. job dissatisfaction), physiological (e.g. high blood pressure), and behavioural (e.g. absenteeism) dimensions. Finally, individual teachers' characteristics are assumed to influence the process (e.g. self-efficacy beliefs).

On the other hand, Blase (1982) presented a social–psychological teacher stress and burnout model whose basis for this framework was extracted and refined from the Teacher Performance-Motivation Theory (TP-M Theory). Blase's model posits that teachers apply effort and coping resources to attain valued outcomes with students based on their perceptions of student needs (objectives). The failure of teacher effort and teacher coping resources to overcome job-related stressors results in some degree of job strain (or residual stress) and as a consequence negative outcomes emerge. In turn, negative outcomes affect job satisfaction, work involvement, teacher motivation and teacher effort. Stressors, which are inherent in all school environments, are divided into two categories in Blase's model: first-order and second-order stressors. The former interfere directly with teacher effort (time and energy) which aims to achieve valued outcomes with students (e.g. student discipline, poor student attendance, obtrusive supervisors, etc.), while the second-order stressors do not directly interfere with teacher effort (e.g. low salary, the educational system's aims, social conception of teachers' role, etc.).

The social–psychological model of teacher stress and burnout presented by Blase (1982) shares similarities with the previous model (Kyriacou & Sutcliffe, 1978). Both highlight the importance of the stressor variables related to teaching (occupational stressors or job-related stressors) in teachers' residual stress; potential stressors are seen as antecedents of teacher stress. Likewise, both models attempt to operationalise teacher stress through different correlates, which are understood as the derived negative consequences of teacher stress that affect him or her on both a behavioural and a psychological level. Therefore, the importance attributed to coping resources or coping mechanisms is to lower teacher stress levels. Finally, another common aspect is that both models distinguish between two types of job stressors (physical and psychological for Kyriacou & Sutcliffe's model vs. first and second-order stressors for Blase's model). Despite these similarities however, there are also important differences such as the dimensions used to operationalise burnout (psychological, physiological and behavioural in Kyriacou and Sutcliffe's model vs. job satisfaction, work involvement, teacher motivation and teacher effort in Blase's model), which indicate that the first model could be considered more bio-psychological, whereas the latter could be classified as more instructional. By taking the aforementioned models as a reference, we presented a simplified and synthetic model to guide this research work (see Figure 1). The main components of this model are: coping resources (internals and externals), job stressors and burnout.

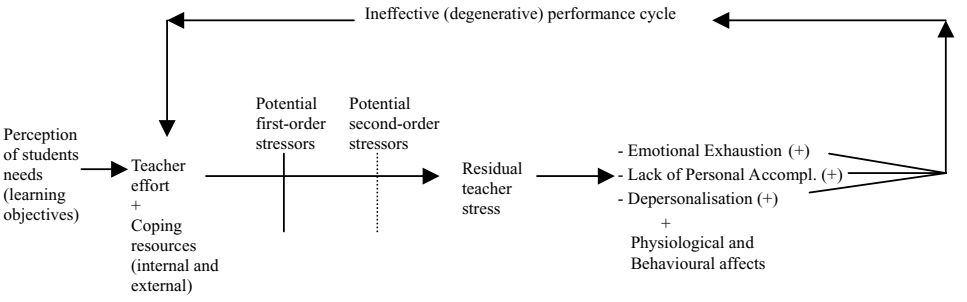


Figure 1. A simplified model designed to guide this research based on the proposals of (1982) and Kyriacou and Sutcliffe (1978) (adapted from Doménech-Betoret, 2006).

In this work, four major improvements have been introduced with regard to the previous research we conducted (Doménech-Betoret, 2006) using a similar model: (a) the scales we used in the previous study were refined for this study; (b) the number of participants has increased in relation to the previous study, including not only secondary teachers, but also primary school teachers; (c) the dimensions proposed by Blase (1982), as being indicative of burnout, considered in the previous study, have been replaced by the three components proposed by Maslach and Jackson (1986); and (d) in the present study, all the variables selected have been considered simultaneously by using the structural equation approach.

Constructs used in the present study are discussed in the following sections.

Coping resources (internal and external)

According to Blase (1982, p. 102), coping resources refer to 'any factor (physical, psychological, social, or material) which helps individual teachers overcome job-related stressors and achieve value outcomes with students'. The author argues that 'when the teacher's coping resources are insufficient to overcome the effects of stressors, residual stress results' Blase (1982, p. 103). We assumed this approach and used the classification between internal and external coping resources or support proposed by Schwarzer and Greenglass (1999). Internal support refers to personal variables (psychological or behavioural patterns) which, in previous research, were proved to have a mitigating or reducing effect on teacher stress (e.g. self-efficacy, professional development, active coping strategies). External support refers to both social and didactic resources. Social support may come from either inside the school (e.g. principal, colleagues, speech therapist, psychologist) or outside the school (e.g. friends, partner, family). Didactic resources refer to teacher support resources (maps, software, computers, overhead projectors, photocopiers) as well as school facilities (labs, library, offices). Self-efficacy (internal support) and school coping resources such as professional and didactic support (external support) were considered in this study. Previous research has provided evidence that internal variables such as self-efficacy (Chan, 1998, 2002; Doménech-Betoret, 2006; Van Dick & Wagner, 2001) and external variables such as resources from school (Achwarzer & Greenglass, 1999; Blase, 1982; Breuse, 1984; Doménech-Betoret, 2006) reduce burnout.

Self-efficacy is a belief in ones' capability to overcome a specific barrier by investing effort and strategies (Achwarzer & Greenglass, 1999). Self-efficacy is a

component of Bandura's social cognitive theory (Bandura, 1986) where behaviour, cognition and the environment exist in a reciprocal relationship. The results obtained indicate that the perceived self-efficacy that a person has of one's own capabilities to perform or undertake a task increase the likelihood of the task being successfully performed (Bandura, 1986). Self-efficacy has been associated with emotional level, effort and task perseverance (Compeau & Higgins, 1995; Hill, Smith, & Mann, 1987), with teacher stress (Parkay, Greewood, Olejnik, & Proller, 1988) and also with teacher burnout (Brouwers and Tomic, 2000; Evers, Brouwers, & Tomic, 2002). In recent years, the self-efficacy concept has developed from a unidimensional construct to a multidimensional construct (see Chan, 2008; Friedman, 2003; Skaalvik & Skaalvik, 2007). In this study we distinguished between perceived self-efficacy in teaching (teacher instructional role) and perceived self-efficacy to deal with students' discipline and misbehaviour (teacher classroom management role). Both self-efficacies complement each other and shape a more complex higher-order construct of instructional efficacy to bring instructional self-efficacy and management self-efficacy together.

Job stressors

Considerable research has been conducted in order to identify occupational stressors in the teaching environment (Boyle, Borg, Falzon, & Baglioni, 1995; Farber, 1991; Friedman, 1991, 1999; Forlin, 2001; Pithers & Soden, 1998; Pithers & Fogarty, 1995; Sulsky & Smith 2005). In their study, which summarised the most important findings on teacher stress, Pithers and Fogarty (1995) stated that the more commonly found stressors were as follows: work overload, role ambiguity and conflict, pressures of the teachers' role, inadequate resources and poor working conditions, lack of professional recognition and low remuneration, lack of involvement in decision-making, lack of affective communication, staff conflicts, and pupil misbehaviour. In a review of the literature of 72 research studies published between 1980 and 1993, Forlin (2001) identified 24 common potential stressors for teachers, which were classified into three general clusters: administrative, classroom-based and personal.

A consensus among the authors has not been reached when it comes to selecting what the main stressors are that affect teachers at various levels of education. This is due, in part, to their dynamic and changing character over time. Stressors are not static variables, rather they are dynamic variables which are subject to the changes taking place in the educational system and the school context. Based on this consideration, we must emphasise that important educational changes have occurred in Spain in the last decade (such as immigration phenomenon and frequent changes in the educational law) which have altered the role of the regular class teacher, and they have to be taken into account.

Occupational stressors have been associated with higher levels of burnout, distress, depression and absenteeism (Griffith, Steptoe, & Cropley, 1999; Mazur & Lynch, 1989; Pierce & Molloy, 1990). However, it should be noted that 'potential' occupational stressors will become 'actual' stressors if teachers develop stress according to their personal variables such as expectations of, beliefs about and attitudes toward the profession, and self-competences about teaching. These are the major personal factors that determine whether or not a teacher will become stressed when responding to a problem (Gómez Pérez & Carrascosa, 2000).

In line with previous work (Kelchtermans, 1999; Lens & Neves de Jesus, 1999; Woods, 1999), we proposed a multi-level ordered classification of stressors according

to the context in which they were generated that range from the most specific to the most general, and from the most internal (personal) to the most external (administration) context. Furthermore, they are understood as barriers or difficulties perceived by teachers that interfere with or hinder the instructional process carried out to achieve learning objectives and which would explain a high level of burnout (Achwarzer & Greenglass, 1999; Blase, 1982).

Burnout

To date, many physical, psychological, behavioural, and social reactions have been mentioned as characteristic symptoms of burnout syndrome. Presently however, most authors consider burnout as a syndrome which comprises the three dimensions proposed by Maslach and Jackson (1986) and Maslach, Jackson and Leiter (1996), known as the central symptoms of burnout (De Heus & Diekstra, 1999). The first, most central, aspect is emotional exhaustion, which is characterised by a feeling of being emotionally overextended and mentally drained. The second symptom, depersonalisation, refers to a cynical, negative attitude toward the people with whom one works. Finally, the third symptom of burnout is reduced personal accomplishment, which indicates a feeling of reduced personal fulfillment at work. However, divergences exist about how these three dimensions are articulated and about the correlates associated with these three basic dimensions (see Schaufeli & Enzmann, 1998; Maslach & Jackson, 1986; Maslach & Leiter, 1997).

Nonetheless, although most researchers currently use a three-dimensional structure of burnout, sometimes it is more convenient for theoretical and practical reasons to treat burnout as a unidimensional construct (see Brenninkmeijer & VanYperen, 2003 and Taris, Schreurs, & Schaufeli, 1999). Some of the reasons argued by these authors are the following: (a) the use of a single score has been considered appropriate when the main interest lies in the burnout syndrome and when the study design is complex; (b) for reasons of parsimony, researchers may be urged to focus on the overall concept of burnout and to pay less attention to the underlying dimensions; (c) conducting research on the overall concept of burnout may sometimes help us to advance our knowledge more thoroughly; (d) although a unidimensional approach implies a substantial loss of information, it may increase the clarity of the presented results. It has also been argued that burnout is strongly dominated by emotional exhaustion and that the additional weight of the other two dimensions is limited (Shirom, 1989). Furthermore, substantial intercorrelations have been observed between emotional exhaustion and depersonalisation, which is why burnout is defined by both symptoms as the so-called ‘core of burnout’ (Green, Walkey, & Taylor, 1991).

Aims of the study

In accordance with this rationale, and taking the theoretical model presented in Figure 1 (adapted from Doménech-Betoret, 2006) as a reference, the present study aimed to investigate the coping resources (internal–external), job stressors and burnout relationship between Spanish primary and secondary school teachers using SEM (Structural Equation Modeling) procedures. We must test if the internal (management and teaching self-efficacy) and external (school resources) support perceived by primary and secondary Spanish teachers determines their evaluation of the potential job stressors that in

turn determine the level of burnout suffered by teachers. In line with previous research (Achwarzer & Greenglass, 1999; Blase, 1982; Cherniss, 1993; Van Dick & Wagner, 2001; Doménech-Betoret, 2006; Hobfoll, 1988, 1989), it is predicted that coping resources, both internal (e.g. self-efficacy) and external (school resources such as school equipment, didactic supplies and qualified educational personnel support), will have a negative impact on work stressors. In turn, and based on previous research (Achwarzer & Greenglass, 1999; Blase, 1982), it is also predicted that stressors (understood as barriers or obstacles perceived by teachers that interfere with or hinder the instructional process carried out to achieve learning objectives) will have a significant and positive impact on burnout dimensions. Thus, internal–external coping resources are considered endogenous variables that could serve as a protective factor to save teachers from experiencing stress, whereas stressors could serve to mediate the association between internal–external coping resources (self-efficacy and school resources) and burnout, considered to be exogenous variables.

These hypothesised connections will be tested, considering burnout to be a unidimensional construct represented by a latent variable, integrated by depersonalisation and emotional exhaustion (known as the core of burnout) to determine the pattern of causal structure for primary (Objective 1a) and secondary education (Objective 1b), and considering burnout to be a multidimensional construct, integrated by depersonalisation, emotional exhaustion and reduced personal accomplishment to determine the pattern of causal structure for primary (Objective 2a) and secondary education (Objective 2b).

Burnout, as a multidimensional factor, was structured taking emotional exhaustion as the central element of the syndrome, as suggested by Leiter (1991, 1993) and Maslach, Schaufeli and Leiter (2000). The interrelations among the three dimensions were established following the proposal by Byrne (1999). According to Byrne (1999), emotional exhaustion impacts positively on depersonalisation and reduces personal accomplishment; in turn, depersonalisation has a positive impact on reduced personal accomplishment.

It is expected that the causal structure hypothesised could be different for Spanish primary and secondary teachers for three major reasons: firstly, the training required to become a teacher in Spain differs completely between primary and secondary education; secondly, primary education teachers usually teach every subject matter to the same group of pupils (same course), whereas secondary teachers usually teach one subject to a number of different groups of pupils (different courses); thirdly, primary education in Spain covers the ages of 6–12, whereas secondary education pupils are adolescents, which is a much more difficult and conflictive age.

Other than offering new data on teacher burnout research, the present study may contribute to extending the literature on the stress–burnout relationship in the Spanish educational context where two important changes, which have taken place in the last years, may affect Spanish teacher burnout: the frequent changes in the educational law (LOGSE, Ley Orgánica General del Sistema Educativo, 1990, LOCE, Ley Orgánica de Calidad de la Educación, 2002, LOE, Ley Orgánica de Educación, 2006), which have generated confusion among teachers, on the one hand, and the emigration phenomenon on the other hand. In the last decade, Spain has been the country of destination for millions of emigrants from different geographic and cultural regions, such as eastern Europe (e.g. Romania), north Africa (e.g. Morocco) and Latin America (e.g. Ecuador). As a result of this phenomenon, one can presently find students from different races and cultures in Spanish classrooms. Most of them

Table 1. The participants' details (primary and secondary teachers).

	Primary education	Secondary education
Participants	317	407
Gender		
Males	95 (30.0%)	176 (43.2%)
Females	222 (70.0%)	231 (56.8%)
Age		
20–29 years	(17.3%)	(14.0%)
30–39 years	(25.2%)	(36.0%)
40–50 years	(33.0%)	(36.8%)
Over 50 years	(24.5%)	(13.2%)
Experience		
0–3 years	(14.7%)	(16.4%)
4–10 years	(26.9%)	(31.8%)
Over 10 years	(58.4%)	(51.8%)

do not know Spanish and they sometimes present problems of integration. So quickly have these changes come about, that the Spanish educational system and teachers have not had enough time to adapt to this new situation. These aforementioned changes could be important sources of teacher burnout in Spain. For this reason, both the facts mentioned have been considered in the elaboration of the stressor scale, including two factors that relate to them: administration ambiguity and classroom diversity, respectively.

Method

Sample and procedure

Participants

A total sample of 724 Spanish teachers from primary (n = 317, 43.8%) and secondary (n = 407, 56.2%) schools participated in this study. The participants' details are presented in Table 1.

The sample of primary school teachers consisted of 317 participants (95 male, 30% and 222 female, 70%) from 16 schools in Spain. They were aged between 20 and 65 (17.3% of the sample between 20–29 years old; 25.2% between 30–39; 33.0% between 40–50; and 24.5% over the age of 50). The teachers' professional experience was as follows: 14.7 % between 0–3 years; 26.9% between 4–10 years; and 58.4 % over 10 years.

The sample of secondary school teachers consisted of 407 participants (176 male, 43.2% and 231 female, 56.8%) from 21 schools in Spain. They were aged between 20 and 65 (14% of the sample between 20–29 years old; 36% between 30–39; 36.8% between 40–50; and 13.2% over the age of 50). The teachers' professional experience was as follows: 16.4 % between 0–3 years; 31.8% between 4–10 years; and 51.8 % over 10 years.

All questionnaires administered were completed anonymously and participation in the study was entirely voluntary.

Measures

School coping resources scale (five items). According to Blase (1982, p. 102), coping resources refer to 'any factor (physical, psychological, social, or material) which helps individual teachers overcome job-related stressors and achieve value outcomes with students'. In the school context, this scale was used to assess material and school personnel support resources to help teachers carry out their work and achieve learning objectives. This scale is an extended and revised version of that devised by Doménech-Betoret (2006). A principal-components factor analysis, with varimax rotation, was conducted on the five items to determine whether they represented a single construct. This analysis yielded a single factor that accounted for 53.1% of the total variance. A school support resources measure was constructed by averaging the five items, and the resultant index presented satisfactory internal consistency (Cronbach's $\alpha = 0.75$). All teacher responses were scored on a four-point Likert-type ordinal scale, with response options ranging from 1 (I quite disagree) to 4 (I quite agree). Although items were counterbalanced regarding positive and negative formulations, scores were positively converted so that higher scores reflect greater perceived support. Examples of items in this scale are: 'Available material resources (library, computer lab, laboratories, etc.) which teachers have in educational centres are sufficient to teach satisfactorily', and 'Human resources (support teachers, janitors, office workers, etc.) available in educational centres are sufficient to teach satisfactorily'. The complete scale is presented in the Appendix.

Teacher-perceived teaching self-efficacy (10 items). We measured teacher self-efficacy using a Spanish version of the scale designed by Schwarzer, Schmitz and Daytner (see http:www.ralfschwarzer.de). This scale assessed teachers' confidence in their capacity to conduct an instructional process with efficacy. Teacher responses were scored on a four-point Likert-type ordinal scale, with response options ranging from 1 (I quite disagree) to 4 (I quite agree). Cronbach's coefficient alpha of this construct for this study was 0.84. We averaged item responses to obtain a measure of teacher self-efficacy where higher scores reflect greater self-efficacy. See Table 1 for details.

Teacher-perceived self-efficacy in classroom management (four items). The teacher has two basic roles in the classroom: an instructor and classroom management. This scale is a revised version of Doménech-Betoret (2006). It was constructed in order to assess teachers' confidence in their capacity of classroom management. A principal-components factor analysis, with varimax rotation, was conducted on the four items to determine whether they represented a single construct. This analysis yielded a single factor with an eigenvalue exceeding unity, and the single factor solution accounted for 72.57% of the total variance. All items loaded higher than .50 on the factor. We averaged the four item responses to construct the classroom management self-efficacy measure where higher scores reflect greater self-efficacy. The resultant index presented good internal consistency (Cronbach's $\alpha = 0.87$). Teachers were asked to indicate their agreement with each statement on a four-point Likert-type ordinal scale with response options ranging from 1 (I quite disagree) to 4 (I quite agree). Examples of items in this scale are: 'I know how to behave effectively before any kind of conflict (aggressions, insults, mistreatments, etc.) that may arise among my students', and 'I know how to effectively neutralise the disruptive or inappropriate behaviour of students in my class'. The complete scale is presented in the Appendix.

Stressor multi-level context scale (31 items). This questionnaire is a revised version of Doménech-Betoret's (2006) scale. It was constructed in accordance with a systemic view (class level, school level, and national level) based on previous research (Kelchtermans, 1999; Lens & Neves de Jesus, 1999; Woods, 1999). The construct of 'Students' diversity' (Class level) was introduced into this revised version owing to the importance of the immigration phenomenon that has taken place in Spain in recent years and has emerged as a new problem for Spanish teachers. Teachers were requested to respond to the following specific question: *'Indicate the elements that interfere with or hinder the achievement of learning objectives with your students'.* All teacher responses were scored on a four-point Likert-type scale with response options ranging from 'it does not hinder me at all/this circumstance has not been observed' (0), 'it hinders me a little' (1), 'it hinders me quite a lot' (2) to 'it hinders me a lot' (3).

The preliminary exploratory factor analysis (EFA) conducted on the whole scale suggested that four items had substantial loadings on more than one factor (.30 or greater), and were removed in order to clarify construct interpretation. We then conducted an additional EFA on the remaining 31 items using the principal-components method with oblique rotation owing to the intercorrelations observed between constructs in previous research (Doménech-Betoret, 2006). Six factors were extracted and the factor solution accounted for 70.86% of the total variance. Measures were constructed by averaging the items on each factor. Higher scores reflect greater factor interference for teachers to achieve learning objectives. The factors extracted and examples of items included in each factor were as follows: (a) Factor 1 (classroom level: students misbehaviour-demotivation, seven items, Cronbach's $\alpha = 0.91$): 'students pressure', 'lack of students' interest'; (b) Factor 2 (school level: lack of shared decision-making, five items, Cronbach's $\alpha = 0.89$): 'rigidity in school organisation', 'difficulty to take part in sharing decisions'; (c) Factor 3 (administration level: ambiguity demands, six items, Cronbach's $\alpha = 0.93$): 'ambiguity in the educational policy from the Administrations', 'frequent changes in legislation regarding educational issues'; (d) Factor 4 (classroom level: student diversity, five items, Cronbach's $\alpha = 0.85$): 'diversity in the students' race and culture', 'diversity in the students level of knowledge'; (e) Factor 5 (school level: workload, four items, Cronbach's $\alpha = 0.81$): 'the amount of tasks and roles to be performed', 'too much work to do'; (f) Factor 6 (parents level: insufficient involvement, four items, Cronbach's $\alpha = 0.88$): 'insufficient parental collaboration', 'insufficient parental interest in children's learning'. The complete scale is presented in the Appendix.

Burnout scale (20 items). Burnout was measured using a Spanish version of the Maslach Burnout Inventory (MBI) for teachers (Maslach & Jackson, 1981). The questionnaire included 20 items divided into three subscales: emotional exhaustion (EE; eight items), personal accomplishment (PA; seven items) and depersonalisation (D; five items). Items were measured on a four-point Likert scale with response options ranging from: 'I quite disagree' (1), 'I disagree more than I agree' (2), 'I agree more than I disagree' (3) to 'I quite agree' (4). Cronbach's coefficient alpha reliabilities were as follows: 0.86 for the EE subscale, 0.83 for the PA subscale and 0.76 for the D subscale. Measures were constructed by averaging the items on each factor (Mean= 2.03, S.D=0.62; Mean = 2.04, S.D.=0.43; Mean = 1.31, S.D.= 0.44, respectively). Items from the PA scale were reversed before averaging the items so that the higher the scores on the EE, PA and D scales, the higher burnout was. See Table 1 for details.

Table 2. Summary of the descriptive statistics and internal consistency of the scales ($n = 668$).

Factors	Number of items	Variance (%)	Mean (SD) Primary	Mean (SD) Secondary	Cronbach's α
Stressor factors (minimum=0, maximum=3)					
Classroom level: Students misbehaviour-demotivation (F1)	7	32.70	1.91 (0.81)	2.17 (0.65)	0.91
School level: lack of shared decision-making (F2)	5	12.04	0.60 (0.76)	0.44 (0.63)	0.89
Administration level: ambiguity demands (F3)	6	8.72	1.27 (0.88)	1.51 (0.93)	0.93
Classroom level: student diversity (F4)	5	6.93	1.27 (0.88)	1.26 (0.65)	0.85
School level: workload (F5)	4	5.46	1.02 (0.77)	0.94 (0.74)	0.81
Parents level: insufficient involvement (F6)	4	4.97	1.52 (0.90)	1.27 (0.80)	0.88
Internal–external coping resources (minimum= 1, maximum= 4)					
Internal: management self-efficacy	4	72.57	3.06 (0.60)	2.76 (0.60)	0.87
Internal: teaching self-efficacy	10	48.62	3.12 (0.46)	2.94 (0.45)	0.84
External: school coping resources	5	53.14	2.34 (0.67)	2.18 (0.70)	0.75
Burnout factors (minimum=1, maximum=4)					
Emotional exhaustion (EE)	8	33.29	1.90 (0.61)	2.03 (0.62)	0.86
Personal accomplishment (PA)	7	10.79	1.87 (0.45)	2.04 (0.43)	0.83
Depersonalisation (DE)	5	9.58	1.22 (0.40)	1.31 (0.44)	0.76

Results

Factor analyses, descriptive statistics and correlations

Exploratory factor analyses demonstrated a satisfactory factor structure for the variables considered in the study. Cronbach's alpha coefficients also indicated good internal consistency for stressor subscales (ranging from .81 to .93), coping resources scales (ranging from .75 to .87) and for burnout subscales (ranging from .76 to .86). Table 2 presents a summary of the descriptive statistics and the internal consistency of the scales.

Individual bivariate correlations were then carried out as an approach to learning the relationships between stressors factors, coping resources and burnout dimensions. The results are shown in Table 3. As seen in the table, significant and positive correlations values emerged among all the work stressors themselves (ranging from .14 to .51, $p < .01$).

Significant and negative correlation values emerged between internal–external coping resources and most of the job stressor factors, although they were moderate.

Regarding school support resources, the highest value obtained was between this variable and Factor 3 ($r = -.18$, $p<.001$), referring to administration ambiguity demands. As for management self-efficacy, the highest value obtained was between this variable and Factor 1 ($r = -.31$, $p<.001$), referring to student misbehaviour-demotivation. With

Table 3. Pearson's bivariate correlations among variables considered in the study (n = 714).

	F1	F2	F3	F4	F5	F6	SR	SELFG	SELFI	EE	RA	DE
F1 Student misbehavior	1											
F2 Lack of shared decision-making	.263(*)	1										
F3 Adminis. ambiguity demands	.345(*)	.347(*)	1									
F4 Student diversity	.442(*)	.147(*)	.254(*)	1								
F5 Workload	.294(*)	.405(*)	.374(*)	.233(*)	1							
F6 Parents' insufficient involvement	.516(*)	.418(*)	.444(*)	.370(*)	.374(*)	1						
School resources (SR)	−.127(*)	−.113	−.184(*)	−.027	−.116(*)	−.068	1					
Management self-efficacy (SELFG)	−.319(*)	−.057	−.134(*)	−.152(*)	−.130(*)	−.092	.116	1				
Teaching self-efficacy (SELFI)	−.222(*)	−.082	−.184(*)	−.157(*)	−.036	−.099	.084	.579(*)	1			
Exhaustion (EE)	.372(*)	.251(*)	.300(*)	.285(*)	.322(*)	.251(*)	−.083	−.320(*)	−.324(*)	1		
Reduced accomplish. (RA)	.187(*)	.072	.152(*)	.117	.078	.054	−.072	−.510(*)	−.639(*)	.373(*)	1	
Depersonal (DE)	.199(*)	.154(*)	.178(*)	.166(*)	.175(*)	.111	.004	−.263(*)	−.296(*)	.428(*)	.335(*)	1

Note: * p<0.0007; Bonferrroni criteria were used due to the high number of cases.

Table 4. Results of a principal-components second-order factor analysis (oblique rotation) of the nine stressor factors obtained from the stressor scale (n = 708).

	Factor extracted	
Stressor factors	Factor I	Factor II
F2 Lack of decision-making	**.862**	.150
F5 Workload	**.753**	–.014
F3 Ambiguity from administration	**.610**	–.206
F4 Classroom diversity	–.129	**–.880**
F1 Student misbehavior-demotivation	.117	**–.770**
F6 Parents' insufficient involvement	**.451**	**–.504**
Percentage of total variance	46.15	16.51
Cumulative percentage of total variance	46.15	62.67

Note. Factor loadings greater than .30 are shown in bold print.

regard to instructional self-efficacy, the highest value obtained was between this variable and Factor 1 again ($r = -.22$, $p<.001$). Finally, significant and positive correlations values emerged between most stressors variables and burnout dimensions, above all with EE (ranging from .18 to .37 $p < .01$).

Subsequently, a second-order exploratory factor analysis (2EFA) was conducted on six factors of the stressor scale owing to the intercorrelations among factors. The principal-components factor analysis, conducted with oblique rotation, yielded two factors which accounted for 62.67% of the total variance (46.15% and 16.51%, respectively). The first second-order factor (FI) was formed by three factors: F2 (school level: lack of shared decision-making), F3 (administration level: ambiguity demands) and F5 (school level: workload). The other second-order factor (FII) was formed by the remaining factors: F1 (classroom level: students misbehaviour-demotivation), and F4 (classroom level: student diversity). As observed in Table 4, F6 (parents' insufficient involvement) has a similar and substantial loading on both factors (above .30). Therefore it was removed in order to clarify the constructs interpretation. These second-order factors obtained will be very helpful in designing the causal structure of the models to be tested.

Structural equation modelling

Regarding Objective 1, burnout was considered a unidimensional construct, integrated by depersonalisation and emotional exhaustion (known as the core of burnout). The hypothesised connections were tested using SEM procedures to determine the pattern of causal structure for primary and secondary education.

First of all, the hypothesised model proposed was tested simultaneously for both samples of teachers using the multiple group method. The results indicated that the same model presented significant differences between samples on the parameters obtained [$\chi^2(9) = 21.30$, $p<0.05$]. Therefore, both samples can be treated as arising from different populations.

The causal structure, the standardised coefficients and the fit indices obtained are displayed in Figures 2 and 3 for primary and secondary teachers, respectively. The index values obtained for primary [Chi-Square = 75.01; degrees of freedom (DF)= 31; Bentler–Bonett normed fit index (NFI) = .89; Bentler–Bonett non-normed fit index

(NNFI) = .90; comparative fit index (CFI) = .93; Goodness of fit index (GFI) = .95; Adjusted goodness of fit index (AGFI) = .91; root mean-square error of approximation (RMSEA) = .70] and secondary education [Chi-Square = 66.39; DF = 31; NFI = .90; NNFI = .91; CFI = .94; GFI= .96; AGFI = .94; RMSEA = .56] indicate that both models fit the data well since they meet the criteria: RMSEA below 0.08, and NFI, NNFI, CFI, GFI, AGFI are equal or greater to 0.90 (except NFI for primary education). Thus, the relationship between variables was in the expected direction, therefore supporting the hypothesised causal structure. See Figures 2 and 3 for details.

Regarding Objective 2, burnout was considered a multidimensional construct, integrated by depersonalisation, emotional exhaustion and reduced personal accomplishment. The hypothesised connections were tested using SEM procedures to determine the pattern of causal structure for primary and secondary education.

First of all, the hypothesised model proposed was tested simultaneously for both samples of teachers using the multiple group method. The results indicated that the same model presented significant differences between samples on the parameters

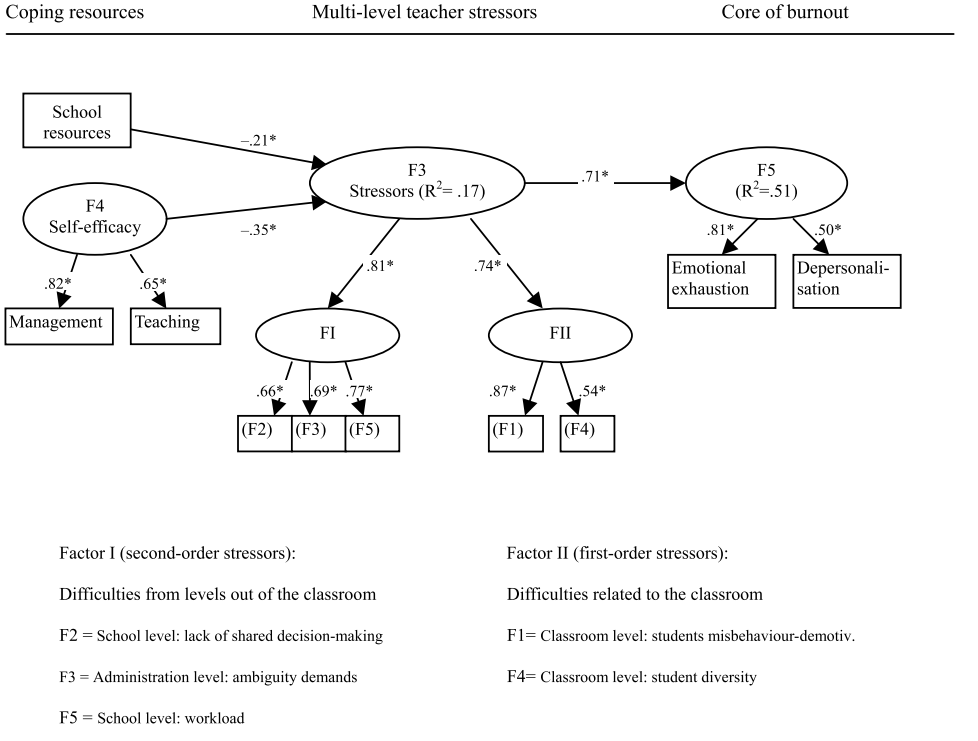


Figure 2. Structural model for primary education that relates the internal coping resources (instructional self-efficacy and classroom management) and the external coping resources (material and personal elements that support teaching) with both stressors and the core of burnout (n = 297 valid cases).
Notes: *significant ($p < .05$); fit indices: goodness-of-fit statistics: chi-square = 75.01; DF = 31; Bentler–Bonett normed fit index (NFI) = .89; Bentler–Bonett non-normed fit index (NNFI) = .90; comparative fit index (CFI) = .93; Lisrel GFI fit index = .95; Lisrel AGFI fit index = .91; root mean-square residual (RMR) = .023; root mean-square error of approximation (RMSEA) = .070.

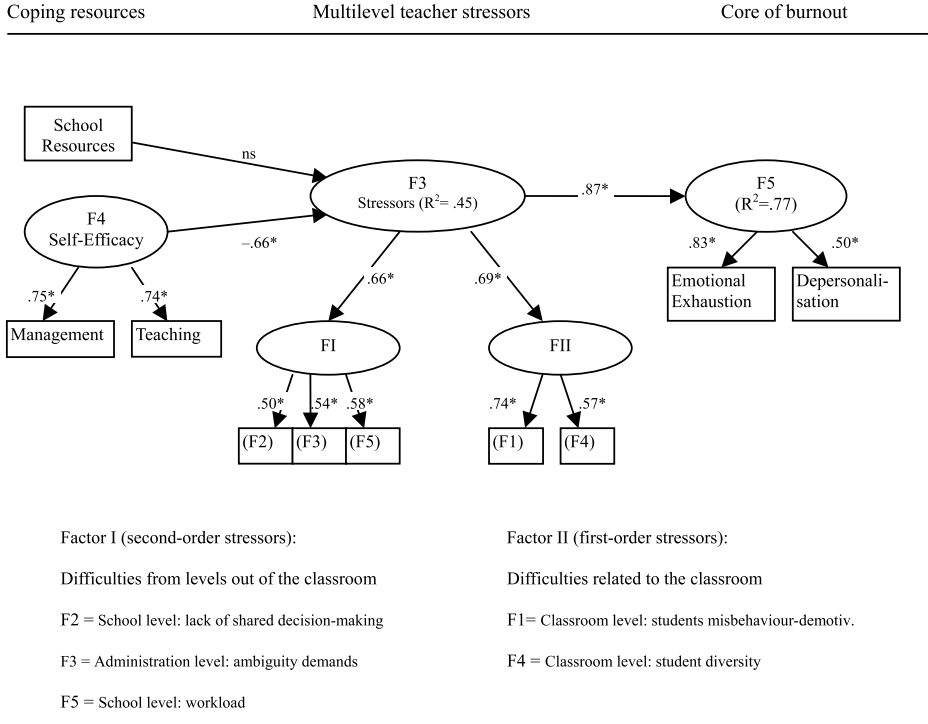


Figure 3. Structural model for secondary education that relates the internal coping resources (instructional self-efficacy and classroom management) and the external coping resources (material and personal elements that support teaching) with both stressors and the core of burnout (n = 384 valid cases).
Notes: *significant ($p < .05$); ns; not significant; fit indices: goodness-of-fit statistics: chi-square = 66.39; DF = 31; Bentler–Bonett normed fit index (NFI) = .90; Bentler–Bonett non-normed fit index (NNFI) = .91; Comparative fit index (CFI) = .94; Lisrel GFI fit index = .96; Lisrel AGFI fit index = .94; root mean-square residual (RMR) = .024; Root mean-square error of approximation (RMSEA) = .056

obtained ($\chi^2(13) = 41.04$, $p<0.01$). Therefore, both samples can be treated as arising from different populations.

The causal structure, the standardised coefficients and the fit indices obtained are displayed in Figures 4 and 5 for primary and secondary teachers, respectively.

The first model tested for primary teachers does not show a good fit according to the index values obtained [Chi-Square = 194.68; D.F.= 38; NFI = .77; NNFI = .72; CFI = .80; GFI= .90; AGFI = .83; RMSEA = .110] since they do not meet the accepted criteria established by researchers: RMSEA below 0.08, and NFI, NNFI, CFI, GFI, AGFI equal or greater to 0.90. These values indicated that the model doesn't fit well to the data. However, the standardised coefficient showed a significant relationship for each path of the model in the expected direction, supporting the hypothesised relationship between variables. See Figure 4 for details.

The second model tested for secondary teachers fits the data reasonably well [Chi-Square = 125.18; DF = 38; NFI = .86; NNFI = .85; CFI = .90; GFI = .94; AGFI = .89; RMSEA = .079]. The indices values meet the criteria of 0.08 for RMSEA, and also marginally meet the criteria of 0.90 for most of the remaining indices (NFI, NNFI,

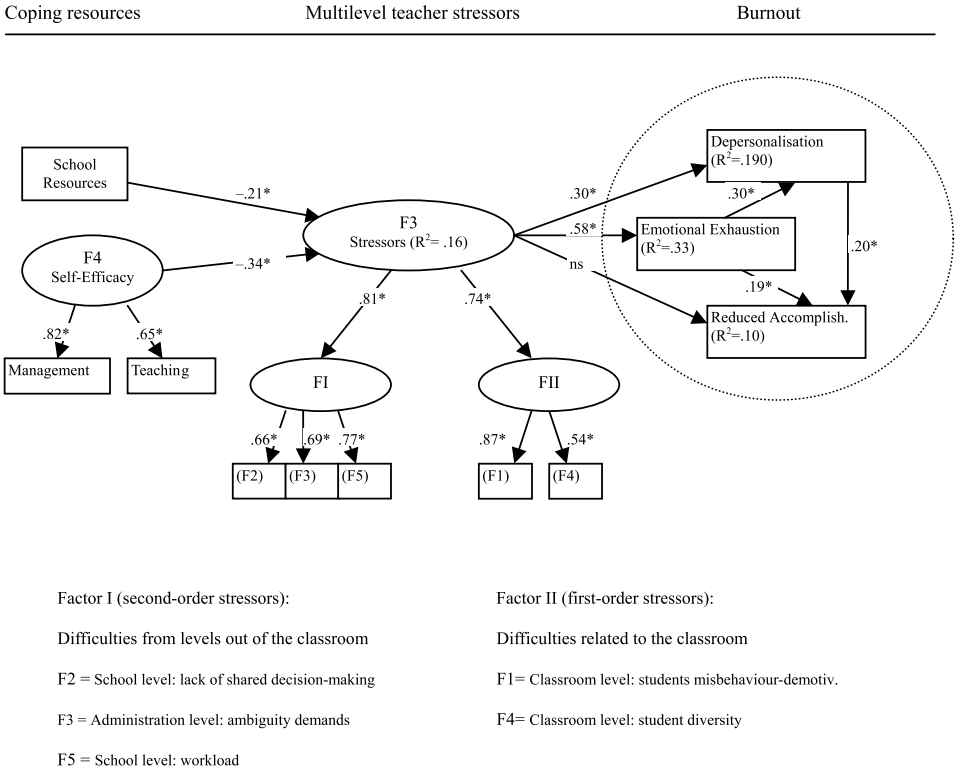


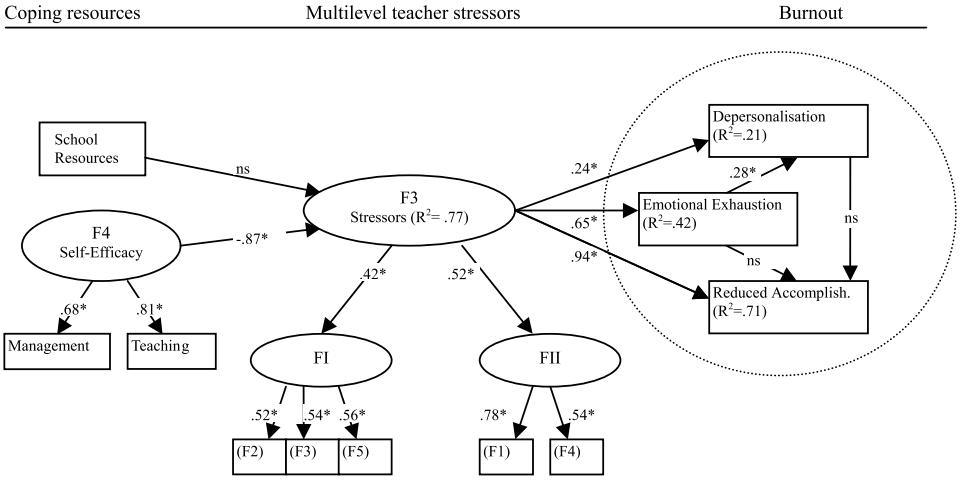
Figure 4. Structural model for primary education that relates the internal coping resources (instructional self-efficacy and classroom management) and the external coping resources (material and personal elements that support teaching) with both stressors and burnout (n = 296 valid cases).
Notes: *significant ($p < .05$); ns, non significant; fit indices: goodness-of-fit statistics: chi-square = 194.68; DF = 38; Bentler–Bonett normed fit index (NFI) = .77; Bentler–Bonett non-normed fit index (NNFI) = .72; comparative fit index (CFI) = .80; Lisrel GFI fit index = .90; Lisrel AGFI fit index = .83; root mean-square residual (RMR) = .028; root mean-square error of approximation (RMSEA) = .119.

AGFI) since their values approach .90, except CFI, that are equal and GFI that are greater. Thus, the relationship between variables was in the expected direction, therefore supporting the hypothesised causal structure for secondary education. See Figure 5 for details.

Discussion and conclusions

Based on a reduced and adapted version of the Blase (1982) model, we examined the relationships between coping resources (self-efficacy and school resources), occupational stressors, and burnout dimensions.

This study used a new stressor scale with a multi-level structure that organises factors that hinder teachers achieving learning objectives (Blase, 1982). The second-order factor analysis conducted on stressor scale has led to the identification of the first- and second-order stressors considered by Blase (1982) in his theoretical model.



Factor I (second-order stressors):

Difficulties from levels out of the classroom

F2 = School level: lack of shared decision-making

F3 = Administration level: ambiguity demands

F5= School level: workload

Factor II (first-order stressors):

Difficulties related to the classroom

F1= Classroom level: students misbehaviour-demotiv.

F4= Classroom level: student diversity

Figure 5. Structural model for secondary education that relates the internal coping resources (instructional self-efficacy and classroom management) and the external coping resources (material and personal elements that support teaching) with both stressors and burnout (n = 376 valid cases).
Notes: *significant (p < .05); ns, non significant; fit indices: goodness-of-fit statistics: chi-square = 125.18; DF = 38; Bentler–Bonett normed fit index (NFI) = .86; Bentler–Bonett non-normed fit index (NNFI) = .85; comparative fit index (CFI) = .90; Lisrel GFI fit index = .94; Lisrel AGFI fit index = .89; root mean-square residual (RMR) = .035; root mean-square error of approximation (RMSEA) = .079.

The first-order stressors refer to obstacles which directly interfere with teaching and are fundamentally related to the classroom climate, and by extension also include difficulties with parents (relationships with students and parents), whereas second-order stressors refer to obstacles that indirectly interfere with teaching and come from contexts outside the classroom. According to these considerations, the first-order stressor factors in our study would be represented by Factor II and the second-order stressor factors by Factor I.

Concerning the causal models hypothesised, the results obtained for primary teachers revealed the relationships expected among variables. Thus, external coping resources (school support resources) and internal coping resources (management classroom self-efficacy and instructional self-efficacy) have a negative and significant effect on job stressors. In turn, job stressors represented by a global latent variable, defined as first- (FII) and second-order stressor (FI) categories , has a positive and significant effect on burnout, considered as a unidimensional construct (R^2= .51), and

also when considered as a three-dimensional construct. In the latter case, job stressors had a positive and significant effect on emotional exhaustion (with the highest impact, R^2= .33) and depersonalisation, but not on reduced personal accomplishment. Furthermore, the hypothesised structure of burnout dimensions proposed was supported. Emotional exhaustion impacts positively on both depersonalisation and reduced personal accomplishment. In turn, depersonalisation has a positive impact on reduced personal accomplishment. These findings support the proposal by Byrne (1999), but are restricted to the primary school teachers group.

Concerning the hypothesised causal models, the results obtained for secondary school teachers revealed most of the relationships expected among variables. Thus, internal coping resources (management classroom self-efficacy and instructional self-efficacy) have a negative and significant effect on job stressors. In turn, job stressors represented by a global latent variable, defined as first- (FII) and second-order stressor (FI) categories, has a positive and significant effect on burnout, considered to be a unidimensional construct (R^2= .77), and on burnout, considered to be a three-dimensional construct. In the latter case, job stressors had a positive and significant effect on emotional exhaustion, depersonalisation, and reduced personal accomplishment (with the highest impact, R^2= .71). Furthermore, the hypothesised structure of burnout dimensions proposed by Byrne (1999) was not supported for the secondary school teachers group since only emotional exhaustion impacts positively on depersonalisation.

These findings suggest the following:

A positive perception of self-efficacy (management and instructional) reduced or mitigated the impact that the potential stressors have on the teaching work for Spanish primary, and mainly for secondary school teachers. These findings are consistent with previous research into the relationship between self-efficacy and stress-burnout (Brouwers, 2000; Chan, 1998, 2002; Brouwers et al., 2001; Friedman, 2003; Van Dick & Wagner, 2001). Nonetheless, the diversity of the aspects studied with the self-efficacy construct makes the comparison of results difficult.

A positive perception of school support resources to help teaching (school equipment, didactic supplies and qualified personnel for student support such as psychologists, speech therapists, resource specialist teachers, etc.) also has a reduced effect on potential stressors, but only for Spanish primary school teachers. This result suggests that school support resources are considered more important for primary school teachers to overcome the obstacles that interfere with teachers' work, thus making it more difficult for them to achieve learning objectives than their secondary school counterparts.

Although coping resources (mainly self-efficacy) play a positive role (negative effect) in interpreting potential job stressors, their causal patterns differ substantially between primary school and secondary school teachers.

Standardised coefficients revealed that their negative impact on job stressors are much stronger in secondary school teachers. This suggests that the perception of instructional self-efficacy on both classroom management and teaching is of more help to secondary school teachers in overcoming the obstacles that interfere with teachers' work and which hinder learning objectives from being achieved.

Multi-level job stressors impact positively on burnout.

Data from primary school teachers show an important effect of job stressors on depersonalisation and reduced personal accomplishment through the mediator role played by emotional exhaustion. Emotional exhaustion apparently plays a key role in

explaining Spanish primary school teachers' burnout. These findings suggest that, as a consequence of the obstacles that interfere with teaching work (stressors) and which impede or make it difficult for them to achieve learning objectives, secondary school teachers become emotionally exhausted and simultaneously develop increasing negative attitudes toward their students (depersonalisation) and an increased feeling of poor effectiveness at work (reduced personal accomplishment). Furthermore, the feeling of poor effectiveness at work is also a consequence of developing increasing negative attitudes toward students. These findings support the proposal by Byrne (1999).

Data from secondary school teachers show an important effect of job stressors on emotional exhaustion, depersonalisation, and reduced personal accomplishment. Results reveal that the role played by emotional exhaustion as a link between stressors and the other burnout dimensions is less important. Emotional exhaustion has an impact on depersonalisation but not on reduced personal accomplishment. These findings suggest that as a consequence of the obstacles that interfere with teaching work, which either impede or make it difficult for them to achieve learning objectives, secondary school teachers become emotionally exhausted and develop increasingly negative attitudes toward students, and about the teaching profession in general. This finding is in line with the proposal of Leiter (1993) who clamed that emotional exhaustion occurs first and is linked sequentially to a rise in depersonalisation, and that personal accomplishment develops separately from these two components.

Finally, this study points out that the causal model proposed, which takes burnout as a unidimensional construct (core of burnout), is more parsimonious and fits the data better (for both samples) than the causal model which considers burnout as a three-dimensional construct. Maybe the significant interrelationship observed between emotional exhaustion, depersonalisation and reduced personal accomplishment could be one of the reasons. Furthermore, we wish to highlight the important amount of burnout variance accounted for by the former model for primary and secondary education.

Limitations

The first limitation of the study refers to the fact that the teachers' causal attributions can be very biased, something that is well documented in research on social cognition and self-perception (Fiske & Taylor, 1991). The second major limitation is related to the representation of the sample used. Teachers participated on a voluntary basis in this study, and as such were not selected by a rigorous procedure to ensure that the sample was representative of the population. The third main limitation was its cross-sectional design based on self-report measures. We must therefore be cautious about generalising these findings, and should emphasise the need for cross-replication studies with more representative teacher samples. Strictly speaking, the applied cross-sectional design cannot provide any proof of causality. A temporal sequence between variables is required to establish a cause–effect relationship. Longitudinal studies are therefore required. When using cross-sectional survey studies, the data analysis with structural equation modelling would appear to be the first step to at least obtain an idea of causality, as in this research work.

Practical implications

Despite these limitations, this study extends past findings on teacher burnout and contributes to a better understanding of this phenomenon and how it is generated. The

findings obtained may also have practical implications to help prepare primary and secondary school teachers to reduce burnout. On the one hand, programmes to reduce teacher burnout might profitably include provisions for increased school equipment, didactic supplies and qualified personnel for student support (psychologists, speech therapists, resource specialist teachers, etc.), especially for primary school teachers, and above all by training them to improve their classroom management (classroom management role) and instructional skills (instructional role). However, the fact that most personal interventions are unsuccessful in the implementation of training programmes, given the lack of attention paid at an organisational level, must be considered (Friedman, 1999; Nytro, Mikkelsen, Bohle, & Quinlan, 2000). Therefore, personal interventions should be carried out simultaneously with interventions at an organisational level.

Future research

Further research is needed to investigate to what extent changes that have occurred in Spain in the last decade are affecting Spanish teacher burnout. A refinement of the models tested for primary and secondary school teachers is proposed in this section by the introduction of other constructs. For instance, the inclusion of other less-used self-efficacy modalities in previous research such as *interpersonal relations efficacy* (Friedman, 2003) is suggested. Finally, according to the data, the hypothesised structure of burnout dimensions could differ for different levels of education. This finding is in line with the study conducted by Byrne (1999) who obtained a different dimension structure for different levels of education. Further research is needed to find out how they are articulated, and which co-variables play a modulation role in their articulation.

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Appendix. Original Spanish scales

School coping resources scale (5 items).

—— 1. The resources (library, computer room, laboratories, etc.) which we, as teachers, have available in our workplaces are *sufficient* to provide quality teaching.
—— 2. The human resources (support teachers, librarians, caretakers, secretaries, etc.) which we, as teachers, have available in our workplaces are *sufficient* to provide quality teaching.
—— 3. The human resources of a specialised support type (psycho-pedagogue, school counsellors, speech therapists, social workers, etc.) which we, as teachers, have available in our workplaces are *insufficient* to teach satisfactorily.
—— 4. The didactic materials (overhead projector, videos, books, photocopying machines, etc.) which we, as teachers, have available in our workplaces are *insufficient* to provide quality teaching.
—— 5. The resources that are available in the workplaces of teaching staff (offices, filing systems, computers, software, etc.) are *insufficient* to be able to work in adequate conditions and to provide quality teaching.

Teacher-perceived self-efficacy in the classroom management scale (4 items).

——1. I know how to act efficiently when faced with any conflict (assaults, insults, ill-treatment, etc.) that may occur among my students.
——2. I know how to efficiently counteract disruptions or improper conduct among the students in class.
——3. I am able to keep order and discipline in my classes, even with difficult groups.
——4. I know how to act to produce an atmosphere of respect and good cooperation in the classroom, even with difficult groups.

Multilevel teacher stressor scale (6 Dimensions, 31 items)

Request to teachers: 'Indicate the elements that interfere with or hinder the achievement of learning objectives with your students'

F1. Student misbehavior and demotivation (Classroom level)

——1. The students "couldn't-care-less" attitude.
——2. Student pressure on teachers.
——3. Students' demotivation.
——4. Students' lack of interest.
——5. Students' idleness.
——6. Students not getting involved.
——7. Students' lack of discipline.

F2. Lack of decision-making (School level)

——8. The impositions of my superiors (Headmaster, Head of Department, Inspections, etc.).
——9. The organisational inflexibility of the institution and departments.
——10. The lack of definition of the institution's educational policy.
——11. The fact that it is not possible to take part in decision-making (Department, Institution, etc.).
——12. The lack of autonomy to make my own decisions.

F3. Ambiguity demands from administration (Administration level)

——13. The ambiguity of the administration's educational policy.
——14. The indifference on the administration's part to school-related problems.
——15. The lack of definition of the administration's educational policy.
——16. The contradictory demands we receive from the administration.

——17. The frequent changes to the study curriculum.
——18. The frequent legal changes concerning matters of education.

F4. Student diversity (Classroom level)

——19. The diversity in student's paces of learning.
——20. The diversity in the levels of students' knowledge.
——21. The cultural and racial diversity among students.
——22. The diversity of students' learning styles.
——23. Students' heterogeneity in class.

F5. Workload (Classroom level)

——24. Lack of time.
——25. Work overload.
——26. Excessive academic load.
——27. Difficulty to combine teaching with other roles or tasks that are expected of you.

F6. Parents insufficient involvement (Parents level)

——28. Parents' collaboration is insufficient.
——29. Parents are not involved enough.
——30. Pressure from parents.
——31. Parents are not informed enough.