

**The power of efficacy beliefs:
Looking for teachers' well-being**

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Prólogo

Supongo que todos los que llegamos a este punto de nuestra carrera académica pasamos por procesos similares. Más allá de las características individuales y de lo que nos hace únicos, hay ciertos sentimientos y pensamientos que creo comunes en todos los que nos encontramos en este momento. Como son, la ilusión por ver el final de un largo y retador proceso, el nerviosismo de la incertidumbre y por supuesto el orgullo de sentir que hemos sido capaces de llegar hasta aquí.

Y es esto último, las creencias de eficacia, las que han permitido que hoy esté escribiendo este prólogo con cierta confianza en mi misma, la misma que me ha permitido afrontar cada uno de los buenos y malos momentos de mi vida. Y es que, ¿qué seríamos sin la creencia en nosotros mismos? ¿Sin la creencia en nuestra valía, capacidad, tesón, etc?.

Si respondo sinceramente a estas preguntas, estoy segura de que sería una persona muy distinta a la que veo en el espejo cada día. Si hubiera creído en mis limitaciones, nunca las habría superado y si no me hubiera creído capaz de escribir la tesis doctoral que yo quería, no habría superado cada uno de los obstáculos que han aparecido en mi camino en estos últimos años.

Es por eso, que he querido plasmar esta creencia en mi tesis doctoral, dándole absoluto protagonismo a las creencias de eficacia y por tanto a la Teoría Social Cognitiva de Albert Bandura.

“Reasonable people adapt themselves to the world. Unreasonable people attempt to adapt the world to themselves. All progress, therefore, depends on unreasonable people.” George Bernard Shaw

Chapter 1

Introduction

Based on the *Social Cognitive Theory (SCT)* of Albert Bandura (1986) and the *Job Demands-Resources Model (JD-R)* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), this thesis tests the pivotal role of efficacy beliefs in the prediction of teaching well-being (i.e., engagement, burnout, satisfaction), and also job performance.

Therefore, and based on these theoretical models, the objectives of this thesis are the following: 1) To test the mediating role of team potency in the relationship between task conflict and personal conflict on the one hand, and between team performance and team commitment on the other hand; 2) To confirm the four dimensions of burnout (i.e., emotional exhaustion, cynicism, depersonalization and lack of professional efficacy); 3) To test whether the different work profiles of university faculty members (i.e., teaching, research and management) are related with teacher well-being (e.g., burnout, engagement and intrinsic satisfaction); 4) To test the predicting role of personal resources (i.e., self-efficacy, perceived mental and emotional competences) in the *JD-R Model*; 5) To show the procedure carried out to develop an adjusted scale to measure self-efficacy in a specific domain following Albert Bandura's recommendations; 6) To test the relationship between efficacy beliefs and task engagement over time at both the individual and collective levels.

Teachers' work

Teaching has been considered a high-stress occupation (Gold & Roth, 1993) and is an internationally recognised problem, although in the case of university faculty, teaching has been treated as a low stressor (Fisher, 1994; Hogan, Carlson, & Dua, 2002; Winefield, 2000). However, things have changed in the last few decades; there are more and more university faculty members coping with job insecurity and experiencing a greater workload and, consequently, more research works about job stress and health

among university faculty members have been conducted (Winefield, Gillespie, Dua, Hapuarachchi, & Boyd, 2003).

Therefore in this thesis, we included both secondary school teachers and university faculty members, and we took into account that both types of teachers are different. For example, Taris, Schreurs, and Van Iersel-Van Silfhout (2001) indicated some differences between primary/secondary teachers and university teachers regarding levels of well-being at work. Firstly, university faculty members have more freedom in deciding when, where and how they want to teach. Secondly, students at university are older and are therefore supposed to be more interested in receiving special education than secondary school students. Finally, unlike primary/secondary teachers, university faculty members' work does not only involve teaching, but also research and management. Thus, university faculty members spend their working hours performing different kinds of tasks which may be summarized as a triple work profile made up of teaching, research, and management tasks. And these three tasks have been already taking into account for several authors (e.g., Buela-Casal & Sierra, 2007; Cifre, Llorens, Salanova, & Martínez, 2003; Currie, 1996; Morrison, 1996; Vera, Martín del Río, & Solanes, 2005). In this thesis, we hypothesized that almost all faculty members have a triple work profile, that is to say, almost all of them perform teaching, research and management tasks to a greater or lesser degree. Nevertheless, there are different work patterns in which one of the three tasks excels over the others in terms of time dedicated to it.

Finally, Taris et al. (2001) concluded that the sources of stress among primary/secondary school teachers cannot be generalised to university faculty members, and vice versa. For these reasons, we have considered both secondary and university teachers in this teacher-based thesis.

Teachers' well-being

We decided to start this thesis with more general concepts and a broader scope to then move on to more specific concepts and psychosocial processes. Hence, our first study among Dutch secondary school teachers examines concepts like team potency and affective commitment among teacher teams. According to Antoni and Hertel (2009), the vast majority of existing team research has focused on the detection or verification of specific predictors of successful teamwork without demonstrating the mediating mechanism of how and why these predictors have the effects they actually have. So, we need to know more about the psychological mechanisms of group work to explain and predict why certain groups are working successfully while others are not. This is precisely why we will attempt to fill this void in Chapter 2 by proposing a model in which job demands (i.e., team task conflict and team relationship conflict) indirectly relate to team performance and affective team commitment through team potency among teacher teams.

(1) Team conflict and team outcomes

According to Medina, Munduate, Dorado, Martinez, and Guerra (2005), one of the most outstanding aspects of conflict is that it is practically intrinsic to the life and dynamics of teams, and teachers are no exception. Moreover, such conflict is both task conflict (i.e., conflict of ideas in the group and disagreement about the content and the issues of the task) and relationship conflict (i.e., personality differences, plus differences of opinions and preferences regarding non-task issues). These conflicts affect team outcomes in several ways. Firstly, they affect commitment. Of the four types of commitment that have been examined in the literature, we use affective commitment which looks at whether individuals feel valued and supported by their school and if they are emotionally attached to it and the teaching profession (Ware & Kitsantas, 2007).

The other types of commitment refer to individuals believing they must remain in the teaching profession given the lack of alternatives or possible disruptions resulting from them leaving their jobs (i.e., continuance commitment), the moral obligation to remain in the teaching profession that individuals feel (i.e., normative commitment), and dedication that teachers exhibit to their school/faculty (i.e., organizational commitment). The literature shows that perceptions of interpersonal (i.e., relationship) conflict relate negatively to both affective and continuance commitments (Thomas, Bliese, & Jex, 2005); people in groups with a high consensus on task issues (i.e., low levels of task conflict) express more satisfaction and wish to stay in the group than members in groups with higher levels of dissent with the task (i.e., high levels of task conflict) (Schweiger, Sandberg, & Ragan, 1986). Another team outcome is job performance, which has consistently been found to negatively relate to relationship conflict (e.g., De Dreu & Weingart, 2003; Jehn, 1995; Powell, Galvin, & Piccoli, 2006). Although for a long time, the predominant view as regards task conflict has been that it encourages considering multiple perspectives, and that it also prevents a premature consensus. A meta-analysis by De Dreu and Weingart (2003) offered very little support for this hypothesis as it revealed a strong, negative relationship between task conflict and performance.

A construct that has attracted substantial attention in the research done to gain an understanding of work group effectiveness is group (or team) potency, which is defined as a team's collective belief that it can be effective (Guzzo, Yost, Campbell, & Shea, 1993). The team potency construct is rooted in the *SCT* and is a parallel construct to perceived collective efficacy. Although both concepts refer to sharing beliefs about the team's capabilities, they differ in one fundamental aspect: whereas team potency reflects generalised employee beliefs about the team's performance capabilities in tasks

and contexts, perceived collective efficacy is associated with beliefs about task-specific activities (De Jong, De Ruyter, & Wetzels, 2005). So, the first aim of this thesis is to test the mediating role of team potency in the relationship of task and relationship conflict with team performance and team commitment among teachers.

But in the next studies, we take into account more specific variables of well-being, such as burnout, and work engagement. These concepts are discussed below in more detail.

(2) Burnout: A four-dimension construct

Burnout has traditionally been treated as a syndrome that is composed of three differentiated dimensions: emotional exhaustion, depersonalization, and lack of professional efficacy (Maslach, 1982). According to Maslach (1993), the first indicates feelings of being emotionally overextended and depleted of one's emotional resources. Depersonalization refers to a negative, cynical, or excessively detached response to other people, which often includes loss of idealism. Lack of professional efficacy suggests a decline in feelings of competence and productivity at work.

Nowadays, however, diverse empirical studies have questioned this structure with its three dimensions. On the one hand, some authors (e.g., Browsers & Tomic, 2000; Green, Walkey, & Taylor, 1991; Schaufeli, Salanova, González-Romá, & Bakker, 2002; Xanthopoulou, et al., 2007) explained that exhaustion and cynicism constitute the “core of burnout” and place lack of professional efficacy to one side. On the other hand, another group of authors (e.g., Bandura, 2001; Cherniss, 1993; Salanova, Bresó, & Schaufeli, 2005) suggested that lack of professional efficacy is not a dimension of burnout, but is more likely to be a cause of burnout. According to this second group of authors, burnout could take place because of a “crisis of self-efficacy”. Thus, according to this second group of authors, lack of professional efficacy is a component that is

independent of the other two burnout components, as pointed out in Bandura's *SCT* (1986), which closely relates to what this author denominates "efficacy beliefs" (Salanova, Martínez, & Lorente, 2005).

Moreover, past research has also confirmed a four-dimension structure of burnout which includes emotional exhaustion, depersonalization, cynicism and lack of professional efficacy (Salanova, et al., 2005). According to these authors, it is necessary to differentiate between depersonalization and cynicism since the definition of burnout has been extended to workers who are not in direct contact with recipients of the service rendered. Depersonalization necessarily implies other people. Therefore, its meaning cannot lie outside social relationships. However, cynicism can appear without any social relationship. Thus, Salanova, et al., (2005) understood both dimensions as indicators of a "mental distance" towards work (cynicism) and also towards fellow workers and the people for whom one works, i.e., clients, students, patients, etc. (depersonalization).

We believe that this differentiation is necessary since there are kinds of works in which people can experience these two kinds of "mental distance"; for instance teachers, as they may experience cynicism towards their work as teachers, researchers and managers, but they may also suffer depersonalization towards students, coworkers or service staff. So, our second aim is to test the four dimensions of burnout (i.e., exhaustion, cynicism, depersonalization and lack of professional efficacy).

(3) Work engagement

Work engagement has reached a peak thanks to the emergence of Positive Psychology. Whereas research on burnout has produced thousands of articles in the last three decades, research on work engagement is now beginning to emerge (Bakker, Schaufeli, Leiter, & Taris, 2008). Although engagement was treated solely as the antithesis of burnout from the very beginning, the alternative view considers work

engagement an independent, distinct concept that relates negatively to burnout. Consequently, work engagement is defined and operationalised in its own right as “a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption” (Schaufeli, et al., 2002, p. 74). Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one’s work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption is characterised by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work.

Both burnout and work engagement have been widely used in the literature as indicators of well-being. Thus the third objective of this thesis is to test whether the different work patterns of university faculty members (i.e., teachers, researchers and management) are related with employee well-being. Moreover, many studies have used these two constructs as a result within the *JD-R Model* (cf. Baker & Demerouti, 2007).

The Job Demands-Resources Model

The origin of the *JD-R Model* dates back to some balanced models of job stress, such as the *demands-control Model* of Karasek (1979). According to these models, job stress is caused by high job demands and low job control. According to Bakker and Demerouti (2007), *the demands-control Model* has some weakness; firstly, the complex reality of working organisations is reduced to only a handful of variables and this simplicity does no justice to reality. Secondly, the static nature of the model; these models do not leave room for other work-related factors that can relate to well-being. In other words, and as Hakanen and Roodt (2010) explained, job resources and demands

may vary in content and nature from one work setting to another. The *JD-R Model* takes this argument one step further by creating a heuristic model that includes two specific sets of working conditions, job demands and job resources, in its prediction of employee well-being, regardless of the occupational group.

According to Bakker and Demerouti (2007), the assumption that whereas every occupation may have its own specific risk factors associated with job stress lies at the very heart of the *JD-R Model*, and these factors can be classified into two general categories (i.e. job demands and job resources); Job demands refer to “those physical, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e., cognitive and emotional) effort on the part of the employee, and are therefore associated with certain physiological and/or psychological costs” (Demerouti, et al., 2001, p. 501). Job demands may become stressors in situations which require great effort to sustain an expected performance level, consequently eliciting negative responses, including burnout.

And, job resources refer to “those physical, psychological, social, or organizational aspects of the job that may (a) reduce job demands and the associated physiological and psychological costs, (b) are functional in achieving work goals, and (c) stimulate personal growth, learning and development” (Demerouti et al., 2001, p. 501). Job resources may be located at different levels: organization, interpersonal and social relations, and work and task organization. Moreover, resources are not only necessary to deal with job demands, but they also are important in their own right. This agrees more generally with the *Conservation Of Resources (COR)* Theory (Hobfoll, 2001) which states that prime human motivation is directed towards the maintenance and accumulation of resources.

Bakker and Demerouti (2007) also emphasised a second premise of the *JD-R Model*: there are two different underlying psychological processes that play a role in the development of job strain and motivation. Firstly, the health impairment process; poorly designed jobs or chronic job demands exhaust employees' mental and physical resources, and may therefore lead to depletion of energy and health problems. Secondly, the motivational process, whereby it is assumed that job resources offer motivational potential and lead to high work engagement, low cynicism, and excellent performance.

This model is continuously growing by increasingly including the quantity of both job demands and resources. Yet there was a significant qualitative change when Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) expanded the *JD-R Model* by examining how personal resources operate in relation to the model's processes. Personal resources are aspects of self that are generally linked to resilience and refer to the individuals' sense of their ability to successfully control their environment and have an impact on it (Hobfoll, Johnson, Ennis, & Jackson, 2003).

Although some empirical research have centred on the role of personal resources in the *JD-R Model* (Xanthopoulou, Bakker, Demerouti, & Schaufeli 2009; Lorente, Salanova, Martínez, & Schaufeli, 2008), the role played by specific personal resources (i.e., self-efficacy, perceived mental and emotional competences) in the *JD-R Model* is still not clear, at least according to sound theories about these constructs such as the *SCT*. So, the fourth aim of this thesis is to test the predicting role of these personal resources in the *JD-R Model* based on the theoretical predictions of the *SCT*.

The Social Cognitive Theory

In 1977, Albert Bandura drastically altered the direction of psychology with the publication of his ambitious book, *Social Learning Theory*. According to this theory

people can learn by observing the behaviour of others (models) and the results of the behaviours observed. But he soon realised that the “social learning” label was becoming very limited since the scope of his theories and research went beyond learning. Besides, the label was increasingly misleading because several theories based on similar principles, such as the *Drive Theory* (Miller & Dollard, 1941), the *Expectancy Theory* (Rotter, 1954), the *Operant Theory* (Gewirtz, 1968), and the *Functionalist Theory* (Patterson, 1977), led Bandura to make the decision to re-label his theoretical “social learning” approach to the so-called “social cognitive” one.

Thus in the mid 1980s, Bandura had developed the *Social Cognitive Theory (SCT)* of human functioning by giving a central role to cognitive, vicarious, self-regulatory and self-reflective mechanisms in human adaptation and change. The fundamental idea of the *SCT* is that human performance is the product of a dynamic interaction among personal factors, behaviour and environmental influences. Therefore based on a triadic reciprocal causal model, people are producers and products of their environment. The above three elements operate as interacting determinants that are bidirectionally influenced by each other.

Bandura saw people as agents who exercise control over their thoughts, feelings and actions. He noted that people have the capacity to symbolise, foresee, learn vicariously, self-regulate and self-reflect on a real operation. With these capabilities, Bandura began developing the idea of self-efficacy and published his book, *Self-Efficacy: The Exercise of Control* in 1997, which emphasises the role of self-efficacy in the *SCT* that works with other sociocognitive factors in regulating well-being and the achievement of goals. Bandura defined them as “beliefs in one's capabilities to organize and execute courses of action required to produce certain achievements or results” (Bandura, 1997, p.3). Therefore, self-efficacy is a belief that a person has about his or

her own capacities. It is not the capacity itself, or the knowledge or skills possessed, but the perception that one has about how to organise and implement certain processes which enable someone to achieve certain results. In addition, self-efficacy is not a generalised belief, but is specific of certain domains or particular areas, such as work, sports, and social relationships. Because of this, the level of self-efficacy may change depending on activities and situations. Thus, we find people with high levels of efficacy for certain tasks or under certain conditions, and low levels of efficacy in other domains and circumstances.

It is at this point that we realise that self-efficacy scales must be specific of the given domain. Bandura warns us about the need to exhaustively study the domain so that each item of our self-efficacy scale reflects the real value of self-efficacy. So this author criticised the use of general and non-specific self-efficacy scales, and argued that it is futile to measure self-efficacy with a general scale because the items of those tests based on the general efficacy approach are of little or no relevance for the domain being studied. Furthermore, items of a global test are commonly designed in a global fashion, and are too ambiguous to know what is being measured with any degree of accuracy. Self-efficacy scales must be adapted to our particular domain of interest and must reflect an exhaustive study of our chosen domain. So, the fifth aim of this thesis is to show the procedure carries out to develop an adjusted scale to measure self-efficacy in a specific domain following Bandura's recommendations (2006).

Moreover, based on theories of social influence and emotional contagion, research has shown that the individual is influenced by social stimuli whether or not he or she is in the presence of others and that, in practice, everything that an individual experiences is subjected to his or her social contacts to a greater or lesser extent. Hence, the *SCT* extends the causality concept of the agency to collective agency exercised through a

shared sense of efficacy (Bandura, 1997).

Perceived collective efficacy is an emergent property of the group, and not a mere sum of the efficacy beliefs of individual members, and is defined as “a group’s shared belief in its conjoint capabilities to organise and execute the courses of action required to produce given levels of attainments” (Bandura, 1997, p. 477).

Finally, and following Bandura’s assertion (2001), although perceived collective efficacy and self-efficacy differ at the agency level, both types of beliefs have similar functions and operate through psychosocial processes. We decided to discover whether the theoretical processes linking efficacy beliefs and task engagement are functionally equivalent at the individual and collective levels. Thus, we tested if the regulatory processes in the relationship between efficacy beliefs and engagement at both the individual and collective levels are isomorphic.

(1) The power of efficacy beliefs

Bandura (2001) considers that these beliefs affect the way we behave, and how we think and feel. That is, we tend to choose those tasks we can do and avoid those that exceed our capabilities; they also determine the amount of effort invested to face obstacles, as well as the amount of time or persistence in trying to achieve something. Moreover, efficacy beliefs also affect how we think about ourselves and how we feel. In this way, people who are considered ineffective in coping with environmental demands exaggerate the magnitude of their deficiencies and the potential difficulties of the medium. These negative thoughts create stress and hinder the use of available resources.

Moreover, Halbesleben (2010) concluded that compared to other job and personal resources, self-efficacy had the strongest relationships with work engagement. Although we know that efficacy beliefs and work engagement are strongly related (cf. Xanthopoulou et al., 2007, 2009), the temporal dynamics of this relationship remain

understudied to date. More detailed knowledge is needed, e.g., on how initial levels of efficacy beliefs relate to the development of work engagement over time. Thus, the sixth aim of this thesis is to know whether initial levels of efficacy beliefs relate to (a) the initial levels of task engagement and (b) the development of task engagement over time.

A deeper overview of the current thesis: specific research aims

This thesis presents five empirical studies with the following main general objectives:

The first objective was to test, in **Chapter 2**, if team potency mediates the negative relationship of task conflict and relationship conflict with team performance and affective commitment among teachers. So, we tested a model in which task and relationship team conflict are indirectly related to team performance and team commitment through team potency. Moreover, the model proposes that both conflict types make an independent contribution to team potency. With 33 groups of Dutch secondary school teachers ($N = 269$), we performed structural equation modelling with AMOS using the bootstrap resampling method. The results support our model by demonstrating that team potency fully mediated the relationships between each of the two types of team conflict and team performance and team commitment.

In **Chapter 3**, we attempt to gain a deeper understanding of the university faculty members' job. But first we tested the second objective of this thesis, confirming the four dimensions of burnout. Then, and having confirmed the four dimensions, we looked if there were work patterns in university faculty members and if the type of pattern (e.g., teacher, researcher and management) relates with psychological well-being (the second objective of this thesis). For this purpose, we did cluster and ANOVA analyses in a sample of 170 Spanish university faculty members.

Our fourth objective is set out in **Chapter 4** and lies in the *SCT*, that of analysing the predicting role of personal resources (i.e., self-efficacy, perceived mental and emotional competences) in the *JD-R Model* by analysing both processes of this model in a longitudinal study: that is, 1) motivational process, in which job resources foster engagement and, 2) an erosion process, in which high job demands lead to burnout. In a sample of 274 secondary school teachers, and through structural equation analyses, we not only confirmed both processes, but we also tested whether job resources significantly predict work engagement over time and if they also reduce burnout.

Chapter 5 represents learning and growth in the *SCT*, because in this chapter, we make a major shift in terms of measuring self-efficacy and, therefore, we performed our fourth objective, that of showing the procedure carried out to develop a scale to measure self-efficacy in one specific domain, (i.e., in the university faculty members' jobs) following Albert Bandura's recommendations from the *SCT*. The scale created considers the triple work profile of university faculty members (i.e., teaching, research and management). By confirmatory factor analyses in a sample of 166 Spanish university faculty members, we found that the three-factor model, which corresponded with their triple work profile, fitted better.

In **Chapter 6** we analysed the relationship between two of the most important variables in the Occupational Health Psychology (i.e., efficacy beliefs and engagement) and in our theoretical frameworks (the *SCT* and *JD-R Model*). We also analysed this relationship at both the individual and collective levels. So the objective of this chapter was to test the relationship between efficacy beliefs and task engagement in and over time at both the individual and collective levels. Moreover, we tested whether the pattern of effects is isomorphic for both levels (individual and collective). In order to achieve these objectives, we did latent growth curve analyses using the data obtained

from 372 university students (individual level) who were assigned to one of the 79 work groups (collective level) in a laboratory setting. The study sample in this last chapter is not teachers, but students. There is basically one major reason for this, which is also the aim of this chapter, that of testing the veracity of a hypothesis on efficacy beliefs and engagement in creative tasks and its development over time (i.e., 3 waves) regardless of the teaching work. Although we continued to use educational contexts (i.e., students) and therefore we continued in the same sector, we do not believe that the relationship found for our variables (i.e., efficacy beliefs and engagement) in a specific task and in a laboratory setting would be any different for teachers than it would for students.

Finally, **Chapter 7** summarises the findings of the previous studies and discusses the theoretical, methodological and practical implications. Moreover, we identify some limitations of this research thesis and make suggestions for future research.

Chapter 2

Conflict, Performance and Commitment among Teacher

Teams: The mediating Role of Team Potency

Summary

In the present study, a team-level model was tested proposing that team potency mediates the relationships of team conflict (i.e., task and relationship) with two positive team outcomes, (i.e., team performance and team affective commitment). Data on team task conflict, team relationship conflict, team potency and team affective commitment were collected by a questionnaire survey among teachers working in 33 different governance teams in Dutch secondary education, whereas team performance was rated by the respective school principals. Results of structural equation modeling showed that both types of conflict (i.e., task conflict and relationship conflict) were indeed significantly negatively related to both team outcomes through team potency. Based on these results, we concluded that members of governance teams should be trained in successful conflict management strategies in order to prevent potential negative consequences of intrateam conflict for team functioning and team morale.

In organizations adopting flatter, more decentralized structures such as work teams, employees are becoming more interdependent and responsible for more decision making (Jehn & Bendersky, 2003). The present study was conducted among Dutch secondary school teachers who - due to recent organizational and curricular reforms- are nowadays expected to collaborate in multidisciplinary governance teams. Members of these teams are authorized to decide autonomously, that is without consulting the school management, on issues regarding the teaching and supervision of pupils, and on ways of improving daily work processes. In this way, teachers are enabled to participate in school governance (Euwema & Van der Waals, 2007). With the growing significance of working in these governance teams, it is important to study the relationship of specific team characteristics with team functioning.

Recently, Antoni and Hertel (2009) noticed that the predominant amount of existing team research has focused on the detection or verification of specific predictors of successful teamwork, such as the absence of intrateam conflicts, without demonstrating the mediating mechanism that answer how and why these predictors have the effects they have. According to these authors, we need to know more about the psychological mechanisms of group work in order to explain and predict why certain groups are working successfully while others do not. The current paper tries to fill this void by proposing a model in which team task conflict and team relationship conflict are indirectly related to team performance and affective team commitment through team potency, as a psychological mechanism that would explain successful teamwork. Moreover, the model proposes that both types of conflict, though positively related, make an independent contribution to team potency (cf. Lira, Ripoll, Peiró, & Orengo, 2008).

Team conflict

Conflict is a pervasive problem faced by many present-day organizations (De Dreu, Van Dierendonck, & De Best-Waldhober, 2002). According to Medina et al. (2005), one of the most outstanding aspects of conflict is that it is practically intrinsic to the life and dynamics of teams. Team conflict can be defined as the process resulting from the tension between team members because of real or perceived differences (De Dreu, Harinck, & Van Vianen, 1999). Jehn (1995, 1997) distinguished between two types of intragroup conflict (i.e., task conflict and relationship conflict) and the vast majority of empirical studies has shown these two types of conflict to be positively related within work groups (Medina et al, 2005). Task conflict pertains to conflicts of ideas in the group and disagreement about the content and the issues of the task. In this type of conflict, there are disagreements among group members about the content of the tasks being performed, including differences in viewpoints, ideas and opinions. Relationship conflict, on the other hand, exists when there are interpersonal incompatibilities among group members. This type of conflict often includes personality differences as well as differences of opinions and preferences regarding non-task issues (Jehn & Bendersky, 2003). So, whereas task conflicts involve disputes about the distribution and allocation of resources, opposed views with regard to the procedures and policies that should be used or adhered to, or disagreeing judgements and interpretation of facts, relationship conflicts involve irritation about personal taste and interpersonal style, disagreement about political preferences, or opposing values (De Dreu & Van de Vliert, 1997).

Team outcomes: performance and affective commitment

Interpersonal conflict undoubtedly impacts organizational outcomes. Also in school organizations, conflict is a serious problem, in part, because it is often not well

handled (Lulofs & Cahn, 2000). By now, we have a fairly well-developed and researched understanding of organizational conflict and its negative effects on effectiveness and performance (De Dreu & Weingart, 2003), but far less attention has been devoted to ‘soft’ outcomes such as worker satisfaction, commitment, health and well-being (De Dreu & Beersma, 2005). Therefore, in the present study, we expanded the criterion space by not only including team performance but also teachers’ (affective) commitment to their work team as outcome variables.

Team commitment is the psychological attachment that members feel towards their (work) team, and which is analogous to organizational commitment except that the target of the attachment is the team rather than the larger organization of which the team is a part (Allen & Meyer, 1990). While both organizational commitment and team commitment have been found to be negatively related to intent to quit and positively related to job satisfaction and pro-social organization behaviors, commitment to the work team has been found to explain greater variance of these outcomes over and above that explained by organizational commitment (Becker, 1992). For these reasons, workers’ commitment to their team is a construct of vital interest to organizations today.

In a meta-analysis on the antecedents, correlates and consequences of the different subdimensions of organizational commitment that are identified in the Three-Factor Model, i.e., affective, continuance and normative commitment, Meyer, Stanley, Herscovich, and Topolnytsky (2002) showed that affective commitment has the strongest, positive correlation with desirable work behaviours (i.e., attendance, job performance and organizational citizenship behaviour). Affective commitment is defined as “the individual’s emotional attachment to, identification with, and involvement in the organization” (Meyer & Allen, 1991, p.67), and is governed by free choice, whereas this is not, or to a lesser extent, the case for continuance and normative

commitment. Therefore, it is not surprising that especially affective commitment is strongly related to positive outcomes. Based on these findings with respect to organizational commitment, in the present study we decided to focus specifically on teachers' affective team commitment.

Team conflict, performance, and affective commitment

Relationship conflict has consistently been found to be negatively related to team effectiveness or performance (e.g., De Dreu & Weingart, 2003; Jehn, 1995, 1997; Powell, Galvin, & Piccoli, 2006). Because relationship conflict leads team members to focus on reducing threats, increasing power, and attempting to build cohesion rather than working on the task, it interferes with task-related efforts and thus hinders the completion of organizational tasks.

However, the picture for task conflict is more complicated. For a long time, the predominant view as regards task conflict has been that it triggers consideration of multiple perspectives as well as preventing moving to premature consensus. In this way, task conflict should enhance decision-making quality, individual creativity, and work-team effectiveness in general. However, a meta-analysis by De Dreu and Weingart (2003) offered very little support for this hypothesis as it revealed a strong and negative relationship between task conflict and performance. Thus, their results showed that the potential positive effects of task conflict on performance quickly break down as it becomes more intense, cognitive load increases, and information processing is impeded. So, both task conflict and relationship conflict are equally disruptive for team performance.

Regarding 'soft' outcomes, work team studies have consistently found that relationship-based conflicts decreased employees' satisfaction with their job, task group and organization (Jehn, 1994, 1995, 1997; Jehn, Nortcraft, & Neale, 1999). The obvious

negative effect of relationship conflict on member morale is based on a general dissatisfaction with conflicts in interpersonal relationships (Jehn & Bendersky, 2003). In a study among a U.S. military sample, Thomas, Bliese, & Jex (2005) found that perceptions of interpersonal (i.e., relationship) conflict were related negatively to both affective and continuance commitment.

As regards task conflict, Schweiger, Sandberg, and Ragan (1986) provided evidence that people in groups with high consensus about task issues (i.e., low levels of task conflict) expressed more satisfaction and desire to stay in the group than members in groups with higher levels of dissension regarding the task (i.e., high levels of task conflict). Jehn (1995) showed that – even if task conflict leads to the realization of positive outcomes – the conflictful group process leading to these outcomes can cause dissatisfaction. Moreover, though task conflicts may generate more creative decisions, too much task conflict can hurt their implementation by limiting consensus. Nevertheless, and as we exposed before, results of the meta-analysis by De Dreu and Weingart (2003) show that relationship conflict is more disruptive than task conflict when it comes to team member satisfaction.

However, according to Jehn and Bendersky (2003), there are trade-offs in the value of conflict across outcomes; so group-level effects of conflict are contingent not only on the type of conflict in the group, but also on the outcome desired. Nevertheless, excessive levels of any type of conflict erode group consensus and member satisfaction. They can also suppress members' willingness to work together in the future due to low satisfaction with the group. Thus, the experience of conflict influences group members' perceptions, attitudes, emotions, and behaviors, which in turn influence the interaction processes among group members. Jehn and Bendersky (2003) conclude that if the goal of the team is to have a highly satisfied group of members willing to work again and

who can efficiently reach consensus, it is beneficial to have a low level of all types of conflict, including task conflict.

Based on the above arguments, in the present study both team task conflict and team relationship conflict are expected to be negatively related to team performance and affective team commitment. Moreover, in order to gain insight into the underlying psychological mechanism linking both types of team conflict with each of the outcome variables, we tested the role of team potency as a potential mediator of these relationships.

Team potency

Team potency, which is defined as the collective belief of a team that it can be effective (Guzzo, Yost, Campbell, & Shea, 1993), is a construct that has attracted substantial research attention in trying to understand work group effectiveness. The construct of team potency is rooted in the *Social Cognitive Theory* of Albert Bandura (1986) and it is a construct parallel to perceived collective efficacy. Though both team potency and perceived collective efficacy are beliefs operating at the team level and shared by team members, they are clearly distinct constructs that differ in a fundamental respect. Whereas team potency reflects generalized employee beliefs about the team's performance capabilities across tasks and contexts, perceived collective efficacy is referring to beliefs about task-specific activities (Collins & Parker, in press; Gully, Incalcaterra, Joshi, & Beaubien, 2002; Lee et al, 2002).

Team potency consistently has been shown to be positively related - cross-sectionally as well as longitudinally - to important team outcomes such as effort, performance, service quality and member (task) satisfaction (e.g., Gully et al, 2002; Lee et al, 2002; Lester et al, 2002). However, still less is known about potential antecedents of team potency. Up till now, a handful of studies have been performed which identified

factors such as team cohesion and norms (Lee, Tinsley, & Bobko, 2002) communication and cooperation (Lester, Meglino, & Korsgaard, 2002), as well as transformational leadership (Sosik, Aviolo, & Kahai, 1997), and team empowerment (Akgün et al., 2007).

As regard the relationship between team conflict and team potency, a recent experimental study among Spanish student groups working in a either a computer-mediated- communication setting or a face-to-face setting showed that team potency is indeed negatively influenced by high levels of relationship conflict in both settings. For task conflict, it was found that it was unrelated to team potency in face-to-face settings, whereas it was negatively related to team potency in computer-mediated communication settings (Lira, et al., 2008).

The present study: team conflict, team potency and team outcomes

The present study adds to the body of knowledge on the relationship between team conflict and team outcomes (i.e., performance and commitment) in exploring the mediating processes linking these constructs. Moreover, it tests whether recent experimental findings on the relationship between team conflict and team potency also hold in a field (i.e., organizational) setting. Based on the above literature review, our hypotheses are as follows:

Hypothesis 1: Team potency mediates the (negative) relationship of task conflict (Hypothesis 1a) and relationship conflict (Hypothesis 1b) with team performance.

Hypothesis 2: Team potency mediates the (negative) relationship of task conflict (Hypothesis 2a) and relationship conflict (Hypothesis 2b) with affective team commitment.

Method

Procedure and Participants

Data were collected as part of a larger study on the functioning of governance teams, i.e. interdisciplinary teacher teams, in Dutch secondary education. These teams require teachers from different disciplines to collaborate closely in order to meet specific educational goals. School principals were asked for their schools' participation by members of the research team. Once they agreed, principals solicited teachers' participation by means of a meeting in which they explained the aim and procedure of the study. At the end of these meetings, teachers received a structured questionnaire on team (work) characteristics, work-related well-being, and some personal background variables. The completed questionnaires could be returned in a closed box located at the schools' meeting room.

When data collection was finished (three weeks after the start of the study), a 65% response rate was obtained. To ensure that we only included teams in which the majority of team members had responded, we used a minimum within-group response rate of 60% as criterion for inclusion (cf. Timmerman, 2005). As a result of this criterion, the number of teams that was eligible for inclusion in the study was 33, consisting of 269 teachers. Actual team sizes ranged between 3 and 22 teachers with a mean of 8.15 (SD = 4.19). Respondents' mean age was 39.94 years old (SD = 11.34), and 48% of them were female. Their team tenure averaged 9 years (SD = 3.77). For each of the participating teams, teachers provided (questionnaire) data on team task conflict and team relationship conflict, team potency, and team commitment, whereas information on team performance was provided by the respective school principals.

Instruments

Team Task Conflict and Team Relationship Conflict. In order to assess the two types of intra-team conflict, a 10-items scale (De Dreu, 2006) was used consisting of five items on task conflict (e.g., “*Within our team, members hold different opinions on the best way to accomplish our tasks*”) (Cronbach’s alpha = .71) and five items on relationship conflict (e.g., “*Within our team, there are many interpersonal conflicts*”) (Cronbach’s alpha = .86). All items were scored on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Team potency. Teachers’ perception of the potency of their team was measured by means of a five-item scale developed by Gevers (2004) (e.g., “*We are convinced that our team can do an excellent job*”). All items were scored on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) (Cronbach’s alpha = .85).

Affective team commitment was also assessed from the team members’ (i.e., teachers) perspective by means of a five-item scale (Allen & Meyer, 1990) (e.g., “*I feel at home in this team*”). All items were scored on a five point Likert-scale (1 = strongly disagree, 5 = strongly agree) (Cronbach’s alpha = .83).

Team performance was evaluated by means of a nine-item scale (Beehr et al, 2001). Each item dealt with a specific aspect of team performance and had to be rated on a 10-point scale by the school principal (e.g., “*This team completes its tasks on time*”, “*This team understands pupils’ needs*”, “*This team solves problems adequately*”). For all 33 teams, the items of this measure were averaged to form a composite score (Cronbach’s alpha = .84).

Data analyses

In line with our hypotheses, all analyses were performed at the team level. In order to meaningfully aggregate individual responses on the scales assessing team task

conflict, team relationship conflict, team potency, and affective team commitment to the team level, sufficient agreement within teams had to be demonstrated. Prior to aggregating, first we assessed within-team agreement in each of these three measures by means of the $r_{wg(j)}$ index (James, Demaree, & Wolf, 1993). Then, we estimated the relative consistency of responses among team members by computing the intra-class correlation coefficient ICC(1) (Bliese, 2000). The average $r_{wg(j)}$ values for team task conflict, team relationship conflict, team potency, and affective team commitment were .82 (SD = .11), .78 (SD = .15), .85 (SD = .12) and .76 (SD = .23) respectively, which are all above the cut-off of .70 typically used to represent good agreement. Thus, we concluded that team members' scores on these scales showed a sufficient level of within-team agreement for aggregation at the team level. The ICC(1) values obtained for team task conflict, team relationship conflict, team potency, and affective team commitment were .10, .16, .16 and .12 respectively, which are well within the typical range of values (.05-.20) suggested by Bliese (2000). Therefore, we concluded that the level of consistency of responses among team members on each of these scales was adequate.

We also carried out a one-way analysis of variance (ANOVA) to ascertain whether there was statistically significant between-team discrimination on the study scales. We obtained the following results: team task conflict $F(32, 236) = 1.97, p < .01$; team relationship conflict: $F(32, 236) = 2.55, p < .01$; team potency: $F(32, 236) = 2.58, p < .01$; and affective team commitment: $F(32, 236) = 1.50, p < .05$. These results show adequate between-teams discrimination on the scale scores, and they support the validity of the aggregate measures (Chan, 1998). Considering all the results presented above regarding within-team agreement, consistency of responses among team members, and between-team discrimination, we decided to compute aggregate scores

for every team in our sample by averaging team members' scores on team task conflict, team relationship conflict, team potency, and affective team commitment.

Next, we tested, by means of Box's M test, whether data gathered from the seven schools could be combined and analyzed together. Box M statistic tests the null hypothesis that the covariance matrix among the study variables is equal across the groups involved. According to the results we obtained ($M = 22.99, p > .10$), this null hypothesis could not be rejected; therefore, data gathered from the seven schools were combined and analyzed together.

In order to test the hypothesized relationships, the research model (see Figure 2.1) was performed using structural equation modeling (SEM) by means of the AMOS software package (Arbuckle, 2003). Maximum likelihood estimation methods were used and the input for each analysis was the covariance matrix of the items. The SEM-technique is particularly suitable for the test of mediation models as it allows for a comparison between the fit of a full mediation model versus partial mediation models as well as for a simultaneous test of models containing multiple consequent variables (LeBreton, Wu, & Bing, 2009).

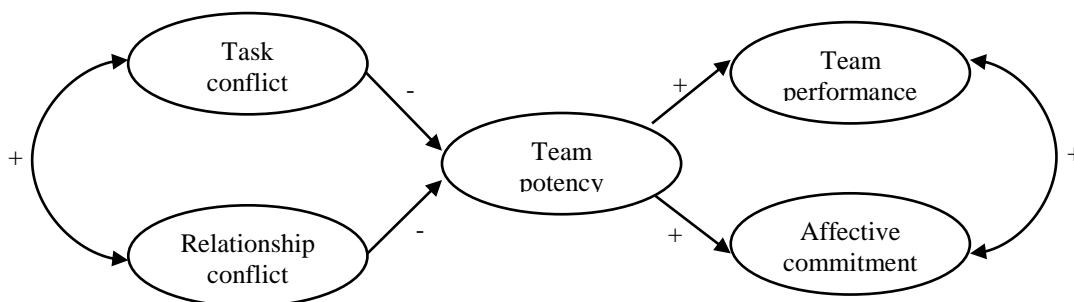


Figure 2.1: Research model.

A path analysis model was tested on the data with AMOS 17.0. The model contained two exogenous variables (i.e., team task conflict and team relationship

conflict) and three endogenous variables (i.e., group potency, team commitment and team performance). Moreover, we also tested an alternative model (M_2) in which team potency is considered as a predicting (i.e. exogenous) variable. The reason to include this alternative model is that following the *SCT*, this type of beliefs has a predicting role and not a mediating one. In the analyses, we controlled for team tenure as this may affect team processes and outcomes. For example, Pfeffer (1983) pointed out that performance will be highest when employees have been in the position long enough to overcome the initial problems caused by novelty and lack of experience. Smith et al. (1994) suggested a positive linear relationship between team tenure and performance, because greater tenure facilitates both coordination and control. In a meta-analysis by Cohen (1993), a positive relationship between tenure and (organizational) commitment was found, which was strongest for the oldest tenure subgroup.

As our study sample was very small, we used bootstrapping to test whether the pathways running from the two types of team conflict to both outcome variables do in fact represent mediated relationships. Bootstrapping is a statistical resampling method that estimates the parameters of a model and their standard errors strictly from the sample (Preacher & Hayes, 2008). Moreover, bootstrapping computes more accurate confidence intervals of indirect effects than more commonly used methods, such as the causal steps strategy (Baron & Kenny, 1985), as it does not impose the assumption that the sampling distribution is normal (Preacher & Hayes, 2008). This is especially relevant for indirect effects, as these have distributions that are skewed away from zero (Shrout & Bolger, 2002). The null hypothesis, which states that x does not have an indirect effect on y via m , is rejected when the entire confidence interval lies above or below zero. We extracted new samples (with replacement) from our sample 1000 times and calculated all direct and indirect estimates of the hypothesized model.

The goodness-of-fit of the research model as well as the alternative model was evaluated using the following absolute goodness-of-fit indices: (1) the χ^2 goodness-of-fit statistic, (2) the Root Mean Square Error of Approximation (RMSEA), and (3) the Goodness of Fit Index (GFI). Moreover, three relative goodness-of-fit indices were calculated: (1) the Normed Fit Index (NFI), (2) the Comparative Fit Index (CFI), and (3) the Tucker Lewis Index (TLI). So, by using different types of fit indices, we are also able to compare models to one another in order to determine which one fits best to our data. Values smaller than .08 for the RMSEA are indicative of an acceptable fit, and values greater than .10 should lead to model rejection (Cudeck & Browne, 1993). For all other fit indices, i.e. GFI, NFI, CFI, and TLI, values greater than .95 are considered as indicating a good fit (Hu & Bentler, 1999; Yu, 2002).

Results

Descriptive Statistics

Means, standard deviations, and intercorrelations of all study variables are reported in Table 2.1. Closer inspection of this Table reveals that, as expected, both task conflict and relationship conflict are significantly, negatively related to team potency, and to affective team commitment and team performance, respectively. Moreover, team potency is significantly, positively related to both outcome variables.

Table 2.1

Descriptive statistics for the study variables (n = 33)

	M	SD	1	2	3	4	5	6
1. Team tenure	9.08	3.77	--					
2. Team task conflict	3.49	0.30	.19	--				
3. Team relationship conflict	2.31	0.41	.01	.70**	--			
4. Team potency	3.55	0.35	.22	-.59**	-.58**	--		
5. Team performance	7.19	0.75	.25	-.45**	-.48**	.51**	--	
6. Team commitment	3.31	0.32	.28*	-.36*	-.47**	.64**	.47**	--

Note. ** $p < .01$; * $p < .05$

Testing of the research model

The model linking both types of team conflict to team potency, and to team affective commitment and team performance showed a good fit to our data: $\chi^2 (3) = 3.61$, $p < .10$; RMSEA = .08; GFI = .96; NFI = .96; CFI = .99; TLI = .96. All relationships between the constructs were in the expected direction. However, the four direct paths from task and relationship conflict to team commitment and team performance respectively turned out to be non-significant: team task conflict \rightarrow team commitment $\beta = -.03$, n.s.; team task conflict \rightarrow team performance $\beta = -.21$, n.s.; team relationship conflict \rightarrow team commitment $\beta = -.08$, n.s.; team relationship conflict \rightarrow team performance $\beta = -.07$, n.s. Moreover, the covariance between team commitment and team performance also turned out to be non-significant ($r = .03$; ns). Therefore, we tested a revised model (M_{1R}), in which the non significant paths were removed. The fit indices of the revised model were as follows: $\chi^2 (8) = 6.52$, $p < .10$; RMSEA = .00; GFI = .95; NFI = .96; CFI = .99; TLI = .99. Results of a χ^2 differences test made clear that removing these non-significant paths from the model did not result in a significant

difference in model fit ($\Delta\chi^2(5) = 2.90$; ns). According to Vandenberg & Grelle (2009), in case two models do not significantly differ as regards model fit, the most parsimonious model should be preferred.

Next, we also tested an alternative model (M_2), in which team potency has a predicting role (i.e., task and relationship conflict fully mediates the relationship between team potency and team outcomes), instead of a mediating role (i.e., team potency fully mediates the relationship between task and relationship conflict and team outcomes): $\chi^2(2) = 10.72$, $p < .005$; RMSEA = .37; GFI = .90; NFI = .85; CFI = .86; TLI = .27. After compare both models (i.e., predicting vs. mediating role) and based on a χ^2 differences test we concluded that its fit was inferior to that of the research model (M_1), i.e. $\Delta\chi^2(1) = 7.11$, $p < .01$. In the case of the revised model (M_{1R}), although the χ^2 differences test is not significant ($\Delta\chi^2(6) = 4.20$; ns.), all other indices indicate a better fit for M_{1R} . Therefore, we concluded that model M_{1R} is our final model.

Figure 2.2 depicts the significant relationships between the team conflict variables and affective team commitment and team performance mediated via team potency. All mediated paths were significant, as shown by the bootstrap of the specific indirect effects (see Table 2.2).

Table 2.2

Specific indirect pathways using bootstrapping (n=33)

Indirect effects	Bootstrap		BC 95% CI		P
	Estimate	SE	CI Lower	CI Upper	
<i>Team performance</i>					
Task conflict	-.14	.10	-.39	-.01	.05
Relationship conflict	-.13	.09	-.37	-.02	.05
<i>Team commitment</i>					
Task conflict	-.23	.13	-.52	-.08	.01
Relationship conflict	-.22	.12	-.43	-.03	.05

Firstly, we found that task conflict was significantly negatively related to team performance (Hypothesis 1a confirmed) and to affective team commitment (Hypothesis 1b confirmed) through lower team potency. Secondly, also for relationship conflict, we also found that it was significantly negatively related to team performance (Hypothesis 2a confirmed) and to affective team commitment (Hypothesis 2b confirmed) through lower team potency. Hence, it is concluded that, as expected, group potency fully mediates the relationship between team task conflict and team relationship conflict on the one hand, and team commitment and team performance on the other hand. The final model explained 46% of the variance in team performance and 65% of the variance in affective team commitment.

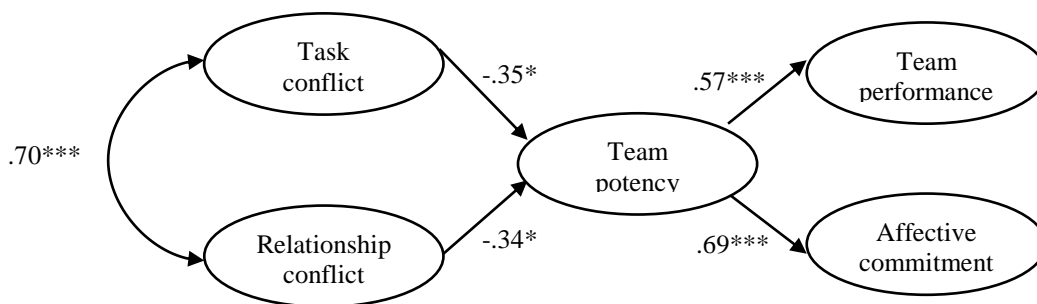


Figure 2.2: Final model (n = 33)

Discussion

The aim of this study was to test a model in which team task conflict and team relationship conflict are indirectly related to team performance and to affective team commitment through team potency. Data were collected among members of 33 teacher teams in Dutch secondary education as well as their schools' principals. Specifically, our results showed that, firstly, task conflict was significantly negatively related to team performance (H_{1a} confirmed) and to affective team commitment (H_{1b} confirmed) through lower levels of team potency. Secondly, the same pattern of results was found for relationship conflict, which was also significantly negatively related to team performance (H_{2a} confirmed) and to affective team commitment (H_{2b} confirmed) through lower levels of team potency. Hence, it is concluded that, as expected, group potency fully mediates the relationship between team task conflict and team relationship conflict on the one hand, and team performance and affective team commitment on the other hand. Moreover, in line with Lira et al. (2008), we also found that both types of conflict made an independent contribution to team potency.

Theoretical contribution

Firstly, our results corroborate the findings of the meta-analysis by De Dreu & Weingart (2003) regarding the negative relationship of both task and relationship conflict with team performance. In contrast to many previous empirical studies which explored these relationships at the individual level, we tested our model at the team level. Nowadays many organizations are using (work) teams as the basic form of organizing, and employees are becoming increasingly interdependent, so exploring the effects of conflict at the team level is warranted. Moreover our findings add to the existing literature on team potency, as we were not only able to replicate its positive

relationship with team performance, but also showed that this collective belief is positively related to team members' psychological attachment to their work group.

Secondly, we were able to clarify an underlying psychological mechanism linking conflict with positive team outcomes by demonstrating that the relationship between team conflict (i.e., task and relationship) and performance and commitment is fully mediated by team potency. This is in line with the results of previous studies (e.g., Akgün et al., 2007; De Jong, De Ruyter, & Wetzels, 2005; Lee, Tinsley, & Bobko, 2002) that also demonstrated the mediating role of team potency in the relationship between team characteristics and outcomes. However, according to Bandura's *SCT*, team potency -being a generalized version of perceived collective efficacy - should play a predicting rather than a mediating role. Therefore, we also tested an alternative model (M_2) in which team potency was the predictor and conflict was the mediator. The fit of this model turned out to be worse than that of the original research model, so it was rejected. Therefore, it seems that team potency, as a generalized efficacy beliefs, has less power in predicting than efficacy beliefs has, and this is in line with Bandura (2006) who stated that efficacy measures tailored to the activity domain are more predictive than global ones.

Implications for practice and for future research.

Taking into account that conflict is practically intrinsic to the life and dynamics of teams, from a practical point of view, it is important to realize that team potency plays a key role in transmitting the negative effects of team conflict on team functioning. So, it would be relevant to think of practical ways to boost team members' shared feeling about the team's performance capabilities across tasks and contexts, in order to prevent team conflict from negatively affecting team functioning. For instance, it would be interesting to organize activities outside the organization to reinforce the group's sense

of (collective) effectiveness, or to participate in a general workshop about how to improve the group's effectiveness (i.e., good time management). In addition, it may also be important to train team members in constructive conflict management strategies or using third-party intervention in case of team-conflicts (Giebels & Janssen, 2005), in order to prevent team conflict from negatively affecting team potency.

In future research, it would be interesting to further explore the role of team potency using a longitudinal design. Moreover, it would be interesting to test our model with other positive and negative team outcomes (e.g., burnout, turnover intention, work engagement, etc.), as well as in other occupational settings. Finally, we could look for potential moderators of the relationship between conflict and team potency following the typology of moderator variables that influence the relationship between conflict and outcomes by Jehn and Bendersky (2003) (i.e., amplifiers, suppressors, ameliorators, and exacerbators).

Strengths and limitations of the study

There were several shortcomings to the present study. Firstly, the reliance on self-report measures for four out of the five study variables may be considered a limitation. The link between the two conflict types, group potency and affective team commitment may be partly the result of common method variance, so in order to test that the common method variance bias was not a problem in this study, we performed the Harman's single factor test with CFA (e.g., Iverson & Maguire, 2000). Results of this test revealed that one single factor could not account for the variance in the data [Delta $\chi^2(6) = 794.86$ $p < .001$]. So, common method bias is not a major drawback of this study. Moreover, the robustness of our findings for *self-reported* affective team commitment is supported by the fact that similar patterns of relationships are found for the supervisor-reported performance measure.

Another limitation of the current study is that the relationships are correlational and not causal. Thus, theoretically, conflict may be a consequence of poor performance and/or low commitment, rather than the other way around. For example, poor performance or low commitment may deteriorate interpersonal relationships among team members and thus increase the likelihood of conflicts. Moreover, since it is a cross-sectional study, theoretically we cannot talk about mediating and predicting roles, and future longitudinal studies are needed to gain more insight into the direction of these relationships.

Moreover, this study's findings are based solely on a sample of secondary school teachers, who reported on their perceptions of team functioning. Employees from other occupations might experience and respond to conflict within their work teams differently. Therefore, the generalizability of our model should be tested in other types of work teams as, for instance, De Dreu and Weingart (2003) stated that relationship conflict is worse than task conflict in the case of decision making teams. Moreover, conflicts with team leaders instead of conflicts with colleagues on the same hierarchical level may elicit different processes than the ones illustrated by our model (cf. Frone, 2000, in: Giebels & Janssen, 2005).

However, there are also strengths of our study that deserve to be mentioned. First, we were able to corroborate previous results from an experimental laboratory study on the relationship between team conflict and team potency (Lira et al., 2008) in a real life setting. As mentioned above, many employees nowadays work in work groups or teams, and it is therefore important to test for relationships between work characteristics, performance and well-being at the collective level too. Moreover, we have tested for the first time that team potency plays a *mediating* role in this type of psychological

processes, thus empirically demonstrating the differences with efficacy beliefs that - according to the *SCT* - act as *predictors* of future affect and behaviors.

Finally, it is important to stress that team performance was evaluated by the school principal and not by the team members themselves, removing much of the subjectivity of this variable.

Final note

In sum, the data confirm our expectation that conflicts within work teams, and especially lower levels of team potency associated with it, threaten team functioning such as team performance and commitment with the team. Since conflict is an inevitable part of organizational life, research should focus on conditions or factors that may buffer its negative consequences for team performance and morale.

Chapter 3

University Faculty and Work-Related Well-Being:

The Importance of the Triple Work Profile

Summary

The main aim of this study is to test whether different university faculty work profiles (i.e., teaching, researching and management) relate with the experience of well-being at work (i.e., burnout, work engagement and intrinsic satisfaction). Using a K-means cluster analysis in a sample of 170 Spanish university faculty members, the results show the existence of four work patterns in university faculty (i.e., teaching cluster, research cluster, management cluster and teaching and research cluster). Moreover, ANOVA analyses indicate that there are significant differences in absorption and intrinsic satisfaction, depending on the cluster they belong to. So far, the research cluster offers the lowest value in burnout and the highest value in engagement and intrinsic satisfaction. In contrast, the management cluster presents the highest value in burnout, and the lowest in engagement and intrinsic satisfaction. In addition, the confirmatory factor analyses showed that burnout consists of the four expected dimensions (i.e., exhaustion, cynicism, depersonalization and lack of professional efficacy). Finally, we discuss the theoretical and practical implications of the results for university faculty well-being.

Although traditionally, university teaching has been treated as a low stress occupation (Fisher, 1994; Hogan, Carlson, & Dua, 2002; Winefield, 2000), things have changed in the last few decades. Nowadays, there are more and more university faculty members holding an insecure post and have a greater workload and, consequently, more research works about job stress and health among university faculty members have been conducted (Winefield, Gillespie, Dua, Hapuarachchi & Boyd, 2003). Moreover, we must take into account the important role played by this collective in our society, as Johnsrud (2008) stated, university faculty members, through their work, transform individual lives and improve the quality of life of the entire society, so it seems important to study this collective as well as to know any antecedent that can affect to their well-being.

Thus, this study provide an important practical contribution, since not only shows a better understanding of the work carried out by university faculty members, but also it shows how their well-being changes depending on their work pattern. Additionally, this study also makes a great theoretical contribution by testing that burnout consists of four dimensions instead of three.

Generally speaking, university faculty members spend their working hours performing different kinds of tasks which may be summarized as a triple work profile made up of teaching, research, and management tasks. And these three tasks have been already taking into account for several authors (e.g., Buena-Casal & Sierra, 2007; Cifre, Llorens, Salanova, & Martínez, 2003; Currie, 1996; Morrison, 1996; Vera, Martín del Río, & Solanes, 2005). Previous research has examined the potential (im)balance among the tasks carried out by university faculty members. For example, León and Gozalo (1999) stated that there is no balance between university faculty teaching and research functions because more importance is attached to the role of researcher, while the

importance of teaching tasks is played down.

Hypothesis 1: Almost all faculty members have a triple work profile, that is to say, almost all of them perform teaching, research and management tasks to a greater or lesser degree. Nevertheless, there are different work patterns in which one of the three tasks excels over the others in terms of time dedicated to it.

Currie (1996) claimed that the most frustrating task for university faculty members is to have to deal with institutional demands that affect their teaching and research tasks. He showed that university faculty members were losing their autonomy by spending too much time on administrative tasks. Along the same lines, a study by Court (1994) showed how university faculty members dedicated one third of their time to administrative tasks. Morrison (1996) also claimed that the pressure of teaching and management tasks were sapping the energy that university faculty members had previously applied to research tasks.

According to Chalmers (1998), university faculty members often feel frustrated because they have no time for research. This author also discussed how these members would like to have more time for research and fewer teaching hours, as well as a smaller number of administrative tasks. She finally concluded that university faculty members have increasingly more bureaucratic-administrative duties as a result of the need to obtain economic resources for research, congresses, academic exchanges, and so on. It seems that these professionals' work is no longer what it was before as it has become more submissive work with more restrictive conditions and involves working "against the clock" (Caramés, 2003).

According to Taris, Schreurs and Van Iersel-Van Silfhout (2001), research and teaching tasks entail temporary demands that cause tension, which in turn causes

emotional exhaustion. Guerrero and Vicente (1999) also pointed out the obligation to make teaching and research tasks compatible as a source of strain, and even of burnout. They claimed that this happens not only because the time dedicated to one's tasks has negative influences on being able to dedicate oneself to other tasks, but also because research work evaluation is more important than teaching work evaluation. Moreover, university faculty members are becoming increasingly involved in managerial tasks that are also a source of role conflict (Moriani & Herruzo, 2004). In addition, Lackritz (2004) concluded that feelings of burnout are more strongly related with teaching tasks than with those involved in research.

Nonetheless, university faculty members do not have only negative experiences in their work, it also provides them with positive experiences, such as engagement, which is defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 72). Engagement refers to a persistent and pervasive affective-cognitive state which does not focus on any particular object, event, individual, or behavior. Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence also in the face of difficulties. Dedication, on the other hand, refers to a sense of significance, enthusiasm, inspiration, pride, and challenge. The third dimension of engagement, absorption, suggests being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work.

Finally, an important topic that it is relevant to well-being is job satisfaction, defined as a pleasurable or positive emotional state that results from an appraisal of one's job and job experiences or from the perception that a job fulfills one's needs and important job values (Locke, 1976). And whereas engagement is focus on the cognitive-

affective motivation at work for long periods and it emphasizes the cognitive aspect of involvement with the tasks at work, satisfaction is more focus on affect (Wefald & Downey, 2009). Oshagbemi (1997, 1999) studied the relationship between the triple work profile and job satisfaction in university faculty members. He asked university faculty about tasks that contribute to job satisfaction and found they scored high in teaching and research tasks, whereas they scored low in management tasks.

In view of these results, it may be that university faculty members with more management tasks experience more job stress (i.e., burnout), while those with more research tasks experience more work related well-being (i.e., work engagement and intrinsic motivation). Moreover, this study stated that university faculty members with more teaching and research tasks are the ones who are more satisfied.

Hypothesis 2: University faculty members who have work patterns with more managerial tasks will show higher levels of burnout than faculty members with other work patterns.

Hypothesis 3: University faculty members who have work patterns with more research tasks will show higher levels of work engagement and intrinsic job satisfaction than faculty members with other work patterns.

With regard to university faculty members' stress, we must first consider a chronic type of stress that is referred to as job burnout. This is a syndrome with three separate dimensions: emotional exhaustion, depersonalization, and lack of professional efficacy (Maslach, 1982). According to Maslach (1993), the first refers to feelings of being emotionally overextended and depleted of one's emotional resources. The second, depersonalization, refers to a negative, cynical or excessively detached response to other people, which often includes loss of idealism. Third, lack of professional efficacy suggests a decline in feelings of competence and productivity at work.

Although these three dimensions are widely accepted, diverse empirical studies have questioned this structure composed of emotional exhaustion, depersonalization and lack of professional efficacy. On the one hand, exhaustion and cynicism constitute the “core of burnout” and leave lack of professional efficacy to one side (Browsers & Tomic, 2000; Green, Walkey, & Taylor, 1991; Schaufeli, Salanova, González-Romá, & Bakker, 2002; Xanthopoulou et al., 2007). On the other hand, rather than being a dimension of burnout, lack of professional efficacy is more one of its causes. Burnout could take place due to a “crisis of self-efficacy” (Bandura, 2001; Cherniss, 1993; Salanova, Bresó, & Schaufeli, 2005). Lack of professional efficacy is an independent component of the other two components of burnout, as pointed out in the *Social Cognitive Theory* by Bandura (1986), which closely relates to what this author denominates “efficacy beliefs” (Salanova, Martínez, & Lorente, 2005).

Finally, past research confirmed a four-dimensioned structure of burnout which includes emotional exhaustion, depersonalization, cynicism, and lack of professional efficacy (Salanova et al., 2005). According to these authors, it is necessary to differentiate between depersonalization and cynicism because the definition of burnout has extended to workers who are not in direct contact with recipients of the service being rendered. And depersonalization necessarily implies other people. Therefore its meaning cannot lie outside social relations. However, cynicism can appear without any social relation. Thus, Salanova et al. (2005) understood both dimensions as indicators of a “mental distance” toward work (cynicism) and toward fellow workers and the people for whom one works, i.e., clients, students, patients, etc. (depersonalization). We believe that this differentiation is necessary for university faculty members, as they may experience cynicism toward their work as teachers, researchers and managers, but can also suffer depersonalization toward students, coworkers or service staff.

Hypothesis 4: Burnout among our sample of university faculty members will include four dimensions: emotional exhaustion, depersonalization, cynicism, and lack professional efficacy.

Thus, the current study has three objectives. Firstly, although most university faculty members perform teaching, research and management tasks, not all of them dedicate the same amount of time to each of these tasks. Our first objective, then, is to test whether different work profiles exist among university faculty members, taking into account the percentage of time that they dedicate to teaching, research and management. Secondly, and once we know how many work profiles there are, we shall go on to test whether different work profiles of university faculty members relate with the experience of well-being at work (i.e., burnout, work engagement, and intrinsic job satisfaction). Thirdly, we will also test the four-factor structure of job burnout (i.e., emotional exhaustion, depersonalization, cynicism, and lack of professional efficacy).

Method

Participants and procedure

The sample comprised 170 university faculty members of a Spanish university, which represents 18% of the total number of faculty members of this University (N = 955). All university faculty members received an envelope by the university's internal mail service. This envelope contained a presentation letter, a document which they had to complete with their personal data, and a questionnaire. Both the personal data document and the questionnaire ensured confidentiality because we did not ask about any self-identifying information. All the documents were written in Spanish.

Basically, Spanish university faculty may be divided into two large groups, state employees (tenured lecturers and university professors) and contract faculty (collaborating staff, part-time lecturers, etc.). In our sample population, we studied 60%

contract faculty and 40% state employees, 60% men and 40% women, the mean age was 39 years old ($SD = 8.5$), 74% were married or living with a partner, and 26% were single or divorced. 51% had children and 49% did not. The level of academic education of the sample is as follows: 63% are PhDs, 22% completed the research aptitude period, that is, the first period before obtaining the PhD, 13% have a degree which implies long-cycle studies, and 2% completed a diploma course, implying short-cycle studies. As for work experience, 43% had 5 years experience, 29% had between 6 and 10 years experience, 12% had between 11 and 15 years experience, 8% had between 16 and 20 years, while 8% had more than 20 years experience.

Indeed most of the university faculty members in our sample said they had a triple work profile; specifically, only 6% of the sample had no teaching tasks, 11% had no research tasks, and finally only 16% had no management tasks. The mean amount of time spent on teaching was 50% ($SD = 22.6$), researching 32% ($SD = 21.3$) and management 18% ($SD = 17.1$).

Instruments

Burnout. Emotional exhaustion, cynicism and lack of professional efficacy were measured with the Spanish version (Schaufeli et al., 2002) of the Maslach Burnout Inventory (MBI) General Survey (Schaufeli, Leiter, Maslach, & Jackson, 1996). Five items measured emotional exhaustion (e.g., “*I am tired when I get up in the morning and I must confront another day in my post*”), four items measured cynicism (e.g., “*I lost interest in my work since I took this position*”), six items measured lack of professional efficacy (e.g., “*I can solve problems that arise in my work effectively*”). Depersonalization was measured with five items (e.g., “*In fact, it is of no concern to me what will happen to some people whom I must take care of in my work*”) of the corresponding scale of the MBI Human Services Survey (Maslach, Jackson, & Leiter,

1996). In order to obtain all the dimensions of burnout with the same sign, we reversed the scores of the professional efficacy items to obtain professional inefficacy. All the items scored on a seven-point frequency scale (0 = never, 6 = always).

Work engagement was measured with the Utrecht Work Engagement Scale (Schaufeli et al., 2002). Six items measured vigor (e.g., “*At work, I feel bursting with energy*”), five items measured dedication (e.g., “*My job inspires me*”) and five items measured absorption (e.g., “*When I’m working, I forget everything around me*”). All the items scored on a seven-point frequency scale (0 = never, 6 = always).

Job satisfaction was measured with the S20/23 Job Satisfaction Questionnaire (Meliá & Peiró, 1989); more specifically, we focused on the fourth factor of this scale: intrinsic satisfaction, measured by four items (e.g., “*The opportunities that your job offers you to do the things you like*”). All the items scored on a seven-point frequency scale, (1 = highly dissatisfied, 7 = highly satisfied). We focused on this factor and not on others because we are interested in studying the satisfaction that work itself gives, that is, the opportunities that your job offers you to do what you really like.

Data Analyses

Firstly, we performed descriptive analyses, correlations and internal consistencies for each scale. Secondly, in order to establish the different work profiles that is to test hypothesis 1 a K-means cluster analysis was performed. We analyzed two-cluster, three-cluster and four-cluster solutions. Once groups were established, thirdly, we carried out ANOVA analyses in order to test Hypothesis 2 and Hypothesis 3.

Finally, confirmatory factor analyses (CFA), as implemented by AMOS (Arbuckle, 1997) was used to confirm Hypothesis 4. We evaluated the goodness-of-fit of the models using absolute and relative indexes. The four absolute goodness-of-fit indexes calculated were: (1) the χ^2 goodness-of-fit statistic; (2) the Goodness-of-Fit

Index (GFI); (3) the Adjusted Good-ness-of-Fit Index (AGFI); and (4) the Root Mean Square Error of Approximation (RMSEA). Additionally, we computed three relative indexes: (1) the Tucker-Lewis In-dex (TLI); (2) the Comparative Fit Index (CFI); and (3) the Incremental Fit Index (IFI). Since the distributions of the GFI and the AGFI were unknown, no statistical test or critical value was available (Jöreskog & Sörbom, 1986). Values smaller than .06 for the RMSEA are indicative of an acceptable fit (Hu & Bentler, 1999), whereas a cut-off value close to .90 for the IFI suggests a good fit (Hoyle, 1995). As a rule of thumb for the remaining fit indexes (TLI, CFI), values greater than .95 are considered to indicate an adequate model fit (Hu & Bentler, 1999).

Results

Descriptive Analyses

We performed descriptive analyses, correlations and internal consistencies for each scale. Table 3.1 shows the means, standard deviations and intercorrelations of the eight dimensions. As Table 3.1 illustrates, although all the correlations were not significant, all their items significantly correlated in the predict direction. The same table presents the scores of the internal consistencies (Cronbach's alpha) for all the dimensions and all scores met the criterion of .70 (Nunnally & Bernstein, 1994).

Table 3.1.

Descriptive statistics for the study variables (N = 170)

	M	SD	1	2	3	4	5	6	7	8
1. Emotional exhaustion	2.00	1.18	.86							
2. Depersonalization	0.68	0.89	.33**	.79						
3. Cynicism	1.37	1.25	.39***	.43***	.83					
4. Lack of personal accomplishment	1.35	0.80	.15	.10	.40***	.75				
5. Vigor	4.65	0.88	-.38***	-.19*	-.38***	-.34***	.86			
6. Dedication	4.54	0.96	-.34***	-.21**	-.48***	-.46***	.63***	.87		
7. Absorption	3.98	0.98	-.090	-.13	-.21**	-.19*	.52***	.47***	.76	
8. Intrinsic satisfaction	5.35	0.98	-.45***	-.42***	-.59***	-.25**	.33***	.53***	.35***	.83

Note. * $p < .05$, ** $p < .01$, *** $p < .001$; Cronbach's alpha of the scales are on the diagonal.

Testing the hypotheses

A K-means cluster analysis was performed to test the number of clusters corresponded to the triple work profile. We analyzed two-cluster, three-cluster and four-cluster solutions. The four-cluster solution provided a better interpretation because the solution fitted the university faculty members' job. Moreover, all three tasks in the four-cluster solution were predominant in one cluster (i.e., each task uses more than 50% of the time). Table 3.2 shows the K-means cluster analysis, and we can see the number of university faculty members per cluster and the percentage of time dedicated to each task in each cluster. Three clusters corresponded to the triple work profile. Furthermore, one cluster shared teaching and research tasks equally. Regarding the characteristics of each cluster, we have tested if there are differences between university faculty members who

make up each cluster with respect to sociodemographic variables. And there are only significant differences in the education level ($F(3, 166) = 9.16, p < 0.001$); type of contract ($F(3, 166) = 9.31, p < 0.001$); and work experience ($F(3, 166) = 3.29, p < 0.05$). In this way, university faculty with higher level of studies (i.e., PhD) belong mainly to research cluster, the cluster that has a greater number of contract employees is the teaching cluster, and finally, those university faculty members with more years at university mainly belong to management cluster.

Table 3.2.

Number of University Faculty Members per Cluster and the Percentage of Time Dedicated to each Task (N = 170)

	Management cluster	Research cluster	Teaching cluster	Teaching and research cluster
% of time doing Teaching tasks	33.7%	21.7%	78.7%	43.7%
% of time doing Research tasks	12.4%	69.8%	10.7%	39.0%
% of time doing Management tasks	53.9%	8.6%	10.6%	17.2%
<i>n</i> (%)	19 (11%)	21 (12%)	47 (28%)	83 (49%)

Moreover, in order to test the hypothesis 2 and hypothesis 3, we carried out ANOVA analyses to know whether differences in burnout, engagement and intrinsic satisfaction in university faculty members exist according to the work patterns. The membership of a particular cluster only produced significant differences in absorption ($F(3, 166) = 2.81, p < .05, \eta^2 = .048$) and intrinsic satisfaction ($F(3, 166) = 3.29, p < .05, \eta^2 = .056$). However, in Table 3.3 we can see the means of the eight dimensions in each cluster.

Table 3.3.

Means of the Dimensions of each Cluster (N = 170)

	Management cluster	Research cluster	Teaching cluster	Teaching and research cluster	F	p
Emotional exhaustion	1.98	1.83	1.99	2.05	.20	.90
Depersonalization	0.93	0.89	0.68	0.58	1.16	.33
Cynicism	1.84	1.19	1.30	1.35	.88	.45
Professional inefficacy	1.41	1.31	1.30	1.38	.14	.93
Vigor	4.41	4.61	4.63	4.72	.47	.71
Dedication	4.12	4.84	4.53	4.56	1.93	.13
Absorption	3.72	4.41	3.76	4.05	2.81	.04
Intrinsic satisfaction	4.90	5.73	5.17	5.45	3.29	.04

Moreover, Figure 3.1 presents the difference in burnout, engagement and satisfaction in the four clusters. This figure shows how the research cluster offers, generally speaking, the lowest value in burnout and the highest value in engagement and intrinsic satisfaction. However, the management cluster presents, generally speaking, the highest value in burnout, and the lowest in engagement and intrinsic satisfaction. Therefore, although there are only significant differences in absorption and intrinsic satisfaction, the trend of the averages in the other variables confirm partially hypothesis 2 and hypothesis 3.

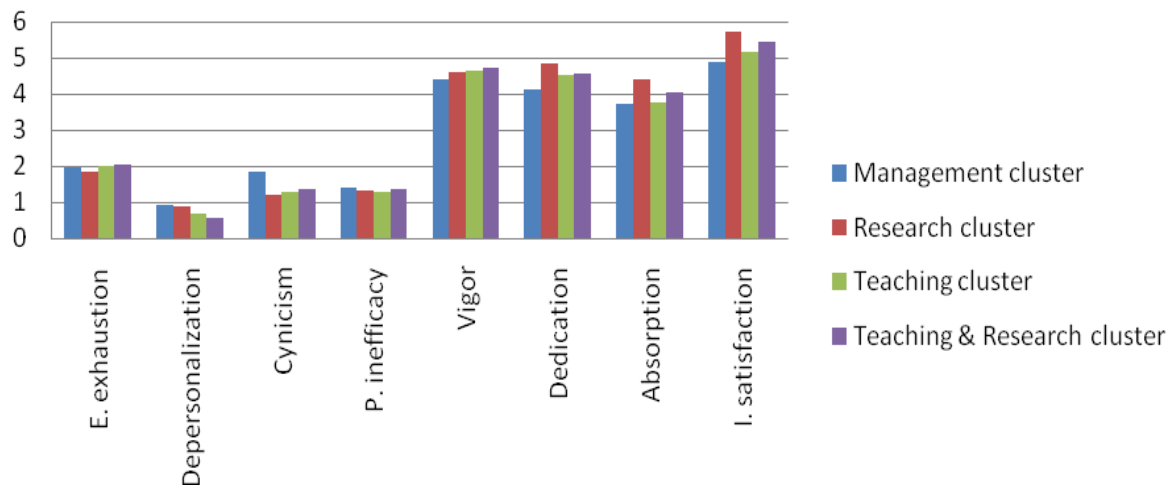


Figure 3.1: Burnout, engagement and intrinsic satisfaction among the four clusters.

Finally, in order to test hypothesis 4, confirmatory factor analyses (CFA), were used to confirm the four dimensions of burnout. We compared a three-factor model with a four-factor model. We used two alternative models: a three-factor model (M_1) which assumed the traditional three dimensions of burnout, and a four-factor model (M_2) which assumed four burnout dimensions.

As seen in Table 3.4, M_2 (four dimensions) fits better than M_1 (three dimensions). On the basis of the modification indexes, we may improve the fit of the four-factor model by allowing one pair of errors to correlate from the emotional exhaustion dimension, one pair of errors to correlate from the cynicism dimension, and three pairs of errors to correlate from the professional efficacy dimension, as seen in the model M_{2R} (see Figure 3.2). Finally, we can confirm the Hypothesis 4, because the four-dimension model composed by emotional exhaustion, cynicism, depersonalization and lack of professional efficacy (M_2) fits better than a model composed by the three traditional dimensions, in which there are no differences between depersonalization and cynicism (M_1).

Table 3.4.

Confirmatory Factor Analyses (N =170)

Model	χ^2	df	GFI	AGFI	RMSEA	TLI	CFI	IFI	$\Delta\chi^2$	Δ df
M₁	557.14	167	.72	.64	.12	.67	.71	.72		
M₂	353.70	164	.82	.77	.08	.84	.86	.86	M ₂ -M ₁ = 203.44***	3
M_{2R}	266.09	159	.86	.82	.06	.91	.92	.92	M _{2R} - M ₁ =291.08***	8
									M _{2R} -M ₂ =87.61***	5

Note. χ^2 = Chi-square; df=degrees of freedom; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; RMSEA = Root Mean Square Error of Approximation; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index. All the χ^2 differences between the models were statistically significant at ***p < .001. M₁= Three-factor model; M₂= Four-factor model; M_{2R}= Revised four-factor model.

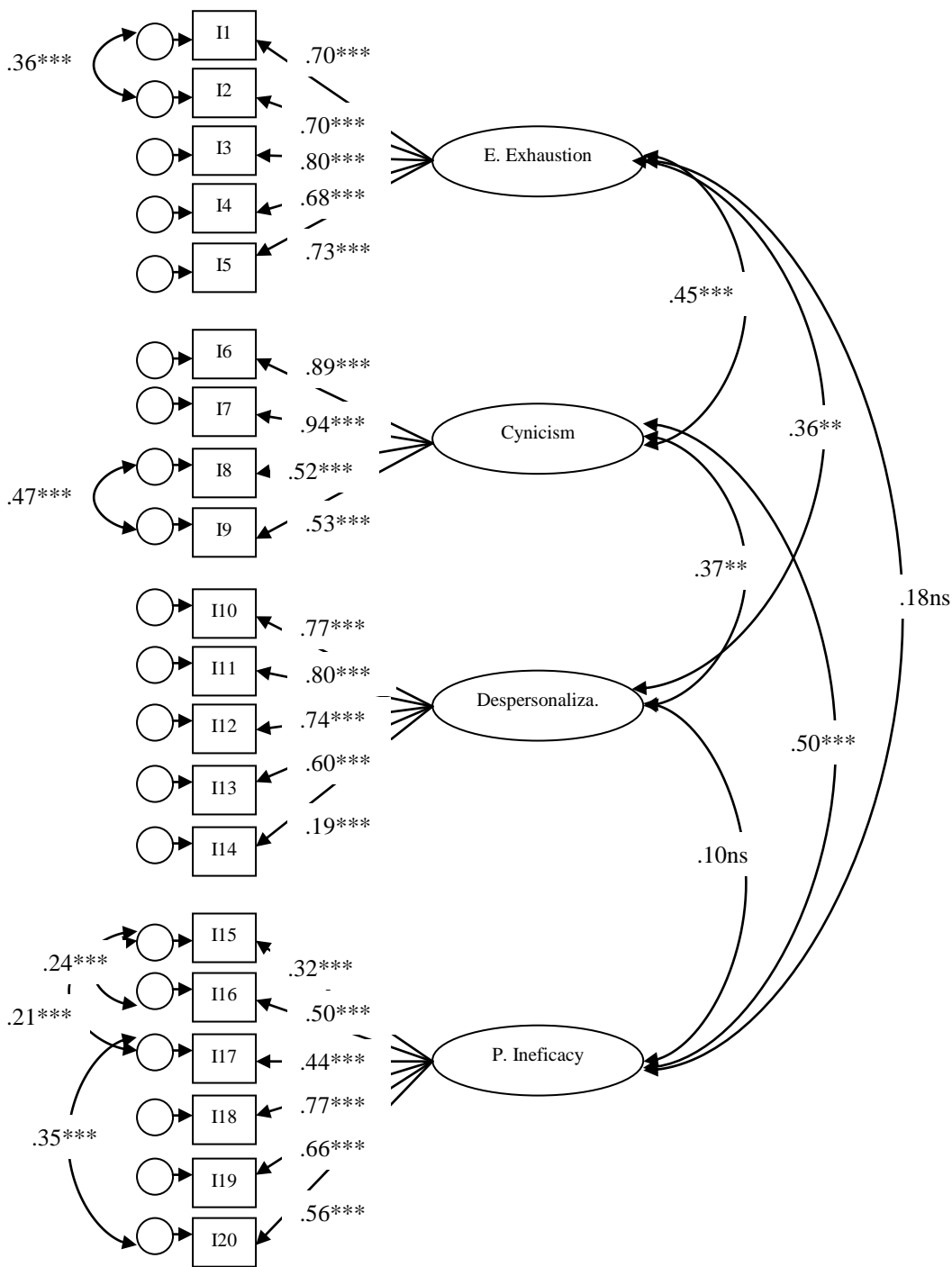


Figure 3.2: Confirmatory Factor Analyses (M_{2R})

Discussion

This study had three objectives. Firstly, although most university faculty members perform teaching, research and management tasks, not all of them dedicate the same amount of time to all these tasks. Our first objective was therefore to test whether different work profiles exist among university faculty members, taking into account the percentage of time that they dedicate to each of their three tasks (i.e., teaching, research and management). Secondly, and once we know how many work profiles there are, our aim was to test whether different work profiles of university faculty members relate with the experience of well-being at work (i.e., burnout, work engagement and intrinsic job satisfaction). And thirdly, we sought to confirm the four-factor structure of burnout (i.e., emotional exhaustion, depersonalization, cynicism, and lack of professional efficacy).

Thus, first, we have demonstrated that, in fact, although the triple work profile applies to most of our sample of university faculty members, the distribution of the three tasks within this profile is not equal in all them. Consequently, different work patterns were found to exist and were tested by a K-means cluster analysis. As already mentioned, we tested the two-cluster, three-cluster and four-cluster solutions. We also tested these solutions, and no others, because our initial aim was to confirm that there were three clusters that correspond to the triple work profile (i.e., teaching, research and management). Thus, in order to cover more possibilities, we tested two more solutions with one more cluster and one less cluster. For us, clusters make sense if there is a task in each of them that takes up more than 50% of the time spent. The four-cluster solution offers a better interpretation because this solution fits the university faculty members' job better.

Second, we tested whether these different work profiles of university faculty members are related to the experience of well-being at work (i.e., burnout, work engagement and intrinsic job satisfaction). Although differences were only significant for the absorption and intrinsic satisfaction dimensions, Figure 3.1 shows that there were differences and that these differences (i.e., percentage differences) are, generally speaking, in line with what we expected in hypotheses 2 and 3, i.e., those university faculty members whose management tasks dominate their work pattern present the highest values in burnout and the lowest in engagement and intrinsic satisfaction. In contrast, university faculty members whose research tasks dominate their work pattern present the lowest scores for burnout and the highest for engagement and intrinsic satisfaction. This also agrees with what other authors such as Caramés (2003) or Currie (1996) have postulated. Moreover, it is in line with Gozalo and León (1999), who stated that university faculty members may feel more satisfied with their work when they spend more time on research tasks, partly because the role of researcher is of great importance nowadays. Conversely, Winefield et al. (2003) proposed that stress in university faculty members has increased because they have to conduct higher quality research in order to obtain more external resources for the university. And also we agree with Oshagbemi (1997) when he said that a research task is, in addition to a source of satisfaction, a cause of dissatisfaction among university faculty members, not because of the task per se, but because of the individual's inability to allocate enough time to research.

Finally, we confirmed a four-dimensional structure of burnout in our sample, composed of emotional exhaustion, depersonalization, cynicism, and lack of professional efficacy. We firmly believe that the differentiation between

depersonalization and cynicism is necessary for university faculty members since they may experience cynicism toward their work as teachers, researchers and managers, but might also experience depersonalization toward students, coworkers or service staff. Although both dimensions are part of the same process, “mental distance”, it can not be confused or treated as equals, both dimensions are measured with different items and they refer to different aspects. In this way there are jobs in which only appear cynicism, for example, telework, and others jobs in which appear both dimensions, such as teachers. And therefore, we assume different consequences for workers who suffer cynicism, and workers who suffer depersonalization. Although we believe that four dimensions make the construct more complex, we feel it is completely necessary. Moreover, the four dimensions mentioned above have already been confirmed by Salanova et al. (2005) in two samples made up of 483 secondary-school teachers and 474 blue-collar workers.

Regarding the theoretical and practical implications, we agree with Johnsrud (2008) when she states that university faculty members are important because of the work they do, since they transform individual lives and improve the quality of life of the entire society, and hence the importance of studying this population. And we also agree with Guerrero and Vicente (1999) when they stated that it is necessary to conduct studies about university faculty members’ work. According to these authors, it is important to study the multiple roles of this particular group and the discrepancies between excessive demands and the limited personal, material and institutional resources available.

However, this study is not without its limitations. The first one is the cross-sectional nature of the study, although the first two objectives of the studies are

essentially exploratory. In this study we described that there are different working patterns and that such patterns have different levels of well-being. Of course it is necessary to confirm these four work patterns at other universities, whether Spanish or international, and to analyze the well-being in each work pattern in other samples. Second, observations were based solely on self-reports, which might have inflated the relationships among the variables. Harman's single-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) was therefore conducted, the results showing that one single factor could not account for the variance in the data ($\Delta \chi^2 (3) = 81.97 p < .001$). So, common method bias is not a major drawback in this study. The third limitation is perhaps related to the sample size, since only a small percentage (18%) of university faculty members completed the scale. Moreover, we used a convenient sample and then included all the university faculty members so that they all had the chance to respond to the scale. This method is possibly not the most effective in terms of sample collection and we could have used another type of sampling, perhaps it would be more effective a random sampling in which we had chosen a number of teachers in each area or department, so we make sure that a large representation of the total sample exists, and also we could have done a thorough monitoring of the filling out of the questionnaire. Furthermore, the ANOVA showed that the work pattern produces significant differences in intrinsic satisfaction and absorption, but the size of the effects that were measured ($\eta^2 = .056$; $\eta^2 = .048$) is low. This may be due to the relatively large sample size for the ANOVAs. Although not all the ANOVA values are significant, we can see clearly in Table 3.3 and Figure 3.1 that the optimal values for the university faculty members are in the cluster dominated by research tasks.

Regarding future research, we think that an interesting future research could be to ask university faculty members about their tasks preferences (i.e., teaching, research, and management) and to test how the preferred and true work profiles jointly influence their well-being and motivation. In addition, it is important to perform cluster analyses in other universities by analyzing the work situation in which there are other national and international faculty members. Moreover, we believe it is important to continue checking whether it makes sense to analyze the four dimensions of burnout in different samples. Moreover, it would be interesting to study if both dimensions of mental distance have different roles in the process of burnout.

Final Note

This study shows not only the reality of the triple work profile among most of the university faculty members in our sample, but also how the distribution of this triple work profile is not equal among all the faculty members, since there are four types of work patterns depending on the task which takes up the greatest amount of time. And most importantly, these members' absorption and intrinsic satisfaction depend on the work pattern. In addition, this study has confirmed that among university faculty it makes sense to talk about the four dimensions of burnout by differentiating between depersonalization and cynicism.

Chapter 4

The Predicting Role of Personal Resources in the Job-Demands Resources Model: A Longitudinal Study

Summary

Taking Albert Bandura's *Social Cognitive Theory* as our starting point, we analyzed the predicting role of personal resources (i.e., self-efficacy, perceived mental and emotional competences) in the *Job Demands-Resources Model*. We tested longitudinally the two underlying psychological processes, namely: 1) the motivational process, in which job resources foster engagement, and 2) the erosion process, in which high job demands lead to burnout. Structural equation modeling in a sample of 274 secondary-school teachers confirmed both psychological processes as well as the powerful predicting role of personal resources that positively influence work engagement and negatively influence job burnout over time. Finally, we discuss the theoretical findings and the practical implications, mainly in terms of the *Social Cognitive Theory*.

Several past studies have confirmed the popular idea that teaching is a stressful job. For instance, teachers can feel emotionally overloaded (e.g., they are required to be involved with students, parents, society, etc.). They also suffer from role ambiguity because sometimes they do not know what is expected of them by the school, students, parents or even society in general, and role conflict, due to the fact that teachers receive conflicting instructions about tasks they are expected to perform in their work. They are often demotivated by the work they do with their students, by the apathy these latter frequently express and by often being the target for their students' acts of indiscipline (Salanova, 2003). They also have problems with the low levels of resources they have available to them and with high administrative constraints (González-Morales, Rodríguez, & Peiró, 2010), as well as feeling a lack of support from colleagues (Browsers & Tomic, 2001a). But teachers also enjoy positive emotions and experiences at work; for example, they can have good relationships with students; they are recognized by others as being a good teacher; they feel proud of having been able to cope with a difficult student, and they also feel gratitude, trust and that they are valued by parents (Marchesi & Díaz, 2007). Moreover, they are content and enthusiastic about their work and they also find it rewarding and satisfying (Hakanen, Bakker, & Schaufeli, 2006).

However, and looking into past research on teachers in the field of Occupational Health Psychology, more studies have been conducted on the negative side of teaching (i.e., teaching burnout, stress and anxiety) than on the positive side (i.e., engagement, satisfaction, positive emotions). For instance, a search on the PsycFirst, where peer-reviewed journals are considered, we find that of the 134 articles about teachers and

burnout that have appeared over the last ten years, only 46 focus on teachers and engagement¹.

Thus, we currently know more about the negative side of teachers' well-being and, consequently, it seems interesting to carry out more research on secondary-school teachers that addresses not only the negative part of their jobs, such as burnout (e.g., Schaufeli & Enzmann, 1998; González-Morales et al., 2010), but also the positive aspects such as engagement (e.g., Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Hence, in this study, the two sides (i.e., positive and negative) of well-being are both considered, but more attention is also paid to the positive side from two points of view. The first of these two perspectives is by testing whether job resources negatively influence job burnout, as other studies have shown (e.g., Hakanen et al., 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006; Schaufeli & Bakker, 2004) and the second – and this is what makes this work original – is the inclusion of personal resources into the *Job Demands-Resources Model (JD-R)* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) from the perspective of the *Social Cognitive Theory (SCT)*.

Theoretical background: an integration of the JD-R Model and the SCT

The origins of the *JD-R Model* date back to some balanced models of job stress, such as the *Demands-Control Model* by Karasek (1979), where job stress is caused by high job demands and low job control. According to Bakker and Demerouti (2007), the *Demands-Control Model* has some weaknesses, for example, the complex reality of working organizations is reduced to only a handful of variables, and this simplicity does no justice to reality. The second weak spot is the static nature of the model: these models do not leave room for the integration of other workplace factors that can be

¹ Research conducted on PsycInfo in April 2010. Keywords were Teachers and Burnout (separately, in title field) and Teachers and Engagement (separately, in title field), both limiting the number of results to those from the period 2000-2010 and peer-reviewed journals.

related to well-being. In other words, and as Hakanen and Roodt (2010) explained, job resources and demands may vary in content and in nature from one work setting to another. The *JD-R Model* takes this argument one step further and creates a heuristic model that includes two specific sets of working conditions, job demands and job resources, in its prediction of employee well-being.

At the heart of the *JD-R Model* lies the assumption that, whereas every occupation may have its own specific risk factors associated with job stress, these factors can be classified into two general categories (i.e., job demands and job resources). Job demands refer to “those physical, social, or organizational aspects of the job that require sustained physical and/or psychological (i.e., cognitive and emotional) effort on the part of the employee, and are therefore associated with certain physiological and/or psychological costs” (Demerouti et al., 2001, p. 501). Job demands may become stressors in situations that require a large effort to sustain an expected performance level, which can lead to negative responses being elicited and even burnout. Job resources refer to “those physical, psychological, social, or organizational aspects of the job that may (a) reduce job demands and the associated physiological and psychological costs, (b) are functional in achieving work goals, and (c) stimulate personal growth, learning and development” (Demerouti et al., 2001, p. 501). Job resources may be located on different levels: organization, interpersonal and social relations, organization of work and tasks. Moreover, resources are not only necessary to deal with job demands, but they also are important in their own right, and this is in line with the *Conservation of Resources Theory* (Hobfoll, 2001), which states that the main human motivation is the maintenance and accumulation of resources. Therefore resources are valued for what they are and also because they are a means of achieving or protecting other valuable resources.

Bakker and Demerouti (2007) also emphasized a second premise of the *JD-R Model*: there are two different underlying psychological processes that play a role in the development of job strain and motivation. Firstly, there is the health impairment or erosion process, in which poorly designed jobs or chronic job demands exhaust employees' mental and physical resources and may therefore lead to the depletion of energy and health problems. Secondly, we find the motivational process, whereby it is assumed that job resources have motivational potential and lead to high work engagement, low cynicism, and excellent performance.

This model is continuously growing, and this development includes not only an increase in the number of both job demands and resources, but also a significant qualitative change, when Xanthopoulou, Bakker, Demerouti and Schaufeli (2007) expand the *JD-R Model* by examining the relationship between personal resources and the model's processes.

We understand personal resources as aspects of the self that are generally linked to resiliency and refer to individuals' sense of their ability to control and have an impact on their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Xanthopoulou et al. (2007, 2009) included three personal resources in their studies: self-efficacy, organizational-based self-esteem, and optimism; Xanthopoulou, Bakker, Heuven, Demerouti, and Schaufeli (2008) also included state work-related self-efficacy. All studies showed that personal resources played a significant and a mediating role in the *JD-R Model*. For instance, Xanthopoulou et al. (2007) showed that personal resources together with job demands and job resources help to explain variance in exhaustion and work engagement. In their model, they argued that personal resources mediated the relationship between job demands and resources, on the one hand, and burnout and engagement, on the other.

In the same line, Lorente, Salanova, Martínez, and Schaufeli (2008) also added personal resources (i.e., perceived mental and emotional competences) to the *JD-R Model*. But, although the studies by Xanthopoulou et al. (2008, 2009) and Lorente et al. (2008) are longitudinal and the relationship between job and personal resources and work engagement is studied, there is an important difference between them. This distinction is the role played by personal resources in the *JD-R Model*, which can have a mediating (Xanthopoulou et al., 2008, 2009) or a predicting role, although Lorente et al. (2008) found that the role of personal resources as a significant predictor disappears when controlling for baseline levels of burnout and engagement at T1. Xanthopoulou et al. (2008, 2009) also showed a reciprocal relationship between personal resources, job resources and work engagement. Therefore, the aim of this study is to test the role of personal resources (i.e., self-efficacy, perceived mental and emotional competences) in the *JD-R Model*, as a simultaneous predictor of both underlying processes, i.e. the motivational and the erosion process, by considering the theoretical predictions of the *SCT*. We start from the assumption that efficacy beliefs play a predicting role and not a mediating role, since the *SCT* efficacy beliefs are considered to be predictors of human behavior, motivation and even of how we feel in different contexts, including the workplace. According to Bandura (2001) and regarding our own behavior, we tend to choose those tasks that we are able to do and avoid those which exceed our capabilities. Efficacy beliefs also determine the amount of effort spent on dealing with obstacles and the amount of time or persistence invested in trying to achieve something. Low levels of self-efficacy are associated with early retirements, while high levels involve effort and perseverance.

Moreover, efficacy beliefs also affect our thoughts and feelings, that is, what we think about ourselves and how we feel. Hence, people who are considered inefficient

in coping with the demands of the environment, exaggerate the magnitude of their deficiencies and the potential difficulties of the medium. These negative thoughts generate stress and hinder the use of available resources, while people who perceive themselves as efficacious focus their efforts on the demands that may arise from situations and strive to resolve them correctly. In this regard, research has shown that self-efficacy is associated with persistence, commitment, satisfaction with the actions we perform and human motivation (Llorens, Schaufeli, Bakker, & Salanova, 2007; Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010).

Moreover, in this study not only self-efficacy is taken into account as a personal resource – perceived mental and emotional competences are also included. At this point, it is important to clarify the difference between perceived competence and self-efficacy, because although efficacy beliefs are a key factor in perceived competences, there are differences between them. Self-efficacy is concerned not with the competences that we think we have, but with judgments of what we can do in the future, with whatever skills we possess (Bandura, 1986). Perceived competences (i.e., mental and emotional) are concerned with feelings of efficacy related to current competences to perform mental or emotional tasks at work, and so they are related to being efficacious in the present. And both types of perceived competences (i.e., mental and emotional) are two typical personal resources among teachers (Lorente et al., 2008).

Teachers' well-being: burnout and engagement

Teachers represent the largest homogeneous occupational group to have been investigated in burnout research, comprising 22% of all samples (Schaufeli & Enzmann, 1998). However, although a considerable amount of research has been devoted to studying teacher burnout in recent studies, it is still unclear exactly what the best way to help teachers prevent burnout is (Lambert & McCarthy, 2006). According to McCarthy,

Lambert, O'Donnell, and Melendres (2009), this may be because job burnout studies over the past 30 years have focused on workplace conditions (e.g., lack of job role specification, layoffs) as the cause of burnout rather than on intra- and interpersonal factors. This is why, in this article, we have focused not only on workplace conditions like quantitative overload and autonomy, but also on personal (i.e., personal resources) and interpersonal factors (i.e., role conflict and social climate) in the prediction of teacher burnout.

It is important to note that recent research on burnout considers the inclusion of the structure based on four dimensions of burnout (i.e., emotional exhaustion, depersonalization, cynicism, and lack of professional efficacy) confirmed by Salanova et al. (2005). According to these authors, it became necessary to differentiate between depersonalization and cynicism when the definition of burnout was extended to workers who are not in contact with clients/customers. Depersonalization necessarily implies the presence of other people and therefore it can have no meaning outside social relations. However, cynicism can appear without any social relations. Thus, Salanova et al. (2005) understand both dimensions as indicators of a second-order factor called mental distance “toward work” (cynicism) and mental distance “toward fellow workers and the people for whom one works”, like students, clients, patients, etc. (depersonalization). We believe that this differentiation is also necessary among teachers, as they may suffer cynicism toward their teaching work but also feelings of depersonalization toward their students, coworkers and/or supervisors.

Moreover, from a conceptual point of view, instead of a genuine burnout dimension, lack of professional efficacy has been considered to be similar to a personality construct (Cordes & Dougherty, 1993; Shirom, 2003). Some etiological models also posit that burnout develops out of feelings of inefficiency and that it can

therefore be considered a crisis of professional efficacy. For example, Cherniss (1980, 1993) assumes that the lack of trust in one's own competences is a critical factor in the development of burnout. Leiter (1992) also regards burnout as essentially an "efficacy crisis". Research confirms the etiological role that lack of professional efficacy plays in the development of burnout (Llorens, García, & Salanova, 2005; Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003; Salanova, Peiró, & Schaufeli, 2002; Van Dierendonck, Schaufeli, & Buunk, 2001).

Finally, it is interesting to remark that most teachers are not anxious, stressed, unmotivated, or burnt out and, quite to the contrary, the vast majority are content and enthusiastic and find their work rewarding and satisfying (Hakanen et al., 2006). As we mentioned above, compared with the studies about negative well-being among teachers, positive well-being has not been studied so much in past research (Hakanen et al., 2006; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008) as, for example, teacher engagement. Work engagement is defined by Schaufeli, Salanova, González-Romá, and Bakker (2002) as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 72). Engagement refers to a persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior. As in the case of burnout, here we have used the core of engagement (i.e., vigor and dedication).

Work engagement has emerged as a potentially important employee performance and organizational management topic. A growing body of evidence supports the relationship between engagement of the employee at work and organizational outcomes (Simpson, 2009). So, work engagement has positive consequences at the individual and organizational levels. For instance, in teachers, work engagement is predictive of classroom performance (Bakker & Bal, in press), has predicting value for organizational

commitment (Hakanen et al., 2006), and is positively associated with self-rated health and working ability (Hakanen, 2002).

Moreover, work engagement has been widely studied within the *JD-R Model*, and there are several studies that underline engagement as a result of both job and personal resources. For instance, Bakker, Schaufeli, Leiter, and Taris (2008) concluded that engagement is a unique concept which is best predicted by job and personal resources. Salanova et al. (2010) clearly summarize the latest findings about work engagement from three theoretical perspectives (i.e., *Conservation of Resources, SCT, and Broaden-and-Build theory*), concluding that there are reciprocal and positive relationships among resources and engagement. These same authors also speculated that there is a positive cycle that includes job resources, personal resources, positive emotions, work engagement and enhanced performance.

The current study

In this study we will test the *JD-R Model* by including personal resources as a predictor of the motivational and erosion processes, and following the *SCT*. Based on previous research (Llorens et al., 2005; Salanova et al., 2003), we included two of the main job demands of teaching occupations: quantitative overload, and role conflict, and the most important teaching job resources (i.e., job autonomy and social support climate). Finally, we also included three personal resources: self-efficacy and perceived mental and emotional competences based on the *SCT*.

Thus, the purpose of this study is to test the *JD-R Model* (Demerouti et al., 2001) and to explain how job demands and resources influence teachers' well-being (i.e., burnout and engagement) over time by examining the predicting role of personal resources within the framework of the *SCT*. Accordingly, our hypotheses are:

H₁: Personal resources predict engagement indirectly via job resources over time.

Specifically we expect that:

H_{1a}: Feeling high in personal resources at T1 has a positive, but indirect, influence on engagement at T2 via job resources (T1 and T2). The higher personal resources are, the higher job resources and engagement over time.

H₂: Personal resources predict burnout indirectly via job demands and resources over time.

Specifically we expect that:

H_{2a}: Feeling high in personal resources at T1 has a negative, but indirect, influence on burnout at T2 via T1 and T2 job demands. The higher personal resources are, the lower job demands and burnout over time.

H_{2b}: Feeling high in personal resources at T1 has a negative, but indirect, influence on burnout at T2 via T1 and T2 job resources. The higher personal resources are, the higher job resources and the lower burnout over time.

Method

Participants and procedure

A longitudinal study was performed among Spanish secondary-school teachers. This longitudinal study had two waves, the first one (T1) at the beginning of the academic year, and the second one (T2) eight months later at the end of the academic year. In order to obtain our sample, we sent a letter to 600 secondary teachers from 50 secondary schools explaining the purpose of the research, together with the self-report questionnaires. Teachers interested in participating in our study only had to return the completed questionnaire. At T1, it was returned by 484 teachers from 34 schools, while at T2, after resending the questionnaire out to be completed again, it was completed by 274 teachers (57% women and 43% men) from 23 schools. Thus, the final sample was

composed of 119 men (43%) and 155 women (57%) with a mean age of 40 years (SD = 7.01).

To control for potential selection bias due to panel loss, we examined whether teachers from the panel group (N = 274) differed from the dropouts (N = 210) with respect to their baseline levels on the study variables. Results of multivariate analyses of variance showed that the two samples did not differ in terms of their demographic characteristics, that is, age: $F(1, 482) = .27, p = .61$; gender: $F(1, 482) = .01, p = .91$; type of school (private vs. public): $F(1, 482) = 2.05, p = .15$; teaching experience: $F(1, 482) = 2.37, p = .13$; organizational tenure: $F(1, 482) = 1.63, p = .20$, or in the other variables of the model, namely, personal resources: $F(1, 482) = 2.64, p = .11$; job resources: $F(1, 482) = .16, p = .69$; burnout: $F(1, 482) = 2.85, p = .92$; and work engagement $F(1, 482) = 2.38, p = .12$. Although in the case of job demands $F(1, 482) = 6.65, p = .01$; there were significant differences, taken as a whole there are no major differences in the results, and thus there is no selection bias in this study.

Instruments

Job demands. *Quantitative overload* was measured with the questionnaire by Beehr, Walsh and Taber (1976), which includes three items (e.g., “*I have too much work to be able to do it absolutely well*”). *Role conflict* was measured using the eight-item scales by Rizzo, House and Lirtzman (1970) (e.g., “*Doing things with which I disagree*”). Items on both scales were scored according to a seven-point Likert format (0 = not described at all; 6 = fully describes).

Job resources. *Autonomy* was measured using the questionnaire by Jackson, Wall, Martin and Davis (1993) consisting of five items (e.g., “*I can decide what tasks I will do everyday*”). We measured *climate* using the FOCUS questionnaire (Van Muijen et al., 1999). Support climate was measured by three items (e.g., “*People help each*

other to finish the work correctly”). Goals climate was measured by three items (e.g., *“The targets to be achieved over a period of time are clearly defined”*). Innovation climate was measured by three items (e.g., *“New ideas are implemented to improve work”*). And, finally, rules climate was measured by three items (e.g., *“Work is highly regulated”*). Items on all scales were scored according to a seven-point Likert format (0 = not described at all; 6 = fully describes).

Personal resources. *Self-efficacy* was measured with a specific version of the generalized self-efficacy scale (Schwarzer, Schmitz, & Daytner, 1999) that was adapted to the work context. The 10 items were reworded to fit the work-specific situation (e.g., *“I can solve difficult problems in my work if I try”*). *Perceived mental and emotional competences* were measured with self-constructed questionnaires consisting of three and seven items, respectively. We reworded the items that make up the scale of mental and emotional demands by Van Veldhoven & Meijman (1994) to construct this scale, which enabled us to identify the competences required to face these demands. Finally, three items measured perceived mental competences (e.g., *“I feel competent to work with a lot of written information”*) and seven items measured perceived emotional competences (e.g., *“I feel competent to listen to others actively”*). The items of all scales were scored according to a seven-point Likert format ranging to 0 (not at all) to 6 (totally).

Burnout. The three dimensions were measured using different versions of the Maslach Burnout Inventory (MBI). Exhaustion and cynicism were measured using the Spanish version (Salanova, Schaufeli, Llorens, Peiró, & Grau, 2000) of the MBI-GS (Schaufeli et al., 2002) using five (e.g., *“I am emotionally exhausted by my work”*) and four items (e.g., *“I have lost interest in my work since I began this job”*) respectively. And we used the five-item MBI-HSS scale by Maslach, Jackson and Leiter (1996) to

measure depersonalization (e.g., “*I really do not mind what will happen to some people who I must work for in my work*”). The items of the dimensions were scored according to a seven-point Likert format ranging to 0 (never/not at all) to 6 = (always/everyday).

Work Engagement. The vigor and dedication dimensions were measured using the Spanish adaptation (Salanova et al., 2000) of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002) made up of six items that measure vigor (e.g., “*In my work, I feel full of energy*”) and five for dedication (e.g., “*My work is challenging*”). The items of the dimensions were scored according to a seven-point Likert format ranging from 0 (never/not at all) to 6 (always/everyday).

Data analyses

First, we performed descriptive analyses by computing the mean, standard deviation and internal consistency for each scale and their intercorrelations. Second, we employed structural equation modeling (SEM) techniques using the AMOS software package (Arbuckle, 2005) to test our research model (see Figure 4.1). The goodness-of-fit of the models was evaluated using absolute and relative indexes. The three absolute goodness-of-fit indexes that were calculated were: (1) the χ^2 goodness-of-fit statistic; (2) the Goodness-of-Fit Index (GFI); and (3) the Root Mean Square Error of Approximation (RMSEA). Additionally, we computed a relative index: Comparative Fit Index (CFI). Because the distribution of the GFI is unknown, no statistical test or critical value is available (Jöreskog & Sörbom, 1986). Values below .06 for the RMSEA are indicative of an acceptable fit (Hu & Bentler, 1999), whereas a cut-off value close to .95 for CFI is considered to indicate an adequate model fit (Hu & Bentler, 1999). And, third, we performed additional analyses in order to confirm the role of personal resources in the *JD-R Model* without the influence of other variables.

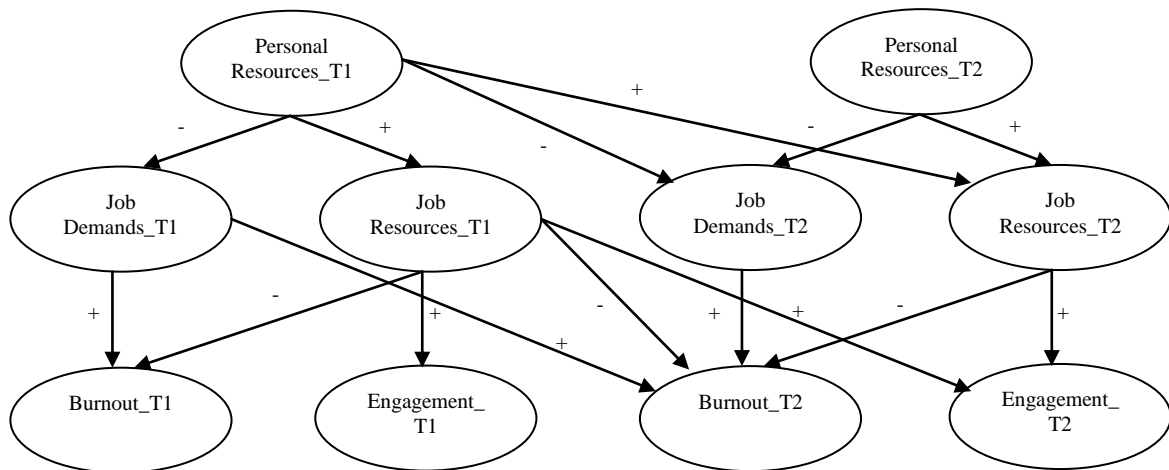


Figure 4.1: Research Model

Results

Descriptive analyses

Means and standard deviations between the variables, along with the internal consistencies of the scales, are presented in Table 4.1. Moreover, the same table shows all the correlations, which were significant and in the expected direction. Therefore, the higher personal resources are at both times, the higher job resources and engagement will be at both times, and the fewer job demands and less burnout there will be at both times

Table 4.1
Descriptive statistics for all the study variables (N = 274)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	3.93	0.87	.92	.65**	.41**	.32**	.50**	.48**	-.12*	-.25**	-.18**	-.19**	.28**	.33**	.23**	.25**	-.36**	-.30**	-.19**	-.17**	-.45**	-.36**	.43**	.35**	.43**	.48**
2	4.02	0.81		.94	.37**	.40**	.49**	.59**	-.15*	-.23**	-.22**	-.28**	.25**	.31**	.19**	.29**	-.27**	-.29**	-.14*	-.23**	-.36**	-.41**	.39**	.47**	.51**	.38**
3	4.19	0.72			.67	.52**	.50**	.39**	-.17**	-.15*	-.10	-.18**	.19**	.17**	.24**	.20**	-.26**	-.21**	-.22**	-.15*	-.23**	-.23**	.48**	.41**	.37**	.41**
4	4.16	0.80				.77	.43**	.59**	-.03	-.13*	-.04	-.12	.10	.13*	.17	.12*	-.15*	-.13*	-.11	-.18**	-.20**	-.22**	.37**	.47**	.36**	.30**
5	3.98	0.71					.81	.66**	-.12*	-.15*	-.04	-.05	.14*	.15*	.14*	.13*	-.28**	-.26**	-.24**	-.23**	-.35**	-.32**	.45**	.41**	.43**	.50**
6	3.96	0.72						.83	-.10	-.17**	-.03	-.09	.15*	.16**	.18**	.23**	-.16**	-.18**	-.19**	-.24**	-.29**	-.30**	.37**	.50**	.48**	.35**
7	2.66	0.67							.93	.61**	.35**	.35**	-.22**	-.15*	-.14*	-.10	.40**	.41**	.19**	.20**	.20**	.24**	-.14*	-.04	-.03	-.08
8	2.58	1.44								.91	.30**	.45**	-.24**	-.19**	-.22**	-.18**	.36**	.43**	.13*	.20**	.26**	.29**	-.22**	-.16**	-.13*	-.18**
9	2.54	1.17									.82	.65**	-.19**	-.20**	-.23**	-.20**	.26**	.23**	.35**	.26**	.24**	.32**	-.15*	-.08	-.15*	-.13*
10	2.5	1.15										.84	-.19**	-.24**	-.24**	-.25**	.24**	.24**	.29**	.28**	.23**	.32**	-.17**	-.11	-.13*	-.14*
11	4.24	1.18											.91	.60**	.18**	.21**	-.15*	-.15*	-.07	-.05	-.09	-.06	.20**	.21**	.18**	.20**
12	4.11	1.18												.93	.12*	.20**	-.18**	-.13*	-.09	-.04	-.14*	-.11	.25**	.24**	.28**	.24**
13	3.57	.86													.88	.70**	-.19**	-.19**	-.12*	-.04	-.13*	-.19**	.14*	.15*	.16**	.17**
14	3.42	.92														.91	-.17**	-.18**	-.10	-.12	-.13*	-.21**	.11	.18**	.22**	.15*
15	2.11	1.06															.87	.77**	.30**	.15*	.52**	.47**	-.40**	-.29**	-.32**	-.35**
16	2.21	1.18																.81	.24**	.26**	.44**	.59**	-.33**	-.33**	-.32**	-.33**
17	1.07	0.82																	.63	.60**	.42**	.40**	-.22**	-.18**	-.23**	-.27**
18	1.06	0.75																		.64	.38**	.50**	-.23**	-.26**	-.29**	-.28**
19	1.71	1.16																			.83	.68**	-.38**	-.32**	-.47**	-.54**
20	1.75	1.23																				.85	-.37**	-.46**	-.55**	-.49**
21	4.12	0.93																					.83	.65**	.58**	.67**
22	4.06	0.93																						.85	.74**	.50**
23	3.88	1.13																							.90	.69**
24	3.86	1.10																								.89

Note: 1 = Self-efficacy T1; 2 = Self-efficacy T2; 3 = Mental competences T1; 4 = Mental competences T2; 5 = Emotional competences T1; 6 = Emotional competences T2; 7 = Quantitative overload T1; 8 = Quantitative overload T2; 9 = Role conflict T1; 10 = Role conflict T2; 11 = Autonomy T1; 12 = Autonomy T2; 13 = Climate T1; 14 = Climate T2; 15 = Exhaustion T1; 16 = Exhaustion T2; 17 = Depersonalization T1; 18 = Depersonalization T2; 19 = Cynicism T1; 20 = Cynicism T2; 21 = Vigor T1; 22 = Vigor T2; 23 = Dedication T1; 24 = Dedication T2. ***p < .001; **p < .005; *p < .05. Cronbach's alphas are on the diagonal.

Finally, in order to test that the common method variance bias is not a problem in this study, we performed Harman's single factor test with the CFA (e.g., Iverson & Maguire, 2000); results reveal that one single factor could not account for the variance in the data [T1 Delta $\chi^2(5) = 50.87$, $p < .001$; T2 Delta $\chi^2(5) = 57.36$, $p < .001$]. Consequently, our dataset apparently presents no problems in terms of common method variance at both waves (see Table 4.2).

Table 4.2

Confirmatory Factor Analyses (N = 274)

	T1						T2							
	χ^2	df	GFI	RMSEA	CFI	$\Delta\chi^2$	Δ df	χ^2	df	GFI	RMSEA	CFI	$\Delta\chi^2$	Δ df
M ₁	154.02	49	.92	.09	.87			169.82	49	.91	0.09	.88		
M ₂	103.15	44	.94	.07	.93	M2-M1= 50.87***	5	112.46	44	.94	0.07	.93	M2-M1= 57.36***	5

Note. M₁ = One-factor model; M₂ = Five-factor model.

Model testing

SEM methods, as implemented by the AMOS software program (Arbuckle, 2005) using Maximum Likelihood Estimation methods, were used to establish the relationships between the model variables. First, the Stability Model (M₁) was tested without cross-lagged structural paths but with temporal stabilities and synchronous correlations. Temporal stabilities were specified as correlations between the corresponding constructs at T1 and T2. M₁ estimates the total stability coefficient between T1 and T2 without specifying the variance in direct or indirect paths (Pitts, West, & Tein, 1996). Second, the fit of this stability model was compared to that of

three more complex models: (a) the Causality Model (M_2), which is identical to M_1 but includes additional cross-lagged structural paths from T1 personal resources to T2 job demands and to T2 job resources, as well as from T1 job demands to T2 burnout and from T1 job resources to T2 engagement; (b) the Reversed Causation Model (M_3) which is also identical to M_1 , but includes additional cross-lagged structural paths from T1 burnout to T2 job demands and from T1 engagement to job resources, as well as from T1 job demands and job resources to T2 personal resources; and (c) the Reciprocal Model (M_4), which includes all the paths of M_2 and M_3 . In addition, the measurement errors of the corresponding indicators of T1 and T2 were allowed to covary over time (Pitts et al., 1996). Finally we tested the constrained model (M_5), in which all the parameters are constrained in order to control for the stability between the constructs from T1 to T2. As we can see in Table 4.3, the best fit of the model is M_2 , and thus the causality model, which was improved by a covariance between the errors of perceived mental and emotional competences at both times. The final model can be seen in Figure 4.2, which shows how personal resources play a predicting role, especially in the case of the motivational process of the *JD-R Model*.

Table 4.3

Model fit (N = 274)

	χ^2	df	GFI	RMSEA	CFI	$\Delta\chi^2$	Δdf
M ₁	536.90	222	.85	.07	.90		
M ₂	477.15	218	.87	.07	.92	M ₂ -M ₁ = 59.75***	4
M ₃	500.86	219	.87	.07	.92	M ₃ -M ₁ = 36.04*** M ₃ -M ₂ = 23.71***	3 1
M ₄	471.97	216	.88	0.7	.92	M ₄ -M ₁ = 64.93*** M ₄ -M ₂ = 5.18 M ₄ -M ₃ = 28.89***	6 2 3
M _R	453.02	218	.88	0.6	.93	M _R -M ₁ = 83.88*** M _R -M ₂ = 24.13*** M _R -M ₃ = 47.84*** M _R -M ₄ = 18.95***	4 0 1 2
M ₅	447.48	224	.88	0.6	.93	M ₅ -M ₁ = 89.42*** M ₅ -M ₂ = 29.67*** M ₅ -M ₃ = 24.49** M ₅ -M ₄ = 18.95*** M ₅ -M _R = 5.54	2 6 8 2 6

Note: χ^2 = Chi-square; df = degrees of freedom; GFI = Goodness-of-Fit Index; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index. The $\Delta\chi^2$ differences between the models was statistically significant at ***p < .001; **P<.005 M₁ = Stability Model; M₂ = Causality Model; M₃ = Reversed Model; M₄ = Reciprocal Model; M_R = Revised Model; M₅ = Constrained Model.

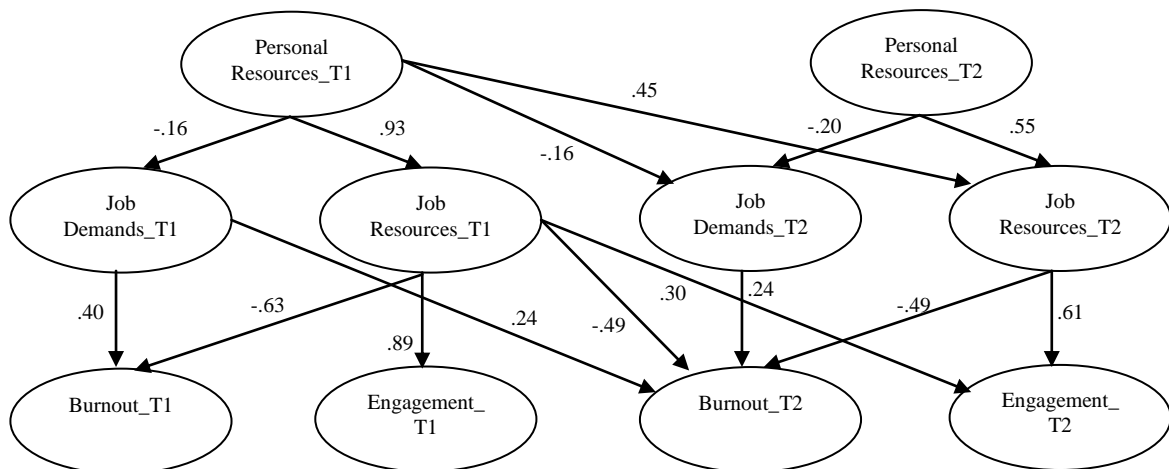


Figure 4.2: Model Testing (N = 274)

A closer look at the model shows that the paths representing the mediating role of personal resources (i.e., the path of personal resources at time 2 to job demands resources at time 1) are not significant, whereas the paths representing the predicting role of personal resources in job demands and resources are statistically significant (i.e., the path of personal resources at time 1 to job demands resources at time 2). Nevertheless, we decided to perform further analyses in order to confirm the role of personal resources without the influence of other variables in the model. For this reason, we conducted two more structural equation analyses, M_1 which is the mediating model (i.e., personal resources at time 2 fully mediates the relationship between job demands and resources at time 1 and burnout and engagement at time 2), and M_2 which is the predicting model (i.e., personal resources at time 1 predicts job demands and resources at time 2, that in turn predicts burnout and engagement at time 2). As shown in Table 4.4, where it can be seen how the predicting model of personal resources fits significantly better than the mediating model.

Table 4.4

Predicting vs. Mediating role of personal resources (N = 274)

	χ^2	df	GFI	RMSEA	CFI	$\Delta\chi^2$	Δdf
M_1	142.65	48	.92	.09	.89		
M_2	101.28	47	.94	.06	.94	$M_2-M_1 = 41.37^{***}$	1

Note: χ^2 = Chi-square; df = degrees of freedom; GFI = Goodness-of-Fit Index; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index. The $\Delta\chi^2$ differences between the models was statistically significant at $***p < .001$. M_1 = Mediating Model; M_2 = Predicting model.

Discussion

The purpose of this article was to test the capacity of the *JD-R Model* (Demerouti et al., 2001) to explain the impact that job demands and resources have on teachers' well-being (i.e., burnout and engagement) over time, and, more importantly, to examine the predicting role of personal resources within the framework of the *SCT*, in a longitudinal study of 274 secondary-school teachers at two waves.

Throughout this article we have shown that the literature agrees on the importance of introducing personal resources into the *JD-R Model* (e.g., Xanthopoulou et al., 2009). However, there are also contradictions in the literature as regards the role that personal resources play in the model. Some authors argue that personal resources have a mediating role in the *JD-R Model* (e.g., Xanthopoulou et al., 2009) while there are also authors who defend the idea, based on the *SCT*, that personal resources play a predicting role within the model (e.g., Lorente et al., 2008).

Our results show that personal resources play a predicting role more than a mediating role in the development of the motivational and erosion processes of burnout and engagement at work. And this predicting role has been demonstrated twice by the first SEM in which we took into account all the variables of the *JD-R Model* at the two times. As we can see in Figure 4.2, both of the paths that test the predicting role are significant whereas the paths that test the mediating role are not significant.

But in this study we also tested the predicting role by means of additional tests, in which the influence of other variables was eliminated and only the personal resources, the job demands and resources, and teacher well-being were tested longitudinally. These further analyses made the predicting role of personal resources very clear, in line with the *SCT*, which postulates that the beliefs about our capabilities and skills modify our perception of job demands and job resources. Thus, people with high personal resources

feel they have enough capacity and skills to meet any job demand and to recognize and know how to use the job resources that are also available.

We can therefore confirm our hypotheses, since teachers high in personal resources at T1 have a positive, but indirect, influence on engagement at T2 via job resources at both times. Hence, the higher personal resources are, the higher job resources and engagement over time (H_{1a} confirmed). Moreover, teachers high in personal resources at T1 have a negative, but indirect, influence on burnout at T2 via job demands at both times. Hence, the higher personal resources are, the lower job demands and the lower burnout over time (H_{2a} confirmed).

And finally, teachers high in personal resources at T1 have a negative, but indirect, influence on burnout at T2 via job resources at both times. Hence, the higher personal resources are, the higher job resources and the lower burnout over time (H_{2b} confirmed). As Llorens et al. (2006) explained, these results suggest that job resources influence well-being via two different ways: directly through increased engagement and indirectly by reducing burnout. The availability of personal and job resources therefore not only increases motivation but also protects subjects from burnout. And this is in accordance with recent findings showing that job resources moderate the effect of job demands on burnout (Bakker, Demerouti, & Euwema, 2005) and on engagement (Hakanen, Bakker, & Demerouti, 2005).

To sum up, we have already shown that the *JD-R Model* is parsimonious and capable of integrating a wide range of potential applications and resources, as well as strong theoretical backgrounds such as the *SCT*.

Theoretical contributions

This study has integrated two of the major theoretical perspectives in Occupational Health Psychology (i.e., the *JD-R Model* and the *SCT*) in teachers. It also

analyzes teacher well-being (i.e., teacher burnout and engagement) longitudinally in terms of personal and job resources as well as job demands.

Moreover, the important predicting role played by personal resources in the *JD-R Model* has been highlighted in this study, and it has reconfirmed what other authors (e.g., Hakanen et al., 2006) had claimed about the importance of job resources, which not only trigger engagement, but also reduce burnout. And this is in line with the two assumptions of the *Conservation of Resources (COR) Theory*. First, people invest their resources in order to deal with stressful conditions and prevent themselves from being affected by negative outcomes, so the *COR* theory predicts that those with greater resources are less vulnerable to stress. And second, people invest resources for several reasons: firstly, to protect themselves against future resource loss; secondly, to recover their resources; and finally, to gain new resources. So the *COR* theory predicts that those who possess more resources are also more capable of gaining resources (Salanova et al., 2010).

Implications for future research and for practice

It is important for future research to examine whether personal resources play a predicting role in the *JD-R Model* in other occupations, and also in other types of teachers, such as primary school teachers, university faculty members, and so forth.

Moreover, it would also be interesting to study this interaction between the *JD-R Model* and the *SCT* with more than two waves, in order to test whether our findings could be replicated. On the other hand, another valuable line of research would be to test the gain spirals of resources and work engagement that Salanova et al. (2010) discussed in their chapter. In this gain spiral, individuals with high levels of efficacy believe that they can control their environment effectively, and thus job demands are more likely to be perceived as challenging and job resources as abundant. Consequently,

individuals are more likely to be engaged in their tasks and perform well. And this constitutes a process of mutual reinforcement that may result in upward spirals.

With regard to practical implications, taking into account the fact that the sample consists of 274 teachers from 23 different schools (which is not small for a longitudinal study) we think that these results can be extended into the secondary teachers group. Hence, this study shows us how important it is to encourage high-resource teachers, which includes both personal resources as a source of well-being and job resources that help teachers to be more engaged in their work and therefore less liable to suffer from burnout. It might be a good idea to promote workshops in schools about increasing (mental and emotional) competences and self-efficacy in teachers.

Weaknesses and strengths of the study

The main limitation of this study is that observations were based solely on self-reports, which might have inflated the relationships among the variables. Although the longitudinal design overcomes some of the problems of common method variance, results of Harman's single-factor test (Podsakoff et al., 2003) in the expected five factors showed a best fit at both T1 and T2 (see Table 4.3). The common method bias is therefore not a major drawback in this study. Another limitation of the present study is that, although results can be extended into the secondary teachers group, there are limits to the generalizability of our results because we used convenience samples from a specific country (Spain).

But our study also has its strengths, the first of which is the use of longitudinal research designs that test the cross-lagged effects between two waves. Second, the test of the predictive role of personal resources was carried out using two types of structural equations, one within the *JD-R Model* and the second without the influence of the other variables. Finally, the sample is made up of 274 teachers from 23 different schools, so

we think that these results can be extended to the secondary teachers group.

Final Note

To sum up, the current study shows that personal resources play an important predictive role within the *JD-R Model* and in line with the assumptions of the *SCT*. Moreover, it stresses the importance of positive constructs such as job and personal resources in the *JD-R Model*, not only because they enhance engagement but also due to the negative influence they exert on job burnout over time.

Chapter 5

Self-efficacy among University Faculty:

How to Develop an Adjusted Scale

Summary

The aim of this study is to show the procedure carried out to develop a scale to measure specificity self-efficacy in one domain, i.e., university faculty, following the recommendations from Social Cognitive Theory by Albert Bandura. The created scale considers the triple work profile of university faculty (i.e., teaching, research and management). By using confirmatory factor analyses in a sample of 166 university faculty members, we found a superior fit for the three-factor model that corresponded with their triple work profile. Moreover, we found significant differences on research self-efficacy at the level of academic education, as the level of academic education increases, self-efficacy also increases. Finally, theoretical and practical implications, limitations of the study and future research are also discussed.

Efficacy beliefs are the beginning of the route that we wish to embark on. What we decide to do, the persistence that we display in it, and our decision to give up or to carry on greatly depends on the “beliefs in own capacities to organize, and to execute courses of action required to produce certain results” (Bandura, 1997, p. 3). Depending on how we see the horizon, we will walk. But when we began, we did not start from a void, we have baggage that modulates how we value the route. Bandura (1997) calls it sources of efficacy expectations, and postulated four: enactive mastery, vicarious experiences, verbal persuasion, and physiological and affective states.

People with high self-efficacy perceive troubles as challenges, are highly committed to the activities they carry out, invest a lot of time and effort in their activities, think strategically to solve difficulties, recover easily from failure or difficulty, feel they are in control of a majority of stressors and furthermore feel they are less vulnerable to stress and depression (Bandura, 1997).

Therefore, self-efficacy is a key construct to understand how people feel and perform at work. According to Bandura (1997), self-efficacy is a good predictor of the activities that we decide to carry out, persistence in performance, motivation, etc. Specifically in teaching, Prieto (2002) for instance, considers self-efficacy as a pivotal role in the study of university faculty. But to date, teaching self-efficacy has been overlooked in higher education (Burton, Bamberry, & Boundy, 2005).

With regard to higher education, university faculty must carry out different kinds of tasks that can be summarized in a triple work profile: teaching, research and management. This triple work profile has already been considered by several authors (e.g., Buena-Casal & Sierra, 2007; Chacón, Pérez-Gil, Holgado, & Lara, 2001; Cifre, Llorens, Salanova, & Martínez, 2003; Currie, 1996; Morrison, 1996; Vera, Martín Del Río, & Solanes, 2005).

The study of teacher self-efficacy is always next to the desire to measure it. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) identified two parallel lines of research in the study of perceived self-efficacy. First, the concept of teacher efficacy was initially used by RAND researchers (Armor, et al., 1976). The RAND Corporation conceived teacher efficacy as the extent to which teachers believed they could control the reinforcement of their actions. The second line of research was based on Bandura's *Social Cognitive Theory (SCT)*. In 1997, Bandura created his own Teacher Self-Efficacy Scale.

Several proposals have recently appeared, like the Teacher Interpersonal Self-Efficacy Scale by Brouwers and Tomic (2001b), the Teachers' Sense of Efficacy Scale by Tschannen-Moran and Woolfolk (2001), the Teacher Self-Efficacy by Schwarzer, Schmitz, and Daytner (1999), and finally the questionnaire developed by Prieto (2005) is of special interest as it was created to measure teaching self-efficacy in the university context.

But we followed Bandura's (2006) advice of creating a specific scale for our context of study, is very important to note that self-efficacy is specific of the context that is measured and not another, we must not create a general scale or scale for a profession in general because each context of work is different, and therefore if we used general scales, our information would can be biased. Bandura warns us of the need to make an exhaustive study of the domain so that each of the items of our self-efficacy scale reflects the real value of self-efficacy. So, this author criticized the use of general and nonspecific self-efficacy scales, and argued that it is futile to measure self-efficacy with a general scale because items of tests based on the general efficacy approach is of little or no relevance for the domain being studied. Furthermore, items of a global test are commonly designed in a global fashion, and are too ambiguous to know what is

being measured with any degree of accuracy. Self-efficacy scales must be adapted to our particular domain of interest and must reflect an exhaustive study of our chosen domain.

Bandura (2006) also explained us how to develop an adjusted scale and this is the method we have followed in this study.

The current study

We have already explained that scales of self-efficacy must be specific of the domain that will be measured, and hence, in this study we show the method carry out in order to create a scale for measuring specific self-efficacy following the recommendations by Bandura (2006). In this case we have created a scale to measure efficacy beliefs in university faculty taking into account the triple work profile.

This scale will be not used by other researchers in other different samples, but they can use the method followed in this study in order to construct their own self-efficacy scale, if they want to follow the recommendations of Social Cognitive Theory.

Moreover, once the scale has been created following the Guide to Constructing Self-Efficacy Scales (Bandura, 2006), we analyzed the developed scale so the first specific objective was to test that the scale consisted of three dimensions corresponding to the triple work profile (i.e., teaching, research and management). The second specific objective was to analyze the psychometric characteristics of the self-efficacy scale. And finally, the third specific objective was to study whether there were significant differences in self-efficacy among university faculty with regard to certain variables that showed significant differences in self-efficacy of several studies in the educational context (i.e., gender, work experience, tenure, level of academic education, marital status and having children).

With regard to gender, several research studies have shown that women score

higher in self-efficacy than men at the different levels of education (Anderson, Greene, & Loewen, 1988; Coladarci & Breton, 1997; Raudenbush, Rowen, & Cheong, 1992). The relationship between the work experience variable and self-efficacy is unclear, and studies with contradictory results exist. However, most of them seem to indicate that teachers who present a higher self-efficacy are those with little experience (Benz, Bradley, Alderman, & Flowers, 1992; Hoy & Woolfolk, 1990). With regard to work link, although we did not find studies that took into account differences in self-efficacy in university faculty in relation to work link, we considered the recommendation by Cifre, Llorens, and Salanova (2003) which considers the professional category of these populations at the time of study. Thus, we considered whether university faculty were state employees or not. In relation to levels of academic education, faculty with a higher level of academic education usually showed greater self-efficacy (Hoy & Woolfolk, 1993). Finally, social support has been demonstrated to have an impact on teacher self-efficacy (Brouwers, Evers, & Tomic, 2001). This accounts for knowing whether marital status and having children influence self-efficacy. For further information about the socio-demographic variables, see Prieto (2002).

Method

Participants and procedure

The sample comprised 166 faculty members of a Spanish university, which represents 17% of the total number of faculty members of that University (N=955). Basically, Spanish university faculty may be divided into two large groups, state employees (tenured lecturers and university professors) and contract faculty (collaborating staff, part-time lecturers, etc.). In our sample population, we studied 100 contract faculty (60%) and 66 state employees (40%), 98 were men (59%) and 68 were women (41%), the mean age was 39 years (SD = 8,5), 99 were married (60%), 27 lived

with a partner (16%), 24 were single and lived alone (15%), nine were single who lived with parents (5%), and seven were divorced/separated (4%). A total of 84 had children (51%) and 82 did not (49%). The level of academic education of the sample is as follows: 105 had completed a doctoral degree, that is, they are PhDs (63%), 36 completed the research aptitude period, that is, the first period before obtaining the doctoral degree (22%), 22 have a degree which implies long-cycle studies (13%) and three completed a diploma course, implying short-cycle studies (2%). As for work experience, 72 had 5 years experience (43%), 50 had between 6 and 10 years experience (30%), 19 had between 11 and 15 years experience (11%), 12 had between 16 and 20 years (7%), while 13 had more than 20 years experience (8%).

The person in charge of occupational hazard prevention at the University, along with several members of the research project, sent an envelope to all university faculty members by the internal mail service. The envelope contained a presentation letter, a document which they had to complete with their personal data and a questionnaire battery. Both the personal data document and the questionnaire battery ensured confidentiality because we are not asking for identifying information. All documents were in Spanish.

Instruments

Following Bandura's recommendations (2006) we created a self-efficacy scale for our domain (i.e. university faculty taking into account their triple work profile). As the creation of the new scale is one of the objectives of this research, we describe the scale construction in the Results section.

Data Analyses

Firstly, we carried out a qualitative analysis in order to develop the scale. Secondly, confirmatory factor analyses (CFA), as implemented by AMOS (Arbuckle,

1997), were used to confirm the first specific objective. We compared a one-factor model with a three-factor model corresponding to the triple work profile of university faculty. We evaluated the goodness-of-fit of the models using absolute and relative indexes. The four absolute goodness-of-fit indexes calculated were: (1) the χ^2 goodness-of-fit statistic; (2) the Goodness-of-Fit Index (GFI); (3) the Adjusted Goodness-of-Fit Index (AGFI); and (4) the Root Mean Square Error of Approximation (RMSEA). Additionally, we computed three relative indexes: (1) Tucker-Lewis Index (TLI); (2) Comparative Fit Index (CFI); and (3) the Incremental Fit Index (IFI). Because the distributions of the GFI and the AGFI are unknown, no statistical test or critical value is available (Jöreskog & Sörbom, 1986). Values smaller than .06 for the RMSEA are indicative of an acceptable fit (Hu & Bentler, 1999), whereas a cut-off value close to .90 for the IFI suggests a good fit (Hoyle, 1995). As a rule of thumb for the remaining fit indexes (TLI, CFI), values greater than .95 are considered to indicate an adequate model fit (Hu & Bentler, 1999). Thirdly, we carried out internal consistency (Cronbach's alpha) and descriptive analyses to study the psychometric characteristics of the scale, which is the second specific objective. Finally, we carried out ANOVA analyses in order to study the third specific objective, which postulates that some variables, such as gender, work experience, work link, level of academic education, marital status and having children, can make a difference in self-efficacy among university faculty.

Results

Preliminary qualitative analyses

Based on the *SCT* in general, and on the Guide to Constructing Self-Efficacy Scales (Bandura, 2006) in particular, the first step to construct a reliable self-efficacy scale was a conceptual analysis of the domain under study. We decided on two methods as the best way to study the work carried out by university faculty. Firstly, as university

faculty' work is regulated by law, the so-called LOU (Organic Law of Universities, 2001) and in this law some of the tasks they carry out are described we have studied it. Secondly, we carried out a discussion group so faculty could make suggestions about our list of tasks, and could contribute with tasks that have not been contemplated by law. As a result of these two processes, we extract the behavioral factors that will be part of the scale of specificity self-efficacy.

Following the Guide to Constructing Self-Efficacy Scales, Bandura (2006) recommends that if there are no obstacles to overcome, the activity is undertaken easily and employees will have very high levels of self-efficacy in this activity. So, our second step consists in presenting an obstacle for each task. So we formed a discussion group with five experts to summarize these challenges or obstacles. All members were university faculty members of the University under study. In this discussion group, university faculty had to express the most common obstacles in all behavioural factors.

In the third step, we considered the choice of answer scale. We follow the recommendations of Bandura (2006) so we used a 10-point scale that ranges from 0 ("not at all") to 9 ("absolutely"). In addition, we assigned each number a corresponding name to help identify the suitable number more easily.

Finally, we formulated the items as they appear in the scale. Thus the item begins with "I can do", followed by the behavioural factor, and finally the proposed obstacle. So, a 13-item scale was constructed to measure self-efficacy in university faculty (see Appendix). The original scale was produced in Spanish but it was translated to English through back translation.

Model testing

Once we have created the scale, our first objective is demonstrated by confirmatory factor analysis (CFA) that actually the scale has three factors that relate to

triple work profile. We used as implemented by AMOS (Arbuckle, 1997), to test the first specific objective. We used two alternative models: a one-factor model (M_1) which assumed one latent factor, self-efficacy; and a three-factor model (M_2) which assumed three latent and correlated factors, teaching self-efficacy, research self-efficacy and management self-efficacy.

Table 5.1

Confirmatory Factor Analyses (N = 166)

	χ^2	df	GFI	AGFI	RMSEA	TLI	CFI	IFI	$\Delta\chi^2$	Δ df
M_1	663.54	65	.57	.41	.24	.57	.64	.64		
M_2	200.86	62	.84	.76	.17	.90	.92	.92	M1-M2= 462.68***	3
M_{2a}	149.46	60	.88	.82	.09	.93	.95	.95	M2- M_{2a} =51.4***	2
M_{2b}	109.18	59	.91	.86	.07	.96	.97	.97	M_{2a} - M_{2b} =40.28***	1

Note. χ^2 = Chi-square; df=degrees of freedom; GFI=Goodness-of-Fit Index; AGFI=Adjusted Goodness-of-Fit Index; RMSEA=Root Mean Square Error of Approximation; TLI=Tucker-Lewis Index; CFI=Comparative Fit Index; IFI = Incremental Fit Index. All the χ^2 differences between the models were statistically significant at ***p < .001. M_1 = One-factor model; M_2 = Three-factor model; M_{2a} = Revised three-factor model, M_{2b} = Revised three-factor model.

As seen in Table 5.1, M_2 (three factors) fits better than M_1 (1 latent factor). Nonetheless, M_2 does not offer a good fit, and we reviewed the modification index precisely for this reason. AMOS output proposes a covariance between two pairs of errors; 5 and 6, 9 and 10. Both covariances are performed within the same factor, research self-efficacy. Although both errors are in the same factor, it is recommendable to analyze them while searching for reasons for this relationship.

Items 5 and 6 focus on updating research as well as on the results obtained and

the appearance of new methodologies. Thus, it seems that this covariance makes sense statistically and theoretically. In the case of Items 9 and 10, both items have in common is that they do not concern the research itself, rather research outputs. Thus, one refers to how to perform a new researcher in the researching task, while the other refers to how to “sell” the result of the researching task. It seems that this covariance also makes sense.

Once we had completed both covariances (M_{2a}), we can see in Table 1 that the index improved substantially. Once again however, the model does not fit satisfactorily, and the modification index shows something peculiar as it requests a relationship between Item 11 and the teaching factor, and Item 12 and the research factor. Item 11 would correspond to teaching management. In this sense, the fact that this item comprises two factors (teaching and management) makes sense. Item 12 would correspond to research management. In this sense, the fact that this item comprises two factors (research and management) makes sense.

Once again, we can see in Table 5.1 how the index improves the fit (M_{2b}).

Finally, we can see the definitive CFA in Figure 5.1.

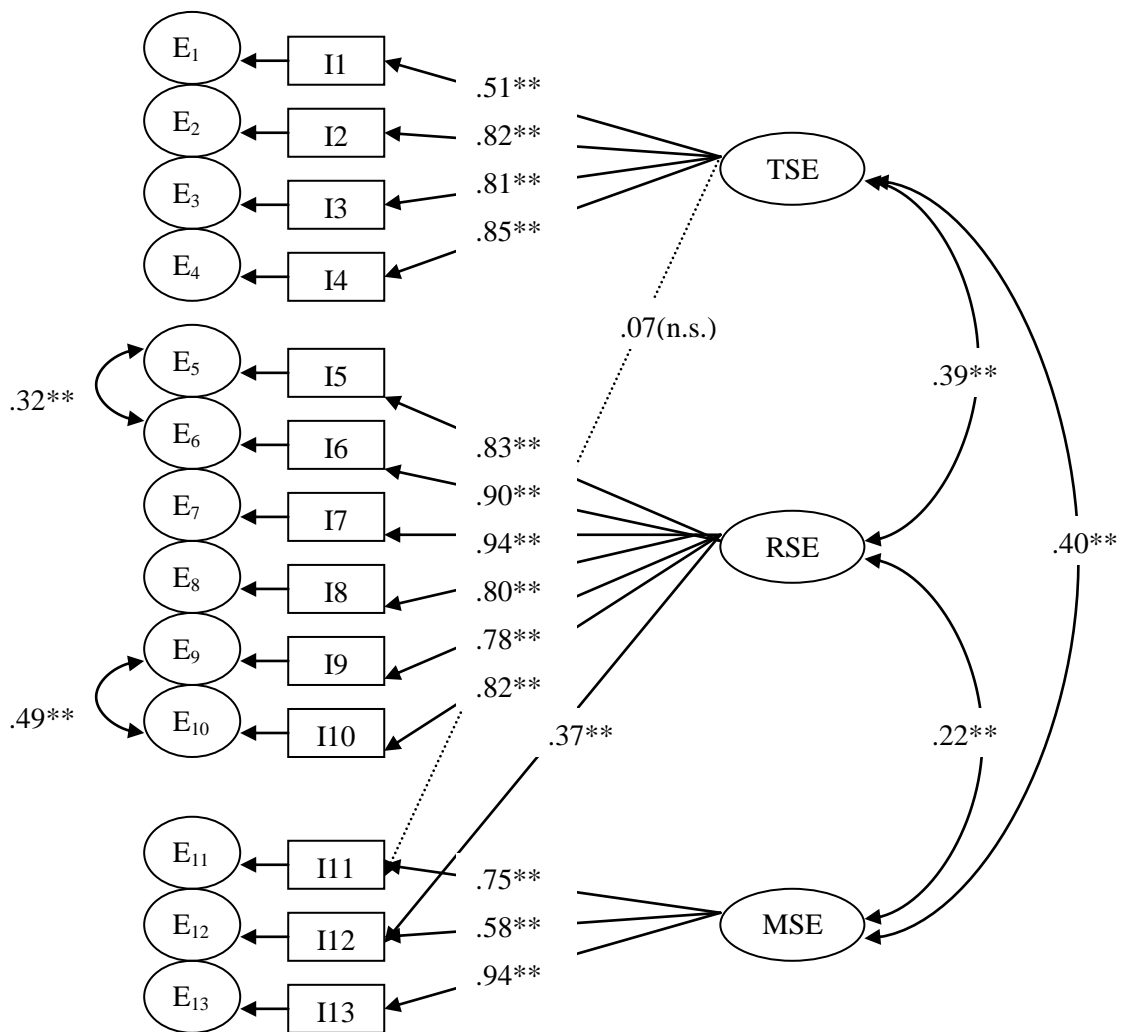


Figure 5.1: Confirmatory factor analyses

Note. ** $p < .001$; I1 = Item 1, I2 = Item 2, (...), I13 = Item 13; TSE = Teaching Self-efficacy, RSE= Research Self-efficacy, MSE= Management Self-efficacy; E = error.

Descriptive Analyses

Table 5.2 shows the means, standard deviations and intercorrelations of the 13 items of the scale and its three dimensions. As Table 5.2 illustrates, although all correlations are not significant, their items all positively and significantly correlate within each dimension. Moreover, there is no negative correlation. In the same Table, we can see the internal consistencies scores (Cronbach's alpha) for all the dimensions

which met the criterion of .80 (Henson, 2001), TSE (4 items) $\alpha = .83$, RSE (6 items) $\alpha = .94$ and MSE (3 items) $\alpha = .82$.

Table 5.2

Descriptive statistics for the study variables (N = 166)

	M	SD	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	TSE	RSE	MSE
I1	6.93	1.55	1															
I2	6.99	1.33	.42**	1														
I3	7.02	1.45	.42**	.66**	1													
I4	6.67	1.65	.41**	.70**	.69**	1												
I5	5.75	1.86	.19*	.15*	.29**	.26**	1											
I6	5.60	1.96	.13	.26**	.27**	.35**	.82**	1										
I7	5.45	2.17	.13	.29**	.27**	.32**	.78**	.86**	1									
I8	5.73	2.18	.14	.15*	.29**	.24**	.70**	.70**	.76**	1								
I9	5.11	2.32	.19*	.33**	.25**	.32**	.62**	.72**	.73**	.65**	1							
I10	5.82	2.15	.25**	.36**	.30**	.35**	.67**	.72**	.77**	.70**	.82**	1						
I11	6.46	1.46	.30**	.25**	.36**	.28**	.15	.14	.14	.15	.21**	.22**	1					
I12	5.79	1.68	.26**	.30**	.28**	.35**	.41**	.45**	.46**	.34**	.49**	.44**	.46**	1				
I13	5.98	1.62	.31**	.29**	.30**	.31**	.13	.17*	.17*	.18*	.32**	.23**	.74**	.63**	1			
TSE	6.90	1.22	.70**	.84**	.85**	.87**	.28**	.31**	.31**	.25**	.33**	.39**	.37**	.37**	.37**	0.83		
RSE	5.58	1.86	.19*	.30**	.31**	.35**	.86**	.90**	.92**	.85**	.86**	.90**	.19*	.49**	.24**	.35**	0.94	
MSE	6.08	1.37	.34**	.33**	.36**	.37**	.27**	.30**	.30**	.26**	.40**	.37**	.84**	.82**	.92**	.43**	.36**	0.82

Note. * p < .05, ** p < .001; I1 = Item 1, I2 = Item 2, (...), I13 = Item 13; TSE = Teaching Self-efficacy. RSE= Research Self-efficacy , MSE= Management Self-efficacy. Cronbach's alphas are on the diagonal.

Finally, we carried out ANOVA analyses to know whether differences in self-efficacy in university faculty exist according to some socio-demographic variables such as gender, work experience, tenure, level of academic education, marital status and having children. We found no significant differences in teaching self-efficacy for any of the variables. The level of academic education produced significant differences ($F(43, 122) = 4.99, p < .05, \eta^2 = .045$) in research self-efficacy. As the level of academic education increases, self-efficacy also increases. Therefore, we found the highest score in research self-efficacy in those university faculty members who had a doctoral degree while the lowest score was seen among the university faculty who had completed a diploma course. We found no significant differences in management self-efficacy for any of the variables.

Discussion

The aim of this research was to show the work method carried out to develop a new scale to measure specificity self-efficacy, in this case, in university faculty and which takes their triple work profile into account. So, the objective of this work has not been to create the scale, but to show the work method carried out to get that scale. Moreover, the aim of this work has not been to generalize the scale that has been created, because, according to the *SCT*, we have argued that measures in self-efficacy cannot be generalized, but specific to the sample to be measured. Thus, the ultimate goal has been to show a work method that can be followed to measure specificity self-efficacy in any domain.

We have shown how the qualitative analysis is carried out to obtain the items of the scale. Furthermore, the hypothesis that the scale is formed by three latent factors corresponding to the triple work profile of university faculty is confirmed. We carried out CFA, as implemented in AMOS (Arbuckle, 1997), and the results largely met the

criterion: all indexes fully surpass the values marked as the criterion, except the RMSEA, which is not lower than 0.06 but comes very close to this value (0.07). In addition, model M_2 (three latent factors) fits better than model M_1 (1 latent factor). So, we can state that this scale is formed by three latent, correlated factors; teaching, research and management. Moreover, results show that the items of each dimension correlate positively and significantly and that correlations are high in general, as Table 5.1 shows. This table also shows the Cronbach's alphas which confirm that the participants' scores on the scale should be considered reliable. Thus, all dimensions met the criterion of 0.80 (Henson, 2001), TSE (4 items) $\alpha = .83$, RSE (6 items) $\alpha = .94$ and MSE (3 items) $\alpha = .82$.

Furthermore, it has been possible to verify that the chosen socio-demographic variables included in this study (gender, work experience, work link, levels of academic education, marital status and having children) make no difference to self-efficacy in both teaching and management self-efficacy among university faculty. In research self-efficacy however, we saw that one variable presented marked differences: the level of academic education. As the level of academic education increases, self-efficacy also increases. This result is expected because both research aptitude and doctoral studies have, among others, similar purposes: to learn how to do research. So, university faculty members with a specific education in research show the highest scores in research self-efficacy. In addition, these results agreed with other studies (Hoy & Woolfolk, 1993).

We firmly believe that this study can serve as an example of how to construct a self-efficacy scale within the SCT, because with this study we have shown how to put in practice the Bandura's guide. Furthermore, we can learn about the situation in which university faculty find themselves through the theoretical contributions that this study offers. Past research had already denounced the few studies conducted in university

faculty by considering their differences in relation to those of primary and secondary schools (Burton et al., 2005; Gozalo & León, 1999; Prieto, 2005).

However, this research has its limitations. Firstly, the sample size; only a low percentage (17%) of university faculty completed the scale. Moreover, we used a convenient sample and then all university faculty members were included so that all such university faculty had the chance to respond in the scale. This method is possibly not the most effective in terms of sample collection and we could have used another type of sampling, perhaps it would be more effective a random sampling in which we had chosen a number of teachers in each area or department, so we make sure that a large representation of the total sample exists, and also we could have done a thorough monitoring of the filling out of the questionnaire. Secondly, the ANOVA have shown that the level of academic education produced significant differences in research self-efficacy, but the effect size measure ($\eta^2 = .045$) is low. This may be due to the relatively large sample size for the ANOVA. Even so, these differences exist and are very logical. Thirdly, management factor has needed two cross-loadings, one from teaching and one from research, although this can be understood as that management factor did not succeed that well as the others two, we understand it as the close relationship that exist between university faculty's tasks, sometimes it is difficult for university faculty members to decided, for instance, which tasks are part from teaching and which ones belong to management tasks.

As far as the validity of the scale is concerned, our scale fulfils content validity once we had completed an exhaustive study on self-efficacy in a specific context: the university. It was not possible to verify criterion validity since other scales which measure self-efficacy in our population, and which consider their triple work profile, do not exist.

This work method could also be used in other universities in future research, where different self-efficacy scales for each University could be created. It would be interesting to verify how this work method functions in other universities.

Chapter 6

I would if I could, and love it too:

The Relationship between Efficacy Beliefs and Task

Engagement at the Individual vs. Collective Level

Summary

This study tests the relationship between efficacy beliefs and task engagement in and over time at both the individual and collective levels. We assumed that high levels of efficacy beliefs would benefit the development of task engagement. Moreover, we tested whether the pattern of effects for both models (individual and collective) was similar. In order to achieve these objectives, we conducted latent growth curve analyses using the data from 372 university students (individual level) who were assigned to one of the 79 work groups (collective level). The participants carried out three collaborative tasks in a laboratory setting. The study variables were assessed three times after the completion of each of the three tasks. At the individual level, results reveal that the participants' level of task engagement with high initial levels of self-efficacy remained stable during the study, whereas the participants' level of task engagement with low initial levels of self-efficacy decreased significantly over time. The same pattern appeared at the collective level of analysis. Moreover, the results show that the relationships linking the parallel constructs were functionally equivalent across levels. Theoretical and practical implications are discussed from the perspective of Bandura's *Social Cognitive Theory*.

Work engagement has been defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). It refers to a persistent and pervasive affective-cognitive state that does not focus on any particular object, event, individual, or behavior. *Vigor* is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and also persistence in the face of difficulties. *Dedication* is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge. Finally, *absorption* is characterized by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly and one has difficulties with detaching oneself from work.

Although work engagement has been studied mainly among workers and occupational samples, engagement has also been investigated in other samples like students (i.e., academic engagement) and group members (i.e., task engagement). With regards to students, Salanova, Bresó, and Schaufeli (2005) showed that engagement acts like an injection of motivated behavior which stems from high levels of self-efficacy in people. In their study conducted among 353 Spanish and Belgian students, these authors showed that efficacy beliefs significantly and positively related to students’ engagement levels. Similarly, and regarding group members, Llorens, Schaufeli, Bakker, and Salanova (2007) reported a positive gain spiral of self-efficacy and task engagement among a sample of university students working on a computer task, and showed that high levels of self-efficacy lead to high levels of energy and persistence in the face of demands (e.g., vigor) and fulfillment of personal needs and job identification (e.g., dedication) over time. Moreover, in a longitudinal study among Spanish secondary school teachers, Lorente, Salanova, Martínez, and Schaufeli (2008) found that self-efficacy significantly predicted work engagement over time.

Along the same lines, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007, 2009) examined the role of self-efficacy, organizational-based self-esteem and optimism in predicting work engagement, and showed that that employees with high self-efficacy were also highly engaged both cross-sectionally and longitudinally. The results of their longitudinal study (Xanthopoulou et. al., 2009) indicate that self-efficacy, organization-based self-esteem and optimism all explain a unique proportion of the variance in work engagement over time when controlling for job resources. In his meta-analysis, Halbesleben (2010) stressed the importance of work engagement for organizations by showing that engagement not only positively relates to organizational outcomes such as worker commitment, performance and health, but also negatively relates to outcomes such as turnover intention. Moreover, he concluded that compared to other job and personal resources, self-efficacy had the strongest relationships with work engagement. So, it seems that self-efficacy is a key antecedent of work engagement.

These studies confirm the assumptions of the *Social Cognitive Theory (SCT)* (Bandura, 1997), which states that efficacy beliefs provide people with a self-motivating mechanism that mobilizes effort to target behavior toward goals and to increase persistence over time. As Bandura (2001) summarized, efficacy beliefs determine not only the amount of effort invested to face obstacles, but also the amount of time and persistence in trying to achieve something. Low levels of self-efficacy are associated with early retirements, while high levels involve effort and perseverance. On the other hand, efficacy beliefs also affect how we think and feel about ourselves. People who consider themselves ineffective in coping with environmental demands exaggerate the magnitude of their deficiencies and potential difficulties. These negative thoughts create stress and prevent available resources from being used. Conversely, people who perceive themselves as efficacious tended to focus their efforts on arising demands and

strive to resolve these adequately (Bandura, 2001).

In short, people with high levels of efficacy beliefs perceive problems as challenges, are highly committed to the activities they carry out, invest much time and effort in their activities, think strategically to solve difficulties, recover easily from failure or difficulty, feel they are in control of stressors, and feel they are less vulnerable to stress and depression (Bandura, 2001). Thus, efficacy beliefs play a key role in the self-regulation of motivation as they determine goal setting, effort, perseverance and resilience to failures. This suggests that efficacy beliefs will also affect the level of vigor (e.g., energy and persistence in the face of demands) and dedication (e.g., fulfillment of personal needs and job identification) that we invest in task performance.

Although we know that efficacy beliefs and work engagement are strongly related (cf. Xanthopoulou et al., 2007, 2009), to date the temporal dynamics of this relation remain understudied. More detailed knowledge is needed, e.g., on how initial levels of efficacy beliefs relate to the development of work engagement over time. Thus, the objective of the present study is two-fold: firstly, to know whether initial levels of efficacy beliefs relate to (a) the initial levels of task engagement and (b) the development of task engagement over time; secondly, as one of the hallmarks of the changing nature of work is the increasing shift to use teams as the basic organizing unit (DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004), to ascertain if parallel motivational processes operate at the collective (i.e., team) level. Although organizations are formed by employees working individually, they often do so in the context of a work team. According to DeShon et al. (2004), the origins of group level constructs lie in individual cognitions and behaviors, and they emerge as group members working together in an interactive task context. Group members develop shared perceptions of key regulatory constructs that refer to the collective level,

constructs that are linked by similar theoretical processes, as at the individual level. Thus, in order to understand the links between efficacy beliefs and engagement more broadly, we need to consider this relationship at both the individual and collective levels.

With regard to efficacy beliefs (i.e., self-efficacy and perceived collective efficacy), the *SCT* extended the concept of individual causality of agency to collective agency through a feeling of shared efficacy (Bandura, 1997). Perceived collective efficacy is defined as the group members' shared belief in their joint capacities to organize and execute the courses of action required to produce certain levels of profits (Bandura, 1997). In work engagement terms, Salanova, Agut, and Peiró (2005) showed work engagement to be a motivational construct shared by employees in the workplace. According to these authors, people working in the same group have more chances of interacting with each other and have, therefore, more possibilities to become involved in both negative and positive psychological contagion processes (cf. Bakker, Van Emmerik, & Euwema, 2005). Moreover, Pugh, and Dietz (2008) provided several reasons for conceptualizing and studying employee engagement at the group and organizational levels. For example, they argue that collective engagement should be studied because if some of the possible antecedents and consequences of the engagement construct are at the team levels of analysis, it is sensible to conceptualize this construct at the corresponding level of analysis.

Our study adds to the body of knowledge on the relationship between efficacy beliefs and task engagement in that it not only focuses on the relationship between efficacy beliefs and task engagement *in time*, but also explores how initial levels of efficacy beliefs affect task engagement *over time*. Moreover, the composition processes describe the convergence of similar lower-level characteristics to yield a higher-level

property that is essentially the same as its constituent elements, and which is the basis for homologous multilevel models. These models specify that constructs and the relationships linking them can be generalized across levels. For example, the relationship between efficacy beliefs and task engagement is hypothesized to hold at both the individual and collective levels (cf. Kozlowski & Klein, 2000).

Based on the above literature review, our first set of hypotheses are as follows:

H_{1A}: High initial levels of self-efficacy are positively related to the initial level of task engagement.

H_{2A}: High initial levels of self-efficacy are related to an increase in task engagement over time.

We expected the same processes in the collective level, thus:

H_{1B}: High initial levels of perceived collective efficacy are positively related to the initial level of collective engagement.

H_{2B}: High initial levels of perceived collective efficacy are related to an increase in collective engagement over time.

Moreover, and as discussed above, we assumed that the relationships between efficacy beliefs and task engagement at the individual and collective levels are based on similar theoretical processes. Therefore we expect:

H₃: The theoretical processes linking efficacy beliefs and task engagement are functionally equivalent at the individual and collective levels.

Method

Participants and procedure

A three-wave study was conducted in a laboratory setting among 372 Spanish participants enrolled in university studies (83% female). Study participation was voluntary. Participants were randomly assigned to one of the 79 work groups of four or

five members each. The groups carried out three tasks in a laboratory setting with an intranet connection and five work stations with which the Moodle online collaboration software system (Dougiamas, 2007) was installed. The Moodle system allowed participants to communicate online with the other members of their work group and provided a forum where they could upload and download all the materials they required to perform the three tasks. Group members were seated in separate offices. During the tasks, they could only communicate with each other by means of a computer: any direct or personal contact was avoided. All participants received the same information about the study. Before the first session, the participants were trained in the use of Moodle by the researcher.

All participants were informed that their group belonged to the Socio-Cultural task force of their University. The main objective of this service was to develop and promote a project about socio-cultural activities. As a group, their mission was three-fold. Firstly, the group had to develop the official program for the so-called cultural events week at the University (Task 1). Secondly, they had to develop the timetable for this particular week (Task 2). Finally, they had to design the posters that would be used to promote the cultural events week (Task 3). So, the group had to carry out three innovative and creative tasks. In Task 1 participants first worked individually, developing their own ideas about five possible activities to be performed in the cultural week. They would then work as a group by pooling all the activities and choosing the ten activities considered the most appropriate for the cultural week by taking into account that originality and feasibility would be valued. In Task 2, participants had to distribute the ten selected activities on a weekly timetable that ran from Tuesday to Friday by taking into account what day and what time would be most favorable for all the proposed activities. In this task, the originality and viability of the activities were

valued. Finally in Task 3, the group had to design the poster for the cultural week. This poster would be used to promote the cultural week, and would be posted at the University and in certain areas of the city. In this task, the originality of the poster design was valued.

All three tasks were done in 4 hours with short breaks separating the tasks. We measured the study variables on three occasions, and immediately after completing each task. Finally, it is important to emphasize that this cultural week actually takes place each year at this university and that students often participate in its organization. So, the above tasks are entirely plausible for them.

Instruments

Self- efficacy was measured with five self-constructed items based on the guide for constructing self-efficacy scales (Bandura, 2006) and following Bandura's recommendation for the use of specific domain scales. According to Bandura, the use of general and nonspecific self-efficacy scales makes no sense and he argued that it is futile to measure self-efficacy with a general scale because items of tests based on the general efficacy approach is of little or no relevance for the domain being studied. So, five items were specifically created to measure self-efficacy to perform creative and innovative tasks (e.g., "*I am confident that I can find original solutions to problems*").

Perceived Collective Efficacy was measured with five self-constructed items also based on the guide for constructing self-efficacy scales (e.g., "*I am confident that my group can implement original and creative ideas*"). The items of both scales were scored according to an eleven-point Likert format (0 = "not at all confident", 10 = "totally confident").

Task Engagement was measured with an adaptation of the Utrecht Work Engagement Scale (UWES) (Salanova, Schaufeli, Llorens, Peiró, & Grau, 2000;

Schaufeli, et al., 2002) where the items were reworded to refer to (specific) task engagement instead of to (general) work engagement. Vigor was measured by seven items (e.g., *‘During the task, I felt full of energy’*), dedication was measured by five items (e.g., *‘I was involved in the task’*) and absorption was measured with seven items (e.g., *‘Time flew when I was working on the task’*). *Collective Engagement* was measured in a similar way to task engagement, but referred to the group’s level of engagement (Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003). Vigor was measured by seven items (e.g., *‘The group has been strong and vigorous during the task’*), dedication was measured by five items (e.g., *‘The group was enthusiastic about the group task’*) and absorption was measured with seven items (e.g., *‘The group found it difficult to disconnect from the task’*). All scales were scored according to seven-point Likert scales (0 = “never”, 6 = “always”). For both the individual and the collective measures, the scores for the 19 items were averaged for each time point, yielding single scores for engagement.

Data analyses

This is a multilevel study as we used both individual and collective data. The data from the lower level were used to establish the higher-level construct. Following Chan’s (1998) typology of composition models, we used the referent-shift consensus model. So far, a conceptual definition and operationalization of the constructs at the lower level (e.g., self-efficacy and task engagement) and shifting the referent (e.g., we have changed “I” for “we”) have been done. Moreover, the new forms of both constructs were aggregated to higher-level constructs based on within-group consensus. In order to verify if the group members in our sample agreed to a great extent on the variables under study (that is, to verify the consensus among them), we examined several within-group consensus indicators: the $r_{wg(j)}$ index of within-group agreement

(James, Demaree, & Wolf, 1984) and the intra-class correlation coefficient ICC(1) (Bliese, 2000). The $r_{wg(J)}$ values for our measure of perceived collective efficacy was high at Time 1 with an average value of .82. With regard to collective engagement, the $r_{wg(J)}$ values were also high at all three times, with an average value of .87 for Time 1; .85 for Time 2 and .82 for Time 3, indicating substantial agreement among team members on all three occasions. The ICC(1) of perceived collective efficacy at Time 1 was .09, $F(78, 293) = 1.46, p < .05$; whereas the ICC(1) for collective engagement was .25, $F(78, 293) = 2.53, p < .001$ at Time 1; .25, $F(78, 293) = 2.54, p < .001$ at Time 2 and .20, $F(78, 293) = 3.11, p < .001$ at Time 3. Thus, group membership explained a substantial part of the variance in the responses (Bliese, 2000). Together, these results justify aggregation of individual responses to the collective level.

Regarding the data analyses, we firstly performed descriptive analyses by computing the mean, standard deviation and internal consistency for each scale and their intercorrelations. Secondly, we used an extension of McArdle's (1988, 1998) Level and Shape (LS) model (which is often referred to as growth curve modeling or latent change analysis) to test whether the development of task engagement over time varied in terms of the initial levels of efficacy beliefs. Basically, this approach focuses on the development of task engagement during the study and relates this development to the level of efficacy beliefs as measured when it started. Regarding task engagement, the LS model distinguishes between a Level factor (representing the individual-level scores on task engagement at the beginning of the study) and a Shape factor (representing the rate of change in task engagement during the study). The means of these factors are interpreted as the individual-level true scores at the start of the study (for the Level factor) and the rate of change during the study (for the Shape factor: e.g., a negative value for this factor would indicate a decline in task engagement during the study period

(Raykov & Marcoulides, 2006). Furthermore, the Level and Shape factors were allowed to correlate to account for the fact that the rate of change in task engagement could be contingent upon initial status. Finally, both the Level and Shape factors were related to efficacy beliefs, as measured at the beginning of the study. These effects correspond with our hypotheses that high levels of efficacy beliefs would positively relate to the initial level of task engagement (Hypotheses 1_A and 1_B) and to an increase in engagement during the study interval (Hypotheses 2_A and 2_B). These hypotheses were tested at both the individual ($N = 372$) and the collective ($N = 79$) level, i.e., a separate analysis was conducted for each level.

Finally, we performed an additional two-group analysis to examine whether the corresponding individual-level and collective-level structural effects could be constrained to be equal. If this were the case, it would suggest that the processes connecting efficacy beliefs and task engagement at the individual vs. the collective level would be basically the same at both levels (Hypothesis 3).

All the models were estimated using the LISREL 8.30 program (Jöreskog & Sörbom, 1999). Model fit was evaluated by inspecting the Chi-square test, the Non-Normed Fit Index (NNFI), the Root Mean Square Residual (RMSEA), and the Comparative Fit Index (CFI). Values of .90 and higher (for CFI and NNFI) and of .08 or lower (for RMSEA) present an acceptable fit (Byrne, 2009).

Results

Descriptive analyses

Means, standard deviations and correlations between the variables, along with the internal consistencies of the scales, are presented in Table 6.1. As this table shows, all the correlations were significant and in the expected (positive) direction.

Table 6.1

Descriptive statistics for all the study variables

	<i>M</i>	<i>SD</i>	α	2	3	4	6	7	8
1. Self-Efficacy T1 ^a	7.12	1.31	.84	.41***	.30***	.33***			
2. Task Engagement T1 ^a	4.30	.69	.91		.50***	.48***			
3. Task Engagement T2 ^a	4.15	.92	.95			.66***			
4. Task Engagement T3 ^a	4.04	1.02	.96						
5. Collective Efficacy Beliefs T1 ^b	7.48	.73	.93				.71**	.64**	.57**
6. Collective Task Engagement T1 ^b	4.62	.44	.96					.73**	.67**
7. Collective Task Engagement T2 ^b	4.31	.55	.97						.81**
8. Collective Task Engagement T3 ^b	4.20	.67	.98						

* $p < .05$; ** $p < .01$; *** $p < .001$.

^a Individual-level construct, $N = 372$.

^b Collective-level construct, $N = 79$.

Structural equation analyses

Individual-level analysis. The individual-level model fitted the data acceptably; Chi-square ($N = 372$, $df = 3$) = 6.18, RMSEA = .05, NNFI = .98, CFI = .99. Figure 6.1 presents the findings. The mean score for the level factor was 4.31 ($p < .001$). The mean score for the shape factor was negative and significant ($-.25$, $p < .001$), showing that individual-level task engagement declined slightly over time. Moreover, the covariance between the Level and Shape factors was significant (a standardized effect of .87, $p < .05$), meaning that the over-time task engagement scores of those participants who reported high initial levels of task engagement were higher than those of participants reporting low initial levels of task engagement. As the scores on individual-level task engagement declined over time, the positive association between the Level and the Shape factors means that this decline was weaker for those reporting high initial levels of task engagement than for others.

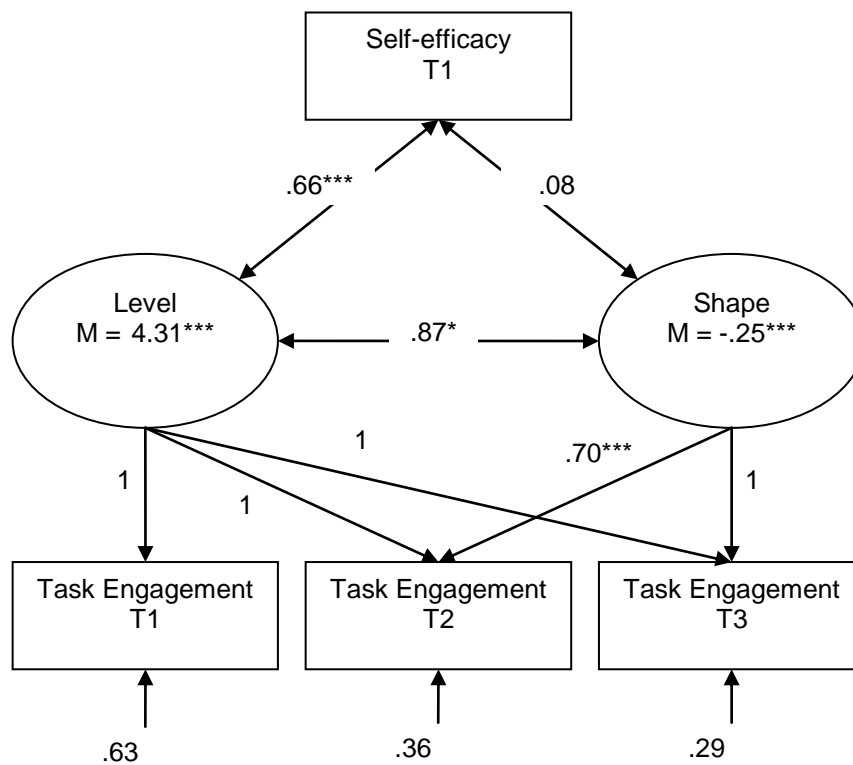


Figure 6.1: Individual-level findings ($N = 372$) for a structural equation analysis of the associations among self-efficacy, initial levels of task engagement (Level) and the over-time development of task engagement (Shape).

We found a positive association between Time 1 self-efficacy and the initial level of task engagement (a standardized effect of .66, $p < .001$), and these findings are relevant for our hypotheses. Thus, high initial levels of self-efficacy predict high initial levels of task engagement (Hypothesis 1_A supported). The direct association between Time 1 self-efficacy and the over-time change in task engagement was not significant, although in the expected direction (a standardized effect of .08, $p > .05$). Thus, although self-efficacy did indeed positively associate with task engagement, self-efficacy was indirectly (via the association between the Level and Shape factors), and not directly, associated with the over-time change in task engagement. Since the level of task engagement of our participants were not increasing but decreasing over time, it is no

possible to support Hypothesis 2_A, i.e., high initial levels of self-efficacy are related to an increase in task engagement over time, but, if we consider that the basis of this hypothesis is to test the power of self-efficacy, we can partially support the H_{2A} because, in a process of loss of task engagement, participants with high initial self-efficacy are capable of maintaining their level of engagement, whereas those with low levels of self-efficacy tend to become less engaged during the task.

Collective analysis. Most of the collective findings were similar to those obtained for the individual-level analysis. The collective model fitted the data well; Chi-square ($N = 79$, $df = 3$) = 2.77, RMSEA = .000, NNFI = 1.00, CFI = 1.00. Figure 6.2 presents the findings. The mean score for the Level factor was 4.61 ($p < .001$), showing that on average the Time 1 score of the groups on collective engagement was already close to the maximum score of 6. Similarly to the individual-level data, the mean for the collective-level Shape factor was negative and significant (-.43, $p < .001$), indicating that collective engagement declined over time. Once more, there was a significant association between the Level and Shape factors (a standardized effect of .50, $p < .05$), meaning that the over-time collective engagement scores of the groups in which the participants reported high initial levels of collective engagement were higher than those of groups for which low initial levels of collective engagement were reported. The positive association between the Level and the Shape factors means that this decline was lesser for those groups reporting high initial levels of collective engagement than for others

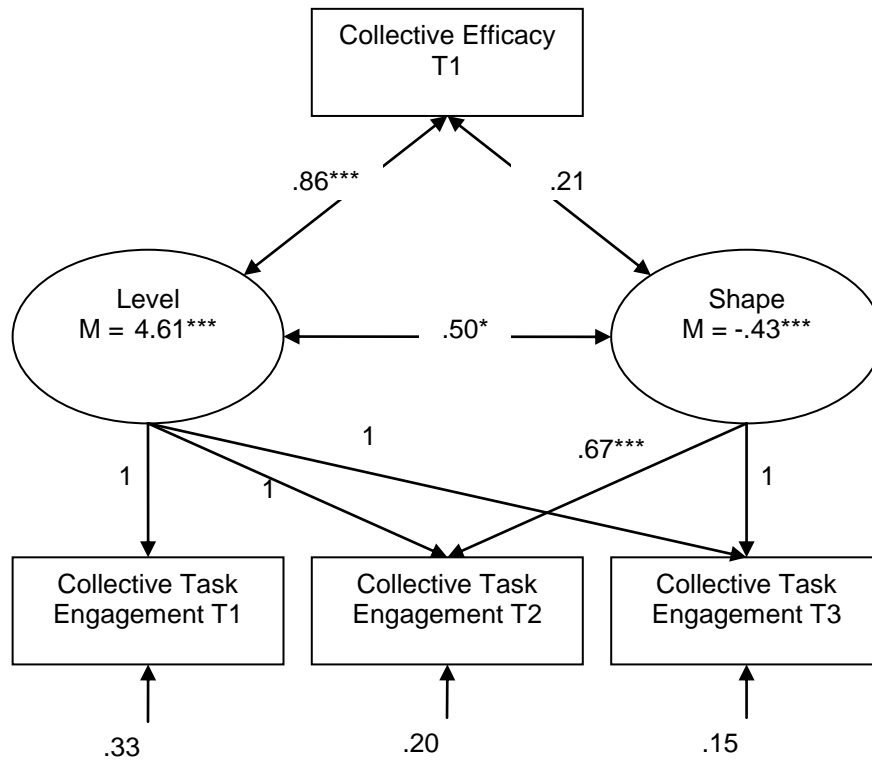


Figure 6.2: Collective-level findings ($N = 79$) for a structural equation analysis of the associations among collective efficacy, initial levels of collective engagement (Level) and the over-time development of task engagement (Shape).

Furthermore, we found a positive association between Time 1 perceived collective efficacy and the initial level of collective engagement (a standardized effect of $.86$, $p < .001$). Thus, high initial levels of perceived collective efficacy related to high levels of initial collective engagement (Hypothesis 1_B supported). However, and as individual level, the direct association between Time 1 perceived collective efficacy and the over-time change in collective engagement was not significant, although in the expected direction (a standardized effect of $.21$, $p > .05$) but the indirect association was significant (again hypothesis 2_B is partially supported). These findings mirror what was found for the individual-level data. Once more, those participants with high perceived

collective efficacy reported a higher initial level of collective engagement, while those with high initial levels of perceived collective efficacy were more successful at maintaining this affective state than participants with low initial levels of perceived collective efficacy.

Comparison of individual-level and collective-level findings. Comparison of the individual-level and collective-level results presented in Figures 6.1 and 6.2 reveals that the pattern of effects for both models was highly similar. As a final step in our analyses, we examined whether the corresponding individual-level and collective-level structural effects (that is, the associations between efficacy beliefs and the Level and Shape factors) could be constrained to be equal. If so, this would suggest that the processes connecting efficacy beliefs and task engagement at the individual vs. the collective level would be basically the same at both levels (H_3) (cf. DeShon et al., 2004). For this purpose, we performed an additional two-group analysis in which we first estimated a model in which these parameters could vary freely across groups. The fit of this model was then compared to that of a second model in which all the corresponding parameters were set equally. A comparison of the fit of these models indicates whether it is reasonable to assume that the two sets of findings are the same.

The unconstrained model yielded a Chi-square value ($df = 6, N = 451$) = 8.96, whereas the model in which the corresponding structural parameters were set equally yielded a Chi-square value ($df = 9, N = 451$) = 17.82. The difference between both Chi-square values was significant, delta Chi-square ($df = 3, N = 451$) was 8.85, $p = .03$, meaning that H_3 had to be initially rejected. However, further analysis revealed that this was due to the fact that the association between the Level and Shape factors was stronger for the individual-level data (a standardized effect of .87, $p < .001$) than for the collective-level data (a standardized effect of .50, $p < .05$). As the associations between

efficacy beliefs and the Level and Shape factors were basically the same for both the individual and collective levels, the relations linking the parallel constructs were functionally equivalent across levels and met a necessary precondition of multilevel homology (DeShon et al., 2004).

Discussion

In the introduction to this paper, the literature was reviewed to show that efficacy beliefs and task engagement are positively related. Based on the results of recent longitudinal studies (e.g., Xanthopoulou et al., 2009), it seems safe to conclude that engagement is apparently caused by efficacy beliefs. This is in line with the *Social Cognitive Theory* (Bandura, 1997) which assumes that high efficacy beliefs are related to motivation and act as a self-motivating mechanism: people perceive their own level of competences to be high and, consequently, they set themselves challenging goals and are motivated to spend considerable effort and show persistence in overcoming obstacles (Bandura, 2001).

The present study attempted to go beyond a mere examination of the role of efficacy beliefs in the motivational process of engagement at both the individual and the collective levels. With these purposes in mind, we tested whether high initial levels of self-efficacy at the individual level predicted high levels of initial task engagement, and whether the association between Time 1 self-efficacy and the over-time change in task engagement was significant. We found that efficacy beliefs indirectly rather than directly associated with the over-time change in engagement; that is, individuals with high initial levels of self-efficacy also obtained high scores at the initial levels of engagement; so high initial levels of engagement act as a resource to protect against major losses in engagement at a later stage of the task being conducted. Conversely, low initial levels of engagement were associated with substantial and significant decrements

in engagement during task execution. In conjunction, these findings strongly support our assumption that high self-efficacy beliefs benefit the development and maintenance of task engagement. Very similar results were obtained at the collective level. Work groups with highly perceived collective efficacy also reported high scores on initial collective engagement. These groups also showed high and stable collective engagement levels over time, whereas groups with low initial perceived collective efficacy declined in collective engagement over time.

The apparent similarity in the results across levels also supports our expectations that the regulatory processes at both levels (individual and collective) are isomorphic and that linkages between similar constructs are functionally equivalent across levels. That is, the constructs at the collective level are analogous to, and the theoretical mechanisms linking them are similar in nature to, the individual level (Kozlowski & Klein, 2000). The associations between efficacy beliefs and the Level and Shape factors are basically the same at both levels, showing that the relations linking the parallel constructs are functionally equivalent. These results are in line with those of DeShon et al. (2004), who found that seventy-nine percent of their hypothesized effects exhibited parallelism across individual and collective levels. They concluded that their results provided a good preliminary support for the homology of their multilevel model of the associations between feedback and performance.

Contrary to our expectations, our results show that our study participants are not in a motivational process, but in a demotivational process as their overall scores for task engagement lowered over time both individually and collectively. This might explain why those individuals and groups with high efficacy beliefs remain stable as regards their levels of task engagement over time, and do not show the expected increase in task engagement. Although the reasons for this decline in motivation are unclear, they may

be due to factors such as low intrinsic motivation for the task, which may have become boring for the participants over time. However, the importance of efficacy beliefs is also demonstrated in this process as these beliefs turn out to be a buffer against the decline in task engagement over time. Several previous studies have shown a similar buffering role of efficacy beliefs, although they mainly focused on efficacy beliefs as a resource to cope with stressful circumstances. For example, Hulbert and Morrison (2006) found that worksite interventions which target caregiver self-efficacy and optimism are recommended as a potential source of stress management for people working in palliative care. Along the same lines, Schwarzer and Schröder (1997) revealed that self-efficacy is a better predictor of recovery than social support for the postsurgical recovery of heart patients by lowering the degree of worry and negative emotional states, and by increasing reading and physical activity. Finally, Marlowe (1998) found that the relationship between stressful events and headache is stronger for those subjects with low self-efficacy and becomes progressively weaker as self-efficacy increases. They concluded that self-efficacy is an important psychological resource to buffer the impact of stress on the frequency of headaches.

Within the Work and Organizational Psychology domain, Xie (2007) summarized the research into the effect of self-efficacy on stressor-strain relationships. He found that after 30 telephone interviews, perceived social efficacy appears to have a buffering effect on the stressor-strain relationship in his study; the number of refusals (stressors) was psychologically less threatening for the interviewees with high levels of perceived social efficacy than for those with low levels of perceived social efficacy. Finally as regards perceived collective efficacy, Salanova, et al., (2003) saw how high levels of perceived collective efficacy buffer the negative effects of chat use and time pressure on collective engagement and task performance. So, the present study adds to

the knowledge about the role of efficacy beliefs at the individual and collective levels, such as the buffering role of efficacy beliefs in a loss of motivation process.

Implications

This study has both theoretical and practical implications. With regard to theoretical implications, we again demonstrate the positive effect of efficacy beliefs on engagement both in and over time. More specifically, we demonstrate that high initial levels of efficacy beliefs protect individuals and groups from undergoing a disengagement process. Therefore, the practical implication of our findings is that, when individuals or groups must work on non challenging tasks, strengthening their efficacy beliefs in advance is recommended to prevent loss of motivation (i.e., engagement) during task performance.

Limitations and future research

Contrary to our expectations, we find a task disengagement process in our study. Therefore, it is important to explore the potential causes and consequences of this task disengagement process over time in future research. They are several potential explanations for this process: a) the initial level of task engagement is already high, therefore it is more difficult to maintain or increase it than to decrease it; b) students may have low intrinsic motivation as they will obtain a reward for good task performance; c) the nature of the task is simply boring for them.

Another limitation of the study is that all the measures used in our study are self-reported. However, as far as we know, the best way to measure efficacy beliefs and engagement is the use of self-report measures.

Regarding future research, it would be interesting to replicate this study with a more engaging task, and to check if our initial assumptions are then confirmed. However, it is hard to anticipate if study participants will be in a motivational or a demotivational

process. Evidently, replicating this study in another sample consisting of workers from a real organization with a natural work team would also be warranted.

Chapter 7

General Discussion

The purpose of the current thesis was to test the important role played by efficacy beliefs within a specific occupation such as teaching. Furthermore, and using the *Social Cognitive Theory (SCT)* of Albert Bandura and the *Job-Demands Resources Model (JD-R)* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) as a framework, this thesis not only sought to understand teachers' well-being, but also its antecedents.

Therefore, the six objectives met through this thesis were: 1) the mediating role of team potency in the relationship of team conflict (i.e., task and relationship) with positive team outcomes (i.e., performance and affective commitment) among teachers teams was tested; 2) the four dimensions of burnout, in which we differentiated depersonalisation and cynicism as components of a mental distance was confirmed; 3) the different work profiles of university faculty members (i.e., teaching, research and management) related with well-being (e.g., burnout, engagement and intrinsic satisfaction) were shown; 4) the predicting role of personal resources (i.e., self-efficacy, perceived mental and emotional competences) in the *JD-R Model* was tested; 5) a procedure to develop an adjusted scale to measure self-efficacy in a specific domain was carried out; and finally, 6) the relationship between efficacy beliefs and task engagement in and over time at both the individual and collective levels was tested.

Summary of main findings

In the first empirical study (**Chapter 2**), the aim was to test a model (see Figure 7.1) in which team task conflict and team relationship conflict were indirectly related to team performance and affective team commitment through team potency among 33 secondary education teacher teams in the Netherlands. Specifically through structural equation analyses, we firstly found that task conflict significantly and negatively related to team performance and affective commitment through lower team potency. Secondly,

we also found that relationship conflict significantly and negatively related to team performance and team commitment through lower team potency. Hence, we may conclude that, as expected, group potency fully mediates the relationship between team task conflict and team relationship conflict on the one hand, and between team commitment and team performance on the other hand.

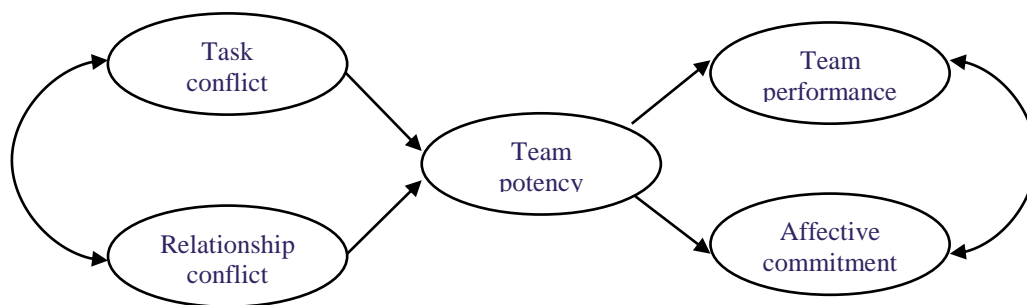


Figure 7.1: Model in which team potency fully mediates the relationship between team conflict and team outcomes.

The second empirical study (**Chapter 3**) had two objectives. Firstly, we confirmed among 170 Spanish university faculty members, and through confirmatory factor analyses (CFA) as implemented by AMOS (Arbuckle, 1997), a four-dimensional structure of burnout composed of emotional exhaustion, depersonalization, cynicism and lack of professional efficacy. Secondly, although the triple work profile applies to all university faculty members, we tested that the distribution of the three tasks within this profile was not equal in them all. Therefore, different work patterns exist, which we tested by a K-means cluster analysis. We obtained a four-cluster solution showing how university faculty members mainly do 1) teaching tasks; 2) research tasks; 3) management tasks; and finally 4) a mixture of teaching and research tasks. Moreover, we tested that teacher's well-being (e.g., burnout, work engagement and intrinsic satisfaction) depends on their dominant work pattern. Although the differences found

were only significant for the absorption and intrinsic satisfaction dimensions, Figure 7.2 shows that there were significant differences, revealing that those university faculty members whose management tasks dominate their work pattern obtain the highest scores for in burnout and the lowest scores for engagement and intrinsic satisfaction. Conversely, those whose research tasks dominate their work pattern obtain the lowest scores for burnout and the highest scores for engagement and intrinsic satisfaction.

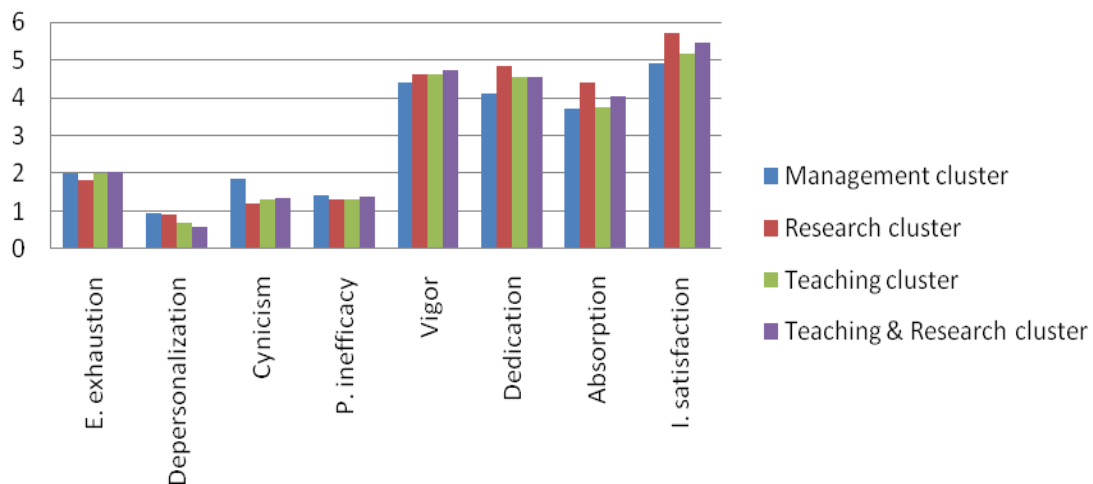


Figure 7.2: Burnout, engagement and intrinsic satisfaction among the four clusters.

The objective of the third empirical study (**Chapter 4**) was to conduct a longitudinal two-wave study with 274 secondary school teachers based on the *JD-R Model* (Demerouti et al., 2001). This study revealed that job demands and resources influence teachers' well-being (i.e., burnout and engagement) over time. We also examined the predicting role of personal resources (i.e., self-efficacy, and perceived mental and emotional competences) in the framework of Albert Bandura's *SCT* (see Figure 7.3). Therefore, we tested whether the personal resources at T1 (Time 1) positively influence work engagement at T2 (Time 2) indirectly via the job resources at both times. So the more personal resources and the more job resources, the higher engagement is over time. Moreover, personal resources at T1 negatively influence

burnout at T2 indirectly via the job demands at both times. Specifically, the more the personal resources, the less the job demands and the lower the burnout is over time. Finally, the personal resources at T1 negatively influence burnout at T2 indirectly via the job resources at both times. So, the more the personal resources and the more the job resources, and the lower burnout is over time.

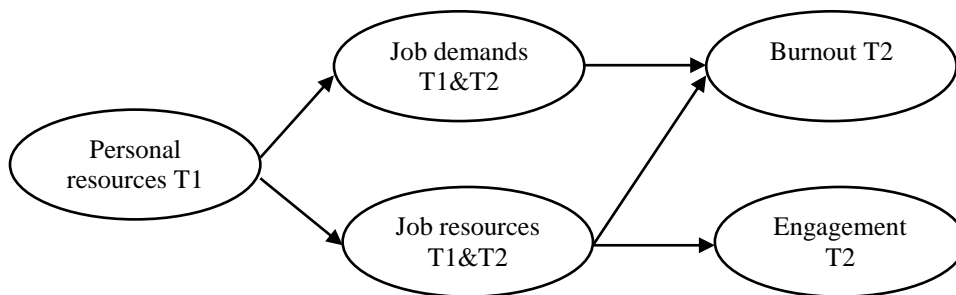


Figure 7.3: Teachers' well-being explained by the *JD-R Model*.

The aim of the fourth study (**Chapter 5**) was to show the procedure carried out to develop a scale to measure specific self-efficacy in a given domain, in this case, university faculty members. This scale took teachers' triple work profile into account. So, the objective was to show the work method carried out to obtain this scale. Moreover, the aim of this work was not to generalise the scale created because, according to the *SCT*, self-efficacy measures cannot be generalised, rather the specific domain can be measured. Thus, the ultimate goal was to show a working strategy based on the *SCT* that can be followed to measure specific self-efficacy in any domain. Therefore, we demonstrate through appropriate qualitative techniques, and by following the guide for constructing self-efficacy scales (Bandura, 2006), how to obtain a specific self-efficacy questionnaire for measuring self-efficacy in university faculty members. Finally, we obtained a questionnaire composed of 13 items to measure self-efficacy, of which 4 items measure self-efficacy in teaching tasks, 6 in research tasks, and 3 in

management tasks. Moreover, these three dimensions have been confirmed among 166 university faculty members by the CFA.

Finally, the fifth empirical study (**Chapter 6**) attempted to go beyond merely exploring the role of efficacy beliefs in the motivational process of engagement at both the individual and collective levels. Using a three-wave study conducted in a laboratory setting with 372 Spanish participants at the individual level and 79 groups at the collective level, we tested whether high initial levels of efficacy beliefs predict high levels of initial task engagement, and whether the association between T1 efficacy beliefs and the across-time change in task engagement was significant. We found that high initial levels of efficacy beliefs act as a resource that protects against major losses in engagement at a later stage of conducting the task. Collectively, these findings strongly support our assumption that high levels of efficacy beliefs are beneficial to develop and maintain task engagement. The apparent similarity in results across the levels also supports the results we expected; that is, the regulatory processes at both levels (individual and collective) were isomorphic and the linkages between similar constructs were functionally equivalent across the levels.

Theoretical findings

Teachers' work

In this thesis, we have proved that university faculty members' triple work profile is a reality, we have shown the way this triple job profile is distributed and we reveal that it is not equal among all the university faculty members since there are four types of work patterns, depending on the task that takes up more time. Therefore by working with a sample of 170 Spanish university faculty members, we observed four types of university faculty members depending on their job: 28% do almost full-time teaching,

12% do almost almost full-time research work, 11% do almost full-time management task and, finally, most (49%) do a mixture of teaching and research. Therefore, a triple work profile exists and besides, the distribution of these tasks is not always the same. This is an important finding because part of the university faculty members' well-being depends on this distribution. Furthermore, several authors have already considered this triple work profile (Currie, 1996; Lackrit, 2004; Morrison, 1996).

Teachers' well-being

As we have already explained, we decided to start this thesis with more general concepts and a broader scope, and to then move on to more specific concepts and psychological processes.

(1) Team conflict and team outcomes

This thesis has clarified an underlying psychological mechanism linking conflict with positive team outcomes, because the relationship between team conflict (i.e., task and relationship) and positive team outcomes (i.e., team performance and team affective commitment) is fully mediated by team potency. Moreover, we tested whether both types of conflict have a negative relationship with both positive outcomes. Therefore, our results corroborate the findings of the meta-analysis by De Dreu and Weingart (2003) regarding the negative relationship of both task and relationship conflicts with team performance. Although relationship conflict has consistently been found to negatively relate to team effectiveness or performance (e.g., De Dreu & Weingart, 2003; Jehn, 1995, 1997; Powell, Galvin, & Piccoli, 2006), for a long time, the predominant view of task conflict has been that it involves considering multiple perspectives and of avoiding a shift to a premature consensus. In this way, task conflict should generally enhance decision-making quality, individual creativity and work-team effectiveness.

Therefore in this chapter, we tested whether task conflict as a relationship conflict has a negative relationship with team performance.

Moreover, we set a clear difference between team potency and perceived collective efficacy. With team potency we refer to the collective belief of a team that it can be effective (Guzzo, Yost, Campbell, & Shea, 1993), and with collective efficacy beliefs, we refer to the group members' shared belief in their joint capacities to organize and execute the courses of action required to produce certain levels of profits (Bandura, 1997). So the difference between these two concepts is basically the specificity of the domain in the case of perceived collective efficacy. In the case of efficacy beliefs, and as we have already explained it is fundamental the specificity of the domain under study. And according to Bandura's *SCT*, team potency, being a generalized version of perceived collective efficacy, should play a predicting rather than a mediating role. That is why we tested in Chapter 2 an alternative model in which team potency was the predictor and conflict was the mediator. The fit of this model turned out to be worse than that of the original research model, so it was rejected. Therefore, it seems that team potency, as a generalized efficacy beliefs, has less power in predicting than efficacy beliefs has, and this is in line with Bandura (2006) who stated that efficacy measures tailored to the activity domain are more predictive than global ones.

(2) *Burnout: A four-dimensional construct*

We confirm a four-dimensional structure of burnout which is composed of emotional exhaustion, depersonalization, cynicism and lack of professional efficacy. As we have already explained, it is necessary to differentiate between depersonalization and cynicism because the definition of burnout has been extended to workers who are not in contact with clients/customers. Depersonalization necessarily implies other people; therefore its meaning cannot lie beyond social relationships. However, cynicism

can appear with no social relationship. Salanova et al. (2005) understood both dimensions to be indicators of a second-order factor called mental distance “towards work” (cynicism) and mental distance “towards fellow workers and the people for whom one works”, e.g., students, clients, patients, etc. (depersonalization). We believe that this differentiation is also necessary among teachers as they may experience cynicism towards their teaching work, but may also have feelings of depersonalization towards their students, co-workers and/or supervisors.

(3) Work engagement

We tested whether the well-being, which comprises not only engagement in Chapter 3, but also burnout and intrinsic satisfaction, among university faculty members depends on their work pattern. Although the differences found were only significant for the absorption and intrinsic satisfaction dimensions, Figure 7.2 illustrates that there are differences. Furthermore, these differences are in line with what we expected, that is: those university faculty members whose management tasks dominate their work pattern obtain the highest scores for burnout and the lowest scores for engagement and intrinsic satisfaction. Conversely, those whose research tasks dominate their work pattern obtain the lowest scores for burnout and the highest scores for engagement and intrinsic satisfaction. These findings are also in line with what other authors have postulated (Caramés, 2003; Currie, 1996).

By taking secondary education teachers into account, we verified that some personal and job resources, plus some job demands, have proven to be predictors of teachers' well-being (i.e., burnout and work engagement). As Chapter 4 reveals, we verified whether the more the personal resources (i.e., efficacy beliefs, and perceived mental and emotional competences), the more the job resources (i.e., autonomy and social climate) and the higher engagement is over time. Moreover, the lesser the job

demands (i.e., quantitative overload and role conflict), the lower burnout is over time. Finally, the more the personal resources and the more the job resources, and the lower burnout is over time.

Chapter 6 reveals the positive effect of efficacy beliefs on engagement, both in and over time. More specifically, we demonstrate that high initial levels of efficacy beliefs protect individuals and groups from experiencing a disengagement process. Moreover, since we analysed the data at both levels (i.e., individual and collective) in Chapter 6, and as one of the hallmarks of the changing nature of work is an increasing shift to use teams as the basic organising unit (DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004), we were interested in finding out if parallel motivational processes operate at the collective level. Composition processes describe the convergence of similar lower-level characteristics to yield a higher-level property that is essentially the same as its constituent elements, and is the basis of homologous multilevel models. These models specify that the constructs and relationships linking them can be generalised across levels. Besides, the apparent similarity in the results across the levels presented in Chapter 6 supports the idea of the constructs at the collective level being analogous, and of the theoretical mechanisms linking them being similar in nature at the individual level (Kozlowski & Klein, 2000). The associations found between efficacy beliefs and the Level and Shape factors are basically the same for both individual and team levels, while the relationships linking the parallel constructs are functionally equivalent across the levels, thus meeting a necessary precondition of multilevel homology (DeShon et al., 2004).

Integration of the Job Demands-Resources Model and the Social Cognitive Theory

This thesis has integrated two of the major theoretical perspectives in

Occupational Health Psychology; the *JD-R Model* and the *SCT*; by including personal resources such as self-efficacy and perceived mental and emotional competences in the by including personal resources such as the predicting role in the *JD-R Model*, having these personal resources a predicting role in the model. Although personal resources have already been included in the *JD-R Model*, (Xanthopoulou, et al., 2007), but literature contradicts itself in terms of the role that personal resources play. On the one hand, there are authors who argue that personal resources play a mediating role in the *JD-R Model* (e.g., Xanthopoulou et al., 2009). On the other hand however, other authors defend the idea based on the *SCT* that personal resources play a predicting role in the model (e.g., Lorente et al., 2008). However, Lorente et al. (2008) discovered how personal resources (e.g., significant prediction) disappeared when controlling by the baseline levels of burnout and engagement at T1. With this thesis we have tested that personal resources has indeed a predicting role in the *JD-R Model*, and this results are in line with the *SCT*.

Implications for practice and future research

Teachers' work

Teachers' work is important for our society as it is teachers' responsibility to train the professionals of tomorrow, and this work is especially important in the last few years of students' education; that is, secondary education and university studies. For instance, Johnsrud (2008) stated that university faculty members transform individual lives and improve the entire society's quality of life. Hence, we should pay attention to teachers' work and improve their well-being. Moreover, and according to Guerrero and Vicente (1999), it is necessary to do studies about university faculty members' work because it is important to study the multiple roles of this particular group, as well as the

discrepancies between excessive demands and the limited personal, material and institutional resources available. In Chapter 3, we attempted to understand university faculty members' work because, besides teaching, they have to carry out two other tasks that are equally important for society: research and management. Therefore, we must bear in mind that this occupational group has a triple work profile, but these tasks are unequally distributed among its members. Besides, this distribution affects their well-being, so any intervention or study with this group must consider their special job characteristics. We believe that future studies that analyse university faculty members should take into account the roles distribution because it affects their well-being.

Teachers' well-being

By starting this thesis with more general concepts and a broader scope, and then moving on to more specific concepts and psychological processes, we have made a step-by-step discovery of the practical implications and future studies of this thesis.

(1) Team conflict and team outcomes

When considering that conflict is practically intrinsic to the life and dynamics of teams, it is important from a practical point of view that high levels of team potency help teams function because of the negative relationship between team conflict and team potency, and the positive relationship between team potency and positive team outcomes (i.e., performance and affective commitment). So, it would be interesting to boost team members' shared feelings about the team's performance capabilities across tasks and contexts. In addition, it is also important to train team members in constructive conflict management strategies or to use third-party intervention should there be team conflicts (Giebels & Janssen, 2005).

In future research, it would be interesting to conduct a longitudinal study to test the mediating role of team potency and the predicting role of efficacy beliefs, which we have already discussed in the theoretical findings. Moreover, it would be interesting to test the model not only with other positive and negative team outcomes (e.g., burnout, turnover intention, work engagement, etc.), but also with other occupations apart from teachers. Finally, we could look for potential moderators of the relationship between conflict and team potency following the typology of the moderator variables influencing the relationship between conflict and outcomes as presented by Jehn and Bendersky (2003) (i.e., amplifiers, suppressors, ameliorators and exacerbators).

(2) Burnout: A four-dimensional construct

We have confirmed a four-dimensional structure of burnout composed of emotional exhaustion, depersonalization, cynicism and lack of professional efficacy. Although we consider that this improvement is an almost exclusive theoretical implication, we firmly believe that differentiating between depersonalization and cynicism is necessary for certain jobs, such as teaching, since the people undertaking these jobs may experience cynicism towards their work as teachers, researchers and managers, and may also experience depersonalisation towards their students, co-workers or service staff. The four dimensions mentioned have already been confirmed by Salanova et al. (2005) in two samples: 483 secondary school teachers and 474 blue collar workers.

It would be interesting to test the four dimensions of burnout in samples other than teachers and blue collar workers, and also in countries other than Spain.

(3) Work engagement

In Chapter 3, we tested whether university faculty members' well-being, which comprises not only engagement but also burnout and intrinsic satisfaction, depends on

their work pattern. Therefore, it is important to notice that those university faculty members whose management tasks dominate their work pattern obtain the highest scores for burnout and the lowest scores for engagement and intrinsic satisfaction, meaning they have better well-being. However, those whose research tasks dominate their work pattern obtain the lowest scores for burnout and the highest scores for engagement and intrinsic satisfaction, indicating worse well-being. It would be interesting if universities would consider these results and pay special attention to those teachers whose work mainly consists in management tasks, such as department managers. Perhaps one option for lowering the workload created by teachers' management tasks would be to hire staff specifically for such tasks. Moreover in future research, it would be interesting to know if this distribution on the four clusters is universal, and whether the distribution affects university faculty members' well-being in the same way.

Regarding secondary education teachers, in Chapter 4 we tested whether teachers' well-being (i.e., burnout and work engagement) is a result of having more personal resources (i.e., efficacy beliefs, and perceived mental and emotional competences), more job resources (i.e., autonomy and social climate) and less job demands (i.e., quantitative overload and role conflict). This implies that secondary schools will have to pay attention to these resources and demands intended for teachers, especially personal resources as they are predictors of well-being through job demands and job resources. Future studies could test the model with not only other job demands and job resources that may affect secondary education teachers, but also at a collective level, which could be used with both a group of teachers and the school as a whole unit.

Finally in Chapter 6, we tested that high initial levels of efficacy beliefs protect individuals and groups from experiencing a disengagement process. Once again, this

relationship, tested in a laboratory setting, shows the importance of efficacy beliefs in engagement and, above all, what happens when subjects experience a disengagement process, which occurs in this chapter. Therefore, it is important to note that a disengagement process may occur in the daily life of any employee if we consider efficacy beliefs at both individual and group levels. Thus, when individuals or groups have to work on non-challenging tasks, strengthening their efficacy beliefs in advance to prevent loss of motivation (i.e., engagement) is recommended during task performance. In future studies, this relationship can be drawn from the laboratory and taken to different work settings, and we could also test the isomorphism between the two levels outside the laboratory setting. Moreover, it would be interesting to replicate this study with a more engaging task to check if our initial assumptions are then confirmed. However, it is difficult to anticipate whether the study participants will experience a motivational or a demotivational process. Evidently, replicating this study in another sample of workers from a real organisation and with natural work teams would be fully warranted.

Integration of the Job Demands-Resources Model and the Social Cognitive Theory

Although the integration of both models has been mainly theoretical, it is important to note the important role played by personal resources as predictors of the model and, therefore, the importance of all the organizations in enhancing these beliefs among employees. Moreover, it would also prove interesting to study this interaction between the *JD-R Model* and the *SCT* with more than two waves to verify if our findings could be replicated. On the other hand, it would be appealing to test the gain spirals of resources and work engagement that Salanova, et al. (2010) discussed in their chapter. In this gain spiral, individuals with high levels of efficacy believe they can

control their environment effectively, thus job demands are more likely to be perceived as challenging, while job resources are considered abundant. Consequently, individuals are more likely to be engaged in their tasks and to perform well, which constitutes a process of mutual reinforcement and may result in upward spirals.

Moreover, one of the most important practical contributions of this thesis is to show the work strategy carried out in order to develop a new scale to measure specific self-efficacy following the guide for constructing self-efficacy scales (Bandura, 2006). In this case, we decided to create a self-efficacy scale in university faculty members by taking their triple work profile into account. The objective was not to create the scale, but to show the work method carried out to obtain this scale; that is, the idea was not to generalise the scale created because, according to the *SCT*, measures in self-efficacy cannot be generalised, rather specific domains can. Thus, the ultimate goal was to present a work method to measure specific self-efficacy in any domain. Indeed, we believe that this chapter may become a practical guide to create self-efficacy scales.

In addition, throughout the thesis we show that it is necessary to create a specific self-efficacy scale of our domain; for example, in Chapter 6. However, we followed the same process indicated in Chapter 5 to carry out the process to develop the self-efficacy scale for creative tasks, and we used it directly to show the expected relationships, resulting in a Cronbach's alpha of .84.

Weaknesses and strengths of the thesis

There are several shortcomings in the present thesis. Firstly, and most importantly, we have relied on self-report measures in all the chapters. Nevertheless, performing Harman's single factor test with the CFA has shown that the common method variance bias is not a problem for this thesis (e.g., Iverson & Maguire, 2000).

Although we have not always used self-reported measures, it is important to stress that the team performance in Chapter 2 was evaluated by the school headmaster and not by the team members themselves, thus eliminating much of this variable's subjectivity.

Secondly, the relationships in Chapter 2 are correlational and not causal. Thus, theoretically, conflict may result from poor performance and/or low commitment, rather than the other way around. Perhaps poor performance or low commitment deteriorates the interpersonal relationships among the team members, thus increasing the likelihood of conflicts. This, however, is not the case of other chapters in which the longitudinal relationships were tested (i.e., Chapters 4 and 6). In relation to this, in Chapter 2 we are aware that we cannot talk of a cross-level study predicting and mediating the role of team potency and perceived collective efficacy. Therefore we need a longitudinal study to test these two models.

Thirdly, sample size; in Chapters 3 and 5, only a low percentage (17% and 18%) of the university faculty members completed the scale. However, we used a convenient sample, and all the university faculty members were included so they all had the chance to respond in the scale. This method is possibly not the most effective in sample collection and we could have used another type of sampling. This is not the case for other chapters; for instance, cross-sectional Chapter 2, where we obtained a 65% participation rate and the participation rate was 46% in longitudinal Chapter 4. Because a laboratory setting was used in Chapter 6, we cannot speak about rates, but about the number of participants: 372 participants in 79 groups, this being a more than acceptable figure.

Finally, the exclusive use of teachers can be either a weakness or strength of this thesis. Since this thesis is an in-depth study of teachers in both secondary schools and universities, it widely covers the teaching context; however, it restricts our findings to

this single context. Nonetheless, Chapter 6 shows a longitudinal relationship between efficacy beliefs and engagement which can go beyond the educational context as it was tested in a laboratory setting.

However, there are more strengths in this thesis that deserve a mention. Firstly, we were able to corroborate previous results from an experimental laboratory study on the relationship between team conflict and team potency (Lira et al., 2008) in a real-life setting. Secondly, we have integrated two of the major theoretical perspectives in Occupational Health Psychology; the *JD-R Model* and the *SCT*; in longitudinal studies. Thirdly, we have used both individuals and collective levels, which is an important point since today's organisations are adopting flatter, more decentralised structures such as work teams, and employees are becoming more interdependent and responsible for more decision making (Jehn & Bendersky, 2003). Even though individual-level studies are still absolutely necessary, the organisational world is increasingly working more in groups. Therefore we have to include this present reality in our studies.

Finally, I would like to conclude this section by highlighting the variety of methodologies, samples, statistical analyses, etc., that appear in this thesis, and which collectively become one of the strengths of this thesis, and undoubtedly show my personal development as a researcher. This thesis combines quantitative and qualitative methodologies, exploratory and confirmatory analyses, cross-sectional and longitudinal studies of both a field and laboratory kind using four different samples from two countries (i.e., Spain and the Netherlands). Moreover, we used a set of statistical programs: SPSS, AMOS and LISREL.

Just how powerful are efficacy beliefs?

Recently, Van den Heuvel, Demerouti, Bakker, and Schaufeli (2010) stated that there is a growing tendency in Occupational Health Psychology to focus on personal resources, and that self-efficacy is one of the most studied personal resources and has been extensively used in research into the educational setting, among others.

This thesis continuously demonstrates just how powerful efficacy beliefs are, and in several ways. Firstly, we tested the predicting role played by personal resources (i.e., self-efficacy and perceived mental and emotional competences) in the *JD-R Model*. Personal resources enhance job resources, which role has been stressed by other authors (e.g., Hakanen et al., 2006), which not only trigger engagement, but also reduce burnout. Along these lines, there are the two assumptions of the *Conservation of Resources (COR) Theory*. Firstly, people invest their resources to deal with stressful conditions and to avoid experiencing negative outcomes. So the *COR* theory predicts that those workers with more resources are less vulnerable to stress. Secondly, people invest resources for several reasons: to protect against future resource loss, to recover their resources and, finally, to gain new resources. So, the *COR* theory predicts that those workers who possess more resources are also more capable of resource gain (Salanova, et al., 2010). As Llorens et al., (2006) explained, these results suggest that job resources influence well-being via two ways: directly by increasing engagement and indirectly by reducing burnout. So, the availability of personal and job resources not only increases motivation, but also protect against burnout.

Secondly, by knowing that efficacy beliefs are related to motivation and that they act as a self-motivating mechanism, people perceive their own level of competences as high. Consequently, they set themselves challenging goals and are motivated to invest considerable effort and show persistence in overcoming obstacles (Bandura, 2001). In

Chapter 6, we have attempted to go beyond merely exploring the role of efficacy beliefs in the motivational process of engagement by considering both individual and collective levels. For these purposes, we tested at both levels whether high initial levels of efficacy beliefs predict high levels of initial engagement, and whether the association between efficacy beliefs at Time 1 and the across-time change in task engagement was significant. At both the individual and group levels, we see that efficacy beliefs have a positive, significant relationship with engagement. Combined, these findings strongly support our assumption that high self-efficacy beliefs are beneficial for the development and maintenance of task engagement. Therefore, we demonstrate the positive effect of efficacy beliefs on well-being both in and over time. Moreover, we reveal that high initial levels of efficacy beliefs protect individuals and groups from experiencing a disengagement process.

Finally, this thesis also shows that although less powerful than efficacy beliefs, team potency, as a generalised version of perceived collective efficacy, also plays a positive role in team outcomes (i.e., team performance and team affective commitment) since Chapter 2 reveals that team potency fully mediates the relationship between team task conflict and team relationship conflict on the one hand, and team performance and affective team commitment on the other hand.

So, this thesis tells us just how important it is to encourage not only high personal resources as a source of well-being, but also job resources which help teachers become more engaged in their work and experience less burnout.

Final Note

This thesis comprises five empirical studies that have allowed us to meet our main objectives. They combine quantitative and qualitative methodologies, cross-sectional and longitudinal studies of a field and laboratory kind with four different samples from two European countries. Several theoretical and practical implications are provided to conduct an in-depth study of efficacy beliefs and well-being. Finally, the influence of efficacy beliefs on teachers' well-being has been proved.

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Appendix

With regard to the TEACHING I undertake at University, I can:

1. Determine contents of academic training even when I must decide between a considerable number of those which are fundamental and those that are additional.
2. Transmit knowledge even when material means are not sufficiently appropriate.
3. Communicate with students even when the characteristics of the students group are not favourable.
4. Assess the student's learning even when it is difficult to appreciate all its aspects (e.g. competences).

With regard to the scientific RESEARCH I undertake at University, I can:

5. Update the main research results even when there is a considerable number.
6. Update the use of research methodologies of my own speciality even when it is difficult to me to gain access to them.
7. Research with a high scientific quality.
8. Collaborate with teams inside and outside the university even when access to other research groups is difficult.
9. Train new researchers even when the economical means are not sufficient.
10. Prepare research projects to diffuse the research results even when I am not a member of top research groups.

With regard to the MANAGEMENT I undertake at University, I can:

11. Carry out tasks inherent to the academic management of my subject or subjects even when the system is excessively bureaucratic.
12. Carry out tasks inherent to the management of research projects which I participate in even when the regulating bases change.

13. Carry out tasks inherent to the administrative management of the present situation even when I depend on the work of others to complete them.

Answer scale:

0	1	2	3	4	5	6	7	8	9
Not at all	Hardly	Very slightly	Slightly	Somewhat	Sufficiently	Fairly	Considerably	Most considerably	Absolutely

Resumen**(Summary in Spanish)**

El objetivo de esta tesis ha sido examinar el importante papel desempeñado por las creencias de eficacia dentro de una profesión determinada, como es la enseñanza. Además, y con el *Modelo Demandas-Recursos Laborales (D-RL)* y la *Teoría Social Cognitiva (TSC)*, de Albert Bandura como marco, se ha analizado del bienestar de los profesores, a la vez que los antecedentes de dicho bienestar.

Por tanto, los objetivos generales de esta tesis han sido: 1) Comprobar el papel mediador de la potencia de equipo en la relación entre el conflicto de equipo (es decir, de tarea y de relación) y los resultados positivos del equipo (es decir, el rendimiento grupal y el compromiso afectivo) entre los profesores; 2) Confirmar las cuatro dimensiones del *burnout*, en el que se diferencian despersonalización y cinismo como componentes de distancia mental, y 3) Comprobar si los diferentes perfiles laborales de los profesores universitarios (es decir, docentes, investigadores y de gestores) se relacionaron con el bienestar (ej., *burnout*, *engagement* y la satisfacción intrínseca), 4) Analizar el rol predictivo de los recursos personales (es decir, autoeficacia, competencias emocionales y mentales percibidas) dentro del *Modelo DR-L*, 5) Mostrar el procedimiento llevado a cabo con el fin de desarrollar una escala para medir la autoeficacia en un dominio específico; 6) Analizar la relación entre las creencias de eficacia y *engagement*, tanto en un mismo tiempo como a lo largo del mismo y tanto a nivel individual como colectivo.

Para poner a prueba estos seis objetivos generales, se han desarrollado cinco estudios empíricos. Estos estudios han combinado metodología cualitativa y cuantitativa, estudios longitudinales y transversales, de campo y de laboratorio y se han utilizado cuatro muestras distintas, pertenecientes a dos países europeos. Estos estudios han dado lugar a cinco artículos de investigación que han sido sometidos varias revistas de impacto para su publicación.

Con el desarrollo de los cinco estudios que componen la tesis, se han alcanzado los seis objetivos planteados. En el primer estudio empírico (Capítulo 2), el objetivo era poner a prueba un modelo en que el conflicto grupal, tanto de tarea como de relaciones, estaba indirectamente relacionados con el rendimiento grupal y el compromiso afectivo a través de la potencia grupal en 33 equipos de profesores holandeses de educación secundaria. Específicamente, encontramos, a través de análisis de ecuaciones estructurales, que, el conflicto grupal fue significativa y negativamente relacionado con el rendimiento grupal, así como con el compromiso afectivo grupal a través de la potencia grupal. Por lo tanto, se concluye que, como se esperaba, la potencia grupal media plenamente la relación entre el conflicto grupal, tanto de tarea como de relación, por una parte, y el rendimiento y compromiso afectivo del equipo y el rendimiento del equipo por el otro lado.

El segundo estudio (Capítulo 3) tenía dos objetivos. En primer lugar, se ha confirmado, en una muestra de 170 profesores universitarios y mediante análisis factorial confirmatorio, una estructura de cuatro dimensiones del *burnout*, compuestas por agotamiento, despersonalización, cinismo y falta de eficacia profesional. En segundo lugar, se ha demostrado que aunque los profesores universitarios poseen un triple perfil laboral, la distribución de las tres tareas no es igual en todos los profesores, y por tanto, existen diferentes patrones laborales en este colectivo, que se han obtenido mediante análisis clusters, obteniendo una solución de cuatro clusters: 1) profesores universitarios dedicados principalmente a tareas docentes; 2) profesores universitarios dedicados principalmente a tareas investigadoras; 3) profesores universitarios dedicados principalmente a tareas de gestión; y por último 4) profesores universitarios dedicados principalmente a tareas investigadoras y de docencia. Además, se ha comprobado que el bienestar de los profesores universitarios (ej., *burnout*, *engagement* y satisfacción

intrínseca) depende de dicho patrón laboral. Y aunque las diferencias fueron sólo significativas en el caso de la absorción y la motivación intrínseca, se ha demostrado que los aquellos profesores universitarios con niveles más altos de *engagement* y satisfacción intrínseca y niveles más bajos en *burnout* son los que se dedican principalmente a las tareas de investigación, mientras que los profesores universitarios con mayores niveles de *burnout* y niveles más bajos de *engagement* y satisfacción intrínseca son los que se dedican principalmente a las tareas de gestión.

El objetivo del tercer estudio empírico (Capítulo 4) ha sido comprobar, en un estudio longitudinal de dos tiempos entre 274 profesores de secundaria, el *Modelo DR-L* (Demerouti y col., 2001) en el que las demandas y los recursos laborales afectan al bienestar de los profesores (e.j., *burnout* y *engagement*) a lo largo del tiempo, examinando el rol de los recursos personales dentro del marco teórico de la *TSC* de Albert Bandura. Por tanto, hemos demostrado que los profesores con altos niveles de recursos personales (ej., autoeficacia, y competencias mentales y emocionales percibidas) en Tiempo 1 (T1) influye positivamente en el *engagement* en Tiempo 2 (T2) indirectamente vía los recursos laborales en ambos tiempos. Además, los profesores con altos niveles de recursos personales en T1 influyen negativamente en el *burnout* en T2 indirectamente vía las demandas laborales en ambos tiempos. Y finalmente, los profesores con altos niveles de recursos personales en T1 influyen negativamente en el *burnout* en T2 indirectamente vía los recursos laborales en ambos tiempos.

El objetivo del cuarto estudio (Capítulo 5) ha sido mostrar el proceso llevado a cabo para crear una escala para medir la autoeficacia específica, en este caso, para medir la autoeficacia de los profesores universitarios en su trabajo y que tiene en cuenta su triple perfil laboral. Por tanto el objetivo de este estudio no ha sido crear la escala en sí, sino mostrar el procedimiento llevado a cabo para crearlo. Además, el objetivo tampoco

ha sido generalizar la escala creada, ya que de acuerdo con la *TSC* las escalas que midan creencias de eficacia no pueden ser generalizadas, sino específicas del dominio que se ha de medir. Por tanto, se ha mostrado como, mediante análisis cualitativos en una muestra de 166 profesores universitarios se creó dicha escala.

Finalmente, en el quinto estudio empírico (Capítulo 6) se ha profundizado en el análisis del rol de las creencias de eficacia en el proceso motivacional del *engagement* tanto a nivel individual como colectivo. Por tanto, se ha demostrado en un estudio longitudinal de tres tiempos hecho en laboratorio con 372 participantes españoles a nivel individual y 79 grupos a nivel colectivo, que altos niveles de creencias de eficacia predicen tanto altos niveles iniciales en *engagement* como el mantenimiento en esos niveles iniciales de *engagement* en el caso de estar ante un proceso de desmotivación. Por tanto, se ha demostrado que las creencias de eficacia son beneficiosas tanto para el desarrollo como el mantenimiento del *engagement*. Además, la aparente similitud entre los resultados de ambos niveles (ej., individual y colectivo) ha demostrado isomorfismo, lo que significa que los procesos y las conexiones entre nuestros constructos son funcionalmente equivalentes en ambos niveles.

Por tanto, esta tesis ha sido capaz de integrar dos de las perspectivas teóricas más importantes de la Psicología de la Salud Ocupacional, el *Modelo DR-L* y la *TSC*, y además los distintos antecedentes del bienestar de los profesores, tanto de secundaria como universitarios, han sido analizados, destacando en todos ellos el papel que juegan las creencias de eficacia.

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Curriculum Vitae



María Vera Perea was born on January 24th, 1981 in Alicante (Spain). She graduated in Psychology in 2004 at Universidad Miguel Hernández de Elche. Then, she started the PhD studies on Work and Organisational Psychology, (Inter-university program awarded a quality mention by the Spanish Ministry of Science and Education), under the supervision of Marisa Salanova. In 2007 she was granted a scholarship from the Spanish Educational Ministry, in order to carry out her PhD. Since then she is involved in several research projects at Wont Research Team, and also teaching in the Department of Social Psychology at the Universitat Jaume I. Her main topics of interest are related to positive psychology as self-efficacy and well-being.