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Dancing between Theory and Practice: Work Stress Intervention through the Action-Research  
Approach

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*Submitted to Human Factors and Ergonomics in Manufacturing*

July, 2009

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The research was supported by a postdoctoral grant and financial support from the Spanish Ministry of Science and Technology (CICYT #SEJ2004-02755/PSIC) and Bancaixa (P1.1B2004-12).

### Abstract

The present quasi-experimental and longitudinal study assesses the effectiveness of a work stress intervention (i.e., Team Redesign) to increase job and personal resources, and to consequently reduce job strain and increase employee psychosocial well-being in a manufacturing enamel company following the *Resources-Experiences-Demands Model (RED Model)*; Salanova, Cifre, Llorens, Martínez, & Lorente, 2009) and within the *Action-Research* approach. The sample was composed of Time 1 with 108 employees and Time 2 with 72 employees. Repeated Measures MANOVA showed that the Time X Intervention interaction had reliable, positive and incremental effects on job resources (i.e., innovation climate), personal resources (i.e., professional self-efficacy and perceived competence) and motivational outcomes (i.e., work engagement: vigor and dedication) on the intervened group (laboratory team, n=9) when compared with the control group (n=63 employees from different departments). Finally, we discuss the theoretical and practical implications based on the *RED Model*, including the feedback from Intervention (Action) to Theory (Research).

Keywords: Work stress intervention, well-being, demands, resources, self-efficacy, Action-Research.

## Dancing between Theory and Practice: Work Stress Intervention through the Action-Research Approach

### 1. INTRODUCTION

The manufacturing industry has a long history of assessing and intervening health and safety at work (i.e., Emmons, Marcus, Linnan, & Rossi, 1994; Picard, *et al.*, 2008; Yen, Edington, & Witting, 1991; see also Heidel, 2008). Risk assessment has become a key tool for organizations (both top management and employees' representatives) to enhance Quality of Working Life given its potential to avoid accidents and improve working conditions. However, this risk assessment has focused on physical and ergonomics factors such as Musculoskeletal Disorders (i.e., Pascual, Frazer, Wells, & Cole, 2008; Rinder, Genaidy, Salem, Shell, & Karwowski, 2008; Tuncel *et al.*, 2008), while wider psychological problems have been ignored (Jensen, 2001). According to the Sixth Spanish National Survey of Work Conditions (Spanish National Institute of Occupational Safety and Health at work, 2007) only 9.6% of Spanish manufacturing companies have assessed mental and organizational aspects of work, focusing mainly on the assessment of noise, safety of machinery, equipment and materials and work postures, repetitive movements and physical effort. And that even the fact, that according the aforementioned survey, a high percentage of employees in the manufacturing industry (34%) suffer stress and other psychosomatic complaints (headache, depression and insomnia), percentage surpassed only by back pain complains (44%). In fact, according to the *Fourth European Working Conditions Survey* (European Foundation for the Improvement of Living and Working Conditions, 2007), the manufacturing industry might be included in the group of *high-strain work organization* (high demands, low control-autonomy). Clearly, then, developing a methodology that supports the assessment of psychosocial factors in the manufacturing industry is an important task for occupational health research.

Factor that have received little attention in this respect are assessment and intervention on psychosocial factors. This lack of *Occupational Stress Management Intervention Programs* (OSMIP) and the assessment of their effectiveness are even more obvious in the manufacturing sector. For example, a recent meta-analysis performed by Richardson and Rothstein (2008) about the effects of OSMIP considered 36 studies, and found that only one had been developed in office workers of a manufacturing company. This study addresses these issues, and proposes and develops a methodology based on the *Action-Research* approach that not only allows the assessment, but also the intervention of psychosocial factors in a manufacturing company, by grounding and fostering the whole process on the *Demands-Experiences-Resources (RED) Model* (Salanova, Cifre, Llorens, Martínez, & Lorente, 2009).

### 1.1. Action-Research approach.

Several authors have recommended stress reduction programs. For example, Kahn and Byosiere (1998) and Kompier, Geurts, Grundemann, Vink and Smulders (1998) suggested that the systematic identification of stress risk factors and risk groups should be the basis of the type of intervention used in stress reduction programs. An optimal fit between intervention and the target of such intervention is not possible without systematic risk assessment, which may finally result in the absence of an effect. Indeed, intervention effectiveness is hard to assess without this systematic identification and assessment. In the same vein, one well-known framework that facilitates this systematic approach is the so-called *Action-Research (AR)* approach.

Briefly, one definition of the *AR* approach is an “emergent inquiry process in which behavioral science knowledge is integrated with existing organizational knowledge and applied to solve real organizational problems [...]. It is an evolving change process that is undertaken in a spirit of collaboration and co-inquiry” (Shani & Pasmore, 1985, p. 439). The *AR* approach is the change process based on systematic data collection, and the selection of an action (intervention) based on

results when organizational constraints allow it (Robbins, 2005). Therefore, the aim of this approach is to provide a methodology to handle planned changes. Briefly from our point of view, there are at least three strong points that support this approach for the study and intervention on occupational health in organizations. Firstly, it represents a collaborative and participative relationship between researchers and stakeholders because of “a double purpose which runs in parallel: The research ends are the researcher’s reason for getting involved, but the intervention itself is driven by the clients’ needs and usually initiated by the client” (Huxham & Vangen, 2003, p. 385). This collaboration allows the intervention actions derived from the assessment to be tailored to the context of each organization. Besides, this heavy employee involvement reduces resistance to change (Robbins, 2005). Secondly, it consists of a systematic and cyclical process to approach the organizational phenomena overcoming “the dual purpose of bringing about practical transformation and advancing knowledge” (Huxham & Vangen, 2003, p. 384). This means that the *AR* concurrently solves problems and creates new knowledge (Khanlou & Peter, 2005), i.e., problem-solving is based on previous theory, and it adds new insights into this pre-existing theory after completing interventions. However, as far as we are aware, there are no empirical studies that evidence this feedback from Action to Research. Thirdly and finally, the *AR* approach represents a step forward to the Work Stress Intervention (WSI) by its cyclical process not only taking into account the intervention *per se*, but also the assessment of its effectiveness.

In relation to the second point, the theory and practice of WSI appear to be separate scopes which prove difficult to combine. This is precisely one of the strong points of the *AR* approach, as explained before. Specifically, and with a view to advancing and bridging this distance between research and practice, the *AR* approach requires theoretical background as a starting point, although it gives researchers the chance to select that which better suits their interpretation of reality. At this point, we consider that the *RED Model* (Salanova *et al.*, 2009) fulfills this need because of its theoretical and

empirical background, and given its specificity as it has been validated in the construction sector (which is included in the manufacturing industry).

### 1.2. Theoretical background: the *RED Model*

The *Resources-Experiences-Demands Model (RED Model)* (Salanova *et al.*, 2009) extends the *Dual Process Model* (Schaufeli & Bakker, 2004) which, in turn, extends the *Job Demands-Resources Model (JDR Model)* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The *JD-R Model* indicates that the amount of stress experienced at work results from the combination of the job demands and job resources available to cope with these demands. *Job demands* (i.e., quantitative overload, role conflict, etc.) refer to those physical, psychological, social or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) efforts or skills, which are, therefore, associated with certain physiological and/or psychological costs. *Job resources* (i.e., social support, job control, etc.) refer to those physical, psychological, social or organizational aspects of the job that: 1) are functional in achieving work goals; 2) reduce job demands and the associated physiological and psychological costs; and 3) stimulate personal growth, learning and development. Hence, resources are not only necessary to deal with job demands, but are also important in their own right.

The *JD-R Model* focuses mainly on negative results, such as employee burnout. Later, Schaufeli and Bakker (2004) extended this model to the *Dual Process Model* by not only including negative outcomes of stress but also positive ones, such as work engagement. The model assumes two different underlying psychological processes that play a role in the development of psychological well-being outcomes: the erosion process (which leads to exhaustion and long-term burnout) and the motivational process (which leads to high work engagement and then to excellent performance) (see Schaufeli & Bakker, 2004 for a review).

However, it does not pay attention to the special and somewhat ‘crucial’ resources that, from our point of view, make the model completely meaningful, i.e., personal resources. These personal resources not only affect the stress process as to how a person appraises the situation, but also both the actual coping process and recovery from the job stress process. Thus, individuals with greater personal resources handle stress more effectively and may recover from experienced stress more quickly (Salanova, Bakker & Llorens, 2006; Salanova, Grau, Cifre, & Llorens, 2000; Salanova, Peiró, & Schaufeli, 2002). In that sense, the *RED Model* sees self-efficacy as a personal resource that plays a key role in coping with stress (Salanova, Grau, Llorens, & Schaufeli, 2001; Salanova *et al.*, 2002), which the *Social Cognitive Theory (SCT)* supports (Bandura, 2002). This is the reason why the *RED Model* includes personal resources to the previous *Dual Process Model* described above. Besides, it is important to note that efficacy beliefs play a key and differential role in this *RED Model*. In this sense, the *RED Model* considers that efficacy beliefs perform as antecedents of demands and resources. (Salanova *et al.*, 2009).

### 1.3. Intervention effectiveness on WSI

Although clearly needed from a theoretical and a practical point of view, studies concerning intervention effectiveness on WSI are scarce, mainly because this research is full of obstacles. For instance: 1) unclear links to theoretical models, 2) excessive emphasis on intervention at the individual employee level, and 3) difficulty in implementing intervention programs (Lipsey & Cordray, 2000). The first obstacle has already been treated in the previous section which links the case study with the *RED Model*. We will cover the rest below.

In relation to the second obstacle, stress prevention programs predominantly focus on the individual and reactive (non proactive) levels (e.g., Kahn & Byosiere, 1992). This means that intervention programs, which focus only on an individual level, teach employees to cope with strain, but ignore the strain causes (e.g., work characteristics that are demanding and stressful to employees)

(Beehr & O'Hara, 1987). The study on WSI effectiveness also follows this trend. In that sense, Van der Klink, Blonk, Schene, and van Dijk (2001) carried out a meta-analysis of 48 well-designed (quasi) experimental studies about WSI effectiveness, and found that only 5 of them focused on the organizational level. The most recent meta-analysis conducted by Richardson and Rothstein (2008) reinforces this result as it found that only 5 studies of the 55 initially included actually focused on the organizational level. However, proactive-preventive intervention, which centers on the organizational level or which targets the stressors at their source (i.e., organization of work, working conditions), seems to be the most effective (see Lamontagne, Keegel, Louie, Ostry & Landsbergis, 2007 for a systematic review of the job-stress intervention evaluation literature).

In relation to the third obstacle and to the weakness of the current WSI effectiveness research designs, we would like to stress the fact that very few studies have conducted quasi-experimental and longitudinal studies (and even less focus on theoretical backgrounds) (see Bond & Bunce, 2001; Landsbergis & Vivona-Vaughan, 1995) because it is difficult to implement them in real organizations. However, these quasi-experimental and longitudinal studies underlie the *AR* approach design.

Finally, we wish to point out a last and additional weak point of current occupational health research. As the *RED Model* states, we consider it important to take into account not only stress but also health indicators (i.e., negative or strain and positive psychological well-being) when studying the WSI effectiveness. Along these lines, research on Occupational Health Psychology (OHP), in general, has focused mainly on negative work-related outcomes (Schaufeli & Bakker, 2004). Nowadays however, we see a shift from the traditional focus on weaknesses and malfunctioning to human strengths and optimal functioning (Seligman & Csikszentmihalyi, 2000), which is the so-called Positive Psychology movement. We believe that it is one of the sides that the OHP in general, and research on WSI effectiveness in particular, should take into account to consider the whole phenomenon.



In short, the aim of this paper is to describe a work stress intervention program based on the empirical results of a manufacturing company following the *AR* approach and grounded on the *RED Model*. In doing so, our intention is to overcome some of the obstacles and weakness of the stress intervention literature by:

- Systematically identifying stress risk factors (high job demands and low job/personal resources) and risk groups (groups in the organization with the poorest psychological employee well-being).
- Making the link between a theoretical model and practice/intervention clear. In this way, the *RED Model* will orient both assessment and intervention in the whole stress program. This theoretical model will help researchers to interpret the reality in the company (Research) and to decide which interventions (Actions) would be the most appropriate. Besides, we will also stress the importance of an alternative way, i.e., we will emphasize the main contributions to theory that the evaluation of the WSI will provide. As noted before, and as far as we know, this relationship has not been stressed in the empirical studies.
- Intervening at both the organizational and group levels, and then focusing on the psychosocial factors that may promote positive psychological well-being and diminish the negative psychological well-being of employees.
- Including negative (i.e., burnout, anxiety and depression) and positive (i.e., engagement, flow and satisfaction) psychosocial constructs in attempt to capture both sides of the employee well-being indicators.
- Studying the WSI effectiveness by (1) using a quasi-experimental longitudinal study (T1-intervention-T2, where T1 = Time 1 and T2 = Time 2), which includes an intervention and a control group to overcome the weakness of research designs; (2) doing a longitudinal study in order to assess the effectiveness of the interventions; and (3) performing complex statistical analysis such as Multivariate Repeated Measures MANOVA which consider both two quasi-

experimental conditions (intervened group vs. control group) and the development of the phenomena over time (T1-T2).

We propose that intervention will decrease job demands and will foster (personal and job) resources which, in turn, will be related to employee well-being at work. We tested this proposition in a case study in a manufacturing company by taking into account the whole organization (both shop floor and office environments). First, we assessed the psychosocial factors in all the areas of the organization (Time 1, T1). Second, we intervened in one of the most conflictive areas by proposing interventions grounded on our theoretical model. Finally, we assessed the effectiveness of these interventions in decreasing job demands, increasing (job/personal) resources and employee well-being at work (Time 2, T2). Thus, on the basis of these arguments, we hypothesize that an interaction effect Time X Intervention in both the job demands-job/personal resources and employee well-being are expected. Specifically, we expect that the employees in the intervened area will report, when compared with the control group over time: 1) increases in job/personal resources, 2) decreases in job demands, and 3) an associated decrease in strain and increase of employee well-being.

According to the *RED Model*, a decrease in job demands accompanied by an increase in job and personal resources will lead to an increase of employee well-being at work. Thus, this will be the central point of our interventions.

## 2. STUDY DESIGN AND SAMPLE: THE *ACTION-RESEARCH* PROCESS

We designed an intervention program as a field quasi-experimental study for the purpose of measuring the effects of group interventions on psychosocial variables. We carried out a two-wave longitudinal design in a Spanish production branch of a multinational enamel company. According to the *AR* approach, the study design process included five phases (Robbins, 2005): (1) diagnosis, (2) data analysis, (3) feedback survey, (4) intervention, and (5) post-intervention assessment.

### 2.1. Diagnosis phase

We used self-report questionnaires to carry out the pre-intervention assessment (pre-test) that involved a T1 pre-test or psychosocial risk assessment. After several meetings with the top management, the health and safety prevention manager, the human resources manager and all the immediate supervisors of each company area, the diagnosis phase took place through a document review and we handed out self-report questionnaires to all the company staff.

In order to encourage the participants to complete the self-report questionnaires, a meeting took place between the researchers and the immediate supervisors to explain the aim of the full psychosocial risk assessment and the intervention program, and to request their collaboration. The immediate supervisors delivered 184 self-report questionnaires to the employees, which they had to return to the researchers in a sealed envelope. This study ensured individual anonymity as the questionnaire included only the working area and a code solely known only by each worker. Finally, 108 respondents (74% men) returned the questionnaire (58% response rate). Employees belonged to eight different areas or departments (24% Technical and Sales Assistance area, 19% Enamel Production Plant, 18% Office and Central Services, 14% Maintenance, 9% Color Laboratory, 7% Warehouse, 5% Special Products Laboratory, 4% Chemical Analyses Laboratory). The mean age of the sample at this T1 was 38 years ( $SD = 11$ ), with an average organizational tenure of 11 years ( $SD = 10$ ).

We assessed both job demands, job resources and personal resources (i.e., self-efficacy) as well as employee well-being indicators (see Table 1).

(Table 1 about here)

Research members translated the scales from English to Spanish and then native English speakers translated them back into English to test their adequacy with the originals ones. Previous studies validated all these scales (Cifre, Llorens, & Salanova, 2003; Cifre & Salanova, 2002; Martínez, Cifre, & Salanova, 1999; Salanova *et al.*, 2002; Salanova *et al.* 2006), except the “training” scale (self-

constructed) as this study measured its validity. All the items scored on a 7-point frequency rating scale ranging from 0 ('never') to 6 ('always'). Table 1 shows the key aspects of those scales, while Table 2 presents their internal consistencies (Cronbach's alphas, in T1 and T2).

(Table 2 about here)

## 2.2. Data analysis

The data analysis phase covered both the data analysis and the preparation of an overall results report and eight area reports (one for each aforementioned area), all of which compared the risk assessment among areas and among companies (internal and external benchmarking). The data analysis phase took two months. We compared all the variables from the different areas with a large database from previous studies belonging to the research team (external benchmarking). Analyses with this large database allowed researchers to locate cut-off points for low (- 1SD) and high (+1SD) scores in all the areas of this company. We delivered the overall results report to the top company management. The researchers kept the particular results reports per area to show them to the employees in the feedback survey phase (see Figure 1).

(Figure 1 about here)

## 2.3. Feedback survey phase

After reporting the main obtained results to the top management, we performed the feedback survey phase (Step 3). This was one of the most important steps. Based on previous data analyses, the aim of this phase was to focus on reporting the results per area to those employees who participated, and to compare the results with the rest of the company using the feedback survey technique. The researchers organized and led a meeting for all the supervisors and employees of each area to attend (one meeting per area). During the meeting, the researchers distributed the results report of their area to all the attendees (see an example of a results report in Figure 1). This technique allowed employees to explain the results in their own words and provides key qualitative information about them. Besides,

we gave the employees the chance to propose improvement strategies. The researchers encouraged this form of participation to increase employees' commitment to the final strategies adopted. Then the researchers prepared a new report by summarizing all the intervention proposals of the particular area which they delivered to the top management of the company.

#### 2.4. Intervention phase

Owing to the organizational constraints operating within the company, it was not possible to either randomly allocate participants to the “intervention” and “control” groups or to intervene in those groups showing the poorest well-being indicators. Based on policy decisions, the top management only agreed to first perform some of the interventions proposed by the research team in the Color Laboratory area.

According to the results obtained in Phase 2 (*data analyses*) and Phase 3 (*feedback survey*), the main psychosocial risks in the Color Laboratory area were those related to low job resources, such as job autonomy, innovation climate, and perceived training quality. By taking these results into account, we decided to carry out a “Team Redesign” intervention program that consisted in two main actions:

1. Role redesign. An in-depth interview with the supervisor revealed that he did not feel comfortable in his job as he was performing a job that did not match his competencies. In particular, he showed a low degree of social competences in terms of all those that deal with the supervising activities expected by the company (i.e., empowering employees, communicating relevant information). After negotiation, the supervisor preferred to be relocated in another area and in another job which matched his technical and social competencies better, and which did not require leading competences. In the intervened area, the supervising role was performed by another member with supervising competences, and with the trust and support of her co-workers. Moreover, in order to increase job control and the innovation climate, we divided the area into two

sub-areas according to the similar roles and competences among employees. The main objective was to gain a better adjustment between job requirements and employees' competencies to, in turn, lead to higher personal development.

2. Information actions about job training in this area. One of the company managers orally explained to employees the on-the-job training that had been conducted in the whole area in recent years in order to make employees aware of this process and to suggest future improvements of the training process in the company.

#### 2.5. Post-intervention assessment phase (T2)

In order to test the effectiveness of the intervention carried out in the company, we performed a post-intervention psycho-social factors assessment nine months after the pre-intervention assessment and six months after a two-week intervention phase. We adapted the assessment design by splitting the groups of participants into "intervened" and "control" groups according to intervention exposure.

We distributed identical questionnaires to all the areas. In order to guarantee confidentiality, we delivered an identical number of questionnaires, and recommended employees to participate only if they had already participated at T1. After deleting missing cases, 72 employees (68% men) from all the areas completed both questionnaires. Thus, 75.6% of the employees who participated at T1 also participated at T2. Once more, the mean age of the sample at T2 was 38 years ( $SD = 10$ ), and the average organizational tenure was 11 years ( $SD = 10$ ).

The sample of the intervened area comprised its full population (all the staff of the Color Laboratory) both at T1 and T2 ( $N=9$ ). The mean age was 32 ( $SD = 7$ ) with an average organizational tenure of 7 years ( $SD = 8$ ).

### 3. RESULTS

#### 3.1. Cross-time analyses

In order to test whether dropouts differed from the panel group, we compared the T1 age and organizational tenure of both groups with the whole sample ( $n=108$ ). The results of the ANOVAs showed that there were no significant differences among the groups regarding these two variables,  $F(1, 97) = 3.24, p > .05$ ,  $F(1, 103) = 1.95, p > .05$ . We therefore concluded that the panel group did not differ from the dropouts in terms of the background variables.

We computed the means, standard deviations, Cronbach's alpha coefficients and bivariate correlations at T1 and T2 (see Table 2). Cronbach's alpha coefficients suggested that each scale was sufficiently consistent internally since it met the criterion of .70 (Nunnally & Bernstein, 1994).

According to the ANOVAs, some inter-group differences among the study variables at both T1 and T2 were found (see Table 3). Given all the results shown in Table 3, the control group not only showed higher levels of work overload at T1, but also perceived better quality training than the intervened group. These differences in overload continued at T2 (employees in the Color Laboratory continue to under-load compared with other areas). However, the differences on perceived quality of training disappeared at T2. Apparently, the quality of training in the intervened area increased at T2. It is remarkable to recall that some of the interventions conducted at the Color Laboratory addressed the improvement of this perception.

(Table 3 about here)

### 3.2. Over-time analyses: longitudinal design

In order to test whether the differences at T2 were owing to time (within-subjects effect) or to intervention (between-subjects effects), we performed four Doubly Multivariate Repeated Measures MANOVA (Norusis, 1988; SAS Institute, 1990) with the different dependent variables. We grouped these according to their nature (job demands, job resources, personal resources, and employee well-

being). This Repeated Measures MANOVA became doubly multivariate since we measured two dependent variables, or more, at a minimum of two time points (Weinfurt, 1995).

Table 4 summarizes the results of the four Doubly Multivariate Repeated Measures MANOVA for all the groups of variables. We tested three main multivariate effects for each group of variables. We excluded training quality (resource variable) from the analysis given the low number of respondents. The results show that only the main effects appeared in the Personal Resources group of variables (Wilks' lambda,  $\lambda$ ). Specifically, the effect of time on Personal Resources was highly significant, indicating that the change in the pretest-post-test scores of the different subscales of the resources group differed mainly because of change over time. However, not only the time variable (within the subject variable) seemed to have a main effect on the Personal Resources variables, but the effect of the interaction Time X Intervention (within and between variables) was also significant.

(Table 4 about here)

The effect sizes of the models show the magnitude of the treatments. According to Cohen's (1977) classification of effect sizes (measured in this case by an eta-square,  $\eta^2$ ), effect sizes around 0.01 were small, those around 0.09 were medium, and those exceeding 0.25 were large. Then, the effect sizes shown by the tested models in this study were small-medium, with similar results to those of the majority of social research works (Weinfurt, 1995). The demands variables were less affected over time, while time showed a greater effect size on resources (mainly personal resources), and an even greater effect on employees' psychosocial well-being. Besides, we agree with Cortina and Landis (2009) about the need to include a reflexive interpretation of the effect sizes by taking into account the context we did the study in. In this case, if we were to consider the fact that the whole company intervened in some way (as we invited all the workers to participate and we carried out the feedback survey in all the units), the effect of the extra interventions (i.e., interventions performed in the Color area) were considerably large, especially on the psychosocial well-being variables. Therefore we may



conclude that interventions had a significant effect on psychological well-being and resources, particularly on personal resources, which also significantly differed between the intervened and control groups.

The main multivariate effects only account for the differences in personal resources as a whole because of the changes taking place over time (within-subject variable) and the interaction between Time X Intervention. Another look at the univariate contrasts test highlights some even more interesting results. Besides all the personal resources, as the main multivariate effects show, the univariate results reveal the effect of the within-subject variable (time) over one demand variable (role clarity,  $F(1, 67) = 1.52, p < .05$ ), one job resource variable (innovation climate,  $F(1, 63) = 6.37, p < .05$ ), and one psychosocial well-being variable (the dedication component in the engagement scale,  $F(1, 60) = 6.99, p < .05$ ). Moreover, the intervention group variable (between-subject variable) affected one job demand variable (overload,  $F(1, 67) = 6.18, p < .05$ ).

Finally, we stress more interesting effects (i.e., interaction effects) obtained from these univariate contrasts. In fact, five interaction effects (Time X Intervention) show one job resource (innovation climate,  $F(1, 63) = 5.43, p < .05$ ), two assess personal resources (professional self-efficacy,  $F(1, 63) = 4.30, p < .05$  and perceived competence,  $F(1, 63) = 8.52, p < .01$ ), and two positive psychosocial well-being variables, the core dimensions of work engagement (vigor,  $F(1, 60) = 4.95, p < .05$ ; and dedication,  $F(1, 60) = 7.43, p < .01$ ).

Figure 2 graphically presents the significant interaction effect of the Time X Intervention on innovation climate. The results of the employees in the control group remained constant over time. However, a different picture was seen for employees in the intervened area. In this case, innovation climate at T2 increased, and significantly improved from T1 to T2.

(Figure 2 about here)

Figures 3 and 4 graphically depict the significant interaction effects of intervention exposure and time on perceived competence and self-efficacy, respectively. Once more, the results for employees in the control group remained constant over time. In this case, the employees in the intervened area obtained lower scores in efficacy beliefs at T1. These scores significantly increased at T2 (post-intervention time) to reach (perceived competence), or even exceed (professional self-efficacy) those of the control group.

(Figures 3 and 4 about here)

Figures 5 and 6 graphically depict the significant interaction effects of intervention exposure and time on both the core of engagement dimensions (i.e., vigor and dedication). In this case, the levels of vigor and dedication in the control group decreased over time, whereas they significantly increased in the intervened group. In fact, the intervened group score obtained lower scores in both the engagement dimensions at T1, while they were higher at T2 (even higher than in the control group at T1). This trend was even more evident for dedication.

(Figures 5 and 6 about here)

#### 4. DISCUSSION

The aim of this study was to show a stress management intervention guided by theory and practice. For this purpose, we used the *RED Model* (Salanova *et al.*, 2009) as a theoretical basis and we followed the *Action-Research* approach. The results partially support Hypothesis 1 as they show that the Team Redesign Intervention strategies derived after the T1 assessment specifically address the increased job resources reported as the main psychological factors associated with the intervened group, which were partially successful as they caused significant changes in two of the three psychosocial risks assessed at T1 (low innovation climate and low perceived training quality). In fact, innovation climate increased by more than one point at T2, showing statistical significant differences with the control group; these differences were not seen at T1. Furthermore by taking the cross-

sectional analyses at T1 and T2 into account, the perceived quality of training also increased at T2 in the intervened group and reached the control group scores.

Besides, we found further interesting results with the interaction effects of Time X Intervention as they reflect the effect of not only time flow, but also intervention at the same time. Regarding these interaction effects, we found personal resources (self-efficacy beliefs and perceived competence) and two positive employee well-being indicators, i.e., the core of engagement (vigor and dedication), and collateral improvements in the social support climate (job resources) and intrinsic motivation (flow antecedent). However, no changes in the negative variables were found, that is, neither job demands nor negative employee well-being indicators. Therefore, we adjusted the intervention program to the results of the T1 assessment to increase job resources. Briefly, we may state that the intervention strategies at this point were effective.

#### 4.1. Theoretical implications

We based the main theoretical implications on Albert Bandura's *Social Cognitive Theory* (SCT) predictions. In that sense, our results show the key role played by personal resources (self-efficacy and perceived competence) in the stress management intervention programs. The significant interaction effect shown on personal resources reflects how the employees in the intervened group changed their beliefs about professional self-efficacy and perceived competence positively over time and at a different rate to those in the control group. This trend was even stronger with professional self-efficacy if compared with the control group. The more specific beliefs (professional self-efficacy) in the intervened group were lower at T1 than for the control group, but higher at T2. This result agrees with Albert Bandura's SCT (Bandura, 2002; Salanova *et al.*, 2002) which predicts that domain-specific efficacy beliefs prove to be more powerful predictors of behaviors and psychosocial well-being than general beliefs. On the other hand, the positive changes noted in self-efficacy from T1 to T2 after one intervention program could be indicators of the effectiveness of the intervention program

itself. This is even more important if we have into account that previous studies indicate that manufacturing workers (i.e., construction workers) show lower levels than the general population (Salanova *et al.*, 2009).

But, why was intervention successful? At this point, it is time to once again link theory and practice. So, according to the *SCT* (Bandura, 1986, 2002), the success of intervention which focuses on Team Redesign would be grounded on the fact that we intervened directly on the four self-efficacy sources, i.e., 1) *Mastery Experiences*, as the redesign allowed employees to perform activities that adjusted more to their own competences, thus facilitating successful experiences that would built a robust belief in one's personal efficacy, 2) *Vicarious experiences*, provided by their colleagues as social models, i.e., looking at other people with similar characteristics (work colleagues in their new roles) as doing specific tasks successfully would help them to trust their own capacity to successfully carry out the same task, 3) *Social persuasion*, from the new transformational group leader as others' positive reactions can have a positive effect on one's own beliefs of effectiveness, and can encourage people to make more effort in difficult tasks and to improve their own performance, and 4) *Modifying somatic and emotional states* that would affect employees in judging their capabilities in a positive mood (in our study, engagement), which would lead to enhanced perceived self-efficacy.

Finally, the intervention program specifically focused on improving 'resources' and not on reducing job demands. Prior research shows that job resources positively associate with positive outcomes, especially with work engagement (Salanova, Agut, & Peiró, 2005; Schaufeli & Bakker, 2004). In that sense, this study validates the motivational process (the more job resources, the greater job engagement) of the *RED Model* by using a real intervention program in the workplace.

#### 4.2. Practical implications

In our opinion, the feedback survey technique (conducted in Phase 3) has shown a key role in this entire Work Stress Intervention Program. According to the *AR* approach, all the company

employees participating in the study carried out this technique, while the intervention group received help in using this feedback-survey. This scenario makes us think that we cannot talk of a “pure” control group as the whole company showed improvements in some of psychosocial factors assessed (role clarity, innovation climate, both personal resources and dedication), and probably not only as a result of the time flow, but also because we intervened with all the employees in some way (“*Intervention implies change*”; Cox, Karanika, Griffiths & Houdmont, 2007, p. 353). Therefore, we believe that this is a technique that the practitioners interested in WSI should really take into account.

Therefore, the *AR* approach has proved to be a robust model to follow when it comes to designing a WSI as it not only includes the first steps to carry out a WSI, but also the last ones involved in evaluating the effectiveness of the WSI. Besides by following McClenahan, Giles, and Mallett’s recommendation (2007), this model includes specific context designs as we needed a different design to be able to adapt to each company reality. As Cox *et al.* (2007) remark, “*the fixed point is largely context-specific*” (p. 357). In this case, it has shown its huge potential to be used in manufacturing companies. Besides, the results of this study potentially encourage companies and practitioners interested in improving employees’ psychosocial well-being to use this interesting approach to analyze their organizational reality.

Another important practical implication of this study lies in the fact that we have assessed not only negative constructs (demands, strain, etc.), but also positive ones (resources, psychosocial well-being, etc.). In fact, if this study had only focused on the negative ones, no improvements would have been shown at T2, and the effectiveness of the WSI would be unclear. This, however, is not the case because the results support the so-called organizational wellness programs which attempt to promote good health or to identify and correct potential health-related problems (Wolfe, Parker, & Napier, 1994) whose effectiveness is associated with decreased absenteeism and increased job satisfaction (see Parks & Steelman, 2008 for a meta-analysis).

Finally, we wish to stress the importance of connecting Occupational Health Psychology (OHP) with professionalized Human Resources Management (HRM). The link between both scopes is clearly strong as HRM must carry out the intervention strategies proposed by the OHP, and it (HRM) usually has the last word about which strategies fit the organizational aims and particular interests better. Our study stresses the need to build bridges between both scopes.

#### 4.3. Limitations and future research

The *AR* approach assumes a (quasi) experimental approach to understand the organizational reality. However, organizational constraints usually avoid carrying out the action as originally planned by the researchers (difficulty of implementation, which Lipsey & Cordray, 2000, mentioned to be a main obstacle). In particular, we found some organizational constraints that imply certain limitations for our study.

The first limitation lies in the selection of areas of intervention because we did not base them directly, uniquely and exclusively on the T1 results, which are reasonable for a quasi-experimental study. So although the intervened area shows indicators to be improved through intervention, the top management selected the area to be intervened to not include some others that would objectively have also required intervention. Researchers do not usually have access to organizational dynamics and policies, so they do not normally have any control over them, and this is a typical obstacle for practitioners/researchers to work in real organizations. Nonetheless, it is a “reality” in organizational interventions at the same time.

Another limitation, which relates to the previous one, concerns the low number of employees intervened, even though all the employees of the intervened group participated. Besides, the size effect shows a fairly large  $\eta^2$ . All in all, we found statistically significant interaction effects which revealed a positive impact on the full WSI program despite the group size not being large. The most important idea is not to generalize the power of the specific intervention strategies, but the power of

the full methodology of the *AR* approach based on a theoretical framework. Moreover, it is difficult to reproduce these results in other companies of different sectors and countries as the *AR* approach considers each company to be unique. In that sense, the process of action research can be generalized to other companies interested in this process. We believe that this approach has shown its strength to improve the psychosocial factors at work (see previous empirical studies of – Participatory – *Action-Research*, such as Heaney, *et al.*, 1993; Huxham & Vangen, 2003; LeBlanc, Hox, Schaufeli, Taris & Peeters, 2007; Pasmore & Friedlander, 1982; Rasmussen, *et al.*, 2006; Whyte, 1989; see Dollard, LeBlanc & Cotton, 2008, for a review). So we should take its use into account when designing a WSI.

Nevertheless, it is worth mentioning that most of the above-mentioned limitations have already been collected by Cox *et al.* (2007) when they proposed a new framework for the evaluation of organizational-level interventions. We agree with the authors when they emphasize that the “*traditional experimental approach in applied psychology may be inadequate for exploring the complex and changing world of organizations*” (p. 350). Therefore, the lack of absolute methodological rigor in this kind of interventions leads us to talk about “acceptable evidence”, which we consider we have obtained.

Briefly, this study shows the strength of using a systematic approach (the *AR* approach) when performing a WSI. It involves empirically analyzing organizational intervention effects, which are scarce in the Work and Organizational research in general, and in the OHP literature in particular. Its longitudinal design contributes to the completion of the *Research-Action-Research* circle as it also supports the *RED Model*.

#### 4.4. Final Note

This study shows the effectiveness of a Work Stress Intervention (i.e., *Team Redesign*) carried out in one organization from the Action-Research Paradigm in a manufacturing company. Moreover, and as far as we know, we show the importance of making a continuous cyclical feedback from Theory

to Practice, and vice versa, possible for the first time. Right from the start, the theory describes the basis of all the interventions (from the risk assessment to the final interventions performed). The opposite also applies, that is, the empirical results obtained help improve the original theoretical framework by highlighting the role played specifically by personal resources (i.e., self-efficacy and perceived competence) in the improvement of well-being at work. Therefore, this study underlines the importance of continuing to dance between theory and practice, at the same beat, over time.



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Table 1. Scales used in the study

	<i>Original Authors' scale</i>	<i>Number of items</i>	<i>Example of item</i>
<i>Demands</i>			
<ul style="list-style-type: none"> <li>• <u>Quantitative overload</u>: Role overload questionnaire</li> </ul>	Beehr, Walsh, and Taber (1976)	3	'I have too much work for it to be done properly'
<ul style="list-style-type: none"> <li>• <u>Low role clarity</u></li> </ul>	Rizzo, House and Lirtzman (1970)	8	'What I must do in my job is clearly specified'
<ul style="list-style-type: none"> <li>• <u>Role conflict</u></li> </ul>	Rizzo, House and Lirtzman (1970)	8	'I receive incompatible demands from two people or more'
<i>Job Resources</i>			
<ul style="list-style-type: none"> <li>• <u>Autonomy</u></li> </ul>	Jackson, Wall, Martin and Davis (1993)	5	'I have the discretion to decide what tasks I will do during my working day'
<ul style="list-style-type: none"> <li>• <u>Organizational support climate</u></li> </ul>	Scale extracted from the FOCUS Organizational Culture Questionnaire (Van Muijen <i>et al.</i> , 1999)	3	'People help their partners to get the work done'
<ul style="list-style-type: none"> <li>• <u>Organizational innovation climate</u></li> </ul>	Scale extracted from the FOCUS Organizational Culture Questionnaire (Van Muijen <i>et al.</i> , 1999)	3	'Suggestions to improve the efficacy and quality of my work are welcomed'
<ul style="list-style-type: none"> <li>• <u>Organizational training</u></li> </ul>	Self constructed	8	'The company considers my present or future training needs before it organizes training'
<i>Personal Resources</i>			
<ul style="list-style-type: none"> <li>• <u>Professional self-efficacy</u></li> </ul>	Adapted to Work from the generalized Self-Efficacy by Schwarzer (1999).	10	'I can solve most problems if I make the necessary effort'
<ul style="list-style-type: none"> <li>• <u>Perceived competence</u></li> </ul>	MBI-GS (Maslach Burnout Inventory-General Survey, Schaufeli, Leiter, Maslach & Jackson, 1996).	6	'In my opinion, I am good at my job'



Table 1. Scales used in the study (continue)

<i>Positive psychosocial well-being indicators</i>			
<ul style="list-style-type: none"> <li>• <u>Work satisfaction</u></li> </ul>	Face Scale (Kunin, 1955)	3	1) intrinsic work satisfaction, 2) satisfaction with group/ workmates and 3) satisfaction with the organization
<ul style="list-style-type: none"> <li>• <u>Flow at work</u></li> </ul> <ol style="list-style-type: none"> <li>1. Happiness</li> <li>2. Absorption</li> <li>3. Intrinsic work motivation</li> </ol>	WORk-reLated Flow scale (WOLF, Bakker, 2001)	4 4 6	<i>'I feel happy while I am working'</i> <i>'I forget everything else around me when I am working'</i> <i>'I get my motivation from the work itself, and not from the rewards from it'</i>
<ul style="list-style-type: none"> <li>• <u>Engagement</u></li> </ul> <ol style="list-style-type: none"> <li>1. Vigor</li> <li>2. Dedication</li> </ol>	Engagement Scale (Schaufeli, Salanova, González-Romá & Bakker, 2002)	6 5	<i>'When I get up in the morning, I feel like going to work'</i> <i>'I'm enthusiastic about my job'</i>
<i>Negative psychosocial well-being indicators</i>			
<ul style="list-style-type: none"> <li>• <u>Burnout</u></li> </ul> <ol style="list-style-type: none"> <li>1. Emotional Exhaustion</li> <li>2. Cynicism</li> </ol>	MBI-GS (Schaufeli <i>et al.</i> , 1996)	5 4	<i>'I feel emotionally drained by my work'</i> <i>'I have become less enthusiastic about my work'</i>
<ul style="list-style-type: none"> <li>• <u>Job-related anxiety and depression</u></li> </ul> <ol style="list-style-type: none"> <li>1. Relax–Anxiety</li> <li>2. Enthusiasm–Depression</li> </ol>	'Psychological well-being related to work" questionnaire (Warr, 1990)	6 5	<i>'Tense'</i> <i>'Depressed'</i>

Table 2. Means, Standard Deviations, Cronbach's Alpha (underlined on the diagonal, T1 & T2), and Correlations for the Study Variables at T1 (below) and T2 (above diagonal) (N = 72).

	Mean T1	SD T1	Mean T2	SD T2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
<b>Demands</b>																								
1. Quantitative overload	2.45	1.56	2.35	1.69	<u>.89</u>	-.30**	.38**	-.04	-.04	-.05	.21	-.15	-.16	-.20	-.36**	-.13	-.42**	.46**	.89	-.25*	-.32**	.19	.24*	
2. Role clarity (R)	4.62	0.73	4.74	0.88	.06	<u>.78</u>	-.35**	.44**	.63**	.45**	.35	.53**	.48**	.67**	.68**	.44**	.43**	-.49**	-.60**	.61**	.56**	-.49**	-.63**	
3. Role conflict	1.55	1.01	1.61	1.00	.34**	-.02	<u>.81</u>	.10	-.37**	-.32**	-.38*	-.23	-.34**	-.49**	-.43**	-.18	-.32**	.57**	.43**	-.47**	-.30**	.54**	.45**	
<b>Resources</b>																								
<b>Job resources</b>																								
4. Autonomy	4.56	0.87	3.67	1.36	.10	.60**	.03	<u>.90</u>	.35**	.43**	.31	.49**	.17	.28	.34**	.33**	.30*	-.17	-.35**	.31**	.38**	-.01	-.32**	
5. Organizational support climate	3.85	1.17	4.05	0.95	-.07	.43**	-.27*	.52**	<u>.88</u>	.60**	.47**	.51**	.33	.69	.43**	.37**	.30	-.50**	-.55**	.53**	.32**	-.55**	-.62**	
6. Organizational innovation climate	3.73	1.12	3.98	1.23	-.18	.18	.18	.37**	.61**	<u>.77</u>	.59**	.48**	.37	.56	.39**	.30*	.34**	-.27*	-.37**	.38**	.43**	-.32**	-.39**	
7. Organizational training	3.28	1.25	3.58	1.25	.37*	.19	.31	.56**	.22	.33	<u>.87</u>	.57**	.36	.53	.46*	.24	.40*	-.31	-.49**	.53**	.30	-.40*	-.53**	
<b>Personal resources</b>																								
8. Perceived competence	4.61	0.85	4.70	0.91	.10	.59**	.07	.96**	.53**	.40**	.37**	<u>.94</u>	.65	.41	.55**	.49**	.49**	-.32**	-.38**	.59**	.56**	-.32**	-.48**	
9. Professional self-efficacy	4.90	0.76	4.93	0.80	.01	.61**	.07	.65**	.39**	.34**	.27*	.29*	<u>.86</u>	.37	.72**	.62**	.66**	-.35**	-.43**	.70**	.72**	-.36**	-.41**	
<b>Psychosocial well-being</b>																								
10. Job satisfaction	4.61	0.85	4.58	0.85	.17	.56**	-.17	.62**	.60**	.34**	.35**	.23	.51**	<u>.71</u>	.81	.58**	.40	.50**	-.62**	-.66**	.64**	.44**	-.70**	-.75**
11. Flow: Happiness	4.71	1.03	4.49	1.20	.03	.60**	-.10	.50**	.48**	.31**	.27*	.39**	.61**	.52**	<u>.87</u>	.89	.71**	.78**	-.50**	-.60**	.80**	.86**	-.45**	-.64**
12. Flow: Absorption	3.86	0.96	3.97	1.12	-.10	.22	.03	.31**	.28*	.38**	.20	.28*	.43**	.20	.58**	<u>.80</u>	.86	.59**	-.28*	-.41**	.65**	.72**	-.39**	-.48**
13. Flow: Intrinsic motivation	3.50	1.15	3.42	1.41	-.23	.12	-.06	.24*	.17	.49**	.43**	.36**	.32**	.17	.38**	.63**	<u>.78</u>	.86	-.43**	-.41**	.64**	.77**	-.35**	-.53**
<b>14. Burnout:</b>																								
Emotional exhaustion	1.54	.84	1.45	0.95	.19	-.44**	.29*	-.51**	-.48**	-.33**	-.23	.31**	-.49**	-.44**	-.61**	-.33**	-.23	<u>.82</u>	.84	.63**	-.59**	-.32**	.67**	.72**
15. Burnout: Cynicism	.73	.81	.89	1.08	.02	-.58**	.26*	-.45**	-.40**	-.25*	-.32**	-.25*	-.57**	-.51**	-.76**	-.44**	-.34**	.61**	<u>.85</u>	.87	-.64**	-.51**	.61**	.72**
<b>16. Engagement:</b>																								
Vigor	4.75	.87	4.68	1.06	.01	.55**	-.26*	.68**	.40**	.38**	-.24*	.28*	.79**	.51**	.67**	.38**	.26*	-.53**	-.51**	<u>.89</u>	.89	.71**	-.55**	-.69**
<b>17. Engagement:</b>																								
Dedication	4.19	1.12	4.35	1.35	-.16	.35**	.02	.45**	.21	.47**	.41**	.31**	.63**	.27*	.57**	.79**	.72**	-.31**	-.51**	.53**	<u>.87</u>	.94	-.28*	-.46**
18. Relax–Anxiety	4.15	1.09	4.17	1.18	-.17	.37**	-.34**	.22	.48**	.18	.04	.12	.50**	.37**	.43**	.06	-.01	-.54**	-.38**	.50**	.07	<u>.87</u>	.89	.77**
19. Enthusiasm-Depression	4.78	.89	4.69	1.22	-.09	.46**	-.23	.55**	.60**	.43**	.39**	.30*	.70**	.52**	.67**	.40**	.26*	-.58**	-.58**	.75**	.45**	.71**	<u>.84</u>	.89

\*\* p < .01, \* p < .05

Table 3. Cross-sectional T1 vs. T2 descriptive analysis with F differences (n=72)

	Time 1			Time 2		
	Intervened group	Control group	F <sub>df</sub>	Intervened group	Control group	F <sub>df</sub>
<u>Demands</u>						
1. Quantitative overload	1.5 (SD=1.2)	2.7 (SD=1.5)	4.64 <sub>1,67</sub> *	1.15 (SD=1.0)	2.5 (SD=1.7)	5.33 <sub>1,67</sub> *
2. Role clarity	4.5 (SD=0.5)	4.6 (SD=0.8)	0.17 <sub>1,67</sub>	5.1 (SD=0.6)	4.7 (SD=0.9)	1.44 <sub>1,67</sub>
3. Role conflict	1.2 (SD=1.3)	1.6 (SD=1.0)	1.22 <sub>1,67</sub>	1.1 (SD=0.8)	1.7 (SD=1.0)	2.40 <sub>1,67</sub>
<u>Resources</u>						
<u>Job resources</u>						
4. Autonomy	4.1 (SD=0.7)	4.5 (SD=0.8)	2.99 <sub>1,66</sub>	3.6 (SD=1.2)	3.6 (SD=1.4)	0.04 <sub>1,67</sub>
5. Organizational support climate	4.1 (SD=0.9)	3.7 (SD=1.2)	0.44 <sub>1,66</sub>	4.6 (SD=0.6)	3.8 (SD=0.9)	4.56 <sub>1,67</sub> *
6. Organizational innovation climate	3.6 (SD=1.0)	3.7 (SD=1.2)	0.09 <sub>1,67</sub>	4.7 (SD=0.9)	3.8 (SD=1.3)	4.22 <sub>1,64</sub> *
7. Training quality	1.8 (SD=1.6)	3.4 (SD=1.1)	6.81 <sub>1,31</sub> *	3.4 (SD=0.5)	3.6 (SD=1.3)	0.26 <sub>1,27</sub>
<u>Personal resources</u>						
8. Perceived competence	4.1 (SD=0.7)	4.6 (SD=0.8)	3.81 <sub>1,66</sub> †	4.7 (SD=1.0)	4.7 (SD=0.9)	0.10 <sub>1,64</sub>
9. Professional self-efficacy	4.5 (SD=0.8)	4.9 (SD=0.8)	2.29 <sub>1,67</sub>	5.2 (SD=1.0)	4.9 (SD=0.7)	1.54 <sub>1,67</sub>
<u>Psychosocial well-being</u>						
10. Work satisfaction	4.5 (SD=0.5)	4.6 (SD=0.9)	0.14 <sub>1,67</sub>	4.8 (SD=0.4)	4.5 (SD=0.9)	1.17 <sub>1,67</sub>
11. Flow: Happiness	4.5 (SD=1.0)	4.7 (SD=1.1)	0.21 <sub>1,67</sub>	4.9 (SD=0.8)	4.3 (SD=1.2)	1.91 <sub>1,67</sub>
12. Flow: Absorption	3.9 (SD=1.5)	3.8 (SD=0.9)	0.17 <sub>1,67</sub>	4.4 (SD=1.6)	3.8 (SD=1.0)	2.92 <sub>1,67</sub>
13. Flow: Intrinsic motivation	3.7 (SD=1.2)	3.4 (SD=1.5)	0.38 <sub>1,67</sub>	4.3 (SD=0.9)	3.2 (SD=1.4)	4.52 <sub>1,67</sub> *
14. Burnout: Emotional exhaustion	1.3 (SD=0.7)	1.6 (SD=0.8)	0.26 <sub>1,67</sub>	1.3 (SD=0.8)	1.5 (SD=1.0)	0.31 <sub>1,67</sub>
15. Burnout: Cynicism	0.7 (SD=0.8)	0.7 (SD=0.8)	0.97 <sub>1,67</sub>	0.8 (SD=0.7)	0.9 (SD=1.1)	0.22 <sub>1,67</sub>
16. Engagement: Vigor	4.4 (SD=0.9)	4.7 (SD=0.9)	1.03 <sub>1,67</sub>	5.0 (SD=1.0)	4.6 (SD=1.1)	2.04 <sub>1,67</sub>
17. Engagement: Dedication	3.8 (SD=1.2)	4.1 (SD=1.1)	0.05 <sub>1,67</sub>	5.0 (SD=1.3)	4.1 (SD=1.4)	3.71 <sub>1,67</sub> †
18. Relax-Anxiety	4.5 (SD=0.8)	4.0 (SD=1.1)	1.10 <sub>1,63</sub>	4.5 (SD=1.1)	4.1 (SD=1.2)	1.91 <sub>1,66</sub>
19. Enthusiasm-Depression	4.7 (SD=0.8)	4.8 (SD=0.9)	0.36 <sub>1,61</sub>	4.9 (SD=0.6)	4.7 (SD=1.2)	0.65 <sub>1,67</sub>

\*&lt;0.05; †&lt;0.06

Table 4. Summary of the main effects of the four Doubly Multivariate Repeated Measures MANOVA ( $n=72$ )

Multivariate effect	$\Lambda$	$df$	F	$\eta^2$
<b>Job Demands</b>				
Time	0.91	3, 65	2.06	0.09
Interventions	0.91	3, 65	2.23	0.09
Time X Interventions	0.95	3, 65	1.11	0.05
<b>Job Resources</b>				
Time	0.91	3, 61	2.18	0.10
Interventions	0.91	3, 61	2.11	0.09
Time X Interventions	0.91	3, 61	1.89	0.08
<b>Personal Resources</b>				
Time	0.85	2, 62	5.45**	0.15
Interventions	0.99	2, 62	0.41	0.01
Time X Interventions	0.88	2, 62	4.31*	0.12
<b>Psychosocial well-being</b>				
Time	0.74	10, 51	1.79	0.26
Interventions	0.86	10, 51	0.80	0.14
Time X Interventions	0.78	10, 51	1.43	0.22

Note.  $\Lambda$ = Wilks's lambda;  $\eta^2$ = eta-square

\*\*<0.01; \*<0.05

Figure captions

Figure 1. *Example of feedback report*

Figure 2. *Two-way interaction effect of Time X Intervention on Innovation Climate (levels of Innovation Climate on the Y-axis) (n=65).*

Figure 3. *Two-way interaction effect of Time X Intervention on Perceived Competence (levels of Perceived Competence on the Y-axis) (n=65).*

Figure 4. *Two-way interaction effect of Time X Intervention on Professional Self-Efficacy (levels of Professional Self-Efficacy on the Y-axis) (n=65).*

Figure 5. *Two-way interaction effect of Time X Intervention on Vigor (levels of Vigor on the Y-axis) (n=62).*

Figure 6. *Two-way interaction effect of Time X Intervention on Dedication (levels of Dedication on the Y-axis) (n=62).*













