



Job Demands-Resources Interventions

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Job Demands-Resources Interventions

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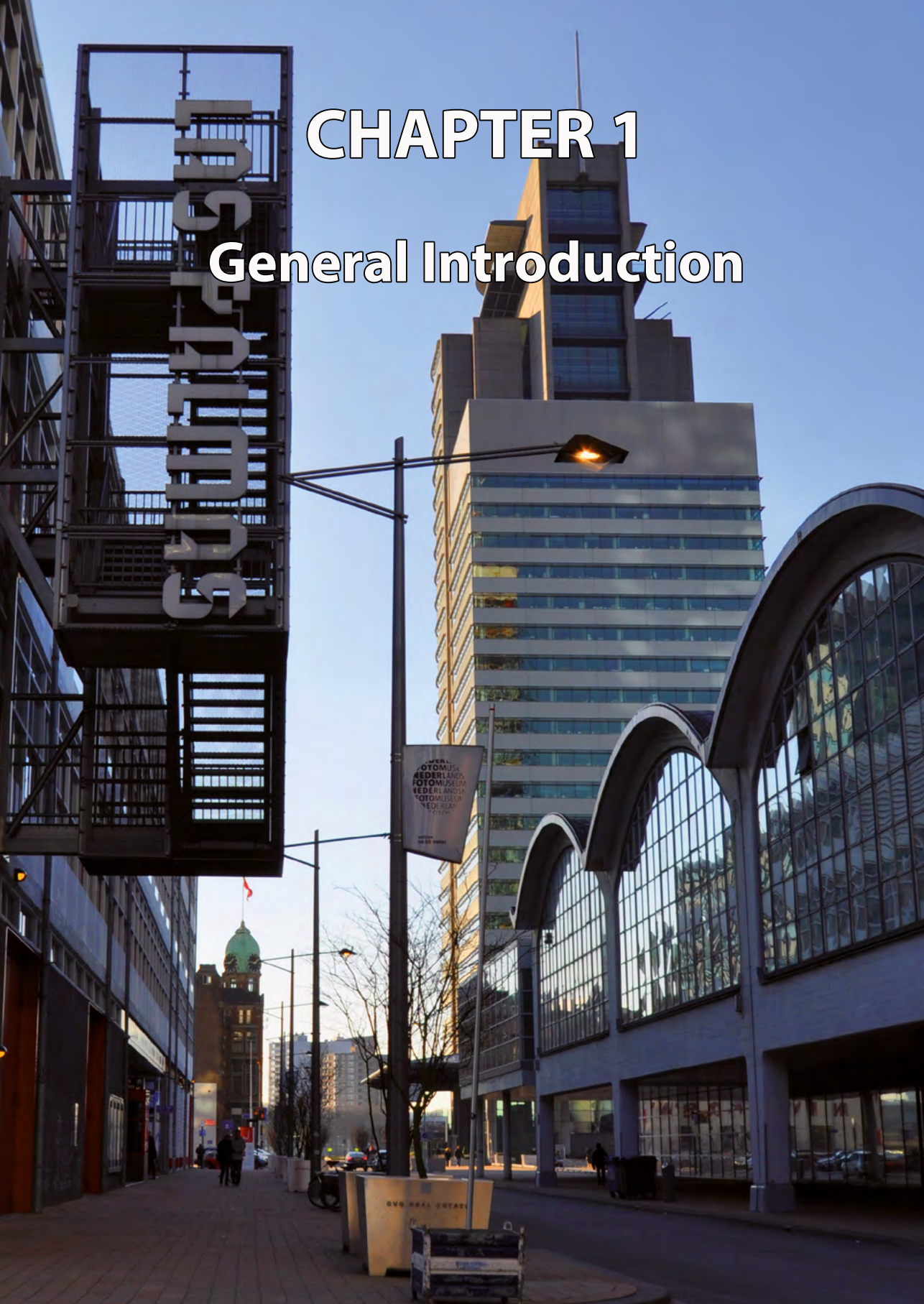
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CHAPTER 1

General Introduction



INTRODUCTION

The most recent financial crisis struck almost a decade ago and it continues to impact local and global economies today. Governments are forced to decrease their costs and limit their investment. Organizations in both the profit and non-profit sectors are struggling to survive. In the public and service industries the urgency of focusing on service quality, productivity and innovation in order to distinguish oneself from others has been keenly felt. Research has repeatedly confirmed that employees who are engaged in their work contribute significantly to the quality of service, productivity and innovation (Christian et al., 2011; Konermann, 2012; Salanova et al., 2009). Engaged individuals are energetic and enthusiastic about their work. So it is not surprising that work engagement has important consequences for organizations. Work engagement not only leads to excellent performance, it also contributes to commitment to the organization and customer loyalty (Halbesleben, 2010; Salanova et al., 2009). Engaged employees bring positive energy to the workplace because they are enthusiastic and vigorous and they connect easily with colleagues (Bakker & Demerouti, 2008). As a consequence of these positive relations, organizations are interested in how they can increase employees' work engagement and subsequently their performance.

Over the years, work engagement and performance have gained ample research attention as illustrated by the amount of scientific papers on this topic (for a meta-analysis, see Halbesleben, 2010; Christian et al., 2011). An increasing number of researchers not only study the theoretical part of the work engagement concept but also focused on applying the knowledge on work engagement into practice (Bakker & Demerouti, 2014). A theory that helps us to understand work engagement, its antecedents and outcomes is Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014). According to this theory, work engagement is mostly determined by job resources (such as social support, feedback and development opportunities) and personal job resources (such as optimism and self-efficacy). These resources have the greatest impact when they are actually needed, namely when the job demands are high. According to the JD-R theory, employees are engaged and perform well particularly when the work environment is characterized by high and challenging job demands in combination with sufficient (job and personal) resources. This model is supported by empirical evidence accumulated over the last 15 years (Bakker & Demerouti, 2014; Halbesleben, 2010; Nahrgang, Morgeson & Hofmann, 2011).

JD-R theory suggests that work engagement and performance can be fostered through interventions that stimulate participants to optimize their levels of job demands and (job and personal) resources (Bakker & Demerouti, 2014). However, as far as I have

been able to assess, there has been no empirical intervention study that has tested the propositions of the JD-R theory in practice. Can work engagement indeed be increased by interventions focused on optimizing job demands and (personal and work-related) job resources, as JD-R theory suggests (Bakker & Demerouti, 2014)? The primary goal of this dissertation is to answer this question. In this introductory chapter the theoretical framework of JD-R theory and positive interventions within organizations will be addressed first, followed by an overview of research questions and how they are covered in subsequent chapters.

Job Demands-Resources Theory

In the transition from the 20th to the 21st century, researchers in the field of organizational psychology began to show more interest in positive work experiences. The positive psychology movement and interest in subjects like work engagement and well-being expanded greatly in the early years of this century. Researchers no longer focused on only negative work-related experiences like job stress and burnout. The focus shifted to healing people and how to make them stronger. How do you increase people's enthusiasm? How do you help them to excel and develop their strengths? These are examples of questions central to positive organizational psychology. Positive psychology inspired researchers around the world to develop new models and theories. The Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner & Schaufeli, 2001), which is characterized by a positive psychological focus, is an example of this. The JD-R model was applied in a lot of studies (Halbesleben, 2010; Nahrgang, Morgeson & Hofmann, 2011) to analyze both job stress (Demerouti et al., 2001) and motivation (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007). Over the past ten years, the JD-R model has developed into JD-R theory (Bakker & Demerouti, 2014).

One of the core assumptions of the JD-R theory is that every job is characterized by a set of job demands and resources (personal and work-related). Job demands are the physical, social or organizational aspects of the job that require physical and/or cognitive engagement and that are associated with physical and psychological costs (Demerouti et al., 2001, p. 501). Job demands can be divided into those that challenge and those that hinder (Crawford et al., 2010; LePine, LePine & Jackson, 2004). Examples of challenging job demands are work pressure and complex assignments, while role conflicts and poor physical working conditions are examples of hindering job demands. Job resources are the physical, psychological, social and organizational aspects of the job that help employees to achieve their work goals (Demerouti et al., 2001). Job resources can be divided into several levels: organizational (e.g., salary), interpersonal and social (e.g., support from managers), practical working level (e.g., clarity of roles) and task levels (e.g., feedback). Job resources can buffer or reduce the impact of job demands and the

associated costs (physical and psychological), but also stimulate personal growth and development (Demerouti, Bakker, de Jonge, Janssen & Schaufeli, 2001). The JD-R theory hypothesizes that when employees are confronted with challenging job demands, the motivational potential of job resources is strengthened (Bakker, 2011). Job demands and job resources are important predictors of work engagement and performance according to the JD-R theory.

The JD-R theory entails that next to job demands and job resources, personal resources are also important predictors of work engagement and performance. Personal resources refer to those aspects of an individual that are associated with the ability of a person to successfully control and influence their environment (Hobfoll, Johnson, Ennis & Jackson, 2003). Personal resources are known for being functional in achieving goals and have the potential to stimulate personal growth and development (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). The function of job resources and personal resources are therefore largely comparable. Both stimulate personal growth and help employees to achieve work-related goals. Yet job resources and personal resources also differ: while job resources are specifically linked to a job and the working environment, personal resources are part of an individual and therefore not necessarily related to a context. Examples of personal resources are self-efficacy, optimism, personal effectiveness, resilience, and self-esteem. The four personal resources self-efficacy, optimism, hope and resilience are also known as psychological capital (Luthans, Youssef & Avolio, 2007). Research has shown that these four personal resources, or psychological capital, can be developed by interventions (Luthans & Youssef, 2007b; Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans, Avey, & Patera, 2008).

Next to job demands and (personal and work-related) resources, job crafting is also recognized as a core element of the JD-R theory (Bakker & Demerouti, 2014). Job crafting is a bottom-up approach of employees designing their job by proactively adjusting aspects of their job and work relationships to their personal preferences and wishes (Wrzesniewski & Dutton, 2001). Despite studies in the 1980s and 1990s that already suggested that employees could self-initiate changes in their work (Kulik, Oldham, & Hackman, 1987; Nicholson, 1984; Staw & Boettger, 1990), research interest in this proactive behavior increased only in the last ten years. Job relationships in the West have changed dramatically in the last decade. Today, managers are not always physically present at work to provide support and employees are expected to be proactive and self-managing.

Tims, Bakker and Derks (2012) have given job crafting operational potential using the job characteristics of the Job Demands-Resources (JD-R) theory. In line with this

theory, they posit that employees can craft their jobs by increasing social job resources, increasing structural resources, increasing challenging job demands, and/or decreasing hindrance job demands. Examples of job crafting behavior are: asking for feedback and coaching (increasing social resources), enhancing autonomy and creating opportunities for professional development (increasing structural resources), starting new projects (increasing challenging job demands), and reducing work pressure (decreasing hindrance job demands). The idea is that employees can optimize the balance between their job demands and resources through job crafting. In this way they can improve the fit between their jobs and their own needs, talents and passions at work. Employees that increase their resources and challenging job demands by means of job crafting may be able to improve their work engagement and performance. Work engagement and performance subsequently stimulate these employees to take on challenges and strengthen their resources. The JD-R theory and the accompanying model show clear feedback-loops. To illustrate, let's look at Peter, a Group 7 and 8 primary school teacher. Alongside his job as teacher, Peter is passionate about technology and virtual reality. He developed a teaching module, on his own initiative, which makes use of virtual reality to ensure that the curriculum matches the interests of the age group of his class. Peter also provided a training course for his colleagues so that they could get their pupils acquainted with this new way of learning. Peter asked his colleagues for feedback and support in implementing the new module. Colleagues, pupils and parents responded with great enthusiasm and praised Peter's innovative initiative for the school. This appreciation for his performance increased Peter's work engagement and stimulated him to actively seek new challenges and resources within his work. The inspirational power of mobilizing challenging job demands and resources, which this example demonstrates, has been documented in earlier research (Bakker & Demerouti, 2014).

The JD-R theory distinguishes not only the above-noted core elements, but also two independent psychological processes. These are the motivational process and a health impairment process. The health impairment process starts with persistently high job demands that deplete an employee's energy levels and lead to exhaustion and health-related problems. Research has repeatedly shown that with job demands like high workload and emotional pressure, exhaustion can be predicted in various occupational groups (Hakanen, Bakker, & Schaufeli, 2006; Demerouti, Bakker & Bulters, 2004). The motivational process, on the contrary, starts with job resources that have the potential to encourage employees in achieving their work goals (Boyd et al., 2011). Earlier studies suggested that different job resources, like social support from colleagues, performance feedback and supervisory coaching, lead to work engagement and subsequently better performance (Bakker, 2011). According to the JD-R theory, job resources buffer the negative effects of job demands on stress levels. Additionally, challenging job demands

reinforce the positive effect of resources on work engagement. So employees have the greatest chance of being engaged when they experience an optimal balance of job resources and challenging job demands (Bakker, 2011; Halbesleben, 2010). Given that the objective inherent in this dissertation is to increase work engagement and performance through interventions, most of the focus will be on the motivational process within the JD-R theory and the various elements of the JD-R model.

As the motivational process in the JD-R theory shows, work engagement and subsequent performance are the result of an optimal balance between job demands and (job and personal) resources. The JD-R theory helps to identify and differentiate between the most important job demands and resources, which provides a start to the process of influencing them. Knowing how to influence job characteristics is valuable for both managers and employees having to deal with changes at work. It is safe to assume that employees change over time, which puts the original fit they had with their job under some pressure. They may be dealing with changes in their work, have experienced personal growth or have different ambitions, etc. All these kinds of developments can mean that their individual needs in regards to job demands and resources have changed. The level of job demands and resources can be influenced by both management (top-down) and employees themselves (bottom-up). Managers, for example, can exert influence on workload and offer employees access to supportive resources such as feedback or growth opportunities in their work. Additionally, employees can be proactive in adjusting their job demands and resources by way of job crafting. Finally, organizations can help employees to find their optimal demands-resources balance by offering them positive organizational interventions.

Positive Organizational Interventions

Interest among researchers in positive psychological behavior and positive organizational interventions grew along with the introduction of positive psychology. Positive organizational behavior is defined as “the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today’s workplace” (Luthans, 2002, p. 698). This link between positive behavior and the working environment formed the rationale underlying positive organizational interventions. Before the introduction of positive psychology, organizational interventions were primarily geared to preventing absenteeism and treating occupational illnesses (e.g. burnout) (Le Blanc & Schaufeli, 2008; Schaufeli, Bakker, Hoogduin, Sheep & Kladler, 2001). After the introduction of positive psychology, the focus on enhancing positive psychological states like work engagement increased (Bakker & Schaufeli, 2008). Positive organizational interventions aim to cultivate well-being and performance.

This means they are advantageous to employees as well as employers. A literature review by Meyers, Van Woerkom and Bakker (2013) of 15 intervention studies within an employment context revealed that positive psychological interventions had the potential to increase the well-being and performance of employees. Participants in the various interventions reported increased optimism, resilience and positive emotions. Additionally, a study that also measured performance showed an increase in this, and it was noted by both the employee who reported on their own performance and the manager who reported on the employee's performance. The 15 studies tested only the short-term effects. Even though the durability of organizational intervention effects are an important management issue, none of the studies took a long-term approach. This dissertation does look into the long-term and fortifies the literature on organizational interventions by offering insight into intervention effects in the long-term. Certainly in times of economic recession and malaise, employers want to know whether investing in interventions is worthwhile and whether the effects are sustainable over a longer period of time.

The successful implementation of organizational interventions depends on various factors (Cheng & Ho, 2001; Kessels, 1996). A specific and phased approach will increase the chance of successful implementation (Van Strien, 1997). One implementation method for positive organizational intervention is Van Strien's regulatory cycle. This is a method for carrying out research that is aimed at creating interventions in practice. The regulatory cycle is usually initiated by identifying an existing problem in a real situation that needs a solution. The problem, its potential causes and the consequences are then analyzed in order to understand the issue. Subsequently, in the third step of the cycle, a plan and the actions necessary to implementing the plan are designed. Within this step a solution is designed that is expected to solve the problem. Designing an intervention to solve a problem is a good starting point, though real change primarily depends on the implementation of the intervention (Van Strien, 1997). In order to increase the success of the interventions within this dissertation, the regulatory cycle was used in the implementations.

Specific factors are worth taking into account with respect to intervention implementation. Research has shown that the success of an intervention depends on the fit between the intervention and the envisaged change, but also on the degree to which participants are involved in the decision-making regarding the interventions (Heaney, 2003; Kompier, 2002; Kompier, Cooper, & Geurts, 2000; Semmer, 2003). Further important factors are the content of an intervention program, the quality of the trainers, the engagement of managers, employee motivation and the organization's commitment (Burke & Hutchins, 2007). Communication also plays a role. By sharing

clear information about the objectives with participants in an intervention program beforehand, the chances of a successful intervention are increased (Kraiger, Salas & Cannon-Bowers, 1995). In addition to the factors noted above, the effectiveness of the intervention can also be reinforced by the right location for the training. Learning at work is more effective than learning at an external location because direct links to the working situation can be made (Kessels, 1993). If a clear connection to a work context is made during the training sessions, it makes participants more engaged and interested which amplifies the transfer (the actual application after the training of things learned) (Kessels, 2001). The interventions in this dissertation have therefore all occurred at the participants' workplaces and contained exercises related to and relevant for the participants' work. Further, participants were involved in the decision-making regarding the interventions and senior management played an active role in the communication beforehand, during and after the intervention took place.

According to Bakker and Demerouti (2014) positive organizational interventions based on the JD-R theory are geared to optimizing job demands, job resources and personal resources. The JD-R theory holds that these interventions can involve individual aspects of change as well as organizational aspects. Bolstering an employee's individual strengths by an online intervention or strengthening an organization through group training sessions are examples of this. The JD-R theory also describes two intervention objectives: optimizing personal resources and adjusting job demands and job resources. An example of an intervention aimed at optimizing personal resources is training an individual's resilience and the ability to cope with stress. An example of an intervention aimed at adjusting job demands and job resources is a job crafting training. In summary, positive organizational interventions according to the JD-R theory are differing combinations of intervention levels (individual versus organizational) and intervention targets (the working environment versus the person). Within this framework, a JD-R intervention can involve a combination of a top-down (initiated by management) and bottom-up (initiated by employees) approach. Which type of JD-R intervention fits best depends on the problem or issue regarding an individual or organization.

This dissertation includes five studies that analyze whether the JD-R theory can be successfully implemented into practice by means of JD-R interventions. Three different interventions based on the JD-R theory are systematically tested: (a) an intervention to strengthen personal resources; (b) a job crafting intervention to optimize job demands and job resources; and (c) an intervention to optimize job demands and both job and personal resources (see Figure 1.1). These various interventions include a (a) top-down, a (b) bottom-up as well as (c) an integrated approach, and includes control groups.

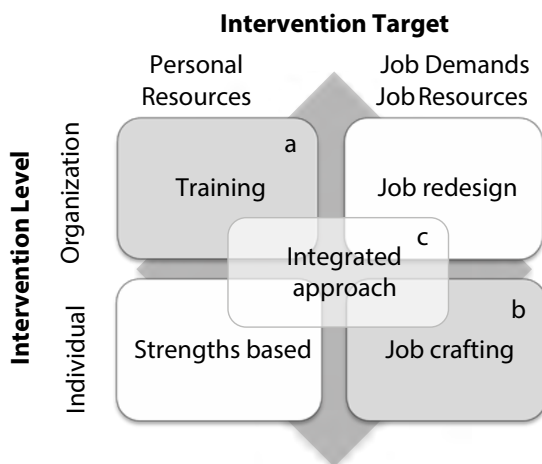


Figure 1.1 JD-R interventions tested

As far as I know, there have been no other studies that investigate the application of a variety of JD-R interventions in organizations. Research has been done on single job crafting interventions (Van den Heuvel, Demerouti & Peeters, 2012) or interventions aimed at strengthening personal resources (Demerouti, Van Eeuwijk, Snelder & Wild, 2012; Luthans, Avey, Avolio, Norman, & Combs, 2006). In addition, within the studies of this dissertation, both quantitative and qualitative research was carried out and the sustainability of the interventions in the long-term is analyzed; these are lacking in the earlier studies noted above. This combined methodology gives insight not only into the effects of interventions but also provides valuable information on application in practice. This dissertation therefore adds to the literature on JD-R theory as well as that on organizational interventions.

Research Questions

This dissertation investigates the effects of Job Demands-Resources Interventions, from a top-down and bottom-up perspective, on employees' work engagement and performance. The primary issue can be divided into four questions, which I attempt to answer in this dissertation. They are:

- 1) Can Job Demands-Resources Interventions successfully increase work engagement and performance?
- 2) What is the role of personal resources in increasing work engagement and performance?
- 3) What is the role of job crafting in increasing work engagement and performance?
- 4) How sustainable are the effects of Job Demands-Resources Interventions?

Overview of Chapters

This dissertation consists of seven chapters, including this introductory chapter.

Chapter 2 covers a qualitative analysis of a job crafting training course for teachers working in special education schools. This study gives insight into the job crafting strategies chosen by participants, the activities undertaken to craft their jobs and the extent to which they were successful. In order to come to a better understanding of the results, structured interviews were carried out with participants. Their experiences in putting job crafting into action on the job was specifically discussed in the interviews. The study reveals implications for both the school's management and the education professionals by providing insight into how job crafting can help individuals to shape and optimize their own working conditions.

In Chapter 3 the impact of a JD-R intervention – aimed at improving personal resources and optimizing job resources as well as challenging job demands – was tested within a health organization. A quasi-experimental design along with a control group formed the basis of the study. In line with the JD-R theory, the issue of whether work engagement and performance can indeed be increased by way of a specific intervention was tested. This study therefore provides answers to whether a JD-R intervention is a possibility in successful implementation of the JD-R theory in practice.

Chapter 4 discusses the impact of positive organizational interventions, including an integrated top-down and bottom-up approach, on work engagement and performance in the field of education. Three different organizational interventions in the form of training sessions were studied. The first training session (top-down) focused on increasing participants' personal resources. The second (bottom-up) encouraged participants to adjust their job demands and resources through job crafting. The third (top-down and bottom-up) aimed to help participants increase their personal resources as well as stimulating them to make changes in their job demands and resources through job crafting. The empirical study in this chapter therefore gives insight into the effects of different JD-R interventions.

Chapter 5 focuses on the sustainability of a job crafting training course. We expected that a job crafting intervention would influence in a positive way both job crafting behaviors and job demands and resources (personal and work-related). We also expected that the intervention would increase the work engagement and performance of employees. A quasi-experimental design with a control group formed the basis of the study in which the effects two weeks after and one year after the intervention were measured. The approach in this intervention study provides insight into the effects of a job crafting intervention in the short and long term.

Chapter 6 presents the results of a job crafting intervention among teachers, with a specific focus on the underlying process that plays a part in employee job crafting. The focus was on basic psychological needs, in which it was assumed that the basic needs of competence, connection and autonomy are met through job crafting. So this study expands on the earlier job crafting study discussed in Chapter 5. In addition to testing the intervention effects, the expected sequential mediation between job crafting and performance was tested, by examining basic need satisfaction and work engagement. This study therefore provides insight into, on the one hand, the causal relationships among job crafting with basic need satisfaction, work engagement and performance in employees, and on the other, the underlying processes.

Chapter 7 is a general discussion of the individual studies. It covers the extent to which they provide answers to the questions posed. The results are also placed in a broader theoretical context to better determine their relevance. Given that the research looked into actual issues and needs, on the basis of real situations that needed solutions, practical implications are also discussed at length. Finally, limitations and suggestions for further research are presented. Please note that the Chapters 2 to 6 can be read independently of each other since they were prepared separately as journal articles. As a result, there is some overlap in the content of these chapters.

CHAPTER 2

Job crafting in schools for special education: A qualitative analysis

This chapter is published as:

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ABSTRACT

In this chapter we discuss the design and qualitative (process) evaluation of a job crafting intervention among employees at three Dutch schools for special education. In a period of 1.5 months, fifty employees participated in a group-based training intervention that addressed individual's job crafting activities aimed at improving individual's *person-job fit* by either lowering job demands or adding job resources and challenges. Through self-evaluations of the success of their job crafting actions and in-depth interviews, successful job crafters reported that they gained a better sense of control over their work and experienced reduced workload. Participants that were unsuccessful in crafting their job, emphasized the importance of the school's support to deal with the effects of unsuccessful job crafting actions. The chapter ends with a discussion and recommendations for future research on job crafting interventions.

JOB CRAFTING IN SCHOOLS FOR SPECIAL EDUCATION: A QUALITATIVE ANALYSIS

The levels of workload experienced in the field of education are high. A recent study (Van Grinsven, Elphick & Van der Woud, 2012) has shown that nearly half of all employees in both primary and secondary education experience their workload as unacceptably high. The 2010 national survey on working conditions (Koppes, De Vroome, Mol, Janssen & Van den Bossche, 2011) showed that, at 17%, the educational sector has the greatest portion of all known burnout cases in the Netherlands. Teaching is considered one of the most stressful occupations because of the high workload that is often a result of large class sizes and the high emotional demands in dealing with pupil misbehavior (Carlson & Thompson, 1995; Hakanen, Bakker & Schaufeli, 2006). Those surveyed in the study by Van Grinsven et al. (2012) said that non-teaching tasks, such as writing reports and reviews, and the limited opportunities to plan and shape their own work were the two most important reasons the respondents experienced a heavy workload. In practice, we see that what employees actually do in their work can differ from their formal job description. Employees can often influence their work. Besides their formal responsibilities teachers may, for example, also organize the annual musical or update colleagues on recent developments in the use of digiboards. Self-initiated changes employees make in their job design is also called job crafting. In this study we investigate whether a job crafting intervention can allow employees in education to experience how they can take the initiative to craft their jobs. The intervention can give employees insight into how they can influence the characteristics of their job in such a way that it aligns with their own strengths, preferences, motives and passions.

The intervention took place in an organization that offers education and healthcare to people with a communication or hearing disability. The training intervention was proposed in response to an employee survey that showed that more than half of the employees reported their workload as very heavy. The job crafting intervention was carried out in three of the twelve primary schools for special education within the organization. The principals of the three schools requested to participate in the intervention program based on the results of the employee surveys at their schools. The objective of this article is to provide insight into how these employees experienced the tailored job crafting intervention.

JOB CRAFTING

Job crafting as a concept

Job crafting can be defined as the process by which employees change elements of their jobs and relationships with others to redefine the meaning of their work and the social environment at work (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). According to Wrzesniewski and Dutton (2001) employees can proactively make changes at task level, relational level and cognitive level. Employees may take on extra tasks at work, such as organizing the school Christmas party. Or they may seek to collaborate with colleagues to, for example, develop new teaching methods or lesson materials, rather than doing it alone. How people perceive their work may also vary. For example, one may see the role of teachers in primary education as a calling to help others develop and to contribute to the foundation of society, rather than simply teaching.

Tims, Bakker and Derks (2012a) connect job crafting and the job demands-resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011; Demerouti, Bakker, Nachreiner & Schaufeli, 2001). In the JD-R model, work characteristics can be divided into job demands and job resources. Job demands are the physical, social or organizational aspects that require effort by employees. Job resources are those physical, psychological, social, or organizational aspects of the job that help employees achieve their goals at work. In line with the JD-R model, job crafting can be seen as self-initiated changes by employees aimed at changing their levels of job resources and job demands at work. Tims, Bakker and Derks (2012b) describe four categories of job crafting activities by employees. Job crafting activities can be aimed at: (a) increasing social job resources, such as feedback and coaching, (b) improving structural job resources, such as autonomy at work or opportunities for self-development, (c) increasing challenging job demands, for example by taking on new projects, and (d) decreasing hindering job demands, for example by taking more breaks at work. Though an employee proactively initiating changes is a core feature of job crafting, the employer might be able to stimulate job crafting by creating a stimulating work environment. One way to give employees insight into how they can influence the way their work aligns with their strengths, preferences, motives and passions is by means of a job crafting intervention.

Job crafting as an intervention

This job crafting intervention integrates elements of two job crafting approaches. First the intervention fits Wrzesniewski and Dutton's (2001) job crafting definition, which sees employees as active job 'crafters' who make task-related, relational and cognitive changes in order to consolidate or improve their person-job fit. Second, the intervention also fits Tims et al.'s (2012a) definition, where employees as active 'crafters' may increase

job resources and/or challenging job demands or decrease hindering job demands in order to maintain or optimize their person-job fit. From the person-job fit theory (Kristof, 1996) we know that mismatches can occur in what a job requires from an employee and what an individual is capable of doing or giving (demands-abilities fit), but also in what the employee requires or finds important and what the job offers (needs-supplies fit).

A job crafting intervention that stimulates employees to make personally relevant changes to their work can follow the principles of what Parker, Bindl and Strauss (2010) recently described as *proactive goal-setting*. A proactive goal is something to be achieved in the future. In terms of job crafting this involves accomplishing a good person-job fit so that a person can and wants to work in a healthier, more meaningful, engaged and productive way. Behavior is proactive when activities undertaken are coupled with an ideal future scenario. For example: "I will rehearse the difficult parent-teacher meeting with a colleague, so that I'll feel well-prepared and more confident in the actual meeting next week." Here people change the natural order of events by determining that practicing a potentially difficult parent-teacher meeting will improve the meeting and their confidence. They think and act proactively. Parker et al. (2010) posits that in the process of proactive goal-setting, the motivation to achieve a goal depends on: (a) the assessment of whether one can achieve the future goal ('can do'), (b) the reason to achieve it or level of importance felt ('reason to'), and (c) whether one feels supported and stimulated – or "energized" – to achieve the goal ('energized to'). Additionally, Parker and colleagues (2010) describe the different phases that are important to setting and pursuing proactive goals: (1) proactive goal envisioning—the awareness of a desirable future work situation; (2) proactive goal generation—setting concrete and realistic goals that contribute to this; (3) proactive goal planning—describing the ways and means to achieving the goal; and, (4) proactive goal striving—the actual pursuit of the goal set.

The goals that employees set themselves should be focused on the short term. They are attainable goals (*generation*) that can be encouraged by a job crafting intervention where people can visualize for themselves the fit or lack thereof in their job (*envisioning*). In a training, these generally formulated goals can be made more specific and the ways and means to achieve them can be discussed in a group setting. Concrete job crafting activities can be presented to the participants who can then take note of them (*planning*). Afterwards, the participants will put the training activities into practice in order to pursue the goals set (*striving*).

The success of training interventions depends on several factors (Cheng & Ho, 2001; Kessels, 1996). The content of a training program, the quality of the trainers, the engagement of the managers, the motivation of the employees and the commitment

of the organization are all important (Burke & Hutchins, 2007). Communication plays an important role too. By clearly informing participants ahead of time about the objective of the training program, the chance for success increases (Kraiger, Salas & Cannon-Bowers, 1995). Learning at the workplace is more effective than learning at an external location because learning at the workplace has a direct connection to the work (Kessels, 1993). If a clear connection is made to their own work context during a training session, participants are more involved and interested (Kessels, 2001). This promotes the transfer, the actual application of things learned, even after the training.

Expected results of the job crafting training program

Up until now little research has been done into job crafting interventions. Berg, Dutton and Wrzesniewski (2008) developed a Job Crafting Exercise (JCE) that can be applied in practice. American JCE users (see www.jobcrafting.org) experience this intervention positively, indicating its attributes as independently coming up with innovative ideas, improving work and stimulating positive work attitudes. However, no scientific study has yet been published on the implementation of these job crafting exercises. The design of the job crafting training program has parallels with stress management interventions (Mikkelsen, Saksvik & Landsbergis, 2000) and group interventions focused on reducing burnout (LeBlanc, Hox, Schaufeli, Taris & Peters, 2007) in which employees are invited to participate in thinking about and initiating changes in the workplace.

Mikkelsen et al. (2000) found that participation in so-called search sessions, in which employees looked for and developed solutions to work-related stress problems, had a positive effect. These solutions were then discussed and passed on to a steering committee who arranged further implementation. Participation in the search sessions and the subsequent follow-up by steering committees resulted in a reduced workload, but also more social support, autonomy and a climate conducive to learning than the control group. LeBlanc et al. (2007) evaluated a group intervention intended to reduce burnout. Here as well, the ideas proposed by employees themselves took center stage. The intervention led to less emotional exhaustion and depersonalization, but also to a feeling of decreased job demands, more autonomy and more social support. Involving employees in the improvement of quality in their work seems to have positive effects on their psychological well-being.

In job crafting, however, the employee can personally tailor the approach to his or her own person-job fit and take appropriate action for him or herself. This is in contrast to the 'search' sessions which have more of a think-tank character, designed to come up with generic solutions for the team or department. A recent study that explicitly examines individual job crafting is the one by Van den Heuvel, Demerouti and Peeters (2012).

Their intervention focused on job crafting through group training sessions, after which participants were given various job crafting assignments to apply to work situations. Results showed that the intervention affected development opportunities experienced, contact with managers, personal effectiveness and positive emotions experienced.

In line with studies such as these, we expect to see a positive effect on the well-being of participants by involving them in the process of influencing their person-job fit. A job crafting intervention is meant to induce employees to put their strengths to better use, to connect their personal motivation with aspects of their work or to overcome obstacles in their work. Translated into the framework of job crafting, as offered by Tims et al. (2012b), this can lead to increased structural job resources or social job resources for employees. However, employees could also focus on increasing challenging job demands or reducing hindering job demands. These hindering job demands may involve organizational issues such as workload or process inefficiencies, or could be about personal hindrances such as repetitive strain injury (RSI) problems or insecurity caused by a lack of knowledge or skills. In alignment with the framework set by Tims et al. (2012a; 2012b), this study analyzes the effects of job crafting activities as carried out by individual participants. The different job crafting activities are intended to reestablish good person-job fits, which will result in an optimization of work content, working environment and working conditions. We consequently expect that job crafting training will have a positive effect on self-initiated changes at work and therefore also on the perception that people are capable of shaping their own work.

The central research question

Workload in the field of education is felt to be high. One of the most important explanations for this is that people feel they have limited opportunities to plan and shape their own activities. The objective of the job crafting intervention is to stimulate employees to self-initiate changes in their work, with the express goal of aligning their own strengths, preferences, motives and passions with the needs of the job. The central questions in this study are: (1) what changes do participants in the job crafting training program want to make for a better-fitting job; (2) to what extent are participants in the job crafting training program able to successfully implement the envisioned changes at work; (3) do participants feel they are capable of initiating changes in shaping their jobs themselves after the job crafting training program, and; (4) does the job crafting intervention contribute to reducing the experienced workload?

METHOD

This study concerns qualitative research, which provides the opportunity to dig deeper into the specific questions posed. By combining process data and in-depth interviews, we can develop a picture of the changes that the participants would like to make in their work, the extent to which they have been successful in implementing these changes, the way they experienced being able to influence shaping their job or the tasks within it, and the work pressures they felt. In-depth interviews allows the reasons behind the answers to these questions to be examined in more detail.

Characteristics of participants and work environments

In the fall of 2011, 50 employees in special education took part in the job crafting training program. Of these 50 participants, 86% were female. The average age was 43.48 ($SD = 10.86$). The participants had different educational backgrounds, from lower to higher, and worked at three different schools for special education. All schools were located in the region of South Holland, specifically in the cities of Rotterdam and Gouda. All participants thus worked in an environment that deals with issues of a typically urban nature, such as children with delayed (Dutch) language development or differences in ethnic backgrounds. All employees within the schools participated in the training sessions.

Procedures and methodology

The job crafting training program comprised a total of four groups of 10 to 15 participants. Prior to the intervention, information sessions were held at the schools to communicate the reasons for initiating a training program, the goals of the intervention and the methods involved. Two weeks before the start of the first sessions, participants received a letter from their school administration. This letter explained the underlying reasons for the training program and the training process, emphasized the importance of participation for all employees and the school, and requested full and active engagement. A week before the start of the sessions, participants received an email explaining the content of the training program. Four weeks after the last training sessions, all participants were interviewed in-depth.

Job crafting intervention

Berg, Dutton and Wrzesniewski (2008) developed a two-hour program – the Job Crafting Exercise (JCE) – to activate participants with a job crafting intervention. A job crafting training program was designed based on the original exercise that involved participants themselves making their jobs a better personal fit, with coaching by two trainers. Consistent with the findings by Kessels (1993, 2001) on the effectiveness of training, the schools themselves were chosen as training locations. The practical

examples incorporated in the training and the text and pictures in the workbook were adapted to the needs of education employees. Figure 2.1 shows the progression of the training that was divided into three sessions. The program involved eight core elements and took place over a total of eight hours, divided into three meetings over a period of four to six weeks.

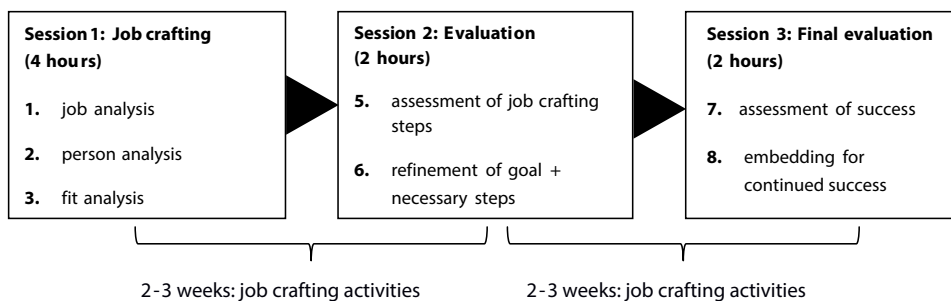


Figure 2.1. Sequence of the job crafting training program

With the JCE approach, participants visualized their own person-job fit by going through four steps. The first step (job analysis) was for them to inventory all their current tasks/duties and place them in order of the amount of time they require, from little to medium to a lot of time. The second step (person analysis) was to assess their personal strengths, motives and the personal or organizational hindrances experienced in their work. By asking participants to also think about what obstacles they felt in their work, the training program deviates slightly from the original JCE in which this aspect is not explicitly explored. Specifically identifying the hindrances in their work helped them to make the connection with the job crafting dimensions noted by Tims et al. (2012b), which involves activities to decrease the number or extent of burdensome tasks. In the third step (fit analysis) participants coupled their own strengths, motives and obstacles with the tasks/duties they carry out. The objective of the fit analysis is to make participants aware of those specific work tasks that reinforce personal strengths and motives and thereby align with what they are good at and what they actually like to do at work. The activities that expose the most personal or organizational hindrances then also become evident and reveal to them where the risks lie in their work. After this fit analysis the JCE challenges participants, in this fourth and final step, to formulate meaningful, personal changes in their work situations that would improve the person-job fit. The self-formulated job crafting activities that resulted from a participant's fit analysis was then saved in a personal action plan. The participant subsequently carried out this action plan on the job in the four weeks following the program. This strategy parallels the principles of proactive goal-setting (Parker et al., 2010).

As shown in Figure 2.1, an interim assessment of the job crafting took place in the second training session. Participants were asked how they had, during the previous weeks, started implementing the job crafting activities they had formulated. Discussing within the group the first successfully-implemented activities or obstacles faced in job crafting (step 5) helped the participants improve the effectiveness of their job crafting activities by further refining them (step 6).

Finally, the third and last session assessed the extent to which the self-initiated job changes had been successful over a period of four to six weeks (step 7). These individual assessments of the success of one's own activities provided the opportunity in step 8 to see the benefits of successful activities and the obstacles to job crafting. By explicitly stating which job crafting activities resulted in which benefits, and which organizational or personal limitations they faced in job crafting, the participants started to apply what they had learned. This is the final step in the training program. It is important to note that in this study of effects, it is the actual changes that employees made themselves (or in collaboration with colleagues) that determine the ultimate level of the intervention. The job crafting activities are indeed the actual job changes that lead to the effects we expect to see.

Assessment tools

In this study a distinction was made between two different assessments: evaluations during the job crafting intervention and evaluations after the job crafting intervention. During the job crafting intervention the trainer collected process data from all the participants. The analysis of the fit between job demands and individual talents, strengths and hindrances was documented by taking a photograph of each individual's written analysis. Participants received the photograph in the time between the sessions. The activities that the participant planned to undertake were included in this documentation. In the last session participants wrote down their activities once again and evaluated whether they had been (sufficiently) successful or not (yet). Four weeks after the job crafting intervention each participant took part in a structured in-depth interview. All interviews were carried out and documented by the same two people. Sample questions from the interviews include: How did you experience the job crafting training program? What have you gained from it? What kind of job crafting activities did you undertake? Who or what did you need to carry out these activities? How successful were you in implementing the desired changes? Are you able to initiate changes in the tasks/duties involved in your job? How do you feel about your workload after the job crafting training program? These interviews were intended to evaluate and gain insights into the participants' experiences, the impact of the training on their feelings of work stress and their desire and opportunity to continue to build on the insights and experience gained.

RESULTS

As described in the job crafting training program above, participants chose to undertake a specific activity to improve their person-job fit, based on the fit analysis in the first session. The participants wrote these activities down and categorized them in the third session. The job crafting activities were divided into the four categories set out by Tims et al. (2012b): increasing challenging job demands (e.g. “developing additional lesson content myself”), decreasing (potentially physical) job hindrances (e.g. “setting time limits”; “being more aware of my posture”), and increasing structural job resources (e.g. “build more confidence for parent-teacher meetings”; “take advantage of the opportunities for self-development at work”) and social job resources (e.g. “more communication with partnered colleagues”).

Table 2.1. Activities chosen and their success rates: increasing job resources, changing job demands

	Number of respondents	%	Successful activities	Not successful activities
Increasing social job resources	12	24%	10	2
Increasing structural job resources	2	4%	0	2
Increasing challenging job demands	2	4%	2	0
Decreasing hindering job demands	34	68%	22	12
Total	50	100%	34 (68%)	16 (32%)

Findings regarding the central research questions

The type of the intended change. The first research question concerns the type of change participants want to initiate in their work. Table 2.1 shows which types of activities participants wanted to undertake as developed in the first training session. The majority of the participants, 68%, opted for an activity designed to reduce the impact of hindering job demands, such as avoiding disruptive interruptions or planning to take breaks. Next, 24% of participants wanted to increase social job resources, for example by coordinating more often with colleagues and managers and taking on tasks together. Two participants, 4%, chose to increase structural job resources. And finally, two participants wanted to increase challenging job demands. These two participants indicated that they were looking for more challenging tasks because much of their work is routine-based. Table 2.2 shows examples of the intended activities per category.

The success of the activity. The second research question concerned the extent to which participants were able to successfully implement changes to their work. This question was answered based on self-evaluation of their success in the last training session. As

Table 2.1 shows, approximately two-thirds of the participants in the job crafting training program felt that they were successful in implementing the envisaged change; about a third of them felt as yet unsuccessful. In terms of increased social job resources, 10 of the 12 intended changes were successful. One of the reasons for not (yet) being successful in implementing a change was that an individual had not yet had enough time to coordinate a new way of working with his/her colleague. Only two participants chose to make a change that would increase their structural job resources: seeking out personal development opportunities and ways to boost self-confidence. Both were as yet unsuccessful in implementing this change within the timeframe of the job crafting intervention. The participants indicated: "I have taken inventory of which development opportunities I see at work, but still have to make arrangements (soon) with my manager"; "Our students are usually brought to school by bus so I don't have the chance to speak to parents often. I have prepared for the parent-teacher meetings next month, but can only carry out my intentions at that time". The two participants who opted to implement a change that would increase their challenging job demands were both successful. It turned out to be easily done by adding their own content to lessons.

Table 2.2. Examples of chosen activities

Activity category	Example
Increasing social job resources	<p>"More communication with my partnered colleagues. Make time to discuss themes and division of tasks."</p> <p>"Approach colleagues to share experiences with new teaching methods, learning from each other's experiences"</p> <p>"Share the writing of treatment plans with colleagues, and not do it by myself at home so that we can keep each other on the ball."</p>
Increasing structural job resources	<p>"Take advantage of development opportunities at work."</p> <p>"Practice the difficult parent-teacher meetings ahead of time so that I can go into them with more confidence."</p>
Increasing challenging job demands	<p>"Enriching the lessons, making them more challenging. Adding my own content."</p>
Decreasing hindering job demands	<p>"Clearly delineate who is and is not responsible for which tasks. Don't take on everything that comes your way."</p> <p>"While writing up reports at school I am often interrupted which means it takes a very long time to complete them. I want to try and see if I can work more efficiently at home."</p> <p>"Limit my tiredness at work by taking a lunch break and going home on time."</p>

Most participants in the job crafting intervention chose to make a change that would decrease their hindering job demands. This primarily concerned the obstacle of having "too many things to do in too little time". In the process data collected during the study we see that the participants who had the worst person-job fits are the ones who wanted to change the most. These participants had a lot of post-it stickers about their risks at work, written out on the brown papers used during the sessions. As can be seen in Table

2.1, 22 of the 34 participants managed to implement the changes successfully. Twelve were not successful, for various reasons: "I don't have the time to make the necessary lists"; "I planned to say no more often, but I still haven't managed this"; "I continue to find it difficult to really take a break during work and to go home on time. I haven't yet been able to break the habit." In practice, despite setting realistic and feasible goals, it proves difficult to break through fixed routines and change habits.

The experience of the ability to influence. The third research question concerned the extent to which participants felt, after the job crafting training program, that they could themselves initiate changes and actually contribute to shaping their job. In order to answer this question, in-depth interviews were held with individual participants. Of the 50 participants, 39 said after the training sessions that they believed they could shape their work tasks and duties. Within this number are the 34 participants who successfully achieved the envisaged goals. For the 16 employees who were not successful in implementing the intended change, the situation is different. Five of the sixteen did believe that they too would be able to modify their work, based on the success they saw among colleagues. Partly because they saw that their colleagues had been successful with their approaches, they believed that they would be successful too. The other 11 participants believed that they could have no influence on the shape their job took. Their experience was that there is no room for them to effect changes at work. Six of the eleven indicated that their own norms, values, beliefs and behavioral patterns on the job played a part in this. The remaining five employees felt that changes in their work were restricted by managers, the organization and the Ministry of Education.

The experience of decreased workload. The fourth research question was about whether the teachers felt they had a lighter workload. During the interviews, 80% of the participants indicated that they experienced less pressure at work after the intervention. Within this percentage are, again, the 34 participants who successfully implemented actual changes in their work. "Now that my 'partner' colleague and I have made better arrangements regarding tasks, and we review these together regularly, I really do have less work. Before, we did quite a few things twice." The participants who did not experience a lighter workload were the ones who chose a change that involved reducing their hindering job demands, but were not successful in implementing the changes.

Evaluation of the training program

After completing the job crafting training program, participants were asked about the experience. Most (90%) said they felt the training was useful. Interestingly, half of all the participants indicated that they viewed work differently after the job crafting

training program. The training had made them more aware of the tasks they carry out at work and on which of these they spend the most time. In the educational sector non-teaching tasks, such as writing reports and reviews, are often felt to be very taxing. Many participants noted after the workshop that they now saw that only a small part of their time is actually spent on these activities: "Before the training I felt that I was mostly consumed by administrative duties – which I don't like to do. Now I see that my job is mostly about my direct interaction with the children. That little bit of administration is no longer a big deal." Participants have also realized anew why they chose the occupation in the first place. Some indicated that they were proud of the work they do. The workshop renewed their awareness of the fact that their passion for teaching is rooted in helping children to develop. Many participants in the workshop opted for activities involving planning and self-organization. Practical changes, such as putting structure into agendas, scheduling the writing of reports and influencing the duration of meetings proved to be easily accomplished. This gave them an increased sense of control at work.

In discussions with the unsuccessful participants, five of the sixteen respondents felt that they were on their way to implementing their job crafting change. For these respondents it was about setting priorities in their work. The help of colleagues and managers was called upon and the participants indicated that the extra guidance and support benefitted them. Doing the training sessions together with all colleagues was felt to be valuable, as the following comments illustrate: "Because we took part in the workshop together, I feel comfortable approaching my colleague for help sooner, rather than later"; "At first I didn't like the idea that my manager was taking part in the workshop as well, but in retrospect it was good. Now she is even more aware of what my hurdles are at work and tries to support me on those specific points."

The participants who said during their interview that their changes had not yet been successful indicated that some of the reasons for this were the lack of time or opportunity, difficulties in setting the right priorities, and struggles in breaking away from routine. Doing a workshop while still having to work (though all within normal working hours) was initially felt to increase the workload. With hindsight however, participants felt that it was good to do this training program together. All in all, 90% of the participants felt it important that the organization should continue to devote attention to the matter. Since there have been many developments in education over the last few years, and since developments rapidly change, participants recognized the need to regularly review the fit between their jobs and their talents, passions and needs.

DISCUSSION

During this intervention study, employees actively formulated and implemented self-initiated changes to their work. These changes at work concerned, as Wrzesniewski and Dutton (2001) noted, task levels, relational levels and cognitive levels. In accordance with Tims et al. (2012a) the intended changes during the run of the study were divided into activities that would increase social job resources and/or structural resources, increase challenging job demands or decrease hindering job demands. This indicates that the job crafting models of Wrzesniewski and Dutton (2001) and Tims et al. (2012a) have similarities and differences. Both models contain changes focused on tasks and relations. Wrzesniewski and Dutton (2001) further suggest that cognitive changes play an important role in how work (meaning in work) is viewed; this is absent in the model by Tims et al. On the other hand, in the model by Tims et al. job crafting is divided into self-initiated activities directed towards changes in the level of job demands and job resources. Within this model, changes are broader than the task, relational and cognitive levels can allow. Moreover, cognitive crafting is seen more as a coping strategy to accept the current situation, rather than actively shaping work.

We see, for example, that some participants opted for changes that have more to do with place and time. Such aspects are not considered in Wrzesniewski and Dutton's (2001) theory of job crafting. These participants wanted to start writing reports at school rather than at home (place) or chose to write them at a different time of day, for example after all students and parents have left. Such changes are focused on increasing decision latitude, or in other words the job resource of autonomy, in one's work.

Though no proposed changes or activities at a cognitive level were noted, the cognitive level does appear to be important for the way the employees experienced the workload. Of the 50 participants, 25 stated that they now view work differently, which seemed to have a positive effect on feelings of work stress. This suggests that changing job demands and job resources when necessary can lead to a different perception of work. For example, previously participants had felt that administrative duties and other matters not directly related to teaching demanded a lot of time. By taking inventory and prioritizing their time, participants realized that the majority of their time was spent on working with the children, the reason that they chose this occupation. It turned out that the time actually spent on less appealing secondary activities was not excessive.

It is not always easy for employees to place their envisaged change into one of the four categories outlined by Tims et al. (2012a). Defining the fundamental reason for the change requires deeper analysis. The objective behind choosing to work in a new way

may be to increase challenging job demands, yet the goal can also be decrease hindering job demands. The majority of the intended changes aimed to decrease hindering job demands. This is in contrast to the findings of Tims and colleagues (2012b) in which the job crafting activities most chosen were those that increased job resources. Mostly the participants who noted many risks in their analyses opted to decrease job hindrances. This decision probably has much to do with the context of this present study. Workload is felt to be very high in the educational sector, which is caused primarily by beliefs that teachers are unable to influence the shape and content of their job. Employees in education experience many hindrances, which may explain the high percentage of changes intended to lower them. The experiences of colleagues within the same school affect the perceptions participants have. Some of the participants who were not successful but their colleagues being successful were convinced that they would eventually be successful in starting to modify their jobs.

The participants who were unsuccessful in making a change and who believed that they could not influence the shape and content of their work are a point of concern for the organization. This group was also unsuccessful in making a change in the four weeks between the completion of the training and the in-depth interviews. These participants *were* aware of the risks in their work, but were *unable* to change them themselves. The training helped them to see the limitations and hindrances they face more clearly. An important question is whether the goals set for making a change in their work were realistic and feasible. Because the intervention was set up such that *proactive goal generation* (Parker et al., 2010) was a clear feature, we can assume that the intended changes were acceptable, realistic and feasible. A manager or close colleague may be able to help the unsuccessful job crafter to assess the feasibility of the intended change. The notion that an employee is unable to independently influence their hindering job demands means that the employer, in its duty to support the well-being of its employees, should take the initiative here. The employer will have to seek out appropriate solutions together with these employees.

These results show that the efficacy of a job crafting intervention is two-sided. The majority of the participants found the intervention to be effective and successful. They can make changes in their work, feel capable of shaping their job, and experience a lighter workload. A small portion of participants did not experience this. For them, the hindrances in their work were exposed through the training, but they were ultimately unable to change them. In follow-up studies involving job crafting interventions, these opposing effects should be taken into consideration. A job crafting intervention requires good counseling and extra attention for participants who do are not immediately successful. The unsuccessful confirm what the majority of employees in

education experience (Van Grinsven, Elphick & Van der Woud, 2012): that there is little potential to modify your own work or tasks at work. With the right approach and careful implementation in the organization, a job crafting intervention can offer promising opportunities to positively influence a continued person-job fit.

Limitations and future research

Most studies have their limitations; this study is no exception. Given that the intervention took place in a hands-on setting, choices had to be made based on practical and ethical considerations, which meant that a totally uncontaminated experiment was not achieved. This study involved a limited number of participants within a specific sector, which meant there were some limitations. We do not know if the results might have been different with a larger group and or a group outside of special education. The attention given to the workload within education will partly have influenced the participants' choice of job crafting activities. Whether the job crafting intervention contributed to reducing the workload was measured with the in-depth interviews. For future research it is advisable to objectively assess workload before and after the intervention, so that more insight into the actual effects can be gained. Working with a control group can further strengthen the findings.

In terms of benefits, it would be interesting to look into what job crafting gives participants and the organization. Further research could also focus on the relevant personal traits of successful job crafters and the characteristics of the working environment or organization. What makes one employee more easily implement changes at work than another? Is it dependent on the person or does, for example, management play a role? This study took place over a period of three months. By following the participants during a longer timeframe to see whether more of them would ultimately be successful in their job crafting activities, more insight into the effects could be gained. Moreover, it would be interesting to be able to assess which job crafting activities in general require more time to be successful. The participants' expectations can be formed using this information so that the possibility of the participant becoming demotivated if job crafting is not immediately successful can be reduced. Doing more evaluations than the one included in this study would provide more insight into the long-term effects of the intervention. Successful job crafting activities will generally have a positive effect on an employee's feelings about work because it shows them they can influence how they do their job. This can lead to feeling like they have a lighter workload. In this study, more than half of the participants indicated after the intervention that they felt they had a lighter workload. For an occupation that experiences such high workload, this is an opportunity to make a positive change. Further research into this can provide the groundwork for specifically tailored solutions.

Finally, we must consider whether all the intended activities of the participants fit into the theoretic framework of job crafting. For example, do the intended activities in the area of self-organization fall under job crafting? They do not concretely change the actual job description, but do appear important to participants in aligning their jobs with their strengths, preferences, motives and passions. Research into job crafting is still in its infancy. There have only been very few interventions done that have put the theoretical insights on individual job re-designing (which is part of job crafting) into practice. This means that a number of questions in this field could be answered by future research. Such research should also focus on the limits of job crafting. Are these defined by changes to job features or are there other factors that play a role? Another important question with regard to interventions focused on job crafting: how far can an employer/manager go before encroaching on the self-initiated, proactive character of job crafting? Management telling employees that they are open to employees' job crafting behavior seems an acceptable step, as does making employees aware of their job demands and job resources. Though how does this work with regard to feedback or embedding job crafting in the organization by, for example, discussing it in performance appraisals? It seems that there is more than enough uncharted territory for future job crafting research to explore.

Practical implications

Preparation and communication with the participants deserves specific attention. The use of the intervention as a tool was motivated, in this study, by the organization's recognition of the high workload experienced. Communicating about this motivation can be expected to influence the types of activities that participants choose to implement. Apart from operational issues such as time, training location and the affinity trainers have with participants' occupations, embedding activities in participants' daily working environments is important (Burke & Hutchins, 2007). The intervention has added value if the issues receive sustained attention. Given the negative effects in the participants who were unsuccessful in implementing their changes, this group requires special attention. Within the organization there needs to be time and expertise available to counsel employees after the training program has finished. The experience of formulating small changes and successfully implementing them can inspire employees to keep working at a long-term fit between themselves and their job. Workload is high in many other sectors beyond education. Neither the job crafting dimensions covered by Tims and colleagues (2012b), nor the job crafting levels specified by Wrzesniewski and Dutton (2001) are bound to any one occupational sector. So also in other sectors, job crafting interventions have the potential to contribute to reducing workload that are related to the feelings employees have that they are unable to influence the content and shape of their work.

In practice...

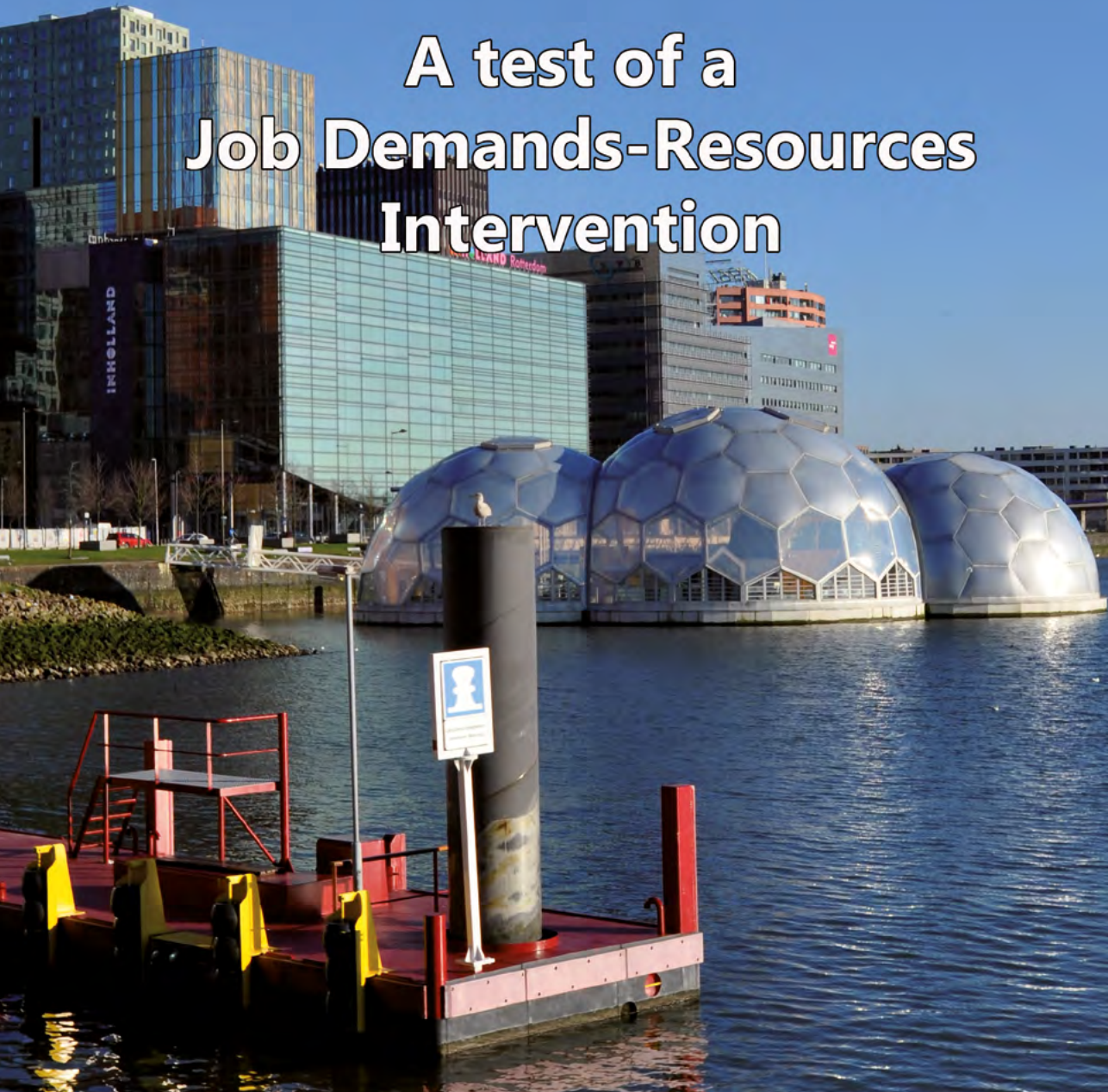
What do these results mean in practice?

- A job crafting intervention can help to improve a work situation. Because the reasons for a high workload are assessed differently among employees, individual employees should determine different solutions that will suit them personally. Working together with employees to achieve tailored solutions is an effective way to improve the workload experienced.
- Within a short amount of time, employees are able to become more aware of their person-job fit by breaking down their job into defined tasks and matching these to personal strengths, needs and risks that may affect how well they can implement those tasks.
- Formulating and recording personal job crafting activities in a group setting gives colleagues or managers the chance to be involved in one's changes in the job.
- A job crafting intervention contributes to a sense of empowerment in being able to influence the content of one's work by trying out practical, small-scale, personally relevant changes in work over period of a month and a half.
- Embedding a job crafting intervention within an organization is important, as is good coaching and extra attention for employees who are unable to implement the intended changes in work.



CHAPTER 3

A test of a Job Demands-Resources Intervention



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ABSTRACT

This study assessed the impact of a JD-R intervention – aimed at improving personal resources, job resources and challenging job demands – on work engagement and performance. The study contributes to the literature on interventions by using an experimental pre-test, post-test control-group design in the field of healthcare. Healthcare professionals ($N = 67$) were assigned to the JD-R intervention or a control group and filled out questionnaires before and after the intervention. To test the hypotheses, a multivariate analysis of covariance (MANCOVA) was conducted. The results revealed that the JD-R intervention was successful: participants' PsyCap, job crafting, work engagement and self-ratings of job performance significantly increased after the JD-R intervention. The limitations of our study concerns aspects of the quasi-experimental research design, the sample size, and the homogeneity of our sample which restricts the generalizability of our findings. A practical implication of the outcomes of this study is that investing in positive organizational interventions might be worthwhile. Therefore, management should acknowledge the importance of facilitating and stimulating employees to work on their resources, both personal and job-related, and their challenging demands. The study contributes to JD-R theory by offering a first causal test. The findings indicate that organizations can foster work engagement and improve performance by offering interventions aimed at increasing personal resources, job resources and challenging job demands at work. Thus, the JD-R intervention offers an opportunity to successfully turn JD-R theory into practice.

A TEST OF A JOB DEMANDS-RESOURCES INTERVENTION

Healthcare organizations in Western society are facing challenges in the realms of quality, rising costs, technological advances, demographic changes, and heightened public expectations (Randall and Williams, 2006). The public expects that healthcare organizations provide high-quality and affordable care by skilled and motivated professionals. Healthcare professionals have a direct impact on the quality of healthcare because they are in direct contact with clients. Being directly in contact with clients can be very satisfying but also emotionally demanding (Gaillard, 2006). Therefore, healthcare professionals need an adequate amount of resources to reach their work-related goals and offer high-quality care (French, Ikenwilo and Scott, 2007).

Research with the Job Demands-Resources (JD-R) theory (Demerouti and Bakker, 2014) has shown that having an adequate amount of resources can lead to various positive work outcomes like work engagement and performance. Work engagement in healthcare is positively related to employee well-being (Laschinger and Finegan, 2005), client satisfaction (Ram, Bhargavi and Prabhakar, 2011), and quality of care (Lowe, 2012). Because of these findings, healthcare organizations are interested in what they can do to foster employee work engagement and improve performance.

Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, and Bakker, 2002). According to JD-R theory (Bakker and Demerouti, 2014), the most important predictors of work engagement are job and personal resources. This is particularly true in situations where job demands are challenging instead of hindering. JD-R theory provides a clear description of the way demands, resources, psychological states and outcomes are associated. JD-R theory suggests that work engagement can be fostered through interventions by targeting at the most important job demands, as well as job and personal resources (Bakker and Demerouti, 2014). Meyers, Woerkom and Bakker (2013) point out that positive psychological interventions in organizations can be a promising tool for enhancing employee well-being and performance. Although the research evidence for JD-R theory is accumulating, no studies have investigated an intervention aimed at adapting both types of resources (job and personal resources). Moreover, as far as we know, no studies in the healthcare domain have attempted to foster work engagement or improve job performance by using a JD-R intervention. Therefore, the central aim of the present study is to assess the impact of a JD-R intervention – aimed at improving personal resources and optimizing job resources and challenging job demands – on work engagement and performance. Figure 3.1 illustrates the central aim of this study.

This study contributes to the literature on interventions by using a quasi-experimental pre-test, post-test control-group design in the field of healthcare. The practical aspect of this intervention is especially relevant given that healthcare is characterized by a high workload and high complexity of work (Bakker and Sanz Vergel, 2013). Additionally, the study contributes to JD-R theory by offering a first causal test.

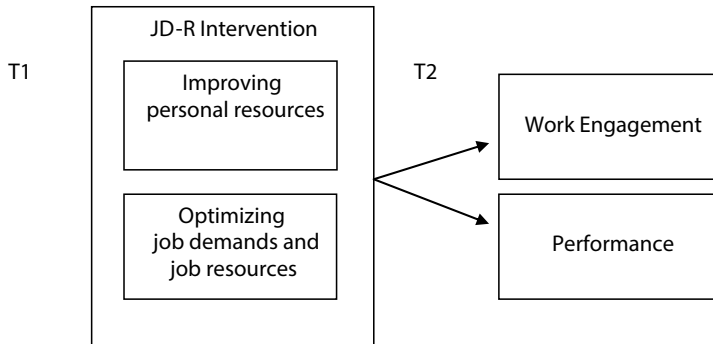


Figure 3.1. Research model

Theoretical Background

Job Demands-Resources Theory

According to the JD-R theory (Bakker and Demerouti, 2014), work characteristics can be classified into job demands and job resources. Job demands refer to physical, social or organizational aspects of the job that require physical and/or cognitive effort and are therefore associated with certain physiological and psychological costs. Work pressure, dealing with demanding clients, or encountering situations that are emotionally demanding are examples of job demands. Job resources refer to those physical, psychological, social, or organizational aspects of the job that are functional in achieving work goals – resources can reduce job demands and the associated costs. Job resources also stimulate personal growth and development. Examples of job resources are feedback from clients, social support from co-workers, and supervisory coaching.

JD-R theory proposes that work environments elicit two independent psychological processes – a health impairment process and a motivational process. The health impairment process starts with consistently high job demands that may exhaust employees’ energetic resources and lead to fatigue and health problems. Specific job demands like work pressure and emotional demands have repeatedly been found to predict exhaustion among various occupational groups (Hakanen, Bakker, and Schaufeli, 2006; Demerouti, Bakker and Bulters, 2004). In contrast, the motivational

process starts with job resources that encourage employees to meet their work-related goals (Boyd, Bakker, Pignata, Winefield, Gillespie and Stough, 2011). Previous studies have suggested that several job resources like colleague support, performance feedback, and supervisory coaching lead to work engagement and consequently to higher performance (Bakker, 2011). Research has shown that JD-R theory can be applied to all work environments (Bakker, Demerouti and Sanz-Vergel, 2014).

In addition, JD-R theory postulates that job resources gain their motivational potential when employees are confronted with highly challenging job demands (Bakker, 2011). For example, Bakker and Sanz Vergel (2013) found that home healthcare professionals perceive emotionally demanding interactions with their patients as challenges, and therefore these demands – particularly when combined with sufficient personal resources – foster work engagement. Further, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) have shown that job and personal resources are mutually related and that personal resources can be independent predictors of work engagement. Employees who score high on personal resources such as self-efficacy and optimism are well equipped to mobilize their job resources and are generally more engaged in their work. Thus, JD-R theory proposes that personal and job resources strengthen each other and both contribute to work engagement and performance.

Influencing Personal Resources

Personal resources have been defined as aspects of the self that are commonly associated with resiliency and individuals' sense of ability to control and impact upon their environment successfully (Hobfoll, Johnson, Ennis and Jackson, 2003). Examples of personal resources are self-efficacy, personal effectiveness, optimism, hope, resilience, and self-esteem. Four personal resources that are proven to be malleable and can be developed through interventions are self-efficacy, optimism, hope and resilience (Luthans, Avey, Avolio, Norman, and Combs, 2006). These personal resources are also known as psychological capital (PsyCap). PsyCap has been defined as "an individual's positive psychological state of development characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when faced with problems and adversity, sustaining and bouncing back and even beyond (resilience) to achieve success." (Luthans et al., 2006).

The PsyCap construct has been recognized as crucial for an individual's work-related well-being (Luthans and Youssef, 2007b), as it helps people achieve their goals and stimulates personal growth and development (Xanthopoulou et al., 2009). According to

Hobfoll (1989), personal resources like the elements of PsyCap do not exist in isolation because people try to accumulate their resources. The accumulation of resources will result in positive personal outcomes like engagement (Gorgievski and Hobfoll, 2008). Recent studies have provided evidence that PsyCap is positively related to work engagement (Gruman and Saks, 2011) and performance (Peterson, Luthans, Avolio, Walumbwa and Zhang, 2011). The inclusion of personal resources in JD-R theory has been recognized as an important extension of the original framework (Bakker et al., 2014). Besides the individual relationships between PsyCap and work engagement and PsyCap and performance, the JD-R model shows a mediated relationship between PsyCap and performance, via work engagement as illustrated in Figure 3.2.

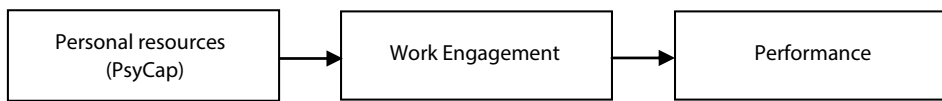


Figure 3.2. Personal resources (PsyCap), work engagement and performance in the JD-R model

Given these positive relationships, it is important for both individuals and organizations that employees have an adequate amount of personal resources. Several studies have shown that personal resources can successfully be increased through interventions (Luthans et al., 2006; Demerouti, Ewijk, Snelder and Wild, 2011). In this way, employees may acquire new skills, knowledge and problem-solving abilities (Bakker and Demerouti, 2014) which may facilitate personal resources like PsyCap. Interventions can also primarily aim to foster personal resources, which was a central aim of the JD-R intervention used in this study. Therefore we hypothesize:

Hypothesis 1: *Participants' level of PsyCap significantly increases after the JD-R intervention (T2) both compared to their level prior to the intervention (T 1) and compared to a control group.*

JOB CRAFTING

Employees may adapt their job demands and job resources through job crafting behavior. According to Wrzesniewski and Dutton (2001), job crafting focuses on the process by which employees change elements of their jobs and relationships with others to redefine the meaning of their work and the social environment at work. Tims, Bakker and Derks (2012) offer a broader definition of job crafting by positioning job crafting in the JD-R model. According to Tims et al. (2012) job crafting entails the changes individuals make in their level of job demands or job resources, which directs

attention to the proactive, bottom-up ways in which employees alter their tasks and the boundaries of their jobs. Through job crafting, employees can improve the fit between their personal needs, abilities and passions about the job.

According to Tims et al. (2012), every job consists of job demands and job resources that employees may craft by increasing social job resources, increasing structural job resources, increasing challenging job demands, or decreasing hindering job demands. Examples of these job crafting behaviors are: asking for feedback and coaching (social job resources), increasing autonomy and creating opportunities to develop oneself at work (structural job resources), starting new projects (challenging job demands), and reducing workload (hindering job demands). Through job crafting, employees may be able to increase their work engagement (Bakker, Oerlemans and Ten Brummelhuis, 2013) and improve their performance (Dorenbosch, Bakker, Demerouti and Van Dam, 2013).

The bottom-up molding of demands and resources initiated by employees themselves, seems to play a substantial role in the most recent version of the JD-R theory (Bakker and Demerouti, 2014). Besides the direct individual relationships between job crafting and work engagement and job crafting and performance, the JD-R model also suggests indirect relationships (see Figure 3.3). Accordingly, adapting job demands and job resources (job crafting) may lead to increased work engagement, which in turn, may lead to improved performance.

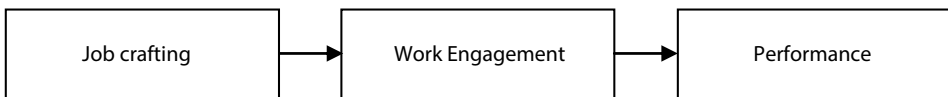


Figure 3.3. Relationship job crafting, work engagement and performance

Van den Heuvel, Demerouti and Peeters (2012) showed that a job crafting intervention could successfully stimulate employees to adapt their job demands and job resources. The job crafting exercise in the current JD-R intervention will teach employees how to optimize their work environment and improve the fit between their personal needs, abilities and passions about the job. Thus, we hypothesize:

Hypothesis 2: *Participants' level of job crafting significantly increases after the JD-R intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

Work Engagement and Performance

According to Schaufeli and Bakker (2004), work engagement is an active, positive work-related state that is characterized by vigor, dedication, and absorption. Vigor is characterized 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, and inspiration. Finally, absorption is characterized by being fully concentrated and happily engrossed in one's work, where time passes quickly. Employees who are engaged experience more active, positive emotions than their less-engaged colleagues and are healthier (Bakker and Demerouti, 2014). While there are numerous definitions of performance, in this study, we are specifically interested in in-role performance. In-role performance is defined as those officially required outcomes and behaviors that directly serve the goals of the organization (Motowidlo and Van Scotter, 1994).

Since the JD-R model proposes that work engagement is the result of the interplay between job demands, job resources, and personal resources, we will examine the impact of a JD-R intervention aimed at improving the combination of these specific antecedents. Since the JD-R model suggests that work engagement and performance can be fostered through interventions by targeting at the most important job demands and (job and personal) resources (Bakker and Demerouti, 2014) we hypothesize:

Hypothesis 3: *Participants' level of work engagement significantly increases after the JD-R intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

Hypothesis 4: *Participants' level of (self-rated) in-role performance significantly increases after the JD-R intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

METHOD

Participants and Procedure

The sample consisted of 64 female (96%) and 3 male healthcare professionals (4%) who diagnose, identify and treat patients with a hearing impairment. This gender skewed distribution is representative for the occupational group, in which more women than men are employed (Merens, Hartgers and Van den Brakel, 2012). The mean age of the participants was 42 years ($SD = 10.58$), and 84% had successfully finished a higher

vocational education or university education in healthcare. The participants worked at two different locations at the same healthcare organization. Because of practical reasons, participants of the intervention group and the control group were grouped by location, resulting in a quasi-experimental design. By following this procedure, we avoided contamination effects, where members of the experimental groups influence members of the control group or vice versa (Cook and Campbell, 1979). Of the 67 healthcare professionals, 43 took part in the JD-R intervention, while 24 were assigned to the control group. The respondents participated voluntarily and did not receive any compensation for their contribution.

There were two measurements in time. The first measurement took place two weeks before the start of the intervention; the second measurement one week after the intervention was completed. In line with other intervention studies, a research design with a post measurement shortly after the intervention was chosen (Mersbergen, Demerouti and De Jonge, 2012; Rasquin, Van de Sande, Praamstra and Van Heugten, 2009). The organization allowed the participants to fill in the questionnaires during their workday. All 67 participants completed both questionnaires (100% response rate). The managing director introduced the first online questionnaire in an email containing instructions and an explanation of the procedure, while also addressing the anonymity of the data. The online questionnaires were hosted by the Erasmus University, and the managing director did not receive any information about individual outcomes. One week before the start, the participants received additional information about the program and content of the intervention. One week after the intervention was completed, the participants were asked to fill in the second questionnaire.

JD-R Intervention

The JD-R intervention contains exercises aimed at increasing personal resources, job resources and challenging job demands. Because earlier studies suggest that decreasing hindering job demands is unrelated (Tims et al., 2012) or negatively related to work engagement (Petrou, Demerouti, Peeters, Schaufeli, and Hetland, 2012) and performance (Tims, Bakker, Derks and Van Rhenen, 2013), we did not include this job crafting strategy in the intervention. To increase personal resources we used exercises to increase participants' levels of hope, optimism, self-efficacy, and resilience (PsyCap). To stimulate participants' job crafting behavior, we used exercises and goal setting. The JD-R intervention consisted of three training sessions over a period of five weeks: the first and second session took place on one day, while the third half-day session took place four weeks later (see Figure 3.4).

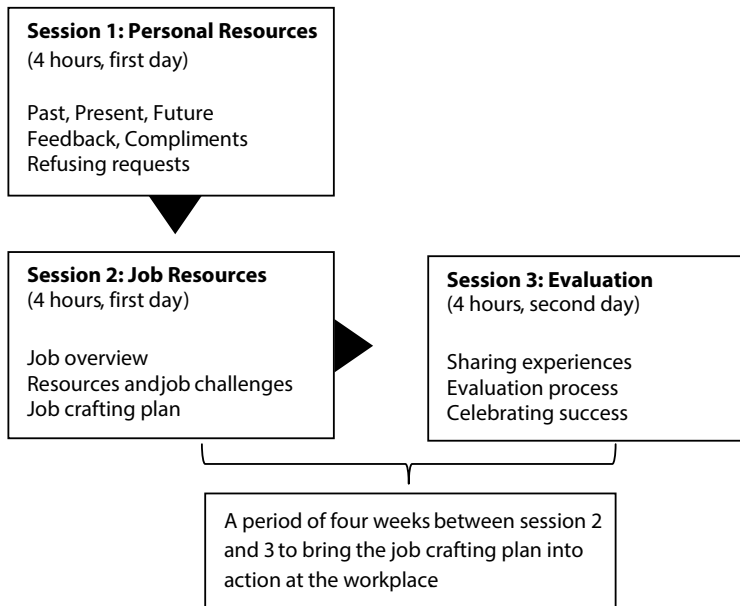


Figure 3.4. JD-R Intervention design

The intervention consisted of four different exercises. First, the participants learned to accept the past, appreciate the present, and view the future as a source of opportunities. In this exercise, participants acknowledged, shared and discussed their thoughts and feelings about their career with each other. They looked back on things they experienced at work, shared the things they like in their recent job and discussed their future ambitions. Second, the participants practiced giving and receiving feedback including gracefully receiving compliments. Third, they practiced refusing requests. Fourth, participants made an overview of their job tasks and their personal strengths, motivation, and possible risk factors at work. Based on this overview, participants made a job crafting plan in which they described their job crafting goals and the actions they would take to increase their social job resources, structural job resources and challenging job demands.

Learning to accept the past, appreciate the present, and viewing the future as a source of opportunities increases hope and optimism (Schneider, 2001). Furthermore, feedback increases self-efficacy (Luthans, Norman, Avolio and Avey, 2008). Through the exercise, the participants learned how to give and receive positive feedback at work in a respectful and constructive way. Giving and receiving compliments is a way to increase self-esteem and appreciate the present. Additionally, reducing risk factors by refusing requests, fosters participants' resilience (Luthans and Youssef, 2004).

The job crafting element of the intervention was based on the Michigan Job Crafting Exercise (Berg, Dutton and Wrzesniewski, 2010) and was adjusted to the work environment of the organization. In the intervention, the participants made an overview of their job tasks and sorted them into three task categories: tasks they spent a lot of time at, tasks they had to do often, and tasks they had to do sometimes. They also designated whether they did the task individually or with colleagues. The participants wrote the outcomes on small, medium, and large sticky notes and stuck them on a piece of brown paper. After this, they labelled the tasks in terms of urgency and importance. During the next part of the exercise, the participants made an overview of their personal strengths, motivation, and possible risk factors in their work and matched these to their tasks. This part of the intervention gives a clear overview of the job. Subsequently, the participants were asked to discuss which things they could change in their work to increase social job resources, structural job resources, and challenging job demands. At the end of the second training session, the participants made a personal crafting plan.

In the four weeks between the second and third training session, the participants tried to put their job crafting plan into action. In the final training session, the trainers and participants evaluated whether the participants had succeeded in accomplishing their job crafting goals. The participants also discussed what they would need in the future to maintain the fit between their personal competences, preferences and the job. At the end of the intervention, the participants had learned what they could do to change elements of their jobs and their relationships with others in order to increase their job resources and challenges at work.

METHOD

The questionnaires were identical for all participants and both measurements.

Personal Resources (PsyCap) consists of self-efficacy, optimism, hope, and resilience. *Self-efficacy* (Schwarzer and Jerusalem, 1995) consists of four items, of which an example is: "I am confident that I could deal effectively with unexpected events." Participants had to score the items on a four-point scale, from (1) absolutely wrong to (4) absolutely right. *Optimism* (Luthans, Avolio, Avey and Norman, 2007a) consists of four items, of which an example is: "I usually expect the best in uncertain times." Participants had to score the items on a five point scale, from (1) totally disagree to (5) totally agree. *Hope* (Luthans et al., 2007a) consists of six items, of which an example is: "If I find myself in a jam at work, I could think of many ways to get out of it." Participants had to judge six different statements using a six-point scale, from (1) totally disagree to (6) totally agree. *Resilience*

(Block and Kremen, 1996) consists of five items, including: "I enjoy dealing with new and unusual situations." Participants had to score the items on a four point scale, from (1) does not apply at all to (4) applies very strongly.

Job Crafting was measured using 3 subscales of the Job Crafting questionnaire developed by Tims et al. (2012). Each subscale consisted of five items using a five-point scale, ranging from (1) never to (5) very often. Examples are: "I ask colleagues for advice" (increasing social job resources), "When an interesting project comes along, I offer myself proactively as project co-worker." (increasing challenging job demands), and "I try to develop my capabilities." (increasing structural job resources).

Work engagement was measured with the nine-item Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker and Salanova, 2006). Participants could respond to these items using a 7-point frequency scale, ranging from (0) never to (6) always. Example items are: "At work, I am bursting with energy" (vigor), "I am enthusiastic about my job" (dedication), and "I am immersed in my work" (absorption).

In-role Performance was measured using the In-role Performance scale by Williams and Anderson (1991), which consists of seven items. A sample item is: "Adequately completes assigned duties." Participants had to score the items on a five point scale ranging from (1) totally disagree to (5) totally agree.

RESULTS

Descriptive Statistics

The means, standard deviations, correlations and reliabilities between all study variables at both measurement points are displayed in Table 3.1. Additionally, means and standard deviations for both intervention and control group are presented in Table 3.2.

Hypotheses Testing

Our central prediction is that the JD-R intervention will positively influence PsyCap (Hypothesis 1), job crafting behavior (Hypothesis 2), work engagement (Hypothesis 3) and performance (Hypothesis 4). To test these hypotheses, we conducted a multivariate analysis of covariance (MANCOVA) with intervention as the independent variable (two levels: intervention, control) with T2 PsyCap, job crafting behavior, work engagement and performance as the dependent variables controlling for T1 scores on each of the dependent variables.

The MANCOVA produced a multivariate significant effect, $F(4, 58) = 3.76, p < .01$. Univariate analyses showed that the two groups differed significantly regarding PsyCap, $F(1, 61) = 10.84, p < .01$; job crafting behavior, $F(1, 61) = 5.64, p < .05$; work engagement, $F(1, 61) = 9.41, p < .01$; and in-role performance, $F(1, 61) = 6.77, p < .05$. The intervention group scored more favorable than the control group on each of these variables: PsyCap $M = 3.84$ vs. $M = 3.58$; job crafting $M = 3.05$ vs. $M = 2.88$; work engagement $M = 5.30$ vs. $M = 4.83$; and in-role performance $M = 4.30$ vs. $M = 4.07$. Taken together, these results revealed that the intervention group reported more PsyCap, job crafting behavior, work engagement and in-role performance compared to the control group. These findings offer evidence for all four hypotheses.

Additional analyses

In addition to testing intervention effects, we examined the underlying theoretical mechanisms of JD-R theory. The theory assumes that work engagement is the mediator between personal resources and performance, and between job demands/resources and performance. Following Baron and Kenny (1986), we examined the required conditions for mediation: a) the predictor should be related to the mediator, b) the mediator should be related to the outcome, and c) the predictor–outcome relationship becomes non-significant (full mediation), or becomes significantly weaker (partial mediation) after the inclusion of the mediator. To test the significance of mediating effects we applied the Sobel z-test.

We examined whether PsyCap was significantly related to work engagement and whether work engagement was related to in-role performance. The regression analysis showed that PsyCap ($\beta = .97, SE = .21, t = 4.74, p < .001$) was significantly related to work engagement and work engagement affects in-role performance ($\beta = .17, SE = .05, t = 3.32, p < .01$). Finally, the results showed that the predictor–outcome relationship became weaker after the inclusion of the mediator ($\beta = .41, SE = .10, t = 4.04, p < .001$). The Sobel test showed that the relationship was partially mediated ($z = 3.08, p = .00$).

We conducted a similar analysis to examine whether work engagement mediates the relationship between job crafting behavior and performance. The regression analysis showed that job crafting behavior ($\beta = .99, SE = .21, t = 4.67, p < .001$) was significantly related to work engagement and work engagement indeed affects in-role performance ($\beta = .17, SE = .05, t = 3.32, p < .01$). Finally, the results showed that the predictor–outcome relationship became weaker after the inclusion of the mediator ($\beta = .23, SE = .11, t = 2.05, p < .05$). The Sobel test revealed that the relationship was partially mediated ($z = 1.88, p = .03$).

Table 3.2 *Overview of Means and Standard Deviations T1 and T2*

	Intervention				Control			
	(N = 43)				(N = 24)			
	MT1	SDT1	MT2	SDT2	MT1	SDT1	MT2	SDT2
PsyCap	3.66	.49	3.79	.53	3.80	.40	3.66	.49
Job crafting	2.93	.54	2.99	.52	3.12	.48	2.98	.48
Social job resources	2.19	.70	2.13	.69	2.24	.56	2.17	.58
Structural job resources	3.67	.56	3.78	.59	3.91	.57	3.72	.47
Challenging job demands	2.94	.70	3.05	.65	3.19	.65	3.03	.72
Work engagement	4.80	.98	5.15	1.08	5.25	.86	5.10	.85
Performance	4.21	.42	4.28	.43	4.20	.38	4.10	.43

DISCUSSION

To our best knowledge, this is the first JD-R intervention study. The design of this study is based on the theoretical assumptions of JD-R theory (Bakker and Demerouti, 2014), which state that optimizing job demands and (personal and job) resources may increase employee engagement and subsequently performance. The present study among healthcare professionals reveals that a JD-R intervention can foster their work engagement and improve their in-role performance. Thus, investing in JD-R interventions may help healthcare professionals to stay engaged at work (Laschinger and Finegan, 2005). This is practically relevant since the healthcare sector is characterized by high demands such as workload, demanding situations and high complexity of work (Bakker and Sanz-Vergel, 2013; Gaillard, 2006). In addition, the investment in interventions offer healthcare organizations the opportunity to meet the public expectations to provide high-quality care and reach the organizational goals. The present study among healthcare professionals reveals that a JD-R intervention may foster work engagement and improve in-role performance.

Theoretical Contributions

The present study makes four main theoretical contributions. First, as far as we know, this is the first study that revealed significant effects of a JD-R intervention aimed at increasing PsyCap and job crafting behavior compared to a control group. In contrast with earlier studies, which were aimed at either increasing personal resources (Demerouti et al., 2011) or increasing job crafting behavior (Van den Heuvel et al., 2012) our study aimed at increasing both.

The analysis of the three separate job crafting components showed that the crafting of structural job resources and challenging job demands increased significantly, but the crafting of social job resources did not. Most of the time, the participants worked in direct contact with clients, and not in direct contact with colleagues. Participants may experience that they have few opportunities to increase their social job resources at work. The outcomes on PsyCap are in line with findings by Demerouti et al. (2011) who showed that an intervention may increase PsyCap. Our results regarding job crafting are in contrast with a study by Van den Heuvel et al. (2012) who did not find a significant increase of job crafting after their intervention, although the intervention did improve the work environment. Thus, the current study is the first showing significant effects of an intervention on both PsyCap and job crafting behavior.

The second contribution concerns a significant effect of the JD-R intervention on work engagement. Our study indicates that adapting personal resources, job resources and job demands contributes to work engagement in the field of healthcare. These outcomes are in line with Bakker and Demerouti (2014) who stated that personal and job resources strengthen each other and gain their motivational potential in a work environment with high job demands such as those found in healthcare organizations. Third, our results illustrate that a JD-R intervention leads to improved (self-rated) in-role performance. Our findings strengthen the JD-R Theory (Bakker and Demerouti, 2014) that stated that organizational interventions can foster employees' work engagement and performance. Fourth and last, the additional analyses revealed mediated relations as proposed in JD-R theory.

Limitations and avenues for future research

Three limitations of our study should be mentioned. First, all participants worked at the same healthcare organization which may cause socially desirable behavior and group pressure. Moreover, participants from different organizations may be less influenced by other participants and may feel more comfortable showing their vulnerability because of anonymity. In addition, the sample consisted of healthcare professionals only. This restricts the generalizability of our findings. Future studies should try to replicate our study among employees of several other occupational groups.

The third limitation concerns the research design. A disadvantage of the chosen quasi-experimental research design with non-random assignment is that intervention effects could be the result of differences between the groups at the beginning of the intervention instead of the result of the intervention. Therefore, a control group and a pre-test were added to the research design. It is relevant to note that we did avoid contamination effects by using this design. Although the locations were different, they

are both located in urban areas and are similar in terms of demographic characteristics. The healthcare professionals also execute the same working activities which are designed around similar team structures. Besides the similar work surroundings, activities and team structures there were no changes in staffing or reorganizations in either of the locations during the intervention period. The assumption is that if the intervention and control group are similar at the pre-test, the likelihood that extraneous variables and other subjects and settings differ between those two groups will be smaller. Another limitation of the research design concerns the sample size. Our intervention study took place in a small organization, which determines our sample size. A small sample size may lead to low statistical power, which may cause inflated estimates of effect sizes. Besides the design and sample size, we also acknowledge a limitation concerning the timing of the post intervention measurement. The effects of the intervention were measured shortly after completing the intervention. With this design it is not possible to measure the long-term sustainability of the intervention effects. Future studies should consider the timing of post-measurement as an important aspect of the research design, and investigate how long the effects of a JD-R intervention last. A fourth limitation concerns the measure of in-role performance. In this study, we only measured participants' self-ratings of in-role performance. Future studies may also include other-ratings provided by direct colleagues, supervisors, or clients. This will give a more objective view of the improvement in terms of observable behavior.

Future research may also examine if the effectiveness of a JD-R intervention depends on participants' personal traits. For example, participants' openness to new experiences may be a better predictor for the intervention effects than participants' age or gender. In fact, some personal traits may moderate the intervention effects. Extravert participants for example, may be more successful in increasing their social job resources compared to introvert participants because they feel themselves more comfortable in social interactions. In addition, future research may also use qualitative research methods like structured interviews. These outcomes may shed light on the experiences of the participants and may reveal how the intervention is useful to them.

Practical implications and Conclusion

A practical implication of the results of this study is that investing in positive organizational interventions might be worthwhile. Within the context of the healthcare sector, where reducing costs is important, our results show that financial investments can impact both the well-being and the performance of employees. Senior management should acknowledge the importance of facilitating and stimulating employees to work on their resources, both personal and job-related, and their challenging demands.

The JD-R intervention showed that it is possible to foster employees' PsyCap and to stimulate their job crafting behavior. Besides investing in organizational interventions, senior management can actively support employees' adapting job demands and resources on the individual level, for example by giving them more autonomy at work (Wrzesniewski and Dutton, 2001). Higher levels of autonomy may make it easier for individuals to change their resources and demands (Petrou et al., 2012). Organizations can also use surveys or questionnaires to examine whether employees experience sufficient resources and challenges at work. Based on the outcomes of the surveys, individualized reports could be made including personalized feedback and suggestions on how employees themselves could optimize their resources and challenges at work. This might be especially relevant for healthcare professionals working in a demanding environment.

In the field of healthcare, organizations are looking for ways to foster employee work engagement and job performance. The present study makes a contribution to the literature by assessing the effects of a positive organizational intervention. The findings indicate that organizations may foster work engagement and improve performance by offering interventions aimed at increasing personal resources, job resources and challenging job demands at work.

Table 3.1 Means, standard deviations, correlations, and Cronbach's alpha of the study variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	42.30	10.58															
2. PsyCap T1	3.71	.46	.14	(.91)													
3. Job crafting T1	3.00	.52	.07	.62**	(.86)												
4. Social job resources T1	2.21	.65	.02	.30*	.74**	(.73)											
5. Structural job resources T1	3.76	.57	.10	.63**	.75**	.25*	(.85)										
6. Challenging job demands T1	3.03	.69	.06	.58**	.93**	.55**	.63**	(.76)									
7. Work engagement T1	4.96	.95	.20	.51**	.50**	.25*	.55**	.43**	(.93)								
8. In-role performance T1	4.20	.41	.14	.46**	.34**	.04	.47**	.33**	.30*	(.80)							
9. PsyCap T2	3.75	.52	.10	.80**	.49**	.22	.52**	.45**	.36**	.43**	(.93)						
10. Job crafting T2	2.99	.50	-.06	.47**	.85**	.69**	.59**	.77**	.33**	.22	.52**	(.84)					
11. Social job resources T2	2.15	.65	-.04	.19	.60**	.79**	.20	.47**	.15	-.03	.18	.72**	(.72)				
12. Structural job resources T2	3.76	.55	.00	.40**	.57**	.27*	.69**	.48**	.33**	.34**	.51**	.74**	.24*	(.84)			
13. Challenging job demands T2	3.04	.67	-.09	.50**	.80**	.56**	.53**	.81**	.31**	.24	.53**	.90**	.47**	.59**	(.74)		
14. Work engagement T2	5.13	1.00	.10	.43**	.48**	.27*	.56**	.38**	.78**	.19	.51**	.50**	.29*	.55**	.39**	(.95)	
15. In-role performance T2	4.22	.44	.15	.41**	.36**	.17	.41**	.31*	.29*	.63**	.55**	.39**	.13	.42**	.38**	.38**	(.81)

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

CHAPTER 4

The impact of Personal Resources and Job crafting Interventions



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ABSTRACT

This study examined the impact of organizational interventions on work engagement and performance. Based on the Job Demands-Resources model, we hypothesized that a Personal Resources intervention and a Job Crafting intervention would have a positive impact on work engagement and performance. We used a quasi-experimental design with a control group. Primary school teachers participated in the study at two time points with six weeks between the measurements ($N = 102$). The results showed that the Personal Resources intervention had a positive causal effect on work engagement. Additionally, the joint Personal Resources and Job Crafting intervention had a positive impact on self-ratings of job performance. We discuss the implications of these findings for theory and practice.

THE IMPACT OF PERSONAL RESOURCES AND JOB CRAFTING INTERVENTIONS

In an unstable economic environment, organizations look for ways to outperform their competitors and stand out to survive. While the general public often assumes that only for-profit organizations are competitive, non-profit and public services organizations must also show their added value. Especially in the field of education, employees can make an important difference and have a crucial impact on organizational results. Teachers, for example, can directly influence the quality of education and the performance of their students (Clotfelter, Ladd & Vigdor, 2007; Rivkin, Hanushek & Kain, 2005).

Recent studies in the Dutch educational field have shown that engaged teachers work harder, are more innovative (Koneremann, 2012), and are more creative (Bakker & Xanthopoulou, 2013) than their non-engaged colleagues. Furthermore, Bakker & Bal (2010) have shown that teachers' work engagement is positively related to their job performance. Because of these findings, educational organizations are interested in fostering employee work engagement and improving performance.

Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). According to the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2008, 2014), job and personal resources are the most important predictors of work engagement. Job resources are aspects of the job that are functional in achieving work goals and reducing job demands and the associated costs (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Personal resources concern individuals' sense of their ability to control their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Work engagement occurs when employees have an optimal balance between their job demands, such as workload and demanding pupils, and their resources, such as feedback, self-efficacy and social support. The JD-R model suggests that work engagement and performance can be fostered through interventions that stimulate participants to optimize their job demands and (job and personal) resources (Bakker & Demerouti, 2014; Demerouti & Bakker, 2011). For example, effective interventions could be a personal resources intervention to increase personal resources (Demerouti, Van Eeuwijk, Snelder & Wild, 2011) or a job crafting intervention to optimize job demands and job resources (Van den Heuvel, Demerouti & Peeters, 2012). Job crafting involves the self-initiated changes employees make in their job design (Tims, Bakker & Derks, 2012). A qualitative job crafting intervention study by Van Wingerden, Derks, Bakker and Dorenbosch (2013) indicates that job crafting is very useful for teachers. Although

teachers work in a demanding work environment and may not have control over significant portions of their workload, they can use and increase their job resources to deal with their job demands. Although the research evidence for the JD-R model is accumulating, no studies have investigated interventions aimed at both types of resources (job and personal resources). To the best of our knowledge, no studies in the educational domain have attempted to foster work engagement or improve job performance by using organizational interventions. Therefore, the central aim of the present study which is based on the principles of the JD-R model was to assess the effects of two organizational interventions, both independently and together, aimed at fostering work engagement and improving performance. Figure 4.1 illustrates the central aim of this study.

This study contributes to the literature on interventions by using an experimental pre-test, post-test control group design in the educational field. With this design, potential intervention effects on work engagement and performance can be traced back to the specific components of the intervention: personal resources, job demands and resources, or the combination. The practical aspect of these interventions is especially relevant given that the educational field is characterized by a high workload and a high prevalence of burnout symptoms (Koppes, De Vroome, Mol, Janssen & Van den Bossche, 2011).

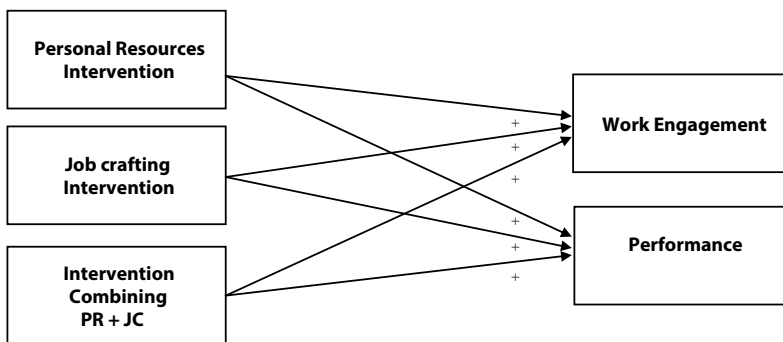


Figure 4.1. Research model

THEORETICAL BACKGROUND

Work Engagement and Performance

According to Schaufeli & Bakker (2004), work engagement is an active, positive work-related state that is characterized by vigor, dedication, and absorption. Vigor is characterized 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. Finally, absorption is characterized by being fully concentrated and happily engrossed in one's work, where time passes quickly (Schaufeli & Bakker, 2010).

Work engagement can be predicted using the Job Demands-Resources (JD-R) model (Bakker, 2011; Bakker & Demerouti, 2007; Demerouti et al., 2001). Research revealed that the JD-R model can be applied to all work environments (for an overview, see Bakker & Demerouti, 2014). The model provides a clear description of the way demands, resources, psychological states and outcomes are associated. According to Bakker & Demerouti (2007) every job can be modeled using two different job characteristics; job demands and job resources. The JD-R model suggests that the combination of high job demands and low resources leads to high levels of strain, which leads to physical and psychological costs. In contrast, the combination of high demands and high resources leads to high levels of motivation, involvement, and work engagement (Rodriguez-Muñoz, Sanz-Vergel, Demerouti, & Bakker, 2012; Tuckey, Bakker & Dollard, 2012). Additionally, personal resources can be helpful in dealing with the job demands and may contribute to improved performance (Bakker, Tims & Derks, 2012). However, having extensive resources does not automatically imply that it is possible to continuously increase job demands. Every employee has a limit in how many demands he/she can deal with.

Employees' with sufficient personal resources will be able to strengthen their job resources (Bakker & Demerouti, 2014). For example, teachers with confidence in their abilities (personal resource) will probably ask for performance feedback more easily (job resource) from their school principal and students since they will feel capable of handling this feedback. In turn, feedback can increase teachers' self-efficacy (personal resource). Therefore, according to JD-R theory (Bakker & Demerouti, 2014), personal and job resources strengthen each other.

While there are numerous definitions of performance, in this study we are specifically interested in in-role performance. In-role performance is defined as those officially required outcomes and behaviors that directly serve the goals of the organization (Motowidlo & Van Scotter, 1994). Since work engagement is the result of employees' optimal balance between job demands, job resources, and personal resources (Bakker & Demerouti, 2014), we examine the impact of interventions aimed to improve the balance of these specific antecedents. More specifically, we will examine the impact of an intervention in which employees learn how to optimize their personal resources

(Personal Resources intervention) as well as an intervention in which employees learn how to optimize their job demands and job resources (Job Crafting intervention).

Personal Resources

Personal resources are aspects of the self that are commonly associated with resiliency and individuals' sense of ability to control and impact their environment successfully (Hobfoll, Johnson, Ennis & Jackson, 2003). Personal resources are functional in achieving goals and stimulate personal growth and development (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). There are various personal resources, some examples are self-efficacy, personal effectiveness, optimism, hope, resilience, and self-esteem. Four personal resources that have been proven to be malleable and can be developed through interventions are self-efficacy, optimism, hope and resilience (Luthans & Youssef, 2007; Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans, Avey, & Patera, 2008). The four personal resources together have more impact as a whole construct than the individual components do (Luthans, Youssef & Avolio, 2007). Together, these four personal resources are also known as psychological capital.

Psychological capital has been defined as "an individual's positive psychological state of development characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when faced with problems and adversity, sustaining and bouncing back and even beyond (resilience) to achieve success" (Luthans, Youssef & Avolio, 2007, p. 3). The Psychological capital construct has been recognized as crucial for an individual's work-related well-being (Luthans & Youssef, 2007).

Sweetman & Luthans (2010) have argued that the four personal resources should be positively related to work engagement because they reflect self-beliefs about control over one's work environment. For example, employees with high levels of self-efficacy and optimism expect things to go well, accept setback and failures as normal, and not as indicative of their own lack of worthiness. These employees tend to see life as something that can be influenced and acted upon (Mäkikangas, Feldt, Kinnunen and Mauno, 2013). Thus, personal resources influence employees' perception of job demands and the way they deal with them. Recent studies have provided evidence for this contention. For example, Hodges (2010) found that the four personal resources were directly and significantly correlated with employee engagement. In addition, research by Gruman & Saks (2011) as well as by Vink, Ouweneel & Le Blanc (2011) has shown that the four constructs are positively related to work engagement. In a sample of female school

principals, Bakker & Xanthopoulou (2013) have shown that respondents with the most personal resources (i.e. self-efficacy and resilience) scored highest on work engagement.

Besides the relation between hope, optimism, self-efficacy and resilience and work engagement, Luthans, Youssef & Avolio (2007) have argued that the four personal resources are keys to higher performance. They have shown that each of these four resources has a significant positive relationship with performance. Peterson, Luthans, Avolio, Walumbwa & Zhang (2011) have shown that a positive change in psychological capital is related to a positive change in supervisor-rated performance and financial performance (i.e. individual sales revenue).

A core characteristic of the four personal resources is that they are by definition malleable (Luthans & Youssef, 2007). Several studies have revealed that they can be developed through interventions (Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans, Avey, & Patera, 2008). Consequently, improved personal resources has a positive impact on employee performance (Luthans, Avey, Avolio, & Peterson, 2010; Demerouti, Van Eeuwijk, Snelder & Wild, 2011). According to JD-R Theory (Bakker & Demerouti, 2014) a sufficient amount of personal resources is fundamental for employees' work engagement and performance. Personal resources increase work engagement because they make employees feel able to control over their work environment. In addition, personal resources help to attain work goals, because individuals with many resources can better cope with the demands they face at work (Siu, Bakker & Jiang, 2014). In the present study, employees will participate in an intervention in which they learn how they can improve their own personal resources. We will examine the effect of a Personal Resources intervention on both work engagement and performance, and hypothesize:

Hypothesis 1: *Participants' levels of (a) work engagement and (b) in-role performance will significantly increase after the Personal Resources intervention (T=2) both compared to their level prior to the intervention (T=1) and compared to a control group.*

JOB CRAFTING

In the seventies, it was assumed that employee motivation, well-being, and performance were outcomes of the top-down design of the job and the associated tasks by managers (Hackman & Oldman, 1976). Over the years, labor relations have changed. Studies conducted in the eighties and nineties suggest that employees also make self-initiated changes at work (Nicholson, 1984; Staw & Boettger, 1990) that may become accepted as part of employees' contributions to the organization. A significant redesign of the

work will therefore have been accomplished without anyone actually executing a planned change program (Kulik, Oldham, & Hackman, 1987). These proactive changes that employees make in their job design are usually focused on resolving problems for the organization (LePine & Van Dyne, 1998). A recent bottom-up approach to job design that contributes to individual and organizational outcomes, is job crafting. According to Wrzesniewski & Dutton (2001), job crafting focuses on the process by which employees change elements of their jobs and relationships with others to redefine the meaning of their work and the social environment at work. Because job crafting involves initiating changes in the job design, Tims, Bakker & Derks (2012) operationalized job crafting according to the types of job characteristics suggested in the Job Demands-Resources (JD-R) model. According to JD-R theory (Bakker & Demerouti, 2014), every job consists of job demands and job resources. In line with the JD-R model, Tims et al. (2012) postulate that employees can craft their own jobs by increasing social job resources, increasing structural resources, increasing challenging job demands, or by decreasing hindering job demands.

Examples of these job crafting behaviors are: asking for feedback and coaching (increasing social job resources), increasing autonomy and creating opportunities to develop oneself at work (increasing structural resources), starting new projects (increasing challenging job demands), and reducing workload (decreasing hindering job demands). Job crafting entails the changes individuals make in their level of job demands or job resources, which directs attention to the proactive, bottom-up ways in which employees alter the tasks and boundaries of their jobs. Through job crafting, employees can improve the fit between their personal needs, abilities and passions about the job (Tims & Bakker, 2010). As a consequence, employees may be able to increase their own work engagement (Bakker, Oerlemans & Ten Brummelhuis, 2013).

According to Dorenbosch, Bakker, Demerouti & Van Dam (2013), job crafting not only affects work engagement, but also affects work performance. Employees' who craft their job, optimize the demands and resources in their work environment which helps them to achieve their work related goals (Tims, Bakker, Derks & Van Rhenen, 2013). Van Dam, Nikolova & Van Ruysseveldt (2013) showed that employees who actively pursued job crafting reported more confidence and involvement with the organization and performed better than employees who made few changes in their work. Further, self-ratings of job crafting correlate positively with colleague-ratings of job performance (Bakker, Tims & Derks, 2012). In the educational field, Leana, Appelbaum & Shevchuk (2009) have found that educators who took part in collaborative job crafting (in which employees work together to redesign their jobs) displayed improved performance compared to those who did not engage in job crafting. A Job Crafting intervention may

teach employees how to optimize their work environment and improve the fit between their personal needs, abilities and passions about the job. After experiencing the Job Crafting intervention, employees will be able to use the job crafting skills when their work environment or personal needs change. Since work in the educational field is often subject to change this will potentially be very useful. The JD-R theory (Bakker & Demerouti, 2014) underlines the importance of job crafting in relation to employees' balance between job demands and resources and states that this balance leads to work engagement and performance. Therefore, we hypothesize:

Hypothesis 2: *Participants' levels of (a) work engagement and (b) in-role performance will significantly increase after the Job Crafting intervention (T=2) both compared to their level prior to the intervention (T=1) and compared to a control group.*

The Best of Both Worlds: Combining Personal Resources and Job Crafting

We argue that a combined Personal Resources and Job Crafting intervention will be more effective than each of the single training interventions separately. In the Personal Resources intervention, participants learn to increase their personal resources. Increasing personal resources will make the teachers more confident and capable of job crafting. In the Job Crafting intervention, participants learn to increase their person-job fit by increasing job resources, increasing challenging job demands, or decreasing hindering job demands. This will presumably improve participants' job performance. Thus, we assume that a combined intervention that stimulates increasing personal resources, job resources and challenge at work will lead to increased work engagement and improved performance. Since the JD-R model (Bakker & Demerouti, 2014; Demerouti & Bakker, 2011) proposes that personal and job resources strengthen each other and both contribute to work engagement and performance, we hypothesize:

Hypothesis 3: *Participants' levels of work engagement (H3a) and in-role performance (H3b) will significantly increase after the intervention combining Personal Resources and Job Crafting (T=2) both compared to their level prior to the intervention (T=1), and compared to a control group.*

METHOD

Participants and Procedure

The sample consisted of 91 female (89%) and 11 male teachers (11%), which can be considered representative for the occupational group. The average age of the participants was 45 years ($SD = 10.16$), and 81% had successfully finished a higher

vocational education or university education in Special Educational Needs. The participants worked at four different locations of primary schools for special education. Because of practical reasons, the participants of the intervention groups and the control group were grouped by location, resulting in a quasi-experimental design. By following this procedure, we avoided contamination effects, where members of the experimental groups may influence members of the control group or vice versa (Cook & Campbell, 1979). A group of 26 participants took part in the Personal Resources intervention, a group of 32 in the Job Crafting intervention, and a group of 26 in the combined Personal Resources and Job Crafting intervention. Finally, 18 participants were assigned to the control group. The participants of the combined intervention participated in both interventions. They started with the Personal Resources intervention and finished with the Job Crafting intervention. The respondents participated voluntarily and did not receive any compensation for their contribution.

There were two measurements in time. The first measurement took place two weeks before the start of the intervention; the second measurement took place one week after the intervention was completed. The initial questionnaire was completed by 132 participants (100% response rate), while the final questionnaire was completed by 102 participants (77% response rate). We conducted an ANOVA including all study variables to analyze whether the drop out from T1 to T2 was selective. The analysis showed no significant differences on any of the study variables between the drop out group and the group included in the study. Three weeks before the start of the intervention, the managing director introduced the first questionnaire in an email containing instructions and a link to the online questionnaire. The procedure and goals of the study were explained, while also addressing the anonymity of the data. One week before the start, the participants received a reminder to fill in the questionnaire and additional information about the content of the intervention. One week after the intervention was completed, the participants were asked to fill in the final questionnaire.

During the Job Crafting intervention, the trainers took pictures of the intended job crafting actions and goals that were formulated and written down by the participants. The participants described their goals in terms of increasing social job resources, increasing structural resources, increasing challenging job demands, or decreasing hindering job demands. Between the intervention sessions the participants received the picture of their intended job crafting actions and goals to stimulate the job crafting process.

Besides the questionnaire and the overview of the job crafting goals, we also conducted one-hour structured interviews for all participants four weeks after the intervention. The outcomes of the interview offered a more complete view of the effect of the intervention.

Personal Resources Intervention

To increase personal resources we used exercises to increase participants' levels of hope, optimism, self-efficacy, and resilience. The Personal Resources intervention consisted of three sessions over a period of six weeks: the first and second session took place on one day, between the second and third session there was a time interval of four weeks. All examples and exercises used in the intervention were derived from the teachers' work context to make it more salient and relevant for our target group.

The intervention consisted of three different exercises: first, the participants learned to accept the past, appreciate the present, and view the future as a source of opportunities. In this exercise, the participants acknowledged, shared and discussed their thoughts and feelings about their career with each other. They looked back on the things they experienced at work, shared the things they like in their recent job and discussed their ambitions. Sharing and discussing the things employees appreciate in the present and aspire to in the future have been proven to be effective in increasing an individual's hope and optimism (Schneider, 2001). Second, the participants practiced giving and receiving feedback, including gracefully receiving compliments. Through this exercise, the participants learned how to give and receive positive feedback at work in a respectful and constructive way. Practicing giving and receiving feedback contributes to participants' self-efficacy (Bandura, 1997; Luthans, Norman, Avolio & Avey, 2008). In the third and final exercise of the Personal Resources intervention, participants practiced refusing a request, which is a way to reduce stressors and increase resilience (Luthans & Youssef, 2004). By practicing refusing requests, individuals feel that they are more in control of their positive outcomes; in other words, they have more control over their environment.

Job Crafting Intervention

The Job Crafting intervention consisted of three training sessions over a period of six weeks, which took place at the schools where the participants were working. The examples and exercises used in the intervention were derived from the teachers' work context. The intervention was based on the Michigan Job Crafting Exercise (Berg, Wrzesniewski, & Dutton, 2010) and operationalized with the principles of the JD-R model (Bakker & Demerouti, 2014). Therefore, the job crafting intervention contained

the elements increasing social job resources, increasing challenging job demands, increasing structural job resources and decreasing hindering job demands. In the Job Crafting intervention, the participants made an overview of their job tasks and sorted them into three categories: tasks they spent a lot of time at, tasks they had to do often, and tasks they had to do sometimes. They also designated whether they did the task individually or with others. The participants wrote the outcomes on small, medium, and large notes and stuck them on a piece of brown paper. After this, they labeled the tasks in terms of urgency and importance. Then the participants made an overview of their personal strengths, motivations, and possible risk factors in their work and matched these to their tasks. This part of the intervention gives a clear overview of the job. Subsequently and in line with the principles of the JD-R model, the participants were asked to discuss which things they could change in their work to increase social job resources, increase challenging job demands, increase structural job resources, or decrease hindering job demands. After the discussion, the participants were asked to choose one job crafting goal they wanted to achieve. At the end of the first training session, they made a personal crafting plan.

In the four weeks between the first and second training session, the participants tried to bring the intended changes into action. In the second session, they met with their colleagues to share their experiences and discuss their progress. Between the second and final session, the participants helped each other to realize their goals at work. In the final training session, the trainers and participants evaluated whether the participants had succeeded in accomplishing their job crafting goals. The participants also discussed what they would need in the future to maintain the fit between their personal competences, preferences and the job. At the end of the intervention, the participants had learned what they could do to change elements of their jobs and their relationships with others in order to change the meaning of their work.

Intervention Combining Personal Resources and Job Crafting

The intervention combining Personal Resources and Job Crafting was designed to combine the best of both worlds and is aimed to increase the level of both job and personal resources. The participants in the combination intervention took part in both intervention programs successively. They started with the personal resources component and then undertook the job crafting component. This order was deliberately chosen because increasing personal resources presumably makes the participants more confident and capable of job crafting. The combined intervention consisted of six training sessions over a period of twelve weeks, which took place at the school where the participants were employed.

Measures

The questionnaires were identical for all four groups of participants over both measurements (T1 and T2). The reliabilities and correlations of the measurements at time 1 and time 2 are presented in Table I.

Psychological capital consists of self-efficacy, optimism, hope, and resilience and was measured using the following scales. *Self-efficacy* (Schwarzer & Jerusalem, 1995) consists of four items, of which an example is: "I am confident that I could deal effectively with unexpected events." Participants had to score the items on a four point scale, from (1) absolutely wrong to (4) absolutely right. *Optimism* (Luthans, Avolio, Avey & Norman, 2007) consists of four items, of which an example is: "I usually expect the best in uncertain times." Participants had to score the items on a five point scale, from (1) totally disagree to (5) totally agree. *Hope* (Luthans, Avolio, Avey & Norman, 2007) consists of six items, of which an example is: "If I find myself in a jam at work, I could think of many ways to get out of it." Participants had to judge five different statements using a six-point scale, from (1) totally disagree to (6) totally agree. *Resilience* (Block & Kremen, 1996) consists of five items, of which an example is: "I enjoy dealing with new and unusual situations." Participants had to score the items on a four point scale, from (1) does not apply at all to (4) applies very strongly.

Job Crafting was measured using the Job Crafting scale developed by Tims et al., (2012), which consists of four subscales, namely: increasing social job resources, increasing challenging job demands, increasing structural job resources, and decreasing hindering job demands. Increasing social job resources consists of five items. An example item is: "I ask my supervisor to coach me." Participants had to score the items on a five point scale, ranging from (1) never to (5) very often. Increasing challenging job demands consists of five items of which an example is: "When an interesting project comes along, I offer myself proactively as project co-worker." Participants had to score the items on a five-point scale, ranging from (1) never to (5) very often. Increasing structural job resources consists of five items. An example item is: "I try to develop my capabilities." Participants had to score the items on a five point scale, ranging from (1) never to (5) very often. Decreasing hindering job demands consists of six items, of which an example is: "I make sure that my work is mentally less intense." Participants had to score the items on a five-point scale, ranging from (1) never to (5) very often.

Work engagement was measured with the nine-item Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker & Salanova, 2006). The instrument consists of three subscales to assess vigor, dedication and absorption. Here is an example for each subscale: "At work, I am bursting with energy" (vigor), "I am enthusiastic about my job" (dedication),

and “I am immersed in my work” (absorption). Participants could respond to these items using a 7-point frequency scale, ranging from (0) never to (6) always.

In-role Performance was measured using the In-role Performance scale by Williams and Anderson (1991), which consists of seven items. An example item is: “Adequately completes assigned duties.” Participants had to score the items on a five point scale ranging from (1) totally disagree to (5) totally agree.

Structured Interviews

During the structured interviews the following questions were asked: How did you experience the intervention? Does the content of the intervention connect with your daily work? Can and do you incorporate the things you learned at practice into your daily work routine? What components are most useful or applicable? Do you see options to make permanent changes to your job or renew your job?

RESULTS

Descriptive Statistics

The correlations between all study variables at both measurement points, the means and standard deviations are displayed in Table 4.1. The chosen job crafting actions and goals are displayed in Table 4.2. Before testing the hypotheses, we first had to check whether there were significant differences in the means of all variables at Time 1 between the four groups. In addition, we had to check whether the Personal Resources intervention led to an increase in personal resources and whether the Job Crafting intervention led to an increase in job crafting behaviors. In addition to overall job crafting behavior, we analyzed the impact of the Job Crafting intervention on the four separate job crafting components.

Table 4.2 Chosen Job crafting Actions and Goals

Actions aimed at:	Job crafting group	Combination group	Total
	N = 32	N = 26	N = 58
Increasing social job resources	4	8	12
Increasing structural job resources	0	2	2
Increasing challenging job demands	0	2	2
Decreasing hindering job demands	28	14	42

A multivariate analysis of variance (MANOVA) was conducted to examine whether there were significant differences in the means for all variables at Time 1 between the four

groups. The analysis revealed that there were no significant T1 differences between teachers at the four study sites ($F(21, 282) = 0.92, ns$).

A repeated measures ANOVA with a within-subject factor representing time (T1-T2) was separately executed for the Personal Resources group and the control group. The results showed a significant increase of the personal resources1 construct within the Personal Resources group ($F(1, 25) = 9.17; p = .01, \eta_p^2 = .27$). There was no significant increase of this variable within the control group ($F(1, 16) = 0.27, ns$). Participants of the Personal Resources intervention reported a significant increase of the personal resources construct at T2 (mean = 3.59) compared to T1 (mean = 3.38). These findings support the intended effect of the Personal Resources intervention.

Table 4.3 Means and F -values of the Job crafting variables

Variables	Job crafting group and control group per time point							
	Job crafting group		RM ANOVA	Control group		RM ANOVA		
	(N = 32)		F-values	(N = 18)		F-values		
	T1	T2		T1	T2			
JC social	2.33	2.53*	$F(1, 29) = 5.80; p = .05, \eta_p^2 = .17$	2.52	2.44	$F(1, 17) = 0.40; p = ns$		
JC structural	3.35	3.51*	$F(1, 30) = 4.85; p = .05, \eta_p^2 = .14$	3.54	3.57	$F(1, 17) = 0.06; p = ns$		
JC challenging	2.91	2.99	$F(1, 31) = 0.85; p = ns$	2.91	3.01	$F(1, 14) = 1.37; p = ns$		
JC hindering	2.34	2.53*	$F(1, 31) = 5.72; p = .05, \eta_p^2 = .16$	2.34	2.30	$F(1, 17) = 0.30; p = ns$		

Note. * $p < .05$, ns = not significant, N = total participants

A repeated measures ANOVA with a within-subject factor representing time (T1-T2) was separately executed for the job crafting group and the control group on the four job crafting dimensions. The results showed a significant increase in job crafting behavior within the job crafting group (see Table 4.3) for decreasing hindering job demands, increasing structural job resources, and increasing social job resources but not for increasing challenging job demands. There was no significant increase in job crafting behavior within the control group. These findings clearly indicate that the Job Crafting intervention was also successful.

Hypotheses Testing

The outcomes of the hypotheses regarding work engagement are presented, followed by the outcomes of in-role performance. The means and F -values of work engagement and in-role performance are presented in Table 4.4.

Table 4.4 Means and *F*-values of Work engagement and In-role performance

	Intervention groups and control group				ANCOVA <i>F</i> -values
	Personal Resources group (<i>N</i> = 26)	Job crafting group (<i>N</i> = 32)	Combi group (<i>N</i> = 26)	Control group (<i>N</i> = 18)	
	T2	T2	T2	T2	
Hypotheses					
H1a Work engagement	5.02*			4.46	$F(1, 96) = 6.67; p = .01, \eta p^2 = .07$
H1b In-role performance	3.41			3.47	$F(1, 95) = 0.75; p = ns$
H2a Work engagement		4.87		4.46	$F(1, 96) = 0.01; p = ns$
H2b In-role performance		3.35		3.47	$F(1, 95) = 0.05; p = ns$
H3a Work engagement			4.97	4.46	$F(1, 96) = 0.06; p = ns$
H3b In-role performance			3.53*	3.47	$F(1, 95) = 4.39; p = .04, \eta p^2 = .04$

Note. * $p < .05$, ns = not significant, *N* = total participants

Work Engagement

We proposed that the participants' levels of work engagement (T=2) would significantly increase after the Personal Resources intervention (H1a), the Job Crafting intervention (H2a) and the intervention combining Personal Resources and Job Crafting (H3a) as opposed to their level prior to the intervention (T=1) and compared to a control group. In order to test these hypotheses, a 2 (Personal Resources: no, yes) x 2 (Job crafting: no, yes) ANCOVA on T2 work engagement was executed, while controlling for T1 work engagement. The results showed a main effect of the Personal Resources intervention on T2 work engagement $F(1, 96) = 6.67, p < .01, \eta p^2 = .07$. Employees who participated in the Personal Resources intervention reported significantly more work engagement at T2 than participants in the control group. These findings offer evidence for hypothesis 1a. The results showed no main effect of the Job Crafting intervention $F(1, 96) = 0.01, p = .93$ or interaction effect of the intervention combining Personal Resources and Job Crafting $F(1, 96) = 0.06, p = ns$. Therefore, we reject H2a and H3a.

In-role Performance

We proposed that the participants' levels of in-role performance (T=2) would significantly increase after the Personal Resources intervention (H1b), the Job Crafting intervention (H2b) and the intervention combining Personal Resources and Job Crafting (H3b) as opposed to their level prior to the intervention (T=1) and compared to a control group. In order to test these hypotheses, a 2 (Personal Resources: no, yes) x 2 (Job crafting: no, yes) ANCOVA on T2 in-role performance was executed, while controlling for T1 in-

role performance. The results of this analysis showed no main effect of the Personal Resources intervention $F(1, 95) = 0.75, p = .39$ or the Job Crafting intervention $F(1, 95) = 0.05, p = .82$. Employees who participated in a Personal Resources intervention or Job Crafting intervention did not report more in-role performance at T2 than participants of the control group. Hence, we reject H1b and H2b. The analysis revealed an interaction effect of the intervention combining Personal Resources and Job Crafting $F(1, 95) = 4.39, p < .05, \eta p^2 = .04$. Employees who participated in a combination intervention reported more in-role performance on T2 than participants of the control group. The positive outcome on in-role performance confirms H3b. A pairwise comparison of the simple effects showed significant contrasts. Respondents who participated in the intervention combining Personal Resources and Job Crafting had a significantly higher score on in-role performance than respondents who only participated in the Job Crafting intervention, $F(1, 95) = 5.06, p < .05, \eta p^2 = .05$; mean difference = 0.17; bias-corrected confidence interval $BI = 0.02 - 0.33$.

Additional analyses

In addition to evaluating the intervention effects, we examined the underlying theoretical mechanisms of the JD-R model. The model assumes that work engagement is the mediator between personal resources and performance, and between job demands/resources and performance. Following Baron & Kenny (1986), we examined the required conditions for mediation: a) the predictor should be related to the mediator, b) the mediator should be related to the outcome, and c) the predictor–outcome relationship becomes non-significant (full mediation), or becomes significantly weaker (partial mediation) after the inclusion of the mediator. To test the significance of mediating effects, we applied the Sobel test. According to MacKinnon, Warsi & Dwyer (1995) a Sobel test is preferable for studies with sample sizes larger than 50. In our study the sample size meets this criteria.

First, we examined whether PsyCap was significantly related to work engagement. The regression analysis showed that PsyCap ($\beta = .81, SE = .21, t = 3.79, p < .001$) was indeed significantly related to work engagement. Second we tested whether work engagement was related to self-rated in-role performance. The results of the regression analysis showed that work engagement was indeed related to self-rated in-role performance ($\beta = .10, SE = .03, t = 3.01, p < .01$). Finally, we examined the third condition. The results showed that the predictor–outcome relationship became non-significant after the inclusion of the mediator ($\beta = .11, SE = .08, t = 1.35, p = ns$). The Sobel test revealed that work engagement fully mediated the relationship between PsyCap and self-rated in-role performance ($z = 2.37, p = .01$). Table 4.5 shows the unstandardized estimates, standard errors and t values for all variables.

Table 4.5 *Unstandardized estimates, standard errors and t values (N = 102)*

Variables	β	SE	t
Predictor - outcome variable (PsyCap - performance)	.171	.075	2.279*
Predictor - mediator variable (PsyCap - Work engagement)	.812	.214	3.787***
Mediator - outcome variable (Work engagement - performance)	.097	.032	3.009**
Predictor - outcome variable with mediator (PsyCap → Work engagement → performance)	.106	.078	1.347
Predictor - outcome variable (Job crafting - performance)	.280	.088	3.174**
Predictor - mediator variable (Job crafting - Work engagement)	1.064	.255	4.171***
Mediator - outcome variable (Work engagement - performance)	.097	.032	3.009**
Predictor - outcome variable with mediator (Job crafting → Work engagement → performance)	.209	.094	2.210*

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

We conducted a similar mediation analysis to examine whether work engagement mediates the relationship between job crafting and performance. First, we examined whether job crafting was significantly related to work engagement (the first condition). The regression analysis showed that job crafting ($\beta = 1.06$, $SE = .26$, $t = 4.17$, $p < .001$) was indeed significantly related to work engagement. Second we tested whether work engagement affects self-rated in-role performance. The regression analysis revealed a significant relationship ($\beta = .10$, $SE = .03$, $t = 3.01$, $p < .01$) between the two variables. The results showed that the predictor–outcome relationship became weaker after the inclusion of the mediator ($\beta = .21$, $SE = .09$, $t = 2.21$, $p < .05$). The Sobel test revealed that work engagement partially mediated the relationship between job crafting and self-rated in-role performance ($z = 2.45$, $p = .01$).

Structured Interviews

During the structured interviews the participants shared how they experienced the intervention, how the content of the intervention connected to their work, how they incorporate the things they learned at practice, and which components of the intervention were most useful or applicable. We used the Framework analysis approach (Ritchie, Spencer & O'Connor, 2003) to analyze the structured interviews. This approach was chosen because it is well suited to qualitative research in which pre-set questions need to be addressed and when the timescale is short (Lacey & Luff, 2001). In our

research design, these characteristics of framework analysis are essential because the one-hour structured interviews need to be conducted with all participants four weeks after the intervention. Further, the aim of the structured interviews was to get a more complete view of the effects of the interventions. Therefore, pre-set questions were formulated to focus on this aim and structure the data collection and data analysis in this way. The responses were grouped by intervention.

Personal Resources. The participants experienced the Personal Resources intervention as pleasant and vigorous. They mainly enjoyed the part in which they gave each other compliments and gracefully received compliments. For most participants this behavior was not a common element of their work. After the intervention, the participants continued with it. The intervention not only gave them a lot of energy and fun, but also had a positive effect on the social cohesion of their team. *Job crafting.* The Job Crafting intervention offered the participants more insight into and awareness of their job demands and resources. The participants mentioned that they did not naturally reflect on these topics before the start of the intervention. During and after the intervention, the participants used their own overview to make adjustments in their work. *Combined intervention.* The participants found Personal Resources and Job Crafting in the combined intervention to be complementary. They stated that by first working on their personal resources they felt able to change their work environment. During the intervention the participants experienced how they could use their strengths to achieve their work-related goals. The participants of all three interventions thought they had enough opportunity to make permanent changes in their job. The participants stated that some actions would take more time before they would lead to desired results.

DISCUSSION

The present study among teachers provides evidence that organizational interventions can foster work engagement and improve performance. This is the first study that has examined different organizational interventions aimed to increase both personal and job resources. We combined research methods using questionnaires and structured interviews. We also collected information about the chosen job crafting actions and goals. This combination can help us to interpret the outcomes and to understand how interventions can be used in a specific work context. Our design is based on theoretical assumptions from the JD-R model (Bakker & Demerouti, 2008), which state that personal resources and job resources strengthen each other and both contribute to employee engagement and performance.

Theoretical Contributions

The present study makes four main theoretical contributions. First, as far as we know, this is the first study that has compared the impact of a Personal Resources intervention, a Job Crafting intervention, and an intervention combining Personal Resources and Job Crafting compared to a control group. A previous study by Demerouti et al. (2011) had only assessed a single Personal Resources intervention aimed to increase participants' personal resources. An intervention study by Van den Heuvel, Demerouti & Peeters (2012) only assessed the effect of a job crafting training program. The aim of the latter program was to increase employees' awareness within different layers of the organization of the ways in which they could adapt their job to their own needs. Our study combined the two interventions and suggests that the combination has the strongest effects on (self-rated) job performance.

Second, our results illustrate that work engagement can be fostered through a Personal Resources intervention. Our study presents evidence that personal resources are important and contribute to work engagement in the educational field. This outcome is in line with earlier survey findings by Xanthopoulou et al. (2009) showing that personal resources are positively related to work engagement. Additionally, Bakker & Xanthopoulou (2013) revealed the relationship between personal resources and work engagement of school principals. Thus, our findings underscore the opportunity that Personal Resources interventions offer to improve personal resources and work engagement. The participants experienced the Personal Resources intervention as pleasant and vigorous. They especially enjoyed the practice of giving compliments and gracefully receiving compliments. According to the participants, the intervention was not only energetic and fun, but it also had a positive effect on the social cohesion of their team.

Third, our outcomes show that the Job Crafting intervention could indeed increase employees' job crafting behavior. As far as we know this is the first intervention study that shows that a Job Crafting intervention can be effective in motivating participants to engage in job crafting behavior. These findings are in contrast with the study by Van den Heuvel, Demerouti & Peeters (2012) who did not find a significant increase in job crafting behavior after the intervention. Besides the significant increase in job crafting behavior, this study also gives insight into teachers preferred job crafting strategies. This may help us understand job crafting strategies and behavior in a teaching context. Our findings strengthen the JD-R theory (Bakker & Demerouti, 2014) that positioned job crafting in the JD-R model as an important element for gaining resources, which can lead to work engagement and performance.

Fourth, our study revealed that an intervention combining Personal Resources and Job Crafting leads to improved in-role performance. The outcomes showed a significant increase of in-role performance in the intervention group combining Personal Resources and Job Crafting compared to a control group. Increasing personal resources can help employees to successfully increase job resources, which can lead to the achievement of their work-related goals. This notion is in line with Bakker's and Xanthopoulou's (2013) view that it is important for employees to have an adequate amount of personal resources to deal with their work tasks successfully. In the interviews that were held after the combination intervention was completed, participants stated that by first working on their personal resources they felt able to change their work environment. The outcomes of this study strengthen JD-R theory (Bakker & Demerouti, 2014), which do not only explains this relation between personal resources and job resources but also underlines the importance of job crafting in the accumulation of resources. Thus, this study reveals empirical evidence for the JD-R theory, in which job crafting has been positioned.

Limitations and Avenues for Future Research

Some limitations of our study should be recognized. Although the Job Crafting Intervention did result in an increase in job crafting behavior, it did not lead to increased work engagement and performance. This may be explained by the chosen job crafting actions and goals which, as shown in Table II, mainly aimed to decrease hindering job demands. Different studies have shown that decreasing hindering job demands is unrelated (Tims, Bakker & Derks, 2012; Tims, Bakker, & Derks, 2013) and also negatively related to work engagement (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012). Reducing hindrance demands will make employees' job less demanding, which does not automatically imply that the job becomes more engaging at the same time (Demerouti et al., 2001; Bakker & Demerouti, 2014). Reducing demands is part of the health impairment process of the JD-R model with the potential to decrease burnout symptoms (Bakker, Demerouti & Euwema, 2005). Work engagement is part of the motivational process of the JD-R model, mainly driven by resources. This can explain why decreasing demands has no motivational potential and thus is not or ambiguously related to engagement (Tims, Bakker & Derks, 2013; Van Wingerden, Derks, Bakker & Dorenbosch, 2013). The three other job crafting strategies (increasing social and structural job resources and challenging job demands) may be more effective in fostering work engagement. Research by Tims et al. (2012) indeed showed that engaged employees are likely to increase their job resources and challenging job demands to stay engaged (Bakker, Demerouti, Xanthopoulou, 2012). Besides the lack of an increase in work engagement, the single Job Crafting intervention also did not lead to improved performance. This is in line with the outcome of an earlier study by Tims, Bakker, Derks &

Van Rhenen (2013) which showed that decreasing hindering job demands at team level was negatively related to team performance.

The combined intervention also did not show an increase in work engagement. During the job crafting part of the combined intervention, the participants made an overview of their job tasks, their personal strengths, motivations, and possible risk factors at work. In the interviews, the participants explained that the job crafting part offered them more insight into and awareness of their job demands and resources. They stated that they did not naturally reflect on this before the start of the intervention. The awareness of job demands and job resources may impair the motivational process when participants realize they have more job demands than they were aware of before the intervention. Another explanation may be that decreasing hindering job demands is not easy to accomplish. In order to become engaged at work, employees should probably focus on increasing resources. An intervention combining Personal Resources and Job Crafting may lead to increased work engagement when job crafting aims to increase resources and challenging job demands.

There are also limitations concerning the research design. Due to practical reasons, a quasi-experimental design with non-random assignment was chosen. A major disadvantage of this method is that any effect of the intervention might be a result of the groups being different at the start rather than different at the end as a result of the intervention. Therefore, a control group and a pre-test were added to the research design. In addition, the reduction in the sample from 132 at time one (T1) to 102 at time two (T2) may raise the question if it were the people who did not enjoy or benefit from the interventions who choose to not complete the second questionnaire. Since we want to make sure that our results are robust and cannot be explained by simple attrition, we tested whether the drop out was selective. There were no significant difference between the study group and the drop out at T1 on any of the study variables. In this study the participants were grouped by location. Although the locations were different, they were all located in urban areas and had similar demographic characteristics. The teachers also executed the same working activities, which were designed around similar team structures. In addition to the similar work surroundings, activities and team structures, there were no changes in staffing or reorganizations in any of the schools during the intervention period.

Another limitation of the research design concerns the sample size. Our intervention study took place in a small organization, which determined our sample size. A small sample size may lead to low statistical power, which may cause inflated estimates of effect sizes. Besides the design and sample size, we also acknowledge a limitation concerning

the timing of the post intervention measurement. The effects of the intervention were measured shortly after completing the intervention. With this design it is not possible to measure the long-term sustainability of the intervention effects. Future studies should consider the timing of post-measurement as an important aspect of the research design and investigate how long the effects of the interventions last. In addition, there is a limitation concerning the type of measurement which was done by self-reporting. In this study, we only measured participants' self-ratings of the variables. Future studies may also pay attention to other ratings provided by direct colleagues, supervisors, or clients. This will give a more objective view of the improvement or change in terms of observable behavior.

Practical Implications and Conclusion

A practical implication of the outcomes of this study is that investing in organizational interventions in the educational field might result in positive outcomes in relation to teachers' well-being and performance. The findings indicate that organizations can foster teachers' work engagement by offering interventions aimed to increase personal resources. Moreover, our findings show that organizations can improve employee performance by offering interventions that aim to increase personal resources and job resources. Therefore, senior management should acknowledge that investing in organizational interventions aimed to increase both employees' personal resources and job resources is worthwhile. Since JD-R theory (Bakker & Demerouti, 2014) indicates that the underlying principles can be applied to a wide range of occupations and sectors (Bakker & Demerouti, 2007, 2014), the outcomes of this study may also be highly relevant to organizations outside the educational field. Several empirical studies (see for a meta-analysis Halbesleden, 2010) revealed that the principles of JD-R theory can be successfully applied to all kind of occupations and organizations, which strengthens the generalizability of our findings.

The outcomes of this study show that it is possible to foster teachers' personal resources and to stimulate their job crafting behavior. Knowing this, senior management may need to pay more attention to the needs of their employees in relation to their resources, challenges and hindrances. Individual conversations between senior management and their employees may be worthwhile because the optimal balance between job demands and resources differs from person to person. Based on the individual conversations, senior management can find out whether more challenges at work are desirable or undesirable. In addition, organizations can use surveys or questionnaires to examine whether employees have sufficient resources, or are confronted with hindering demands at work. Based on the outcomes of the surveys, individualized reports could be made including personalized feedback and suggestions of how employees themselves

could optimize their resources and demands. Organizations may also adjust their performance management cycle by adding the topic of job demands and resources to the performance reviews.

Besides investing in organizational interventions and adding the topic of job demands and resources to the performance management cycle, senior management may also more frequently support employees in adapting their demands and resources at the individual level. For example, by providing employees with feedback and by giving them sufficient autonomy at work (Wrzesniewski & Dutton, 2001), management may increase employees' job resources. Furthermore, feedback increases the personal resource self-efficacy (Bandura, 1997; Luthans, Norman, Avolio & Avey, 2008), which gives employees the confidence to put in the necessary effort to succeed at challenging and demanding tasks (Luthans, Youssef & Avolio, 2007). Higher levels of autonomy may make it easier for individuals to change their resources and demands (Petrou et al., 2012). This might be especially relevant for teachers working in a demanding and changing environment.

In the educational field where people are the main source of competitive advantage, organizations are continually looking for ways to foster work engagement and job performance. In line with our findings, Meyers, Van Woerkom & Bakker (2013) point out that positive psychological interventions in organizations seem to be a promising tool for enhancing employee well-being and performance. Thus, positive organizational interventions may contribute to a resourceful workplace which can facilitate and stimulate employees' work engagement and performance.

Notes

A significant increase of personal resources was also found among the participant of the combined intervention group ($F(1, 25) = 4.94; p = .04, \eta p^2 = .17$)


Table 4.1 Means, standard deviations, correlations, and Cronbach's alpha coefficients (on the diagonal) of the research variables on Time 1 and Time 2

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	44.72	10.17																
2. Gender	1.14	.35	.28**															
3. PsyCap T1	3.47	.41	.18	.07	(.87)													
4. Increasing social job resources T1	2.38	.49	-.06	.16	.18	(.68)												
5. Increasing structural job resources T1	3.46	.50	.09	.00	.31**	.25*	(.76)											
6. Increasing challenging job demands T1	2.89	.58	-.01	-.06	.44**	.33**	.45**	(.70)										
7. Decreasing hindering job demands T1	2.29	.46	-.13	.12	-.03	.22*	.01	.20*	(.67)									
8. Work engagement T1	4.71	.93	-.01	.20*	.35**	.26**	.39**	.29**	.06	(.92)								
9. In-role performance T1	3.43	.31	.10	.00	.22*	.41**	.10	.17	.13	.29**	(.70)							
10. PsyCap T2	3.56	.43	.15	-.01	.68**	.14	.27**	.27**	.05	.25*	.21*	(.92)						
11. Increasing social job resources T2	2.51	.55	-.14	-.03	.11	.50**	-.01	.10	.17	.25*	.22*	.33**	(.76)					
12. Increasing structural job resources T2	3.54	.49	.05	.06	.28**	.32**	.56**	.35**	.00	.28**	.22*	.48**	.28**	(.80)				
13. Increasing challenging job demands T2	2.99	.51	-.04	-.20	.36**	.25*	.25*	.56**	.22*	.20	.31**	.51**	.44**	.51**	(.66)			
14. Decreasing hindering job demands T2	2.36	.49	-.19	.11	-.14	.05	-.20*	.05	.42**	-.06	.05	-.20*	.12	-.20*	-.03	(.77)		
15. Work engagement T2	4.86	1.02	.01	-.15	.29**	.19	.32**	.16	-.02	.69**	.27**	.45**	.43**	.43**	.33**	-.14	(.95)	
16. In-role performance T2	3.43	.30	.13	.02	.17	.07	.17	.07	-.22*	.10	.24*	.19	.04	.31**	.11	.20*	.22*	(.86)

Note. M = mean; SD = standard deviation; PsyCap = Psychological Capital

* $p < .05$, ** $p < .01$





CHAPTER 5

The longitudinal Impact of a Job crafting Intervention

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ABSTRACT

This study examined the impact of a job crafting intervention based on Job Demands-Resources (JD-R) theory. We hypothesized that the intervention would influence participants' job crafting behaviors, as well as their job demands, job resources, and personal resources. In addition, we hypothesized a positive impact of the intervention on work engagement and self-rated job performance. The study used a quasi-experimental design with a control group. Teachers ($N = 75$) participated in the job crafting intervention on three occasions with nine weeks in-between the first and second measurement, and one year in-between the second and third measurement. Results showed that the intervention had a significant impact on participants' job crafting behaviors, both at time 2 and time 3. In addition, the results showed a significant increase of performance feedback, opportunities for professional development, self-efficacy, and job performance one year after the job crafting intervention. Participants' levels of job demands, autonomy, resilience, and work engagement did not change. We discuss the implications of these findings for JD-R theory and practice.

THE LONGITUDINAL IMPACT OF A JOB CRAFTING INTERVENTION

During the last decade, empirical research has revealed that work engagement is the key that opens doors to improving organizational performance. An influential theory through which we can understand work engagement and its antecedents and outcomes (e.g., job performance) is Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014). Accordingly, work engagement and performance can be increased through interventions by targeting the most important job demands and (job and personal) resources (Bakker & Demerouti, 2014). One way to achieve this is to encourage employees to proactively optimize their own job demands and resources. This proactive behavior is also known as job crafting. Stimulating job crafting behavior with a job crafting intervention might be a promising tool for enhancing employee work engagement and performance.

Recently, a few job crafting intervention studies have been published (Van den Heuvel, Demerouti & Peeters, 2012; Van Wingerden, Bakker & Derks, 2013; Van Wingerden, Bakker & Derks, 2015), but none of these have investigated the sustainability of the effects over time. The present study contributes to JD-R theory and to the literature on job crafting by offering a first intervention study that takes longitudinal effects into account. In addition, this is one of the first quasi-experimental intervention studies in which participants are actually encouraged to modify their jobs. The central aim of the present study is to assess the impact of a job crafting intervention on work engagement and performance both immediately after the intervention and one year later.

Theoretical Background

The rapid technological and economic changes that are characteristic of our society today force organizations and their employees to constantly adapt. For example, teachers can no longer just use their blackboard but have to work with digital devices and learning software as well. Thus, advances outside organizations directly influence employees' jobs. As a consequence, employees may be forced to change their work processes. Additionally, employees may also proactively try to change their jobs themselves. Proactive changes employees make in their job design is known as job crafting – the focal variable of the present study.

Job Crafting

Many years before the term “job crafting” was coined by Wrzesniewski and Dutton (2001), several studies had already suggested that employees make self-initiated changes at work (Nicholson, 1984; Staw & Boettger, 1990). Such proactive behaviors may become

accepted as part of employees' contributions to the organization. A significant redesign of the work may be accomplished without anyone actually executing a planned change program (Kulik, Oldham, & Hackman, 1987). These proactive changes that employees make in their job design usually focus on resolving problems for the organization (LePine & Van Dyne, 1998). However, job crafting is an approach to job design that focuses on both organizational outcomes and the contribution to individual outcomes, such as better health, well-being, and work engagement. According to Wrzesniewski and Dutton (2001), job crafting focuses on the process by which employees change elements of their jobs and relationships with others to redefine the meaning of their work and the social environment at work.

Because job crafting involves initiating changes in job design, Tims, Bakker and Derks (2012) operationalized job crafting according to the types of job characteristics suggested by the Job Demands-Resources (JD-R) theory. Accordingly, every job consists of job demands and resources. Through job crafting, employees can optimize their job demands and resources, which may result in high levels of work engagement and performance (Bakker & Demerouti, 2014). Tims and colleagues argued that job crafting entails the changes individuals make in their level of job demands and job resources by increasing social job resources (for example asking for feedback and coaching), increasing structural job resources (for example increasing autonomy and creating opportunities to develop oneself at work), increasing challenging job demands (for example starting new projects), or by decreasing hindering job demands (for example reducing workload). Through job crafting, employees can improve the fit between their jobs and their personal needs, abilities, and passions. Since the introduction and conceptualization of job crafting within the JD-R model (Tims et al., 2012), several studies based on this conceptualization and definition were published (e.g., Bakker & Demerouti, 2014; Lu, Wang, Lu, Du & Bakker, 2014; Tims, Bakker & Derks, 2014). In addition, over the last few years the first studies with an intervention design also taking this approach as a starting point were published. Van den Heuvel et al. (2012) showed that a job crafting intervention could successfully encourage employees to adapt their job demands and job resources. Further, in a qualitative job crafting intervention study among teachers by Van Wingerden, Derks, Bakker and Dorenbosch (2013), participants indicated that they became more aware of the importance of continuously crafting their job. These studies suggest that a job crafting intervention (i.e., a training) can indeed increase employees' job crafting behaviors.

The job crafting intervention study by Van den Heuvel and colleagues (2012) examined short-term effects by measuring two weeks after the participants have participated in the intervention. There are, as far as we know, no job crafting intervention studies that

have investigated possible long-term effects. However, both for theory and practice it is important to examine the sustainability of the job crafting effects in term of increased work engagement and performance. In this study, we will therefore measure the effects both two weeks and one year after the participants have participated in the job crafting intervention. Our first hypothesis reads as follows:

Hypothesis 1: *Participants' level of job crafting will significantly increase after the job crafting intervention (T2 and T3) both compared to their level prior to the intervention (T1) and compared to a control group.*

Job Demands and Resources

Job demands and resources are the core elements of the job crafting approach by Tims and colleagues (2012). Job demands refer to those physical, psychological, social, or organizational aspects of the job that require physical and/or psychological effort and are associated with certain physiological and/or psychological costs (Demerouti et al., 2001). Job demands that are typically found in the educational field are a high workload, and high levels of emotional and cognitive demands (Hakanen, Bakker & Schaufeli, 2006; Koppes, De Vroome, Mol, Janssen & Van den Bossche, 2011). Job demands can be challenging, but may turn into job stressors when meeting those demands requires a major effort from employees (Bakker & Demerouti, 2007). Research revealed that a majority of the employees working in the educational field perceives job demands that are too high (Van Grinsven, Elphick, & Van der Woud, 2012). Governmental policies are therefore focussing on actions to lower the high job demands (Jettinghoff, Van Dijk & Scheeren, 2014). We argue that employees' themselves may also proactively adapt their job demands through job crafting.

Job resources are those physical, psychological, social or organizational aspects of the job that are functional in achieving work goals, reducing job demands and the associated costs, or stimulating personal growth and development (Demerouti et al., 2001). Job resources that are important for teachers are autonomy, feedback, and opportunities for professional development (Hakanen, Bakker & Schaufeli, 2006). Autonomy offers teachers the freedom to take control of their own teaching methods (Shaw, 2002). Further, feedback from school principals, students, or colleagues gives teachers information about their performance at work, which increases the likelihood of being successful in achieving work goals (Bakker & Bal, 2010). Through opportunities for professional development teachers can learn and apply new knowledge and skills that will improve their performance on the job (Colbert, Brown, Choi, & Thomas, 2008). A longitudinal field study by Tims et al. (2012) showed a significant increase in levels of autonomy, feedback and opportunities for professional development between

employees who actively crafted their jobs and those who did not. Thus, through job crafting employees can optimize their work environment, which may result in an increase in their job resources.

In the current intervention study, participants make a personal job crafting plan and are encouraged to put the plan into action at their work place. By doing this, participants may experience how they can optimize their own work environment. In line with the job crafting approach of Tims et al. (2013) and the educational context of this study, we propose that participants' job demands will decrease after the job crafting intervention and in contrast their job resources will increase. Or, more formally, we hypothesize:

Hypothesis 2: *Participants' levels of workload (2a), emotional demands (2b), and cognitive demands (2c) will significantly decrease after the job crafting intervention (T2 and T3) both compared to their level prior to the intervention (T1) and compared to a control group.*

Hypothesis 3: *Participants' levels of autonomy (3a), feedback (3b), and opportunities for professional development (3c) will significantly increase after the job crafting intervention (T2 and T3) both compared to their level prior to the intervention (T1) and compared to a control group.*

Personal Resources

Employees who proactively craft their job give direction and meaning to their work life. Through job crafting, employees may experience that they are in control of their work environment, which may contribute to their personal resources. Personal resources have been defined as aspects of the self that are commonly associated with resiliency and individuals' sense of ability to control and impact upon their environment successfully (Hobfoll et al., 2003). Examples of personal resources are hope, optimism, resilience, and self-efficacy (Luthans, Youssef & Avolio, 2007). A study by Bakker and Xanthopoulou (2013) revealed that resilience and self-efficacy are important personal resources in the educational field. Resilience is characterized by positive coping and adaptation in the face of significant risk or adversity (Masten, 2001). Applied to the workplace, resilience is defined as the "positive psychological capacity to rebound, to 'bounce back' from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility" (Luthans, 2002, p. 702).

Self-efficacy can be defined as the "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (Bandura, 1996, p. 3). Employees who are self-efficacious have the confidence to take on and put in the

necessary effort to succeed at challenging tasks (Luthans, Youssef and Avolio, 2007). According to JD-R theory (Bakker & Demerouti, 2014), personal resources are important predictors of motivation and can be optimized through job crafting. Employees' who adapt their work environment through job crafting, may for example feel self-efficacious because they experience they can proactively optimize their work situation. In addition, Berg, Dutton and Wrzesniewski (2007) argued that job crafting leads to various positive outcomes like an increase of personal resources because active job crafters experience increased competence and feel able to cope with future adversity. In the present intervention study, participants are encouraged to proactively adapt their job demands and job resources. By doing this, participants may experience control over their work environment, which may foster resilience and self-efficacy. We therefore propose that participants' personal resources significantly increase after the job crafting intervention. We hypothesize:

Hypothesis 4: *Participants' levels of resilience (4a) and self-efficacy (4b) will significantly increase after the job crafting intervention (T2 and T3) both compared to their level prior to the intervention (T1) and compared to a control group.*

Work engagement and Job performance

Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Vigour is characterized by mental resilience and high levels of energy during the workday, the willingness to put effort into one's work, and persistence even in the face of difficulties. Dedication refers to employees' strong involvement and their experience of significance, enthusiasm, inspiration, pride, and challenge at work. Finally, absorption is characterized by being fully focused and happily engrossed in one's work, where time passes quickly. Work engagement can be predicted using the JD-R model (Bakker & Demerouti, 2014), in which job and personal resources are postulated to be the most important predictors. The JD-R model suggests that the combination of high demands and high resources leads to high levels of motivation, involvement, and work engagement (Tuckey, Bakker & Dollard, 2012), which in turn leads to high levels of performance (Bakker & Demerouti, 2014). Employees may be able to increase their own work engagement and performance through job crafting by optimizing their job demands and resources. Several survey and diary studies have revealed a positive relation between job crafting and work engagement (e.g., Bakker, Tims, & Derks, 2012; Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012) and between job crafting and performance (e.g., Bakker et al., 2012; Lyons, 2008; Tims et al., 2012). While there are numerous definitions of job performance, in this study we are specifically interested in in-role performance. In-role performance is defined as those officially required

outcomes and behaviors that directly serve the goals of the organization (Motowidlo & Van Scotter, 1994). In the educational field, Leana, Appelbaum and Shevchuk (2009) have found that educators who took part in collaborative job crafting (in which employees work together to redesign their jobs) displayed improved performance compared to those who did not engage in job crafting.

A job crafting intervention may teach employees how to optimize their work environment and improve the fit between their job and their personal needs, abilities and passions, which may result in higher work engagement and improved performance (Demerouti & Bakker, 2011). In this intervention study, participants are encouraged to optimize their own work environment through job crafting during a period of four weeks. Consequently, participants' own job crafting behavior is an essential part of the intervention. By experiencing how job crafting can contribute to their work life, participants may continue to engage in job crafting after the intervention and integrate it with their common job activities. Employees may use the job crafting skills when their work environment changes or when personal needs change, which enables them to stay engaged and perform well. We hypothesize:

Hypothesis 5: *Participants' levels of (a) work engagement and (b) in-role performance will significantly increase after the job crafting intervention (T2 and T3) both compared to their level prior to the intervention (T1) and compared to a control group.*

METHOD

Participants and Procedure

The sample consists of 62 female (83%) and 13 male teachers (17%) who work at primary schools for children with special educational needs. These percentages are representative for the occupational group. The mean age of the participants was 45 years ($SD = 10.05$), and 87% successfully finished a higher vocational education or university education in Special Education Needs. The participants worked at two different schools of the same organization. Because of practical reasons, participants of the intervention groups and the control group were grouped by location, resulting in a quasi-experimental design. By following this procedure, we avoided contamination effects, where members of the experimental groups influence members of the control group or vice versa (Cook and Campbell, 1979). Of the 75 teachers who were contacted to participate, 45 participants took part in the job crafting intervention, while 30 participants were assigned to the control group. The teachers participated voluntarily and did not receive any compensation for their contribution.

There were three measurements in time. The first measurement took place two weeks before the start of the intervention; the second measurement took place two weeks after the intervention was completed; the third measurement took place one year after the second measurement (see also Figure 5.1).

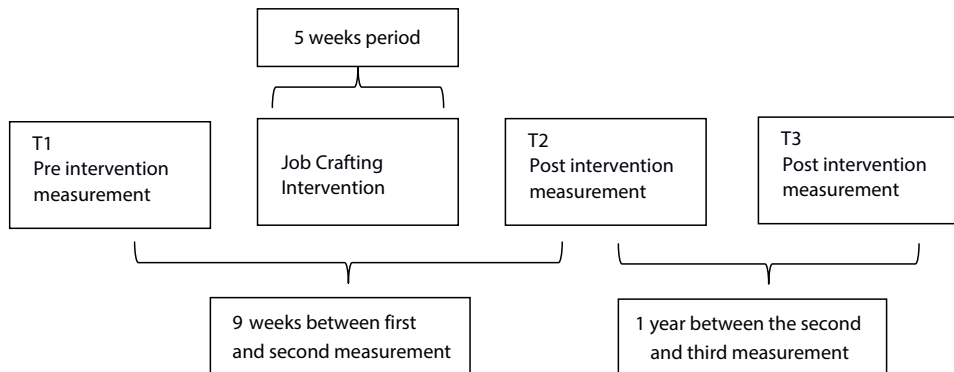


Figure 5.1. Research design.

All 75 participants completed the first and second questionnaire (100% response rate), while 71 participants completed the third questionnaire (95% response rate). Two weeks before the start of the intervention, the managing director introduced the first questionnaire in an email containing instructions and a link to the online questionnaire. The procedure and goals of the study were explained, while also addressing the anonymity of the data. One week before the start, the participants received a reminder to fill in the questionnaire and additional information about the content of the intervention. Two weeks after the intervention was completed, the participants were asked to fill in the second questionnaire, and one year later they were asked to fill in the third questionnaire.

Job Crafting Intervention

The job crafting intervention was based on the Michigan Job Crafting Exercise (Berg, Dutton, Wrzesniewski & Baker, 2008) and operationalized using the principles proposed by JD-R theory (Bakker & Demerouti, 2014). Specifically, the job crafting intervention consists of exercises and goal setting aimed at increasing social job resources, increasing challenging job demands, increasing structural job resources, and decreasing hindering job demands. In this job crafting intervention, we follow the principles of what Parker, Bindl and Strauss (2010) describe as *proactive goal-setting*. A proactive goal is something to be achieved in the future. Parker et al. (2010) posit that in the process of proactive goal-setting, the motivation to achieve a goal depends on: (a) the assessment of whether one

can achieve the future goal, (b) the reason to achieve it or level of importance felt, and (c) whether one feels supported and stimulated – or “energized” – to achieve the goal. Parker and colleagues (2010) further describe the different phases that are important to setting and pursuing proactive goals:

- proactive goal envisioning: the awareness of a desirable future work situation;
- proactive goal generation: setting concrete and realistic goals that contribute to this;
- proactive goal planning: describing the ways and means to achieving the goal;
- proactive goal striving: the actual pursuit of the goal set.

The goals that employees set themselves should be geared to the short term. They are feasible goals (*generation*) that can be achieved by training in a job crafting intervention in which job fits or job misfits can be visualized (*envisioning*). Through training, the roughly formulated goals can be refined and discussed in a group setting and in terms such as the ways and means necessary to achieving the goal. Concrete job crafting actions can be proposed and participants themselves take note of them (*planning*). After this, participants put the actions into effect in order to achieve the goals set (*striving*). The job crafting intervention consisted of three training sessions over a period of five weeks: the first and second session took place on one day, while the third session of half a day took place four weeks later (see also Figure 2). The examples used in the intervention were derived from the work context of the organization.

In the job crafting intervention, the participants made an overview of their job tasks and sorted them into three task categories: tasks they spent a lot of time at, tasks they had to do often, and tasks that they had to do sometimes. They also designated whether they did the task individually or with colleagues. The participants wrote the outcomes on small, medium, and large notes and stuck them on a piece of brown paper. After this, they labelled their tasks in terms of urgency and importance. During the next part of the exercise, the participants made an overview of their personal strengths, motivation, and possible risk factors in their work and matched these to their tasks. This part of the intervention gives a clear overview of the job. Subsequently and in line with the principles of the JD-R model, the participants were asked to discuss which things they could change in their work to increase social job resources, increase challenging job demands, increase structural job resources, or to decrease hindering job demands. Based on the job overview and the discussion, the participants made a job crafting plan in which they described their job crafting goals and the actions they would take to increase their resources and challenges or to decrease their hindering job demands.

In the four weeks between the second and third training session, the participants tried to bring their job crafting plan into action. In the final training session, the trainers and participants evaluated whether the participants succeeded in accomplishing their job crafting goals. The participants also discussed what they would need in the future to maintain the fit between their personal competencies, preferences, and the job. At the end of the intervention, the participants had learned what they could do to change elements of their jobs and their relationships with others in order to increase their job resources and challenges at work. Figure 5.2 presents the design of the job crafting intervention.

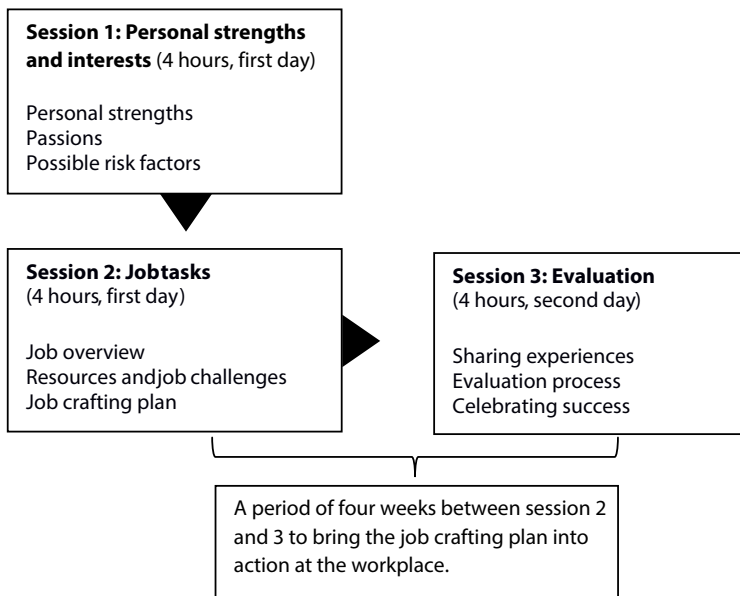


Figure 5.2. Design of the Job crafting Intervention.

Measures

The questionnaires were identical for all participants and all three measurements (T1, T2 and T3).

Job Crafting was measured using the Job Crafting scale developed by Tims et al. (2012), which consists of four subscales, namely: increasing social job resources, increasing structural job resources, increasing challenging job demands and decreasing hindering job demands. Increasing social job resources, structural job resources and challenging job demands was assessed with five items. Decreasing hindering job demands was assessed with six items. Examples are: "I ask my supervisor to coach me." (increasing social

job resources), "I try to develop my capabilities." (increasing structural job resources), "When an interesting project comes along, I offer myself proactively as project co-worker." (increasing challenging job demands) and "I make sure that my work is mentally less intense." (decreasing hindering job demands). Participants could respond to each of the job crafting items using a five-point scale, ranging from (1) never to (5) very often. *Job demands. Workload* was measured using a three-item Dutch version (Furda, 1995) of Karasek's (1985) job content instrument. An sample item is: "Do you have to work quickly?" All items were scored on a five-point scale where the scale ranged from 1 (never) to 5 (always). *Cognitive demands* and *emotional demands* were assessed with a shortened four-item version (cognitive demands) and a shortened three-item version (emotional demands) of the scale developed by Van Veldhoven and Meijman (1994). An example of a cognitive demands item is, "Do you have to be very precise in your work?" An example of an emotional demands item is, "Does your work put you in emotional situations?" (1 = never, 5 = always).

Job resources. Autonomy was assessed with a three-item scale, based on Karasek's (1985) job content instrument. An item is "I can decide myself how I execute my work". All items were scored on a five-point scale where the scale ranged from 1 (never) to 5 (always). *Performance feedback* was assessed with a three-item scale developed by Bakker, Demerouti, Taris, Schaufeli and Schreurs (2003). A sample item is: "I receive sufficient information about my work objectives". Participants had to score the items on a five-point scale, ranging from 1 (never) to 5 (always). *Opportunities for professional development* were assessed with three items from Bakker et al.'s (2003) scale. An item is "My work offers me the possibility to learn new things". All items were scored on a five-point scale where the scale ranged from 1 (totally disagree) to 5 (totally agree).

Personal Resources. Resilience was measured using a shortened five-item version of the scale developed by Block and Kremen (1996) An example is: "I enjoy dealing with new and unusual situations". Participants had to score the items on a four point scale, from (1) does not apply at all to (4) applies very strongly. *Self-efficacy* was measured using a shortened four-item version of the scale developed by Schwarzer and Jerusalem (1995). An item is: "I am confident that I could deal effectively with unexpected events". Participants had to score the items on a four-point scale, from (1) absolutely wrong to (4) absolutely right.

Work engagement was measured with the nine-item Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker and Salanova, 2006). The instrument consists of three subscales to assess vigour, dedication and absorption. Here is an example for each subscale: "At work, I am bursting with energy" (vigour), "I am enthusiastic about my job" (dedication),

and “I am immersed in my work” (absorption). Participants could respond to these items using a 7-point frequency scale, ranging from (0) never to (6) always.

In-role Performance was measured using the In-role Performance scale by Williams and Anderson (1991), which consists of seven items of which an example is: “Adequately completes assigned duties”. Participants had to score the items on a five-point scale ranging from (1) totally disagree to (5) totally agree.

RESULTS

Descriptive Statistics

The reliabilities and correlations between all study variables at the three measurement points are displayed in Table 5.1.

Hypotheses Testing

Our central prediction is that the job crafting intervention will positively influence job crafting behavior (H1), workload (H2a), emotional demands (H2b), cognitive demands (H2c), autonomy (H3a), feedback (H3b), opportunities for professional development (H3c), resilience (H4a), self-efficacy (H4b), work engagement (H5a), and in-role performance (H5b). To test these hypotheses, we conducted repeated measures (RM) multivariate analyses of covariance (MANCOVA) with time (T1-T2-T3) as a within-person factor and group (intervention group vs. control group) as a between-person factor, and age as the covariate. When the multivariate analysis revealed a significant effect, we proceeded with the univariate analyses. The means and standard deviations of the study variables for the intervention group and control group at T1, T2 and T3 are presented in Table 5.2.

Job crafting

In hypothesis 1, we proposed that participants’ levels of job crafting behavior would significantly increase after the job crafting intervention compared to their level prior to the intervention and compared to the control group. The four job crafting components served simultaneously as dependent variables, and age as covariate in the 3 (Time) x 2 (Group) multivariate analysis of covariance (MANCOVA) for repeated measures (RM). The results of the RM MANCOVA revealed a significant time x group interaction effect $F(4, 67) = 12.77; p < .05$, showing that the changes in job crafting scores were different in the two groups.

We proceeded with the univariate analysis of covariance (RM ANCOVA) to examine the changes from time 1 to time 2 and from time 2 to time 3 for the four job crafting components. The results of the univariate analyses showed a significant increase of increasing challenging job demands ($F(1, 72) = 4.82; p < .05$) and decreasing hindering job demands ($F(1, 72) = 4.75; p < .05$) within the intervention group from time 1 to time 2. No significant change was found for the control group on these variables. The results of the analyses showed no changes from time 1 to time 2 on increasing social and structural job resources for both the intervention and the control group. From time 2 to time 3, a significant decline of decreasing hindering job demands ($F(1, 68) = 4.28; p < .05$), and a significant increase of increasing structural job resources ($F(1, 68) = 7.82; p < .01$) was found within the intervention group while no significant changes on these job crafting behaviors were found for the control group. Job crafting in the form of increasing challenging job demands decreased within the control group from time 2 to time 3 ($F(1, 68) = 6.15, p < .05$) while no changes were found for the intervention group ($F(1, 68) = 0.08, ns$). These findings partially confirm hypothesis 1.

Job demands

In hypothesis 2a, 2b and 2c, we proposed that participants' levels of workload, emotional demands, and cognitive demands would significantly decrease after the job crafting intervention compared to their level prior to the intervention and compared to the control group. The three job demands served as the three dependent variables, and age was used as a covariate in the 3 (Time) x 2 (Group) multivariate analysis of covariance (MANCOVA) for repeated measures (RM). The results of the RM MANCOVA showed that the changes in job demands scores were similar in the two groups ($F(3, 67) = 6.98; ns$). Participants' job demands did neither decrease from time 1 to time 2, nor from time 2 to time 3. These findings reject hypothesis 2a-2c.

Job Resources

In hypothesis 3a, 3b and 3c, we proposed that participants' levels of autonomy, feedback, and opportunities for professional development would significantly increase after the job crafting intervention compared to their level prior to the intervention and compared to the control group. The three job resources served simultaneously as dependent variables, and age as covariate in the 3 (Time) x 2 (Group) RM MANCOVA. The results of the analysis revealed a significant time x group interaction effect ($F(3, 67) = 9.47; p < .05$), showing that the changes in job resources scores were different in the two groups. We proceeded with RM ANCOVAs for the three separate job resources.

The results of the RM ANCOVAs showed no significant changes from time 1 to time 2, for autonomy ($F(1, 72) = 0.09$; ns), feedback ($F(1, 72) = 1.14$; ns), and opportunities for professional development ($F(1, 72) = 3.36$; ns) within the intervention group and the control group. However, there were several significant changes after one year. From time 2 to time 3, the results for autonomy showed a significant decrease within the control group ($F(1, 68) = 6.61$; $p < .05$), but no significant change within the intervention group ($F(1, 68) = 0.85$; ns), suggesting that autonomy had worsened in the control group but stayed the same in the intervention group. Further, the results for feedback revealed a significant increase ($F(1, 68) = 8.83$; $p < .01$) from time 2 to time 3 within the intervention group, but not within the control group ($F(1, 68) = 0.71$; ns). Finally, the results of the RM ANCOVA showed a significant increase of opportunities for professional development ($F(1, 68) = 8.83$; $p < .01$) from time 2 to time 3 within the intervention group, but not within the control group ($F(1, 68) = 0.71$; ns). These findings show that feedback and opportunities for development increased over the one-year time-period. Hence, these results reject H3a and confirm H3b and H3c.

Personal Resources

Besides the hypotheses regarding job resources, we hypothesized that participants' levels of resilience (H4a) and self-efficacy (H4b) would significantly increase after the job crafting intervention compared to their level prior to the intervention and compared to the control group. We conducted a similar 3 (Time) x 2 (Group) RM MANCOVA with resilience and self-efficacy as the dependent variables. The results of the RM MANCOVA showed that the two groups differed significantly ($F(2, 67) = 7.95$; $p < .05$), revealing a main effect of time. The results of the univariate analyses revealed no significant changes in resilience and self-efficacy from time 1 to time 2 for both the intervention and control group. From time 2 to time 3 the univariate analysis revealed no significant changes in resilience for both the intervention ($F(1, 68) = 0.46$, ns) and control group ($F(1, 68) = 0.55$, ns). However, the univariate analyses revealed that self-efficacy increased significantly from time 2 to time 3 within the intervention group ($F(1, 68) = 9.50$; $p < .01$), while no effects were found within the control group ($F(1, 68) = 2.59$, ns). These findings reject hypothesis 4a but offer support for hypothesis 4b.

Work engagement and In-role performance

Regarding work engagement (H5a) and in-role performance (H5b), we hypothesized that participants' levels would significantly increase after the job crafting intervention compared to their level prior to the intervention and compared to the control group. To test hypotheses H5a and H5b we conducted a 3 (Time) x 2 (Group) RM MANCOVA in which work engagement and in-role performance served simultaneously as dependent variables. The results of the analysis revealed a significant time x group interaction

effect ($F(2, 67) = 14.00, p < .01$), showing that the changes in work engagement and in-role performance scores were different in the two groups. We proceeded with the RM ANCOVA for work engagement and in-role performance separately. The RM ANCOVA revealed no changes for work engagement from time 1 to time 2 and from time 2 to time 3 for both the intervention group (T1 to T2: $F(1, 72) = 0.01, ns$; T2 to T3: $F(1, 68) = 0.23, ns$) and the control group (T1 to T2: $F(1, 72) = 0.01, ns$; T2 to T3: $F(1, 68) = 0.40, ns$). The RM ANCOVA revealed a significant decrease of in-role performance within the intervention group from time 1 to time 2 ($F(1, 72) = 7.12; p < .01$). Further, the results showed a strong increase of in-role performance for the intervention group from time 2 to time 3 ($F(1, 68) = 28.67 p < .001$). Because in-role performance decreased from time 1 to time 2 and increased from time 2 to time 3 within the intervention group, we also examined the changes from time 1 to time 3. The RM ANCOVA revealed a significant increase of in-role performance from time 1 to time 3 ($F(1, 68) = 14.30, p < .001$) within the intervention group. No significant change of in-role performance was found within the control group (From T1 to T2: $F(1, 72) = 0.59; ns$; T2 to T3: $F(1, 68) = 0.86; ns$; T1 to T3: $F(1, 68) = 0.40, ns$). Because of these findings we reject H5a and partially confirm H5b.

Additional Analyses

In addition to evaluating the job crafting intervention effects, we tested whether job crafting is the mechanism through which the intervention contributed to the improved levels of feedback, opportunities for professional development, self-efficacy and in-role performance. Following Baron & Kenny (1986), we examined the required conditions for mediation: a) the predictor should be related to the dependent variable; b) the predictor should be related to the mediator variable; c) the mediator should be related to the dependent variable; and d) after the inclusion of the mediator the predictor–outcome relationship becomes non-significant (full mediation), or becomes significantly weaker (partial mediation).

First, we tested if the interaction variable time x group (the predictor) was significantly related to the dependent variables feedback, opportunities for professional development, self-efficacy and in-role performance. The results of the regression analysis showed that the interaction variable was indeed related to feedback, opportunities for professional development and in-role performance, while no relation was found with self-efficacy (see Table 5.3).

Second, we tested if the interaction variable time x group was significantly related to the potential mediator, job crafting. The results of the regression analysis showed that the interaction variable was indeed related to increasing challenging job demands, increasing structural job demands and increasing social job resources. The interaction

variable time x group was not related to decreasing hindering job demands (see Table 3). Third, we examined whether increasing challenging job demands, increasing structural job demands and increasing social job resources were related to the outcome variables. *Feedback*. The results of the regression analysis revealed that increasing social resources was significantly related to feedback. No significant relation was found for increasing structural job demands and increasing challenging job demands. *Opportunities for professional development*. The results of the regression analysis revealed that increasing structural resources, increasing challenging job demands and increasing social job resources were significantly related to opportunities for professional development. *Performance*. The results of the regression analysis revealed that increasing structural resources was significantly related to in-role performance. No significant relation was found for increasing challenging job demands and increasing social job resources.

Finally, we examined the fourth condition. We tested whether the predictors–outcomes relationships becomes non-significant (full mediation), or becomes significantly weaker (partial mediation) after the inclusion of the mediator. *Feedback*. The results showed that the predictor–outcome relationship for feedback became non-significant after the inclusion of the mediator increasing social resources. *Opportunities for professional development*. The results showed that the predictor–outcome relationship for opportunities for professional development became non-significant after the inclusion of the mediator increasing structural resources and the mediator increasing challenging job demands. After the inclusion of the mediator increasing social job resources the predictor–outcome relationship did not become non-significant or significantly weaker. *Performance*. The results showed that the predictor–outcome relationship for in-role performance became non-significant after the inclusion of the mediator increasing structural resources. Thus, the results of the analyses revealed full mediation for all three outcome variables. Increasing social and structural job resources and increasing challenging job demands is the mechanism through which the intervention revealed increased levels of feedback, opportunities for professional development and in-role performance.

DISCUSSION

The present study among teachers shows that a job crafting intervention can foster job crafting behaviors. This is the first study that has examined a job crafting intervention aimed at optimizing job demands, job and personal resources, and fostering work engagement and performance. The design of this study is based on theoretical assumptions derived from JD-R theory (Bakker & Demerouti, 2014; Demerouti & Bakker, 2011), which states that by job crafting employees can optimize their job demands and personal and job resources which contribute to work engagement and performance.

Theoretical Contributions

The present study contributes to the literature in four ways. First, as far as we know, this is the first job crafting intervention study that has revealed a significant increase of job crafting behavior compared to a control group. The results not only showed significant effects one week after the intervention was completed, but also one year later. Our results are in contrast with the outcomes of a job crafting intervention study by Van den Heuvel et al., (2012) who did not find significant effects on job crafting behavior after their intervention, although the intervention did improve the work environment in other ways.

The analysis of the four separate job crafting components showed that decreasing hindering job demands and increasing challenging job demands significantly changed at time 2. In contrast with the second measurement, the third measurement revealed a significant increase of increasing structural job resources and a decrease of decreasing hindering job demands. During the job crafting intervention, the participants made an overview of their job tasks, the time they spent on their tasks, and possible risk factors in their work. By doing this, they may have become more aware of their hindering job demands and therefore actively tried to decrease them. At time 3, the participants no longer focused on decreasing hindering job demands. The study outcomes revealed support for this assumption; the means of decreasing hindering job demands showed that the participants put less effort into reducing hindering job demands at time 3 than before the job crafting intervention. The participants may have succeeded in taking away their hindrances or did not succeed and stopped trying. A study by Van Wingerden et al. (2013) revealed that it is not easy for teachers to decrease their hindering job demands. In their study, 34 teachers tried to decrease their hindering job demands, and 12 of them (35%) indicated that they did not manage to succeed. The outcomes of this study revealed that although participants try to adapt their job demands through job crafting, their level of job demands did not decrease after the intervention.

The only job crafting component on which we found no significant effect on both time 2 and time 3 is increasing social resources. The participants work in direct contact with students most of their time, not in direct contact with colleagues. Therefore, the participants may have felt that they did not have opportunities to increase their social resources at work. As a consequence, they may have focused on increasing structural job resources instead of increasing social resources. The higher means of increasing structural resources compared to the means of increasing social job resources for both the intervention group and control group support this assumption.

As a second important finding, this study revealed significant effects of a job crafting intervention on the resources feedback, opportunities for professional development and self-efficacy. As far as we know, this study is the first showing an impact of a job crafting intervention on these specific resources. In line with JD-R theory (Bakker & Demerouti, 2014), our study indicates that stimulating employees' job crafting behaviors can result in an increase of both their job and personal resources. Moreover, these outcomes were found one year after the job crafting intervention. This delayed effect is also known as a sleeper effect (Frese & Zapf, 1988). A sleeper effect occurs when interventions do not have an immediate effect but need (incubation) time to reveal their results (Nesselroade, 1991; Frese & Zapf, 1988). Our outcomes are in line with other intervention studies that also reported sleeper effects (Bry et al., 1986; Bry & Krinsley, 1992; Krinsley, 1991). This suggests that it takes time before increased job crafting behavior will be effective.

Third, the analyses showed significant effects of a job crafting intervention on in-role performance one year after the intervention. Participants' in-role performance did not increase at time two, which may be explained by their job crafting behavior. Through job crafting, participants increased their challenging job demands at time 2. Employees who increase their challenging job demands, for example by starting new activities, may learn and apply new skills and do not feel they are performing right from the start. In addition, by starting new activities employees may need to invest extra time. This will not only affect the time available for their other tasks but consequently may also influence employees' perception of their in-role performance. Fourth, the additional analyses revealed that job crafting is the mechanism through which the intervention contributed to improved levels of feedback, opportunities for professional development and in-role performance.

Limitations and avenues for future research

We want to mention several limitations of our study. The first limitation is that all participants worked for the same educational organization. Socially desirable behavior and group pressure are possible risks when participants work in the same team. Moreover, participants from different organizations may be less influenced by other participants and may feel more comfortable showing their vulnerability because of the anonymity. A second limitation involves the homogeneity of our sample; the sample consisted of teachers only. This restricts the generalizability of our findings. Future studies should try to replicate our study among employees of several other occupational groups.

A third limitation of this study concerns participants' job demands, autonomy, resilience, and work engagement. We did not find a significant effect for these variables at time 2 or time 3. In line with the findings by Van Wingerden et al. (2013), this study revealed that

teachers did not succeed in decreasing their job demands. In addition, the resources autonomy and resilience did not increase. Given the nature of their job, teachers may already experience enough autonomy in their classroom, which may explain why autonomy did not increase. Further, the job crafting intervention is not merely focused on enhancing personal resources, which may explain why resilience did not increase. Work engagement also did not change at time 2 – this may be explained by the significant increase of decreasing hindering job demands. Earlier research had revealed that decreasing hindering job demands is unrelated (Tims et al., 2012) or negatively related to work engagement (Petrou et al., 2012). However, although decreasing hindering job demands diminished significantly at time 3, there was no increase in work engagement at time 3.

A fourth limitation concerns the measurement of in-role performance. In this study, we only measured participants' self-ratings of in-role performance. Future studies may also pay attention to other-ratings of students, colleagues, or supervisors. These other-ratings may offer a more objective view of the improvement in terms of observable behavior or realisation of work-related goals. Since the main hypotheses regarding job crafting, personal and job resources and performance were confirmed, it would be interesting and relevant to replicate this first longitudinal job crafting study with other occupational groups and a heterogeneous sample. Finally, in this study we only collected quantitative data. Additional qualitative data may have helped us in interpreting and explaining the results. Earlier studies (Van Wingerden, Derks, Bakker & Dorenbosch, 2013; Van Wingerden, Bakker & Derks, 2015) that did collect qualitative data, gave insights that contributed to the explanation of the intervention effects. It is recommended for future studies to include a qualitative part as well since this may be valuable in explaining the study results.

Practical implications and conclusion

A practical implication of the outcomes of this study is that organizations should pay attention to the opportunities that positive organizational interventions can provide. By facilitating interventions, job crafting behavior can be promoted and as a consequence employees' job and personal resources and organizational performance can be increased. Therefore, senior management should acknowledge the importance of facilitating and stimulating a resourceful and challenging work environment.

The job crafting intervention showed that it is possible to stimulate employees' behavior in relation to adapting job demands and resources. Senior management can actively support employees, for example by giving more feedback at work (Wrzesniewski and Dutton, 2001). Because of the negative relation between decreasing hindering job

demands and performance (Tims, Bakker, Derks & Van Rhenen, 2013), management could actively try to stimulate employees to increase job resources and challenging job demands. More specifically, increasing structural resources seems to be the most effective job crafting strategy in relation to performance. Therefore, facilitating sufficient opportunities for professional development at work may be an advisable investment. In addition, organizations can also use surveys or questionnaires to find out whether employees experience enough opportunities to craft their jobs. Based on the outcomes of the surveys, individualized reports could be made including personalized feedback and suggestions on how employees themselves could optimize their resources and job demands at work. Senior management should introduce job crafting as a structural conversation topic of staff meetings. By doing this, job crafting will become a subject that is included in the daily routine.

In sum, we conclude that introducing job crafting interventions in educational organizations may offer opportunities to enhance employee well-being and performance. The job crafting intervention may be a promising tool to facilitate a resourceful work environment which enables employees to achieve their personal and organizational goals. Although we found positive effects in this intervention study, we need to consider the presented results within the context of limitations regarding generalizability. Further research is needed to examine whether these positive effects will be found consistently among other sectors and in other occupational groups.

Table 5.1 Means, standard deviations, correlations, and Cronbach's alpha coefficients (on the diagonal) of the research variables on Time 1, Time 2 and Time 3

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Age	45.25	10.05																					
2. Gender	1.17	.38	.12																				
3. Social job resources T1	2.53	.48	.03	-.01	(.52)																		
4. Structural job resources T1	3.71	.53	.03	.09	.33**	(.79)																	
5. Challenging job demands T1	3.01	.63	.03	.10	.23*	.37**	(.74)																
6. Hindering job demands T1	2.29	.49	-.03	.16	.09	.05	.25* (.73)																
7. Workload T1	3.38	1.00	-.13	.04	-.10	-.07	.23* .31** (.91)																
8. Emotional job demands T1	2.50	.68	.11	.08	.08	-.02	.28* .14 .53** (.79)																
9. Mental job demands T1	3.81	.78	-.03	.01	-.09	.13	.17 .25* .59** .54** (.80)																
10. Autonomy T1	3.40	.71	.39**	.03	.21	.35**	.02 .01	-.13	-.11	.04	(.71)												
11. Feedback T1	3.01	.81	.25*	-.08	.19	.28*	-.10	-.12	-.38**	-.29*	-.08	.53** (.83)											
12. Development T1	3.37	.91	.05	-.07	.32**	.53**	.06 .06	-.29*	-.23 .00	.54** .62** (.92)													
13. Resilience T1	2.79	.63	.03	.20	.19	.45**	.55**	.09 .11	.13	.18	.16	.18	.21	(.85)									
14. Self-efficacy T1	3.34	.42	.32**	-.02	-.08	.15	.35**	-.07	-.02	.07	.11	.36**	.24*	.26*	(.77)								
15. Work engagement T1	4.78	1.00	-.07	.07	.18	.58**	.21 .07	-.05	-.18	.08	.45**	.51**	.50**	.35**	.09	(.93)							
16. In-role performance T1	4.24	.50	.04	.09	.04	.56**	.26*	.03	-.04	-.10	.09	.27*	.28*	.30**	.29*	.21	.52** (.84)						
17. Social job resources T2	2.56	.55	.07	-.08	.73**	.31**	.39**	.13	-.18	.06	-.12	.22	.22	.36**	.26*	-.02	.23*	.05	(.71)				
18. Structural job resources T2	3.69	.52	.08	.16	.29*	.71**	.44**	.14	.10	.08	.17	.30**	.07	.31**	.38**	.14	.42**	.37**	.30** (.81)				
19. Challenging job demands T2	3.14	.62	-.04	.09	.17	.44**	.77**	.16	.04	.12	.19	.16	.09	.29*	.47**	.34**	.37**	.36**	.39**	.51** (.74)			
20. Hindering job demands T2	2.34	.50	-.07	-.08	.14	.11	.30**	.70**	.15	.11	.24*	-.07	.03	.18	.03	.02	.07	.10	.27*	.18	.26*	(.76)	
21. Workload T2	3.22	1.00	-.25*	-.10	.03	.03	.20	.19	.71**	.53**	.50**	-.11	-.35**	-.19	.14	-.03	-.07	.06	-.12	.15	.11	.20	(.88)
22. Emotional job demands T2	2.36	.66	.03	.00	.17	.01	.18	.10	.32**	.75**	.45**	-.05	-.17	-.12	.08	.00	-.10	-.11	.13	.05	.17	.19	.46**
23. Mental job demands T2	3.63	.66	-.21	-.10	-.09	.11	.04	.20	.40**	.34**	.70**	.05	-.07	.02	.11	.03	.11	.07	-.12	.17	.10	.26*	.52**
24. Autonomy T2	3.36	.67	.20	.10	.07	.35**	.13	-.08	-.08	-.15	.06	.59**	.39**	.48**	.28*	.17	.39**	.27*	.20	.32**	.32**	-.10	-.12
25. Feedback T2	3.00	.67	.23*	.06	.17	.33**	.04	-.11	-.09	-.08	.10	.46**	.61**	.47**	.29*	.15	.44**	.23	.22	.23*	.21	-.08	-.18
26. Development T2	3.33	.81	-.09	-.17	.36**	.50**	.03	-.04	-.17	-.24*	-.04	.40**	.46**	.74**	.19	.10	.41**	.21	.38**	.39**	.21	.10	-.10
27. Resilience T2	2.83	.57	.05	.26*	.12	.37**	.53**	.03	.02	.09	.11	.18	.10	.15	.79**	.22	.28*	.24*	.31**	.44**	.59**	-.01	.09
28. Self-efficacy T2	3.31	.39	.22	.08	-.03	.25*	.29*	-.02	.06	.11	.09	.19	-.02	.22	.33**	.49**	.18	.25*	.06	.33**	.40**	.05	.09
29. Work engagement T2	4.76	1.08	-.07	.03	.20	.53**	.10	.08	-.05	-.20	.11	.40**	.47**	.51**	.25*	.01	.84**	.39**	.29*	.46**	.30**	.05	-.13
30. In-role performance T2	4.16	.48	.08	.06	.10	.48**	.33**	-.11	.09	-.09	.08	.16	.10	.16	.17	.20	.45**	.67**	.11	.44**	.33**	.00	-.01

Table 5.1 Means, standard deviations, correlations, and Cronbach's alpha coefficients (on the diagonal) of the research variables on Time 1, Time 2 and Time 3

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
31. Social job resources T3	2.54	.55	-.28*	-.12	.07	.03	.08	.06	.04	.05	.25*	-.14	-.10	.09	.01	-.03	-.18	.03	.16	.09	.16	.28*	.17
32. Structural job resources T3	3.81	.51	.03	-.03	.33**	.29*	.05	-.03	-.11	-.08	-.04	.25*	.01	.19	.03	.00	.08	.14	.31**	.51**	.16	.04	.03
33. Challenging job demands T3	3.04	.58	.07	-.11	.26*	.11	.31**	.00	-.09	.01	-.16	.21	.15	.18	.24*	.27*	-.06	.09	.31**	.36**	.32**	.06	.02
34. Hindering job demands T3	2.20	.57	.02	.14	-.10	-.20	.02	.21	.23*	.14	.15	.03	-.25*	-.12	.09	.05	-.24*	-.13	-.18	-.06	-.11	-.03	.14
35. Workload T3	3.32	.89	-.14	-.07	-.07	.05	.05	.16	.34**	.37**	.33**	-.02	-.23	-.13	-.10	-.14	-.07	.09	-.02	.06	.08	.09	.33**
36. Emotional job demands T3	2.51	.71	.04	.19	.04	.18	.16	.21	.31**	.37**	.34**	-.07	-.12	-.13	.20	.04	-.02	.23	-.09	.24*	.13	.13	.26*
37. Mental job demands T3	3.77	.70	-.06	-.07	-.01	.13	.16	.04	.15	.29*	.28*	-.05	-.03	-.03	.23	.03	.13	.11	.04	.16	.19	-.01	.11
38. Autonomy T3	3.28	.75	.13	-.03	.35**	.23	.04	.05	-.17	-.11	.00	.38**	.38**	.33**	.12	.10	.27*	.23	.33**	.25*	.17	.14	-.07
39. Feedback T3	3.15	.84	-.01	-.05	.15	.14	-.03	-.11	-.12	-.20	.07	.13	.39**	.23	-.04	-.05	.22	.10	.18	.17	.06	.06	-.07
40. Development T3	3.68	.80	-.11	-.20	.15	.12	-.02	-.04	-.12	-.28*	-.02	.20	.15	.28*	.02	.01	.13	.07	.28*	.15	.12	.01	.04
41. Resilience T3	2.90	.56	.02	.13	.14	.18	.18	.02	-.04	.08	-.02	.04	-.02	.17	.37**	.21	-.02	-.04	.07	.35**	.23	-.08	-.03
42. Self-efficacy T3	3.50	.43	-.04	-.14	.01	.17	.09	-.20	-.13	-.10	-.12	.07	.05	.10	.04	.13	.05	.02	.13	.15	.29*	-.16	-.09
43. Work engagement T3	4.77	.96	-.02	-.09	.14	.29*	-.12	-.07	-.15	-.35**	-.03	.26*	.35**	.28*	-.10	.04	.43**	.27*	.05	.21	-.05	-.04	-.15
44. In-role performance T3	4.53	.79	.15	-.03	.17	.11	-.19	-.31**	-.30*	-.32**	-.09	.15	.35**	.11	-.05	-.17	.23	.04	.06	.08	-.05	-.13	-.22

Note. *M* = mean; *SD* = standard deviation. * $p < .05$. ** $p < .01$. (N = 75; T3; N = 71)

Table 5.1 Means, standard deviations, correlations, and Cronbach's alpha coefficients (on the diagonal) of the research variables on Time 1, Time 2 and Time 3

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	
22. Emotional job demands T2	(.73)																							
23. Mental job demands T2	.44**	(.66)																						
24. Autonomy T2	-.14	-.07	(.66)																					
25. Feedback T2	-.16	.03	.62**	(.83)																				
26. Development T2	-.22	.00	.57**	.56**	(.90)																			
27. Resilience T2	.06	.03	.36**	.24*	.09	(.83)																		
28. Self-efficacy T2	.12	.07	.29*	.08	.11	.31**	(.78)																	
29. Work engagement T2	-.21	.15	.44**	.45**	.52**	.25*	.17	(.95)																
30. In-role performance T2	-.14	-.06	.25*	.22	.27*	.12	.25*	.38**	(.84)															
31. Social job resources T3	.14	.14	.04	-.13	.06	-.01	.07	-.13	.03	(.63)														
32. Structural job resources T3	-.02	.04	.24*	.16	.32**	.13	.01	.12	.24*	.26*	(.73)													
33. Challenging job demands T3	.02	-.07	.14	.14	.21	.24*	.13	-.10	-.01	.24*	.56**	(.69)												
34. Hindering job demands T3	-.04	.06	.00	-.08	-.16	.00	.02	-.25*	.00	.19	.11	.13	(.76)											
35. Workload T3	.44**	.37**	-.08	-.17	-.18	-.03	-.08	-.11	.03	-.04	.04	-.05	.26*	(.87)										
36. Emotional job demands T3	.36**	.28*	.00	-.08	-.17	.08	.08	-.11	.17	.09	.13	.09	.26*	.44**	(.74)									
37. Mental job demands T3	.40**	.24*	.09	.08	.02	.19	-.01	.05	.12	-.02	.18	.05	.12	.42**	.34**	(.67)								
38. Autonomy T3	-.03	.05	.29*	.36**	.33**	.17	.12	.33**	.13	.22	.50**	.35**	-.18	-.23	-.18	.01	(.78)							
39. Feedback T3	-.04	.07	.18	.39**	.30*	.00	-.03	.35**	.18	.27*	.22	.12	-.27*	-.20	-.09	.03	.43**	(.87)						
40. Development T3	-.27*	.03	.30*	.27*	.44**	.10	.09	.25*	.11	.32**	.40**	.28*	-.06	-.13	-.19	-.01	.50**	.49**	(.89)					
41. Resilience T3	.14	-.11	.17	.09	.11	.38**	.23	-.12	-.09	.11	.32**	.52**	.10	-.12	.14	.21	.10	.00	.02	(.82)				
42. Self-efficacy T3	.15	-.12	.14	.08	.17	.08	.17	-.01	.11	-.07	.18	.19	-.31**	.04	-.05	.17	.17	.21	.14	.43**	(.84)			
43. Work engagement T3	-.30*	-.01	.32**	.31**	.47**	-.20	.00	.45**	.38**	.12	.40**	.06	-.13	-.22	-.03	.10	.42**	.42**	.47**	-.04	.12	(.91)		
44. In-role performance T3	-.07	-.03	.24*	.31**	.10	-.07	-.09	.22	.07	.06	.39**	.13	-.18	-.20	-.06	.11	.43**	.42**	.16	.04	.20	.42**	(.84)	

Note. *M* = mean; *SD* = standard deviation. * $p < .05$, ** $p < .01$. ($N = 75$; $T3: N = 71$)

Table 5.2 Means and Standard Deviations at T1, T2 and T3 for the intervention group and control group

	Intervention group (N = 45)						Control group (N = 30; T3: N = 26)					
	T1		T2		T3		T1		T2		T3	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Increasing Social job resources	2.55	(0.52)	2.62	(0.54)	2.66	(0.49)	2.50	(0.38)	2.47	(0.56)	2.33	(0.58)
Increasing Structural job resources	3.72	(0.55)	3.69	(0.55)	3.90bc	(0.52)	3.71	(0.54)	3.69	(0.55)	3.66	(0.49)
Increasing Challenging job demands	2.97	(0.68)	3.12a	(0.65)	3.14	(0.61)	3.07	(0.56)	3.17	(0.63)	2.85b	(0.49)
Decreasing Hindering job demands	2.24	(0.47)	2.36a	(0.50)	2.12b	(0.56)	2.37	(0.52)	2.32	(0.50)	2.33	(0.59)
Workload	3.16	(1.00)	3.25	(0.96)	3.22	(0.90)	3.17	(0.97)	3.18	(1.02)	3.14	(0.87)
Emotional job demands	2.39	(0.58)	2.33	(0.59)	2.47	(0.58)	2.54	(0.78)	2.39	(0.73)	2.59	(0.65)
Mental job demands	3.68	(0.82)	3.61	(0.68)	3.78	(0.67)	3.61	(0.69)	3.66	(0.63)	3.60	(0.61)
Autonomy	3.30	(0.71)	3.31	(0.66)	3.42	(0.69)	3.53	(0.72)	3.44	(0.64)	3.03bc	(0.79)
Feedback	3.14	(0.75)	2.99	(0.58)	3.36b	(0.86)	2.81	(0.88)	3.00	(0.79)	2.79	(0.67)
Development	3.40	(0.93)	3.35	(0.77)	3.82bc	(0.77)	3.32	(0.90)	3.31	(0.90)	3.44	(0.89)
Resilience	2.86	(0.61)	2.91	(0.56)	2.97	(0.58)	2.69	(0.66)	2.72	(0.61)	2.78	(0.52)
Self-efficacy	3.33	(0.40)	3.29	(0.41)	3.54b	(0.45)	3.37	(0.43)	3.35	(0.34)	3.44	(0.39)
Work engagement	4.76	(0.99)	4.75	(1.07)	4.82	(0.88)	4.81	(1.07)	4.77	(1.06)	4.69	(1.08)
In-role performance	4.25	(0.55)	4.10a	(0.49)	4.74bc	(0.70)	4.21	(0.42)	4.27	(0.40)	4.15	(0.82)

Significant change from: a T1-T2, b T2-T3, c T1-T3

Table 5.3 *Unstandardized estimates, standard errors and t values*

Variables	B	SE	t
Predictor - outcome <i>(Time x group * feedback)</i>	-.568	.197	-2.889**
Predictor - outcome <i>(Time x group * development)</i>	-.386	.193	-1.998*
Predictor - outcome <i>(Time x group * self-efficacy)</i>	-.097	.107	-0.906
Predictor - outcome <i>(Time x group * performance)</i>	-.587	.183	-3.209**
Predictor - mediator <i>(Time x group * increasing challenging job demands)</i>	-.288	.129	-2.061*
Predictor - mediator <i>(Time x group * increasing structural job demands)</i>	-.241	.117	-1.951*
Predictor - mediator <i>(Time x group * increasing social job resources)</i>	-.331	.131	-2.552*
Predictor - mediator <i>(Time x group * decreasing hindering job demands)</i>	.205	.144	1.461
Mediator - outcome <i>(increasing challenging job demands * feedback)</i>	.169	.173	0.980
Mediator - outcome <i>(increasing challenging job demands * opportunities for professional development)</i>	.388	.159	2.433*
Mediator - outcome <i>(increasing challenging job demands * performance)</i>	.182	.162	1.122
Mediator - outcome <i>(increasing structural job demands * feedback)</i>	.360	.193	1.866
Mediator - outcome <i>(increasing structural job demands * opportunities for professional development)</i>	.634	.173	3.671**
Mediator - outcome <i>(increasing structural job demands * performance)</i>	.606	.171	3.539**
Mediator - outcome <i>(increasing social job resources * feedback)</i>	.412	.178	2.319*
Mediator - outcome <i>(increasing social job resources * opportunities for professional development)</i>	.473	.167	2.835**
Mediator - outcome <i>(increasing social job resources * performance)</i>	.086	.173	0.497
Predictor - outcome with mediator included <i>(Time x group + increasing social resources * feedback)</i>	.289	.180	1.605
Predictor - outcome with mediator included <i>(Time x group + increasing structural job resources * development)</i>	.233	.176	1.324
Predictor - outcome with mediator included <i>(Time x group + increasing challenging job demands * development)</i>	.167	.148	1.134
Predictor - outcome with mediator included <i>(Time x group + increasing social job demands * development)</i>	.377	.167	2.261*
Predictor - outcome with mediator included <i>(Time x group + increasing structural job demands * performance)</i>	.129	.168	0.771

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

CHAPTER 6

Fostering Employees' well-being via a Job crafting Intervention

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Van Wingerden, J., Bakker, A.B., & Derks, D.

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ABSTRACT

This study examined the impact of an intervention among employees based on Job Demands-Resources (JD-R) theory. We hypothesized that the intervention would influence employees' job crafting behaviors, as well as their basic need satisfaction. Further, we hypothesized a positive impact on work engagement and self-rated job performance. In addition to the proposed intervention effects, we expected that job crafting would have a positive relationship with performance, through basic need satisfaction and work engagement (sequential mediation). The study used a quasi-experimental design with a control group among teachers. Teachers ($N=71$) participated in the job crafting intervention study on two occasions with nine weeks in-between the first and second measurement. Results of analyses of variance were largely in line with our predictions. In the intervention group, job crafting, basic need satisfaction, and work engagement increased over time. There was no effect on in-role performance. In the control group, no significant changes were found on all variables. In addition, the results of structural equation modelling analysis confirmed the hypothesized sequential mediation. We discuss the implications of these findings for both JD-R theory and practice.

FOSTERING EMPLOYEES' WELL-BEING VIA A JOB DEMANDS-RESOURCES INTERVENTION

The inspiring speech of Nobel prize winner Malala Yousafzai at the United Nations Headquarters in New York on July 12, 2013, stressed the importance of education for our society. With her statement; “one child, one teacher, one book and one pen can change the world” she emphasized the value of the job that teachers all over the world may see as their calling (Farrell, 2015). Many teachers are enthusiastic about their profession, satisfied with their work (Roth, Assor, Kanat-Maymon & Kaplan, 2007; Rudow, 1999), and engaged in their jobs (Hakanen, Bakker & Schaufeli, 2006). However, teaching is also considered to be one of the most stressful occupations (Chaplain, 2008; Montgomery & Rupp, 2005), because teachers experience a high workload and emotional demanding situations, and are confronted with student misbehaviors and a low status of their profession (Burke & Greenglass, 1994; Hakanen et al., 2006).

In work and organizational psychology, both positive (e.g., work engagement) (Hakanen et al., 2006; Simbula, Guglielmi, & Schaufeli, 2010; Tadic, Bakker, & Oerlemans, 2013) and negative aspects of teaching (e.g., stress) (Garrick, Mak, Cathcart, Winwood, Bakker, & Lushington, 2014; Howard & Johnson, 2004) are subject of research. A theory that can help us understand and predict the impact of work on well-being and performance is Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014). JD-R theory provides a clear description of the way job demands, resources, psychological states and outcomes are associated. Further, the theory gives insights in how it can be applied in practice to foster employee well-being. Research has shown that engaged teachers work harder and are more innovative than their non-engaged colleagues (Konermann, 2012). In addition, Bakker and Bal (2010) have shown that engaged teachers perform better. Because of these findings, educational organizations are interested in fostering teachers' work engagement and improving their performance.

Although the research evidence for JD-R theory is accumulating, intervention studies that apply the theory to practice are hard to find. The central aim of the present study is to assess the impact of a Job crafting intervention – aimed at optimizing job demands and resources– on participants' work engagement and performance. In addition, the study aims to examine the proposed mediated relations within JD-R theory. This study contributes to the literature on positive organizational interventions by testing an intervention using a quasi-experimental pre-test, post-test control-group design in schools for primary education. Additionally, the study contributes to JD-R theory by offering a causal test of crucial elements of the theory in the educational field. The study is practically relevant because teaching is considered to be one of the most stressful

occupations (Chaplain, 2008), characterized by a high workload and high complexity of work (Bakker & Sanz Vergel, 2013). Our investigation may illuminate how teachers can stay engaged in their work by mobilizing their most important job and personal resources.

THEORETICAL BACKGROUND

Job Demands-Resources Theory

With the turn of the 21st century, researchers in the field of organizational psychology became more and more interested in the positive side of work and no longer merely focused on negative work aspects like job stress and burnout. The positive psychology movement inspired researchers all over the world to develop new models and theories, including Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014). Over the past decade, JD-R theory has been used to understand and predict employee well-being and job performance in a wide range of occupations (for reviews, see Bakker & Demerouti, 2014; Bakker, Demerouti & Sanz-Vergel, 2014). The principles of JD-R theory have also been used to predict teacher work engagement (Bakker & Bal, 2010; Bakker, Hakanen, Demerouti & Xanthopoulou, 2007).

One key assumption of JD-R theory is that all work characteristics can be classified into two categories: job demands and job resources. Job demands are aspects of the job that require effort and are therefore associated with certain physiological and psychological costs (Demerouti et al., 2001). In the context of education, work pressure, dealing with pupil misbehavior, and facing emotionally demanding situations are examples of effortful job demands. Job resources refer to those aspects of the job that are functional in achieving work goals – they can be used to reduce the impact of job demands and the associated costs, but job resources also stimulate personal growth, learning, and development (Bakker & Demerouti, 2014). Examples of job resources in the teaching domain are support by the school principal, role clarity, social support from colleagues, and feedback from students.

JD-R theory proposes that work environments elicit two independent psychological processes – a health impairment process and a motivational process. The health impairment process starts with high job demands that may exhaust teachers' energetic resources and lead to fatigue and health problems (Hakanen, Bakker & Schaufeli, 2006). In contrast, the motivational process starts with job resources that have motivational potential and lead to high work engagement, low levels of cynicism, and excellent performance (Demerouti & Bakker, 2011). Previous studies have suggested that several

job resources like colleague support, performance feedback, and supervisory coaching lead to work engagement and consequently to higher performance (Bakker, 2011). By optimizing job demands and job resources in the work environment, organizations can follow a top-down approach to facilitate and stimulate work engagement and performance. However, using a bottom-up approach, employees may also take the initiative themselves to optimize their job. This proactive behavior is also known as job crafting.

Job crafting

Job crafting refers to the process by which employees change elements of their jobs and relationships with others to redefine the meaning of their work and the social environment at work (Wrzesniewski & Dutton, 2001). The latter authors propose that employees can craft their job using each of three different strategies: employees can craft the amount or type of tasks; they can change their relations with other people (e.g. how often or how long they interact with colleagues and clients); and employees can change their cognitions about their job.

Following a job redesign perspective and using JD-R theory, Tims, Bakker and Derks (2012) proposed an alternative approach of job crafting. These authors conceptualized job crafting as the proactive, bottom-up changes individuals make in their levels of job demands or job resources. Through job crafting, employees can improve the fit between their personal needs and abilities on the one hand and their job characteristics on the other. Tims et al. (2012) propose four job crafting dimensions: increasing social job resources (e.g., seeking social support among colleagues); increasing structural job resources (e.g., creating opportunities to develop oneself at work); increasing challenging job demands (e.g., starting new projects); and / or decreasing hindering job demands (e.g., reducing workload). The bottom-up moulding of job demands and resources initiated by employees themselves plays a substantial role in the most recent version of JD-R theory (Bakker & Demerouti, 2014).

Recent studies revealed that employees who take the initiative themselves to optimize their job demands and job resources in the work environment, facilitate and stimulate their own work engagement and performance. A study by Bakker, Tims and Derks (2012) among 95 dyads of employees working in various organizations revealed that employees' job crafting behavior was predictive of their work engagement and colleague-ratings of in-role performance. In addition, a recent longitudinal job crafting study (Tims, Bakker & Derks, 2015) among 288 participants showed similar positive relations between employees' job crafting behavior and their work engagement and performance.

Although job crafting concerns employee's self-initiated actions to adapt their job demands and resources, job crafting may be facilitated or supported by management. The feedback employees receive on their job crafting actions may either create more possibilities for job crafting or may inhibit job crafting to occur in the future (Wrzesniewski, 2003). Job crafting behavior can also be supported through interventions (Bakker & Demerouti, 2014; Van den Heuvel, Demerouti & Peeters, 2012; Van Wingerden, Bakker & Derks, 2013). Van den Heuvel, Demerouti and Peeters (2012) showed that a job crafting intervention could successfully stimulate police officers to adapt their job demands and job resources. Although the intervention evaluated by Van den Heuvel and colleagues (2012) did not affect all proposed outcomes, their study illustrates that job crafting can be a promising tool to enhance employees' work environment. In addition, a qualitative intervention study among teachers by Van Wingerden, Bakker and Derks (2013) revealed that participants indicated that they became aware of the importance of proactively crafting their job. We argue that through the job crafting exercise in the current Job crafting intervention, teachers will learn they can optimize their own work environment. Thus, we hypothesize:

Hypothesis 1: *Teachers' job crafting behaviors increase after the Job crafting intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

Basic Need Satisfaction

Another influential theory by which we can understand employee motivation and well-being is self-determination theory (SDT; Deci & Ryan, 1985). Self-Determination theory (SDT) proposes that the satisfaction of basic needs represent the motivational mechanism that energizes and directs employees' behavior and promotes well-being and development (Deci & Ryan, 1985). According to Deci and Ryan (2000), all human beings share basic and universal psychological needs, which are defined as "those nutriment that must be procured by a living entity to maintain its growth, integrity and health" (p. 326). SDT postulates that there are three basic psychological needs: the need for autonomy, the need for belongingness, and the need for competence. The need for autonomy is defined as people's inherent desire to experience ownership of their behavior and to act with a sense of volition (Deci & Ryan, 2000). This sense of volition can be achieved through having the opportunity to make personal choices. The need for belongingness is defined as the human striving for intimate relationships and the desire to achieve a sense of belongingness (Baumeister & Leary, 1995; Deci & Ryan, 2002). The need for competence refers to an individuals' desire to feel capable and effective in interacting with the environment and to bring about desired outcomes (Deci & Ryan, 2000).

In the context of work, need fulfilment can lead to positive outcomes for both individuals and organizations such as employee well-being (Ilardi, Leone, Kasser & Ryan, 1993; Lynch, Plant & Ryan, 2005; Silman, 2014) and performance (Baard, Deci & Ryan, 2004; Richer & Vallerand, 1995). In the context of education, teachers' basic need satisfaction has been found to be predictive of work engagement (Silman, 2014). Research revealed that employees' basic need satisfaction can be fostered via interventions when the intervention design contains elements that make participants experience competence, autonomy and belongingness (Sailer & Mandl, 2015). For example, the need for competence can be satisfied by providing performance feedback during the intervention. The need for autonomy can be satisfied by offering participants individual choices; and the need for belongingness can be met through interventions at the team level, and through interactions between participants.

We propose that teachers' basic needs satisfaction may also be enhanced when they are stimulated to optimize their own work environment. Employees may optimize their work environment by adapting their job demands and resources through job crafting. They may for example ask their supervisor to give feedback on their performance, seek social support from their colleagues, or try to increase their challenges and opportunities for professional development. By crafting their job, employees may satisfy their own basic needs. Because the intervention design contains these ingredients, we hypothesize:

Hypothesis 2: *Teachers' level of basic need satisfaction increases after the Job crafting intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

Work Engagement and Performance

Employees' work engagement is characterized by having a sense of energetic and effective connection with work activities and the feeling of being able to deal with the demands of their job. Schaufeli and Bakker (2004, p. 295), more specifically, defined work engagement as "the positive, fulfilling and work-related state of mind that is characterized by vigor, dedication, and absorption". Vigor is characterized by high levels of energy and mental resilience while working. Engaged employees are willing to invest considerable effort in their work, and persist in the face of difficulties. Dedication refers to being strongly involved in one's work and experiencing a sense of significance and enthusiasm. Finally, absorption is characterized by being fully concentrated and immersed in one's work. Engaged individuals often forget about time and their environment when they are at work.

Employees who are engaged are healthier than their less-engaged colleagues and experience more active, positive emotions (Bakker & Demerouti, 2014). In addition, engaged employees also perform better than their less engaged co-workers. Thus, engaged employees are highly valuable for organizations; they realize their own and organizational goals and thus score high on in-role performance. Motowidlo and Van Scotter (1994) defined in-role performance as those officially required outcomes and employee behaviors that directly serve the goals of the organization. Teachers, for example, contribute to the organization by their in-role performance when they teach their pupils the required knowledge and skills so that pupils are able to apply them in practice. JD-R theory suggests that work engagement and performance can be fostered through interventions by targeting at the most important job demands and resources. Since the intervention design of this study is aimed at making participants aware of their job demands and resources, and supports participants to optimize the work environment, we hypothesize that the job crafting intervention will improve both teachers' work engagement and in-role performance. We therefore hypothesize:

Hypothesis 3: *Participants' level of work engagement significantly increases after the job crafting intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

Hypothesis 4: *Participants' level of (self-rated) in-role performance significantly increases after the job crafting intervention (T2) both compared to their level prior to the intervention (T1) and compared to a control group.*

In addition to the proposed intervention effects, our theoretical arguments suggest that job crafting influences performance through basic need satisfaction and work engagement. In line with Deci and Ryan (2002), we hypothesize that the relation between (increasing) job resources and work engagement is mediated by basic need satisfaction. In addition, following JD-R theory (Bakker & Demerouti, 2014) and SDT (Deci & Ryan, 2002), we propose that need satisfaction can explain the association between job crafting and work engagement and accordingly performance. Thus, we hypothesize:

Hypothesis 5: *Job crafting has a positive relationship with in-role performance, through first basic need satisfaction and then work engagement (sequential mediation).*

METHOD

Participants and Procedure

The sample consists of 65 female (92%) and 6 male teachers (8%). This gender-skewed distribution is representative for the occupational group (Merens, Hartgers & Van den Brakel, 2012). The mean age of the participants was 47 years ($SD = 11.86$), and 94% had successfully finished a higher vocational education or university education for teaching professionals. The participants worked at four different primary schools. Because of practical reasons, participants of the intervention group and the control group were grouped by location, resulting in a quasi-experimental design. By following this procedure, we avoided contamination effects, where members of the experimental groups influence members of the control group or vice versa (Cook & Campbell, 1979). Of the 71 teachers, 41 took part in the job crafting intervention, while 30 were part of the control group. The respondents participated voluntarily, and did not receive any compensation for their contribution.

There were two measurements in time. The first measurement took place two weeks before the start of the intervention; the second measurement two weeks after the intervention was completed. In line with other intervention studies, a research design with a post measurement shortly (but not immediately) after the intervention was chosen (Van den Heuvel, Demerouti & Peeters, 2012; Rasquin, Van de Sande, Praamstra & Van Heugten, 2009). The organization allowed the participants to fill in the questionnaires during their workday. All 71 participants completed both questionnaires (100% response rate). The managing director introduced the first online questionnaire in an email containing instructions and an explanation of the procedure, while also explaining the anonymity of the data. The online questionnaires were hosted by the university, and the managing director did not receive any information about individual outcomes. One week before the start of the intervention, the participants received additional information about the program and content of the intervention. Two weeks after the intervention was completed, the participants were asked to fill in the second questionnaire.

Job crafting Intervention

The job crafting intervention contains exercises aimed at sharing and discussing perceptions of job demands and resources at both team and individual level. In addition, goal setting was used to stimulate participants to proactively optimize their own job demands and resources at school. Because earlier studies suggest that decreasing hindering job demands is unrelated (Tims et al., 2012) or negatively related to work engagement (Petrou, Demerouti, Peeters, Schaufeli & Hetland, 2012) and performance

(Tims, Bakker, Derks & Van Rhenen, 2013), we did not include this job crafting strategy in the intervention. The job crafting intervention consisted of three training sessions over a period of five weeks: the first and second session took place on one day, while the third half-day session took place four weeks later (see Figure 6.1).

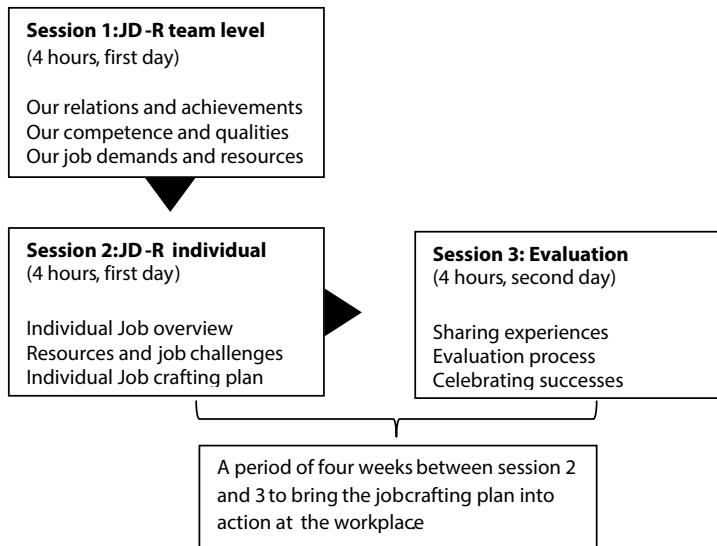


Figure 6.1. Job crafting Intervention design

The first training session consisted of three exercises. First, the participants discussed the value of their relations and celebrated their team achievements. In this exercise, participants acknowledged, shared, and discussed their thoughts and feelings about their relatedness to each other. They looked back on their team achievements and shared the things they are proud of. Second, the participants shared their opinions about the competences of the team. The team members gave each other feedback about their individual strengths and qualities in relation to their job. Third, the participants discussed and acknowledged the job demands and resources they experience at team level. They shared the importance of job resources like autonomy, feedback and opportunities for professional development at their school. In addition, the participants also discussed the job demands they experienced.

During the second training session the participants made an overview of their job tasks and their personal strengths and motivation at work. They wrote down their tasks and sorted them into three task categories: tasks they spent a lot of time on, tasks they had to do often, and tasks they had to do sometimes. They also designated whether they did

the task individually or with colleagues. The participants wrote the outcomes on small, medium, and large sticky notes and stuck them on a piece of brown paper. During the next part of the exercise, the participants made an overview of their personal strengths and motivation, and matched these to their tasks. This part of the intervention gives a clear overview of the job and the fit with participants' personal needs and abilities. In addition, the participants wrote down the challenges and resources they find in their job. Subsequently, the participants were asked to discuss which things they could change in their work to increase social job resources, structural job resources, and challenging job demands. At the end of the second training session, the participants made a personal crafting plan in which they described their job crafting goals and the actions they would undertake.

In the four weeks between the second and third training session, the participants tried to bring their job crafting plan into action. In the third and final training session, the trainers and participants evaluated whether the participants had succeeded in accomplishing their job crafting goals. The participants also discussed what they would need in the future to maintain the fit between their personal competences, preferences and their job. At the end of the intervention, the participants had learned what they could do to change elements of their jobs and their relationships with others in order to increase their job resources and challenges at work.

Measures

The questionnaires were identical for all participants and both measurements in time.

Job Crafting was measured using three subscales of the Job Crafting questionnaire developed by Tims et al. (2012). Each subscale consisted of five items. Examples are: "I ask colleagues for advice" (increasing social job resources), "When an interesting project comes along, I offer myself proactively as project co-worker" (increasing challenging job demands), and "I try to develop my capabilities." (increasing structural job resources). Participants could respond to these statements using a five-point scale, ranging from (1) never to (5) very often.

Work-Related Basic Need Satisfaction (W-BNS) was measured with the eighteen-item W-BNS scale (Van den Broeck et al., 2010). The instrument consists of three subscales to assess autonomy need, belongingness need and competency need. Here is an example for each subscale: "I feel free to do my job the way I think it could best be done" (autonomy), "At work I feel part of a group" (belongingness), and "I feel competent in my job" (competency). Participants could respond to these items using a five-point frequency scale, ranging from 1 (totally disagree) to 5 (totally agree).

Work engagement was measured with the nine-item Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker & Salanova, 2006). Example items are: “At work, I am bursting with energy” (vigor), “I am enthusiastic about my job” (dedication), and “I am immersed in my work” (absorption). Participants used a seven-point frequency scale, ranging from (0) never to (6) always.

In-role Performance was measured using the In-role Performance scale by Williams and Anderson (1991), which consists of seven items. A sample item is: “Adequately completes assigned duties.” Participants had to score the items on a five-point scale ranging from (1) totally disagree to (5) totally agree.

RESULTS

Descriptive Statistics

The means, standard deviations, reliabilities, and correlations, between all study variables at both measurement points are displayed in Table 6.1.

Hypotheses Testing

Our central prediction is that the job crafting intervention will positively influence job crafting (Hypothesis 1), basic need satisfaction (Hypothesis 2), work engagement (Hypothesis 3), and performance (Hypothesis 4). To test these hypotheses, we conducted repeated measures (RM) multivariate analyses of variance (MANOVA) with time (T1-T2) as a within-person factor and group (intervention group vs. control group) as a between-person factor. When the multivariate analysis revealed a significant effect, we proceeded with the univariate analyses. In addition, we hypothesized a sequential mediated relation between the job crafting and performance through basic need satisfaction and work engagement (Hypothesis 5). This hypothesis was tested with the bootstrap analysis option in AMOS (MacKinnon, 2008). See Table 6.2 for the means and F-values of the study variables for both the intervention and control group.

Job crafting and basic need satisfaction

In Hypothesis 1 and 2, we proposed that participants’ levels of job crafting behavior and basic need satisfaction would significantly increase after the job crafting intervention compared to their level prior to the intervention and compared to the control group. To test hypotheses H1 and H2 we conducted a 2 (Time) x 2 (Group) RM MANOVA in which the three job crafting variables and basic need satisfaction served simultaneously as dependent variables. The results of the analysis revealed a significant time x group interaction effect ($F(4, 68) = 11.01, p < .05$), showing that the changes in job crafting

and basic need satisfaction scores were different in the two groups. We proceeded with the RM ANOVA for job crafting and basic need satisfaction separately. The results of the repeated measures ANOVA showed a significant increase of job crafting ($F(1, 69) = 4.44; p < .05$) within the intervention group from time 1 to time 2. No significant change was found for the control group ($F(1, 69) = 0.88; ns$) (see Table 6.2). In addition to overall job crafting behavior, we analysed the impact of the job crafting intervention on the three separate job crafting components. The results of the repeated measures ANOVA showed a significant increase of challenging job demands over time within the intervention group ($F(1, 69) = 9.67; p < .01$), and not for the control group ($F(1, 69) = 0.01; ns$). No significant changes were found for the other two job crafting components within both groups (see table 6.2). These findings offer partial support for Hypothesis 1. Teachers increased their job crafting behaviors after the intervention, but did so only in the form of increasing their challenge job demands. The results of the repeated measures ANOVA showed that basic need satisfaction indeed increased over time in the intervention group ($F(1, 69) = 11.16; p < .01$), while no effects were found for the control group ($F(1, 69) = 1.22; ns$). Hence, these results confirm Hypothesis 2.

Table 6.2 Means and *F*-values of the study variables for the intervention and control group

	Intervention group		RM ANOVA	Control group		RM ANOVA
	(N = 41)		<i>F</i> -values	(N = 30)		<i>F</i> -values
	T1	T2		T1	T2	
Job crafting	3.12	3.23	$F(1, 69) = 4.44, p < .05$	2.99	3.04	$F(1, 69) = 0.88, ns$
JC social job resources	2.59	2.61	$F(1, 69) = 0.17, ns$	2.41	2.48	$F(1, 69) = 0.79, ns$
JC challenging job demands	3.03	3.25	$F(1, 69) = 9.67, p < .01$	2.97	2.97	$F(1, 69) = 0.01, ns$
JC structural job resources	3.75	3.81	$F(1, 69) = 1.11, ns$	3.59	3.67	$F(1, 69) = 1.52, ns$
Basic need satisfaction	5.60	5.82	$F(1, 69) = 11.16, p < .01$	5.51	5.59	$F(1, 69) = 1.22, ns$
Work engagement	5.29	5.52	$F(1, 69) = 6.75, p < .05$	5.32	5.21	$F(1, 69) = 1.18, ns$
In-role performance	4.35	4.41	$F(1, 69) = 1.27, ns$	4.25	4.23	$F(1, 69) = 0.05, ns$

Note. ns = not significant

Work engagement and In-role performance

Regarding work engagement (Hypothesis 3) and in-role performance (Hypothesis 4), we hypothesized that participants' levels would significantly increase after participating in the job crafting intervention. To test hypotheses H3 and H4 we conducted a 2 (Time) x 2 (Group) RM MANOVA in which work engagement and in-role performance served simultaneously as dependent variables. The results of the analysis revealed a significant time x group interaction effect ($F(2, 68) = 6.29, p < .05$), showing that the changes in work engagement and in-role performance scores were different in the two groups.

We proceeded with the RM ANOVA for work engagement and in-role performance separately. The results of the repeated measures ANOVA revealed improved levels of work engagement within the intervention group ($F(1, 69) = 6.75; p < .05$). No significant change of work engagement was found within the control group ($F(1, 69) = 1.18; ns$). The repeated measures ANOVA for in-role performance revealed no significant effects for both groups (see Table 6.2). These findings confirm Hypothesis 3, but reject Hypothesis 4.

Hypothesis 5 proposed a sequential mediated relationship between the job crafting and in-role performance through basic need satisfaction and work engagement. To test this hypothesis, we examined the indirect effects using the bootstrap analysis option in AMOS (MacKinnon, 2008). The bootstrap is a statistical resampling method that estimates the parameters of a model and their standard errors strictly from the sample (Preacher & Hayes, 2008). Bootstrapping computes more accurate confidence intervals of indirect effects ($x \rightarrow m \rightarrow y$) than the more commonly used methods, such as the causal steps strategy (Baron & Kenny, 1986), as it does not assume that the sampling distribution is normal (Preacher & Hayes, 2008). This is especially relevant for indirect effects, as their distributions are skewed away from zero (Shrout & Bolger, 2002). First, we tested the indirect effect of job crafting on work engagement through basic need satisfaction. The results of the bootstrap analysis showed that this indirect effect was significant (estimate = .317, $p < .01$). The bias-corrected confidence interval (B-CCI) ranged from .146 to .500. Second, we tested the indirect effect of basic need satisfaction on performance through work engagement. This indirect effect was also significant (estimate = .333, $p < .001$, $.175 \leq \text{B-CCI} \leq .491$). The results of a final bootstrap analysis showed that the sequential mediation effect of job crafting on performance through basic need satisfaction and work engagement, was also significant (estimate = .160, $p < .01$, $.058 \leq \text{B-CCI} \leq .294$). Taken together, these findings offer support for Hypotheses 5.

DISCUSSION

To our knowledge this is the first job crafting intervention study among teachers. The design of this study is based on theoretical assumptions from the JD-R theory (Bakker & Demerouti, 2014), which states that optimizing job demands and resources may contribute to employee engagement. The present study reveals that teachers' work engagement can indeed be fostered via a job crafting intervention. These findings are highly valuable since they can help to keep teachers enthusiastic about their work and engaged in their job. In the next section, we discuss the most important contributions of our study.

Theoretical Contributions

A first contribution of this study is that it offers evidence that teachers' job crafting behavior can be increased via an intervention. This study expands earlier findings that job crafting behavior in organizations can be facilitated via interventions (Van den Heuvel, Demerouti & Peeters, 2012; Van Wingerden, Bakker & Derks, 2013). Our overall finding is consistent with Wrzesniewski (2003) who argued that although job crafting concerns employee's self-initiated actions, job crafting may be facilitated or supported by management. The analysis of the three separate job crafting components showed that increasing challenging job demands significantly changed at time 2 where increasing resources (social and structural) did not. Note that our sample consisted predominantly of teachers who work in direct contact with students most of their time, not in direct contact with colleagues. Therefore, they may have felt that they did not have opportunities to increase their social resources at work. For structural resources we have to take into account that it may take some time for participants to be successful in increasing their structural job resources. For example, to increase opportunities for professional development, there must be a possibility to join a masterclass or course.

Second, the outcomes revealed that participants' basic need satisfaction can be increased via a job crafting. This is the first job crafting study, as far as we know, revealing increased levels of basic need satisfaction. Our findings are in line with findings by Sailer and Mandl (2015) who showed that interventions may increase employees' basic need satisfaction when the intervention design contains elements that make participants experience competence, autonomy and belongingness during the training session. Our intervention design not only contained elements that made participants experience competence, autonomy and belongingness *during* the training sessions, but also *afterwards* in the workplace when they brought their job crafting plan into action. To increase their challenging job demands, participants may have started new projects and learned new skills, which can contribute to their need for competence. In this new project participants may have worked together with their colleagues, fulfilling their need for belongingness. The need for autonomy may be satisfied by experiencing that job crafting enabled them to optimize their own work environment. In addition, these findings expand SDT (Deci & Ryan, 2000) by revealing that basic need satisfaction is not only positively related to available job resources as found in earlier research (Van den Broeck, Vansteenkiste, De Witte & Lens, 2008) but also to increasing challenging job demands.

A third contribution of this study concerns teachers' enhanced levels of work engagement after participating in the job crafting intervention. Our study showed that increasing challenging job demands contributes to teachers' work engagement. These

outcomes are in line with Bakker and Demerouti (2014) who stated that optimizing job demands and resources may lead to increased levels of employee engagement. These outcomes expand JD-R theory by showing a positive *causal* relation between challenge demands and work engagement, where earlier studies already showed this link cross-sectionally (LePine et al, 2005; Tims, Bakker & Derks, 2013). By offering empirical evidence that organizational interventions can foster work engagement, our findings strengthen JD-R theory (Bakker & Demerouti, 2014). In contrast with increased levels of teachers' work engagement, the outcomes of the study revealed no increased levels of in-role performance. The reason for this null finding may be that increased levels of job crafting and need satisfaction may need time to result in improved performance. Teachers who increase their challenging job demands, for example by starting new activities, may learn and apply new skills and do not feel they are performing right from the start. In addition, by starting new activities teachers may need to invest extra time. This will not only affect the time available for their other tasks but consequently may also influence teachers' perception of their in-role performance.

Fourth and finally, our findings revealed the proposed sequential mediation between job crafting and performance via basic need satisfaction and work engagement. The outcomes of the mediation analyses extends JD-R theory by showing that basic need satisfaction may explain the relationship between optimizing job demands and resources and work engagement. Employees who proactively craft their job by adapting their job demands and resources engage in self-determination and consequently satisfy their basic needs. By satisfying their basic needs, employees become engaged at work which subsequently leads to performance. The findings are in line with SDT, which assumes that the satisfaction of one's basic needs stimulates optimal motivation and is positively associated with individuals' optimal functioning (Deci & Ryan, 2000). Our findings also extend SDT by showing that basic need satisfaction can be enhanced when employees themselves adapt their own work environment instead of their managers. Thus, job crafting may lead to real self-determination. This study has shown that an intervention based on the principles of JD-R theory and SDT can be successfully put into practice in the educational field and foster teachers' well-being.

Limitations and avenues for future research

Although this study provides evidence for most of the hypotheses, three limitations of our research need to be mentioned. The first limitation of this study concerns the research design. A disadvantage of the chosen quasi-experimental research design without random assignment of each individual participant to conditions is that intervention effects could be the result of differences between the groups at the beginning of the intervention instead of being the result of the intervention. Therefore, a control group

and a pre-test were added to the research design. It is relevant to note that by using this design, we did avoid contamination effects where members of the experimental groups may influence members of the control group or vice versa (Cook & Campbell, 1979). Although the locations were different, they are all located in urban areas and are similar in terms of demographic characteristics. The teachers also execute the same working activities, which are designed around similar team structures.

A second limitation involves the homogeneity of our sample. Although we found positive outcomes for teachers' job crafting behavior, need satisfaction and work engagement, we do not know whether or not we can generalize these findings. Our sample consisted of primary school teachers only. Future studies should try to replicate our study among teachers working at secondary schools, higher education or universities and employees of other occupational groups who work in the educational field. Third, we only measured participants' self-ratings of in-role performance, we do not know if objective measures of performance would reveal other outcomes. Future studies may also include other-ratings provided by direct colleagues, supervisors, or pupils. This will give a more objective view of possible improvements in terms of observable behavior. In addition, future research may also use qualitative research methods like structured interviews. Using both quantitative and qualitative research methods may shed a light on the experiences of the participants and may reveal how the intervention is useful to them. Further, parents, pupils and the schools participation council may be involved in the intervention. They are important stakeholders who can make a contribution by sharing their experiences and ideas on how teachers, pupils and the school as a whole can benefit from teachers' work engagement.

Practical implications and Conclusion

A practical implication of the outcomes of this study is that investing in positive organizational interventions at schools may be worthwhile. Within the context of education, our results show that investing time and money in organizational interventions can positively impact teachers' work engagement. The job crafting intervention showed that it is possible to activate employees' proactive job crafting behavior and foster their basic need satisfaction and work engagement. School principals should acknowledge the importance of facilitating and stimulating employees to optimize their resources and their challenging demands. They should also be aware of their role in relation to employees' job crafting behavior. Since the feedback employees receive on their job crafting actions may either create more possibilities for job crafting or inhibit job crafting behavior in the future (Wrzesniewski, 2003), school principals can make a difference.

Besides offering interventions and feedback, organizations can also use surveys to examine whether teachers experience sufficient resources and challenges at work. Based on the outcomes of the surveys, individualized reports could be made including personalized feedback and suggestions on how teachers themselves could optimize their resources and challenges at work. Teachers can also stimulate each other by sharing their good practices in optimizing their work environment. Increasing teachers' work engagement through job crafting interventions may help them to deal with the high workload and emotional demanding situations in their work and stimulate them to stay enthusiastic about their profession and satisfied with their work. As the inspiring speech by Malala Yousafzai reveals, teachers have every reason to do so.

Table 6.1 Means, standard deviations, correlations and Cronbach's alpha of the study variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Age	46.79	11.86																	
2. Gender	1.08	.28	.11																
3. Job crafting T1	3.07	.42	.06	.00	(.83)														
4. JC social job resources T1	2.51	.61	.08	.13	.75**	(.82)													
5. JC challenging job demands T1	3.01	.61	.10	.10	.79**	.27*	(.73)												
6. JC structural job resources T1	3.68	.43	.08	.03	.79**	.41**	.53**	(.65)											
7. Basic need satisfaction T1	5.56	.61	.13	.09	.28*	.23	.12	.32**	(.89)										
8. Work engagement T1	5.30	.81	.15	.21	.43**	.26*	.40**	.33**	.34**	(.91)									
9. In-role performance T1	4.30	.37	.02	.01	.20	.01	.18	.31**	.10	.24*	(.71)								
10. Job crafting T2	3.15	.45	.13	.12	.75**	.58**	.58**	.57**	.21	.39**	.07	(.86)							
11. JC social job resources T2	2.56	.59	.17	.00	.61**	.72**	.34**	.32**	.11	.32**	-.03	.81**	(.79)						
12. JC challenging job demands T2	3.14	.60	.07	.19	.66**	.32**	.71**	.51**	.18	.33**	.07	.86**	.48**	(.78)					
13. JC structural job resources T2	3.75	.41	.09	.11	.58**	.38**	.38**	.65**	.27*	.33**	.17	.83**	.50**	.66**	(.61)				
14. Basic need satisfaction T2	5.72	.57	.07	.09	.30*	.20	.25*	.24*	.74**	.37**	.22	.31**	.19	.27*	.34**	(.87)			
15. Work engagement T2	5.39	.86	.10	.23	.43**	.25*	.42**	.33**	.27*	.76**	.29*	.49**	.32**	.47**	.45**	.50**	(.93)		
16. In-role performance T2	4.33	.42	.02	.09	.20	.04	.25*	.20	.11	.22	.60**	.28*	.14	.25*	.34**	.33**	.42**	(.82)	

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

CHAPTER 7

General Discussion



GENERAL DISCUSSION

Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014) proposes that employees' work engagement and performance is the result of the balance between their job demands and (personal and job) resources. According to JD-R theory, every job is characterized by job demands and resources, which can be influenced by both employees (bottom-up) and management (top-down). Employees may proactively adapt their job demands and resources through job crafting. Management may offer their employees a work environment characterized by a sufficient amount of resources and challenges or they may facilitate the optimization of job demands and resources by offering positive organizational interventions. JD-R theory proposes that positive organizational interventions that aim to optimize job demands and resources lead to improved levels of work engagement and job performance. Although theoretically the drivers of work engagement are well established, the empirical evidence for fostering work engagement and performance through interventions is still relatively scarce (see for an exception: Gordon, Demerouti, Bakker, Le Blanc, Bipp & Verhagen, 2016). Therefore, the main goal of this dissertation was to test whether work engagement and performance could be increased through JD-R interventions, as initially proposed by JD-R theory (Bakker & Demerouti, 2014; Demerouti et al., 2001).

Therefore, I conducted five empirical intervention studies respectively aimed at: (a) improving personal resources from a top-down approach; (b) improving job demands and resources from a bottom-up approach; and (c) interventions combining a top-down and bottom-up approach, optimizing job demands as well as personal and job resources. Four of the five studies contained a pretest-posttest research design including a control group. Using both quantitative and qualitative research methods, I tried to shed light on why and how positive organizational interventions are useful for organizations and employees.

DISCUSSION OF THE MAIN FINDINGS

In this concluding chapter, I first discuss the main findings of the five empirical studies by answering the research questions formulated in Chapter 1. Subsequently, the limitations of the studies and directions for future research are discussed. Finally, I will address the practical implications of the findings and present a conclusion.

Research Question 1. Are Job Demands-Resources Interventions successful in enhancing work engagement and performance?

The first goal of this thesis was to examine whether positive organizational interventions are useful in enhancing work engagement and performance. Four out of five empirical studies reported in this dissertation (Chapter 3 – 6) examined these proposed effects. If we look into the outcomes of the analyses of these studies, we gain insight into the extent to which the different Job Demands-Resource interventions lead to increased levels of work engagement and/or performance. The study presented in Chapter 3 revealed, in line with JD-R theory (Bakker & Demerouti, 2014), that participants' levels of work engagement and performance increased after the combined JD-R intervention both compared to their level prior to the intervention and compared to a control group.

These positive intervention effects on both work engagement and performance are not consistently shown in the different JD-R interventions as presented in this dissertation. The study presented in Chapter 4 tested three different interventions, a personal resources intervention (top-down), a job crafting intervention (bottom-up) and an intervention combining both personal resources and job crafting (integrated approach). The analyses revealed different outcomes for the three interventions. The outcomes showed that the personal resources intervention lead to increased levels of personal resources and work engagement after the intervention compared to a control group. However, results showed no increase in performance. JD-R theory (Bakker & Demerouti, 2014) proposes that performance follows orderly on work engagement. It is conceivable that it takes some time before the personal resources intervention results in both increased work engagement and subsequently in increased performance. The job crafting intervention presented in Chapter 4, revealed improved levels of job crafting behavior after the intervention, but no increased levels of work engagement or performance. The third intervention (optimizing personal resources and job demands and resources) showed improved levels of job crafting behavior and performance, but no increased levels of work engagement. This may be explained by the job crafting goals and actions participants chose to bring into action. In contrast to the job crafting goals as described in Chapter 3 - increasing resources and challenges- the participants of the study presented in Chapter 4 mainly chose job crafting goals aimed at decreasing

their hindering job demands. Earlier research already showed that the relation between decreasing hindering job demands and work engagement is ambiguous. Some studies have shown that decreasing hindering job demands is unrelated to work engagement (Tims, Bakker & Derks, 2012; Tims, Bakker, & Derks, 2013), and one other study even showed a negative relation with work engagement (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012). Reducing hindrance demands may make employees' job less demanding (Van Wingerden, Derks, Bakker & Dorenbosch, 2013). However, it does not automatically imply that the job becomes more engaging at the same time (Demerouti et al., 2001).

Work engagement is part of the motivational process proposed by JD-R theory, mainly driven by resources. This may explain why decreasing demands has no motivational potential and is therefore not consistently related to engagement (Tims, Bakker & Derks, 2013; Van Wingerden, Derks, Bakker & Dorenbosch, 2013). Decreasing hindering job demands like bureaucracy and role ambiguity rather seems to act like a "hygiene factor" (Herzberg, 1974) instead of an intervention with the potential to increase employees' motivation. Work engagement entails more than just taking away hindrances. In line with JD-R theory, it is particularly crafting in the form of making the work environment more challenging and resourceful that fosters work engagement.

Based on the outcomes of the empirical studies as discussed we conclude that JD-R interventions aimed at optimizing job demands and (personal and job) resources are most successful in enhancing participants' levels of work engagement and improving their performance. The outcomes of the analyses revealed that positive organizational interventions are most effective when an integrated approach is used, including both top-down (personal resources) and bottom-up (job crafting) elements. The JD-R intervention with the integrated approach is particularly successful when participants aim to increase their resources and challenges at work through job crafting. Since research revealed that JD-R theory could be applied to different occupations and industries (Bakker, Demerouti & Sanz-Vergel, 2014), JD-R interventions based on the same principles should also be applicable in other work environments. This underlines the strengths of both JD-R theory and JD-R interventions.

It is important to note that the JD-R approach is not the only approach that concerns optimizing the work environment from a top-down and bottom-up approach. Another approach that has received research attention in recent years is idiosyncratic deals (I-deals: Rousseau, Ho & Greenberg, 2006). Through I-deals, individual workers negotiate employment terms with their employer that may concern their task and work responsibilities, schedule and location flexibility, and financial incentives (Rosen et al.,

2013). In contrast to JD-R interventions, I-deals cannot be applied in every work context. Research revealed positive effects among specific groups, for example employees who have a low-quality relation with their team or supervisor (Anand et al., 2010) or senior employees with low self-esteem (Ng & Feldman, 2010). In addition, research revealed that the relation between I-deals and work engagement was ambiguous. Specifically, studies have revealed a positive relation between development I-deals and work engagement (Hornung, Glaser, Rousseau, Angerer & Weigl, 2011), but a negative relation between financial ideals and work engagement (Rousseau, Ho & Greenberg, 2006).

The positive relations and outcomes of the JD-R interventions that were shown in the present thesis are promising in the opportunities they offer for employees and organizations to continue to work on fostering work engagement. The outcomes of the five empirical studies that are part of this dissertation strengthen JD-R theory by revealing causal relations in the motivational process. This thesis reveals initial empirical evidence that the theoretical assumptions of JD-R theory can successfully be applied in the work environment.

Research Question 2. What is the role of personal resources in enhancing work engagement and performance?

By answering the second research question we shed light on the role of personal resources in enhancing work engagement and performance. Personal resources are aspects of the self that are commonly associated with resiliency and individuals' sense of ability to control and impact their environment successfully (Hobfoll, Johnson, Ennis & Jackson, 2003). For example, people who are optimistic and self-efficacious believe they can deal with the challenges they face in their lives but also in their workplace. Personal resources like optimism, self-efficacy, resilience, and hope are functional in achieving goals and stimulate personal growth and development (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009).

Literature revealed that personal resources are positively related to work engagement (Hodges, 2010; Gruman & Saks, 2011) and performance (Luthans, Youssef & Avolio, 2007; Peterson, Luthans, Avolio, Walumbwa & Zhang, 2011). In line with JD-R theory, we not only proposed positive relations but also causal relations and hypothesised that by improving employees' personal resources, their work engagement and performance would also enhance. Earlier research revealed that personal resources can be developed via interventions (Luthans, Avey, & Patera, 2008). However, the effect of increasing personal resources on improved levels of work engagement and performance was not taken into account. In Chapter 4, the impact of a personal resources intervention on work engagement and performance was presented. In that chapter, we showed

that teachers' levels of personal resources and work engagement increased after participating in a personal resources intervention, compared to their level prior to the intervention and a control group. However, their levels of in-role performance did not. This may be explained by the research design in which we measured work engagement and performance at the same time. In line with JD-R theory, it may take some time before an increase in work engagement subsequently will result in improved levels of performance. The qualitative analyses of the study presented in Chapter 4 revealed that participants of the Personal Resources intervention experienced the intervention as pleasant and vigorous.

The study presented in Chapter 3 integrated increasing personal resources into a JD-R intervention that was aimed at optimizing personal resources, job resources and job demands. In line with JD-R theory, the outcomes presented in Chapter 3 revealed that healthcare professionals who optimized both their job demands and resources showed improved levels of work engagement and performance, both compared to their levels prior to the intervention and a control group. The participants stated that by first working on their personal resources they felt able to change their work environment. Employees who have a sufficient amount of personal resources tend to proactively adapt their work environment. Proactively adapting the work environment (job crafting) seems to lead to higher levels of personal resources like optimism and self-efficacy (Van den Heuvel et al., 2015). Thus, personal resources and job crafting have a reciprocal relationship. Therefore, personal resources seem to play an important role in enhancing employees' job crafting behavior, work engagement and performance. The studies discussed in Chapter 3 and 4 revealed that personal resources (and the interventions that can improve them) are meaningful in enhancing employees' work engagement and performance. The causal relationship between increasing personal resources and an increase in work engagement revealed in these studies, underlines this importance. For organizations that want to invest in enhancing their employees' work engagement, the personal resources intervention offers a practical and successful applicable tool.

Research Question 3. What is the role of job crafting in enhancing work engagement and performance?

A series of studies presented in this dissertation have contributed to the understanding of the role of job crafting in enhancing employees' work engagement and performance. In Chapter 2 we presented a qualitative study that helps us understand how a job crafting intervention can be useful to participants. The study presented in Chapter 2 gave insight in participants' job crafting goals, the job crafting strategies that worked for them, and how they experienced turning their own job crafting plan into action

in their work environment. Successful job crafters reported that they gained a better sense of control over their work and experienced reduced workload. The job crafting actions of the successful crafters were mainly aimed at increasing social job resources and increasing challenging job demands. For participants who did not succeed in bringing their job crafting plan into action, the obstacles and hindrances in their work were highlighted through the training. The majority of the participants who were not successful, focused on reducing their job demands.

The outcomes of the analyses of the single job crafting intervention presented in Chapter 4 revealed a significant effect on increasing job crafting behavior, but no significant effects on work engagement or performance. Almost all participants of the intervention group (28 of 32 participants) chose to decrease their hindering job demands. The participants of the job crafting study presented in Chapter 2, showed a similar focus on decreasing hindering job demands. The lack of effect on work engagement and performance may be explained by this focus on decreasing hindering job demands. As the study presented in Chapter 3 revealed, job crafting aimed at increasing job resources and challenges - in contrast to decreasing hindering job demands - is indeed effective. The outcomes of the JD-R Intervention study presented in Chapter 3, revealed both increased levels of work engagement and performance. It should be noted that the whole motivational process is tested, while due to practical reasons the probable mediator (work engagement) and outcome (performance) were measured at the same time. If we had followed the temporal order of the JD-R model, performance should have been measured after measuring work engagement. For future research, it is recommendable to temporally separate the measurement of work engagement and performance.

To gain a better understanding of the role of job crafting in enhancing work engagement and performance, the underlying process of job crafting was examined in the studies presented in Chapter 5 and 6. The results of the study presented in Chapter 5 revealed that participants' levels of job crafting behavior, personal- and job resources and performance increased after the intervention, compared to both their level prior to the intervention and a control group. Thus, by crafting their job, participants' job and personal resources increased.

In the job crafting intervention tested in Chapter 6, participants proactively chose job crafting actions aimed at increasing their challenging job demands. The outcomes of the analyses revealed increased levels of job crafting behavior, basic need satisfaction and work engagement. Earlier cross-sectional research by Van den Broeck, Vansteenkiste, De Witte and Lens (2008) revealed a positive relation between optimizing job demands

and resources by employees on the one hand, and the satisfaction of their needs of competence, autonomy and relatedness on the other hand. In addition, Van den Broeck et al. (2008) found a positive relation between satisfaction of employees' needs and their vigor. The analyses presented in Chapter 6 not only revealed a positive relation between job crafting and basic need satisfaction, but also showed a positive relation between need satisfaction and work engagement and subsequently performance (see Figure 7.1.).



Figure 7.1. Process from job crafting to performance

The findings of the studies presented in the different chapters help to understand the role of job crafting in enhancing work engagement and performance. In addition, they shed a light on the underlying mechanisms of the motivational process within the JD-R model. The job crafting intervention studies revealed empirical evidence for the theoretical propositions within JD-R theory (Bakker & Demerouti, 2014), in which job crafting is positioned as a promising element for optimizing job demands and resources.

Research Question 4. Are Job Demands-Resources intervention effects sustainable over time?

Organizations may be willing to invest time and money in positive organizational interventions since research revealed that they could enhance employees' well-being and performance (Meyers, Van Woerkom & Bakker, 2013). A question that should be raised is whether the intervention effects are sustainable over time. Does the investment in organizational interventions result in temporary short-term effects or will they last? Chapter 5 presented a study that examined both the short term and long term effects of a job crafting intervention. The outcomes of the study revealed that participants' job crafting behavior improved shortly (two weeks) after the intervention, and was sustainable over time showing increased levels of job crafting one year later (compared both with the measurement at T1 and T2). The participants continued crafting their job, even for a longer period after the intervention was completed. The measurement one year after the intervention did not only show improved levels of job crafting but also revealed improved levels of (job and personal) resources and performance. Thus, the study in Chapter 5 offers additional evidence that employees can optimize their job demands and resources themselves via job crafting which subsequently results in better performance.

The job crafting intervention design contained exercises like proactive goal setting and let participants experience how they could transfer job crafting skills into their work environment when needed. In contrast to most top-down interventions, the participants of the interventions studied in this dissertation contributed to the design of the intervention (they individually chose what they wanted to craft and how) and took responsibility in the intervention process (actively job crafting in their own work environment). In addition to earlier research showing that the success of interventions depends on the extent to which employees can participate in the decision and design process (Kompier, 2002; Kompier, Cooper, & Geurts, 2000; Semmer, 2003), this study revealed it may also contribute to the sustainability of intervention effects. Although the outcomes of the study presented in Chapter 5 revealed that intervention effects are sustainable over time, we must recognize that a first longitudinal study is too limited to fully answer the 4th research question. Given the relevance of the question how sustainable intervention effects are, this first study actually makes a very important start. Future research that builds on this study might help to obtain in-depth insight in the sustainability of positive intervention effects over time.

Limitations and Directions for Future Research

Besides the contributions of this thesis, there are also several limitations that should be acknowledged and that could be addressed in future research. First, we only used quasi-experimental designs for the five empirical intervention studies. A disadvantage of the chosen quasi-experimental research design without random assignment of participants to conditions is that intervention effects could be the result of differences between the groups at the beginning of the intervention instead of being the result of the intervention. Therefore, a control group and a pre-test were added to the research design. It is relevant to note that by using this design, we did avoid contamination effects where members of the experimental groups may influence members of the control group or vice versa (Cook & Campbell, 1979).

A second limitation involves the homogeneity of our study samples. Although we found positive outcomes for increasing resources, job crafting behavior, need satisfaction, work engagement and performance, we do not know whether or not we can generalize these findings. Our samples consisted of healthcare professionals and professionals working in the educational field only. Future studies should try to replicate our studies among employees working in other occupational groups and sectors. The interventions may for example also be very useful for employees working in the private sector. There is at the moment no reason to assume that job crafting cannot work in the private sector. Third, we only measured participants' self-ratings on all variables; we do not know whether objective measures of job performance or outcomes of performance would

reveal the same outcomes. Future studies may also include other-ratings and objective measures like grades of students, health of patients, or number of medical errors. This will give a more objective view of possible improvements as a consequence of JD-R interventions in terms of observable behavior. Fourth, only one of the empirical studies presented in this dissertation tracked long-term effects. To gain a better understanding of the sustainability of intervention effects, more longitudinal studies are needed. Future studies should try to replicate our JD-R interventions with a longitudinal research design.

Fifth, this dissertation only examined the positive side (increasing work engagement and performance) of job crafting, and did not pay attention to possible negative side effects. A negative aspect of job crafting may be that job crafting itself may ask a lot of energy. In addition, employees may also try to decrease their demands by delegating task they do not like to their colleagues, which in turn may result in a more demanding work environment for their co-workers. A study by Tims, Bakker and Derks (2015) confirmed that decreasing hindering job demands by employees is positive related to the workload of co-workers and indirectly contributes to their experienced levels of burnout. Job crafting aimed at decreasing hindering job demands is therefore not only an unsuitable strategy to increase personal work engagement and performance, but can also negatively impact upon the well-being of colleagues. For future research, it may be interesting to examine the relation between job crafting and conflicts at work or between job crafting and ineffectiveness at work. Job crafting may ask for coordination between employees, which may distract them from their primary tasks. In addition, a question for future research is how and under what conditions decreasing hindering job demands could work.

Besides the limitations, this dissertation also offers directions for future research. In this dissertation the focus was on the positive aspects of behavior at work (like optimizing the fit between individual talents and the job). JD-R theory also recognizes employee behavior that turns out to be negative which is also known as “self-undermining” (Bakker & Costa, 2014). Self-undermining is defined as employees’ behavior that creates obstacles that may undermine their performance (Bakker & Costa, 2014). For example, by making errors over and over again, employees’ workload increases because they have to fix the errors while regular tasks have to be done at the same time. JD-R theory revealed that by self-undermining, employees increase their job demands, which in turn lead to exhaustion and burnout (Bakker & Costa, 2014). Future research should also examine this negative perspective of work behavior. Besides self-undermining behaviors, it is also interesting to examine the impact of the starting positing of job crafter in relation the different types of job crafting behavior. For example, employees who are exhausted

may not have the energy to craft the things that would be most helpful to them and therefore may not make the best job crafting choices. In this situation, job crafting may lead to reduced levels of exhaustion, but not necessarily to enhanced levels of work engagement. It is interesting to examine if job crafting in specific situations may even turn into self-undermining.

Practical Implications

A series of studies presented in this dissertation has contributed to a better understanding of the effects of Job Demands-Resources Interventions in practice, from both a top-down and bottom-up approach; on participants' work engagement and performance. JD-R interventions aimed at enhancing employees' work engagement and performance are important because engaged employees are proactive, open to learn new things, and enthusiastic about their jobs (Bakker, Schaufeli, Leiter, & Taris, 2008; Schaufeli & Salanova, 2008). In addition, they are more productive and innovative (Harter, Smidt & Hays, 2002; Konermann, 2012), healthier and they perform better (Halbesleben, 2010) than non-engaged employees. Thus, interventions can be beneficial for both employees and organizations as a whole. The results of this thesis showed that investing time and money in organizational interventions is worthwhile. The findings of the studies presented in this dissertation imply that JD-R interventions with both a bottom-up and top-down approach can be used as a tool for human resource management. The findings can be implemented in several ways.

First, management should be aware of the balance between job demands and resources experienced by their employees. It is advised to use surveys to examine whether employees experience sufficient resources and challenges at work. Based on the outcomes of the surveys, individualized reports could be made including personalized feedback and suggestions on how employees themselves could optimize their resources and challenges at work. Senior management may facilitate employees by promoting a dialogue on the results of the individual feedback reports during work hours. This underlines the importance and encourages employees to actually get started with the results. Following the principles of servant leadership (Finley, 2012), supervisors may actively support employees, for example by giving autonomy at work, providing employees with constructive feedback at work, and by offering sufficient opportunities for professional development. Supervisors may also stimulate members of their team to give each other feedback and offer social support in demanding situations or when the manager is not around. Increasing employees' work engagement through positive organizational interventions may help employees to deal with a high workload and emotional demanding situations at work and stimulate them to stay enthusiastic about their profession and satisfied with their job.


Second, the studies in this thesis revealed that although job crafting concerns employees' self-initiated changes, job crafting behavior can be facilitated through interventions. Based on the findings, it could be advised to offer job crafting interventions and facilitate employees' job crafting behavior. The job crafting skills participants develop during the intervention can be used when there are changes in participants' work environment or when their personal needs change (Petrou et al., 2012). In addition, management should be aware of the impact of the feedback employees receive on their job crafting actions. Since the feedback employees receive on their job crafting behavior may either create more possibilities for job crafting or inhibit job crafting behavior in the future (Wrzesniewski, 2003), this is highly relevant. Employees' perceived opportunities to craft therefore might determine their actual job crafting behavior. Expressing appreciation for job crafting behavior to both individual employees and teams is an example of an approach that encourages job crafting behavior. Because of the negative relation between decreasing hindering job demands and work engagement, management could actively try to stimulate employees to increase their job resources and challenging job demands. Sharing knowledge with employees about job crafting and the power of proactively optimizing challenges and resources may be a good starting point. From their modelling role, senior management may share their own job crafting successes, which may inspire their employees (Boone & Makhani, 2012).

CONCLUSION

The main aim of this dissertation was to examine whether positive organizational interventions based on JD-R theory can enhance employees' work engagement and performance. This thesis presented five empirical intervention studies from different perspectives; (a) a personal resources intervention aimed at increasing personal resources, based on a top-down approach; (b) job crafting interventions aimed at optimizing job demands and resources, designed with a bottom-up approach; and (c) JD-R interventions aimed at optimizing both personal resources and job demands and resources, combining both a top-down and bottom-up approach. These studies were conducted to test whether JD-R theory can successfully be turned into practice. In the overall, these five intervention studies shed light on the effectiveness of positive organizational interventions. The results presented in this dissertation strengthen JD-R theory by revealing that interventions based on the principles of JD-R theory can increase employees' work engagement and performance. In addition, this dissertation offers insight into the underlying process revealing how job crafting contributes to work engagement. Employees become engaged through job crafting because by crafting

their job, employees can satisfy their need for competence, autonomy and relatedness. Thus, employees who proactively craft their job by adapting their job demands and resources engage in self-determination and consequently satisfy their basic needs. By satisfying their basic needs, employees become engaged at work, which subsequently leads to improved performance. Our findings also contribute to Self-Determination Theory (Deci & Ryan, 2001) by showing that basic need satisfaction can be enhanced when employees themselves adapt their own work environment instead of their managers. Thus, proactively adapting job demands and resources may lead to real self-determination. In sum, the thesis showed that JD-R theory can be successfully turned in to practice using JD-R interventions with both a bottom-up and top-down approach.

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Nederlandse Samenvatting



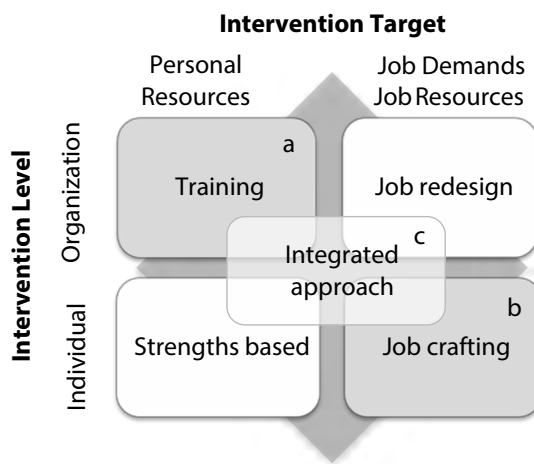
INTRODUCTIE

Bijna een decennium geleden ontstond de meest recente financiële crisis die tot op de dag van vandaag impact heeft op de lokale en globale economie. Overheden zien zich gedwongen om kosten te verlagen en investeringen te beperken. Zowel in de profit als non-profit sector moeten organisaties alle zeilen bijzetten om te overleven. In de publieke- en dienstverlenende sector voelt men de urgentie om te focussen op de kwaliteit van dienstverlening, productiviteit en innovativiteit om zich positief te onderscheiden. Wetenschappelijk onderzoek heeft herhaaldelijk aangetoond dat bevlogen werknemers in belangrijke mate bijdragen aan goede kwaliteit van dienstverlening, hoge productiviteit en innovatie (Christian et al., 2011; Konermann, 2012; Salanova et al., 2009). Mensen die bevlogen zijn, voelen zich vol met energie, en zijn uitermate enthousiast over hun werk. Het is dan ook geen verrassing dat bevlogenheid belangrijke gevolgen heeft voor organisaties. Bevlogenheid leidt niet alleen tot goede prestaties, maar ook tot organisatiebetrokkenheid en klantloyaliteit (Halbesleben, 2010; Salanova et al., 2009). Bevlogen medewerkers brengen positieve energie op de werkplek omdat ze enthousiast over en betrokken bij het werk zijn en zich makkelijk verbinden met collega's (Bakker & Demerouti, 2008). Vanwege deze positieve effecten van bevlogenheid zijn organisaties geïnteresseerd in hoe zij bevlogenheid en de daarmee gepaard gaande prestaties kunnen verhogen.

Door de jaren heen is er in de wetenschap steeds meer interesse ontstaan voor bevlogenheid en prestaties, wat zich laat illustreren door de grote hoeveelheid wetenschappelijke artikelen over dit onderwerp (zie voor meta-analyses over bevlogenheid en prestaties, Halbesleben, 2010; Christian et al., 2011). Een toenemend aantal wetenschappers besteedt niet alleen aandacht aan het theoretische aspect van bevlogenheid, maar richt zich ook op de toepassing van de kennis over bevlogenheid in de praktijk (Bakker & Demerouti, 2014). Een belangrijke en veelgebruikte theorie die kan helpen om de voorspellers en uitkomsten van bevlogenheid te begrijpen is de Job Demands-Resources (JD-R) theorie (Bakker & Demerouti, 2014). De Job Demands-Resources (JD-R) theorie (Bakker & Demerouti, 2014) veronderstelt dat bevlogenheid en prestaties van medewerkers het resultaat zijn van een optimale balans tussen de taakeisen en (werk en persoonlijke) hulpbronnen. Volgens de theorie kunnen deze taakeisen en hulpbronnen beïnvloed worden door zowel medewerkers zelf (bottom-up) als door het management (top down). Medewerkers kunnen proactief hun taakeisen en hulpbronnen aanpassen door middel van job crafting. Het management kan medewerkers een werkomgeving met voldoende hulpbronnen en uitdagingen bieden, maar hen ook faciliteren door het aanbieden van positieve organisatie-interventies. De JD-R theorie veronderstelt dat positieve organisatie-interventies die gericht zijn op

het optimaliseren van taakeisen en hulpbronnen kunnen leiden tot een toename van bevoegtheid en prestaties. Ondanks dat hiervoor voldoende theoretische argumenten zijn, is empirisch bewijs voor het vergroten van bevoegtheid en verbeteren van prestaties door interventies schaars (voor een uitzondering zie: Gordon, Demerouti, Bakker, Le Blanc, Bipp & Verhagen, 2016). Daarom was het hoofddoel van deze dissertatie het onderzoeken of bevoegtheid en prestaties verbeterd kunnen worden door JD-R interventies, zoals verondersteld wordt door de JD-R theorie (Bakker & Demerouti, 2014).

Hiertoe zijn er door middel van vijf empirische studies systematisch drie verschillende JD-R interventies uitgevoerd en onderzocht: (a) een interventie gericht op het versterken van persoonlijke hulpbronnen; (b) een job crafting interventie gericht op het optimaliseren van taakeisen en werk hulpbronnen; en (c) een interventie gericht op het optimaliseren van zowel taakeisen als (persoonlijke en werk) hulpbronnen. Deze verschillende interventies bevatten zowel een top-down (a), een bottom-up (b), als een geïntegreerde aanpak (c). Bovendien is er in elke studie gebruik gemaakt van een pretest-posttest onderzoeksdesign inclusief controle groep. Tot slot is er door het gebruik van zowel kwantitatief als kwalitatief onderzoek getracht om inzicht te geven in waarom en hoe JD-R interventies bij kunnen dragen aan meer bevoegen en beter presterende werknemers.



Figuur 1 JD-R interventies onderzocht in deze dissertatie

Zoals bovenstaand figuur laat zien, toetst deze dissertatie wat het effect is van Job Demands-Resources Interventions, vanuit zowel een top-down als bottom-up aanpak,

op de bevlogenheid en prestaties van medewerkers. De hoofdvraag is verdeeld in vier subvragen die nu beantwoord worden.

Onderzoeksvraag 1: Kunnen Job Demands-Resources Interventies succesvol bevlogenheid en prestaties vergroten?

Het eerste doel van deze dissertatie was het toetsen of Job Demands-Resources Interventions succesvol bevlogenheid en prestaties van deelnemers kunnen vergroten. Vier van de vijf empirische studies zoals gepresenteerd in deze dissertatie (hoofdstuk 3 tot en met 6), toetsten deze veronderstelde effecten. Als we inzoomen op de resultaten van de Job Demands-Resources Interventions ontstaat inzicht in de mate waarin verschillende interventies resulteren in een toename van bevlogenheid en/of prestaties. Zo laat de studie in hoofdstuk 3 in lijn met de JD-R theorie (Bakker & Demerouti, 2014) zien dat deelnemers na een gecombineerde Job Demands-Resources Interventie in vergelijking met een controle groep een significante toename op bevlogenheid en prestaties rapporteren. Deze resultaten zijn echter niet consistent in de verschillende JD-R interventies binnen deze dissertatie. In de studie zoals besproken in hoofdstuk 4 zijn drie verschillende JD-R interventies getest; een persoonlijke hulpbronnen interventie (top-down), een job crafting interventie (bottom-up), en een interventie waarin beide werden gecombineerd (geïntegreerde aanpak). Hier variëren de resultaten over de drie getoetste interventies. Zo onthulde de interventie gericht op het verhogen van persoonlijke hulpbronnen (hoofdstuk 4) een significante toename van persoonlijke hulpbronnen en bevlogenheid van de deelnemers na de training in vergelijking met een controle groep, maar geen toename in prestaties. De job crafting interventie in hoofdstuk 4 toonde ondanks een significante toename in job crafting gedrag, geen effect op bevlogenheid of prestaties. De derde interventie binnen deze studie, de combinatie van het optimaliseren van taakeisen en (persoonlijke en werk) hulpbronnen, toonde een toename van job crafting gedrag en prestaties maar geen effect op bevlogenheid. In tegenstelling tot de gecombineerde interventie in hoofdstuk 3, laat deze gecombineerde interventie dus geen resultaten zien op bevlogenheid.

Dit komt vermoedelijk door de gekozen job crafting doelen en acties van de deelnemers. In tegenstelling tot de job crafting doelen beschreven in hoofdstuk 3 (verhogen hulpbronnen en uitdagingen) kozen de deelnemers in de 4e studie vooral voor het verlagen van belemmerende taakeisen. Ook in eerder onderzoek was de relatie tussen job crafting in de vorm van het verlagen van taakeisen aan de ene kant en bevlogenheid aan de andere ambigue. Sommige studies vonden geen relatie tussen contraction-oriented job crafting en bevlogenheid (Tims, Bakker & Derks, 2012; Tims, Bakker, & Derks, 2013), een andere studie vond zelfs een negatieve relatie (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012).

Het verminderen van belemmerende taakeisen mag de baan voor medewerkers minder veeleisend maken (Van Wingerden, Derks, Bakker & Dorenbosch, 2013), het verminderen van belemmeringen leidt echter niet automatisch tot meer bevlogenheid (Demerouti et al., 2001). Bevlogenheid is een onderdeel van het motivationeel proces binnen het JD-R model wat voornamelijk geïnstigeerd wordt door hulpbronnen. Dit kan dan ook de reden zijn waarom het verlagen van belemmerende taakeisen geen motivationeel potentieel heeft en daarom niet of ambigu gerelateerd is aan bevlogenheid (Tims, Bakker & Derks, 2013; Van Wingerden, Derks, Bakker & Dorenbosch, 2013). Zo lijkt het wegnemen van hinderende taakeisen zoals bureaucratische regels en rolambiguiteit veeleer een hygiënemaatregel (Herzberg, 1959), dan een ingreep die de motivatie kan doen toenemen. Bij bevlogenheid gaat het om meer dan het wegnemen van hindernissen. Het gaat blijkbaar, en consistent met de JD-R theorie, om het creëren van een uitdagende werkomgeving rijk aan hulpbronnen.

Op basis van de besproken studies kan geconcludeerd worden dat een Job Demands-Resources Interventie gericht op het optimaliseren van uitdagende taakeisen en (persoonlijke en werk) hulpbronnen het meest succesvol blijkt in relatie tot het verhogen van zowel bevlogenheid als prestaties. De resultaten tonen dat positieve organsiatie-interventies het meest effectief zijn als binnen de interventie een bottom-up (job crafting) en top-down (vergroten persoonlijke hulpbronnen) insteek wordt gecombineerd. De JD-R interventie met een geïntegreerde aanpak is daarbij vooral succesvol als de deelnemers zich in de bottom-up aanpak (job crafing) richten op het vergroten van de hulpbronnen en uitdagingen in het werk.

Onderzoeksvraag 2: Wat is de rol van persoonlijke hulpbronnen in het vergroten van bevlogenheid en prestaties?

In hoofdstuk 4 van dit proefschrift is de impact van een persoonlijke hulpbronnen interventie op bevlogenheid en prestaties gepresenteerd. In dit hoofdstuk is aangetoond dat de persoonlijke hulpbronnen en bevlogenheid van docenten die deelnamen aan een persoonlijke hulpbronnen interventie significant toenamen in vergelijking met een controle groep. De prestatie van de deelnemers nam na de interventie echter niet significant toe. Het feit dat we geen toename van prestatie na de interventie vinden kan liggen in het feit dat bevlogenheid en prestatie na de interventie gelijktijdig gemeten zijn. Het kan, in lijn met het JD-R model, tijd vragen voordat een toename in bevlogenheid resulteert in een toename in prestaties. Als we inzoomen op de kwalitatieve kant van de studie in hoofdstuk 4 dan zien we dat deelnemers aan de persoonlijke hulpbronnen interventie deze als plezierig en energie gevend hebben ervaren. In de studie zoals gepresenteerd in hoofdstuk 3 is het vergroten van persoonlijke hulpbronnen door een interventie geïntegreerd in een Job Demands-Resources Interventie. De uitkomsten van

deze studie onthulde dat zorgprofessionals die zowel hun persoonlijke hulpbronnen als taakeisen en werkhulpbronnen optimaliseerden, in vergelijking tot het niveau voor de interventie en afgezet tegen een controle groep, een toename lieten zien in zowel bevologenheid en prestaties. De deelnemers gaven aan dat zij door eerst te werken aan hun persoonlijke hulpbronnen het gevoel hadden dat zij in staat waren om hun werkomgeving te veranderen.

Dus wanneer werknemers geloven in eigen kunnen, zullen zij geneigd zijn om proactief hun omgeving aan te passen. En als werknemers proactief hun omgeving aanpassen (job crafting), dan lijkt dat ook te resulteren in meer persoonlijke hulpbronnen zoals optimisme en eigen effectiviteit (Van den Heuvel et al., 2015). Daarmee spelen persoonlijke hulpbronnen een belangrijke rol in zowel het versterken van het job crafting gedrag (waar het gaat om het vergroten van hulpbronnen en uitdagingen) als in het vergroten van de bevologenheid en prestaties. Op basis van de besproken studies kan geconcludeerd worden dat de rol van persoonlijke hulpbronnen (en interventies om deze te vergroten) in het vergroten van bevologenheid en prestatie betekenisvol is. Er is immers sprake van een causale relatie tussen het vergroten van persoonlijke hulpbronnen en een toename van bevologenheid. Voor organisaties die werk willen maken van het vergroten van de bevologenheid van hun medewerkers, biedt de persoonlijke hulpbronnen interventie een praktische en in de praktijk succesvol toepasbare tool.

Onderzoeksvraag 3: Wat is de rol van job crafting in het vergroten van bevologenheid en prestaties?

Een serie studies zoals gepresenteerd in deze dissertatie heeft bijgedragen aan een toenemend begrip van de rol van job crafting in het vergroten van bevologenheid en prestaties van werknemers. De kwalitatieve studie uit Hoofdstuk 2 laat zien hoe een job crafting interventie van waarde kan zijn voor werknemers. Deze studie gaf inzicht in de job crafting doelen die deelnemers stelden en de job crafting strategieën die voor hen succesvol waren. Deelnemers die succesvol waren in het craften van hun baan, rapporteerden dat zij het gevoel hadden meer controle over hun werk te hebben en minder werkdruk te ervaren. De succesvolle crafters kozen daarbij voor acties gericht op het verhogen van de sociale werkhulpbronnen en het verhogen van de uitdagende taakeisen. Deelnemers die niet succesvol waren in het in de praktijk brengen van hun job crafting plan, rapporteerden vooral de bewustwording van de obstakels en belemmeringen in het werk. Opvallend was dat de meerderheid van de deelnemers die niet succesvol waren in het craften van hun baan, zich vooral richtten op het wegnemen van belemmerende taakeisen.

De effecten van de job crafting interventie uit hoofdstuk 4 toonde ondanks een significante toename van job crafting gedrag, geen effecten op bevoegenheid of prestatie. Bijna alle deelnemers aan de interventie (28 van de 32 deelnemers) kozen ervoor om met behulp van job crafting hun belemmerende taakeisen te verlagen. Dit is in lijn met de kwalitatieve studie in hoofdstuk 2 waarin de meerderheid van de deelnemers ook gericht waren op het verlagen van de taakeisen. Deze focus op het wegnemen van belemmerende taakeisen kan de reden zijn waarom er geen effect op bevoegenheid of prestaties gevonden is. Dat job crafting gericht op het vergroten van hulpbronnen en uitdagingen wel effectief is laat de studie beschreven in hoofdstuk 4 zien. De uitkomsten van deze JD-R interventie studie toonde zowel een toename van bevoegenheid als prestatie.

Om de rol van job crafting in het vergroten van bevoegenheid en prestaties beter te begrijpen, is in hoofdstuk 5 en 6 het onderliggende proces van job crafting onderzocht. De resultaten van de studie zoals gepresenteerd in hoofdstuk 5 onthullen dat het job crafting gedrag van de deelnemers toenam na de interventie in vergelijking met het niveau voor de interventie en met een controle groep. Aanvullend liet deze studie zien dat deelnemers aan de interventie ook significant hoger scoorden op persoonlijke- en werkhulpbronnen en prestatie. Dus, door het craften van hun baan namen de hulpbronnen van de respondenten toe. In de studie in hoofdstuk 6 kozen de deelnemers aan de job crafting interventie proactief voor acties gericht op het vergroten van hun uitdagende taakeisen. De resultaten toonden niet alleen een toename van job crafting gedrag na de interventie, maar ook een toename van basic need satisfaction en bevoegenheid. De analyse in hoofdstuk 6 onthult dat het vervullen van de basisbehoefte het verband kan uitleggen tussen job crafting en bevoegenheid en vervolgens met prestatie. De job crafting interventie studies leveren empirisch bewijs voor de theoretische suggesties uit de JD-R theorie (Bakker & Demerouti, 2014) waarin job crafting als een belangrijk element in het optimaliseren van hulpbronnen en taakeisen binnen het JD-R model is geplaatst.

Onderzoeksvraag 4: Zijn de effecten van Job Demands-Resources interventies duurzaam?

Omdat diverse onderzoeken suggereren dat positieve organisatie interventies bevoegenheid en prestaties van medewerkers kunnen vergroten, overwegen organisaties hier tijd en geld in te investeren (Meyers, Van Woerkom & Bakker, 2013). Een vraag die hierbij gesteld zou moeten worden betreft de houdbaarheid/duurzaamheid van interventie effecten. Leiden de investeringen in organisatie interventies in tijdelijke korte termijn effecten of zijn zij blijvend? Hoofdstuk 5 presenteert een studie waarin zowel de korte als de langere termijn effecten van een job crafting interventie zijn

getoetst. De uitkomsten van de studie onthulden dat het job crafting gedrag van de deelnemers zowel kort na de interventie (twee weken) als ook een jaar later significant toenam (zowel ten opzicht van de meting op T1 en T2), waarmee de interventie effecten duurzaam waren. De deelnemers bleven actief job craften, ook lange tijd na de training. De meting een jaar na de interventie toonde niet alleen een toename in job crafting, maar onthulde ook een toename van (persoonlijke en werkgerelateerde) hulpbronnen en prestatie. Dit betekent dat werknemers zelf de balans tussen taakeisen en hulpbronnen kunnen optimaliseren wat zich vervolgens vertaalt in betere prestaties.

CONCLUSIE

Het hoofddoel van deze dissertatie was het onderzoeken of positieve organisatie interventies gebaseerd op de JD-R theorie bevlogenheid en prestaties van medewerkers kan vergroten. Deze thesis presenteerde vijf empirische interventie studies vanuit verschillende perspectieven. Deze studies zijn uitgevoerd om te toetsten of de JD-R theorie succesvol toegepast kan worden in de praktijk. Overall, laten deze vijf interventie studies een licht schijnen over de effectiviteit van positieve organisatie interventies. De resultaten zoals gevonden in de studies binnen deze dissertatie versterken de JD-R theorie door het tonen van empirisch bewijs dat interventies gebaseerd op de principes van de JD-R theorie bevlogenheid en prestaties van medewerkers kunnen vergroten. Aanvullend heeft deze dissertatie meer inzicht gegeven in het onderliggende proces waarom job crafting bijdraagt aan bevlogenheid. Zoals de uitkomsten van de studie in hoofdstuk 6 lieten zien, raken medewerkers door job crafting bevlogen omdat ze hiermee hun behoefte aan competentie, autonomie en relatedness kunnen vervullen. Dus, medewerkers die proactief hun baan craften door het aanpassen van hun taakeisen en hulpbronnen vervullen hiermee hun basic needs. Door het vervullen van de basic needs, worden medewerkers bevlogen, wat vervolgens leidt tot betere prestaties. Door het tonen dat basic need satisfaction vergroot kan worden wanneer medewerkers zelf hun werkomgeving aanpassen in plaats van dat hun managers dit doen, breiden onze bevindingen ook de Self-Determination Theory (Deci & Ryan, 2002) uit. Het proactief aanpassen van taakeisen en hulpbronnen kan dus leiden tot echte self-determination. Samengevat heeft deze dissertatie laten zien dat de JD-R theorie succesvol in de praktijk toegepast kan worden door het gebruik van JD-R interventies met zowel een bottom-up als top-down aanpak.

Dankwoord



Aan het ontstaan van dit proefschrift hebben veel mensen en organisaties een bijdrage geleverd. Ik wil daarom iedereen bedanken die de afgelopen vier jaar bij mijn onderzoek betrokken is geweest. In die periode heb ik met veel inspirerende mensen mogen samenwerken en een aantal van hen wil ik specifiek bedanken.

Arnold, dank dat ik zo veel van je heb mogen leren. Het is een voorrecht om met een van 's werelds meest invloedrijke wetenschappers in de arbeids- en organisatiepsychologie te mogen samenwerken. Het sparren over het maken van de verbinding tussen wetenschap en de praktijk gaf daarbij veel plezier en energie. De afgelopen vier jaar hebben we gedurende het onderzoek vanuit leergangen en congressen kennis mogen delen voor en met de sector onderwijs. Mede door jouw energieke bijdrage hebben we van de leergangen Bevlogen in het Onderwijs en Inspirerend Leiderschap en de congressen Bevlogen in het Onderwijs en Inspirerend Leiderschap een groot succes gemaakt. Het was erg plezierig om ook in die hoedanigheid samen te creëren! Daantje, wat fijn dat je mij wegwijs hebt gemaakt in de wondere wereld van de wetenschap. De tips die je me vanuit jouw ervaring als buitenpromovenda hebt gegeven waren erg waardevol. De dagelijkse begeleiding was bij jou in goede handen: goed bereikbaar, rap in het geven van feedback en bovenal lekker duidelijk en direct in je reactie. Als Limburgse schorpioen ben je meer dan goed in Rotterdam geïntegreerd. Niet alleen het samenwerken in het onderzoek maar ook in de leergangen, het congres en de sectorpublicatie was erg plezierig. Dank! Arnold en Daantje, voor de afronding van dit proefschrift zijn we samen aan een nieuw avontuur gestart om de onderzoekslijn Bevlogen in het Onderwijs voort te zetten. Met het aangaan van de strategische samenwerking met het VFPf gaan wij de komende jaren het verschil maken in het onderwijs.

Jos, we werken al flink wat jaren met veel plezier samen vanuit verschillende rollen en organisaties. De rode draad van de laatste 10 jaar is ontwikkeling, innovatie en groei vanuit verbinding. Werken aan Bevlogenheid was een mooie start om onze samenwerking ook vanuit een wetenschappelijke basis verder te versterken. In de uitvoering van de interventies die onderdeel zijn van deze dissertatie heb je een belangrijke bijdrage geleverd. Door je prettige manier van communiceren en samenwerken heb je ook deelnemers die voor de training sceptisch waren enthousiast gemaakt om te blijven werken aan hun bevlogenheid. Het verbinden van het wetenschappelijk onderzoek aan de praktijk heeft veel professionals verder geholpen. Denken en werken vanuit het creëren van meerwaarde in samenwerking is ons gezamenlijk credo. Op naar nog meer jaren vol passie, energie en prestatie!

Hans, jaren geleden kwamen we er tijdens onze bila's steeds meer achter hoe we een aantal passies waaronder wetenschap en leren & ontwikkelen delen. Je verhalen over je avonturen als visiting professor aan de universiteit in Nant maakte me meer dan nieuwsgierig. Je stimuleerde mij tijdens mijn periode bij Strukton om me te

blijven ontwikkelen en hebt me alle ruimte gegeven. Zonder het toen te weten kon ik de optimale vorm van job crafting toepassen. Die autonomie heeft tot mooie leerprogramma's en een enorme hoeveelheid subsidies geleid. Bij een van onze bila's zijn we onder het genot van een hapje en drankje in een restaurant in Zoetermeer zelfs "vader en dochter" geworden. Dankzij die ober hebben we de rest van ons leven een hilarische anekdote en een uitbreiding van de familie 😊 Dank voor je support!

Syreeta, de afgelopen jaren was je mijn steun door dik en dun. Ongelofelijk hoe jij je talenten in die tijd hebt weten te ontwikkelen. Formeel secretaresse Directeur HR, maar eigenlijk een fantastische office- en eventmanager. Met je pro-activiteit en enthousiasme heb je me veel werk uit handen genomen. Het afstemmen over trainingen en locaties, het maken van werkboeken en het bedenken van de trainingsmaterialen, je deed het allemaal met evenveel plezier. Tijdens het congres Bevlogen in het Onderwijs heb je de regie over de organisatie genomen en iedereen verstandig doen staan. Wat een prestatie, ben super trots op je!

Het waarmaken van dromen is een stuk leuker als er mensen achter je staan die in je geloven. De collega's van de Koninklijke Auris Groep; natuurlijk het HR team, Dick de Boer voor je rotsvast vertrouwen in mijn visie, Rianne en Marco voor jullie rol als ambassadeur en voortrekker en natuurlijk alle collega's die deel hebben genomen in de trainingen. Vanaf het begin van het onderzoek hebben ook de 'collega's' van Dyade mij gesteund. Herman, Alexander, Frank, Marianne en Theo, hartelijk dank! Als sponsor van het programma hebben jullie niet alleen geïnvesteerd in de ontwikkeling van de materialen en het trainingsprogramma maar mij en het onderzoek ook podium gegeven in het Dyade magazine. Daarnaast hebben we succesvol een aantal leergangen en congressen mogen ontwikkelen en uitrollen. Het is heel bijzonder om te kunnen zeggen dat je meer dan 250 bestuurders en directeuren deelgenoot hebt kunnen maken van je visie en bevindingen. Het Vervangingsfonds/Participatiefonds dank ik voor het financieel mogelijk maken van de trainingen. Denis Vijgen, Karin Montebal en vele anderen bij het fonds, mooi dat jullie werken aan bevoegenheid hebben omarmt. Als sponsor van de sector publicatie Bevlogen in het Onderwijs, hebben jullie het mede mogelijk gemaakt om de opgedane kennis met de sector te delen. Onze duurzame en strategische samenwerking "bevlogen voor de klas" is een mooi begin om ook de komende jaren samen kennis, passie en bevoegenheid te creëren. Agnes de Jong, van Primas Scholen groep en Harry van de Kant van De Groeiling bewonder ik voor hun visie en lef. Het was een genoegen om met jullie en de collega's binnen jullie organisatie met de interventies aan de slag te gaan. Jullie laten zien waar goed bestuur voor staat: durven kiezen voor bevlogen professionals die met passie en energie voor de klas staan.

Natas, dushi, vanuit het zonnige Curaçao heb je me enorm gesteund. Regelmatig kreeg ik een Whatsapp bericht van je om te vragen hoe het met het onderzoek en de artikelen

ging. De plannen voor het onderzoek onder de schoolbesturen in Curaçao verliepen niet zo soepel als we hadden gehoopt, maar dat mocht de pret niet drukken. Zoals met veel op het eiland, zal het uiteindelijk wel een keer gaan gebeuren. Dank voor je support lieverd. Vanaf het moment dat we elkaar leerde kennen begonnen we met lachen en het zal nog wel heel lang duren voordat we daar (zowel onder als boven water) mee stoppen! Tamara en Melissa, al meer dan 25 jaar zijn we vriendinnen en wat hebben we een hoop meegemaakt! Jullie staan altijd voor me klaar, in voor en tegenspoed. Iedere dinsdagavond hebben we dikke pret met z'n drieën (en met de kinderen), heerlijk om zo ongecompliceerd samen te genieten. Ik heb de laatste jaren af en toe een dinsdagavond moeten laten schieten, maar zoals dat met echte vriendinnen gaat doet dat niets af aan onze sterke band.

Desiree, als zus en soulmate weet je dat mijn interesse voor wetenschappelijk onderzoek al vroeg begon. Na een spreekbeurt over Toetanchamon droomde we samen van een carrière als archeoloog. Toen we de herhalingen van de onderwateravonturen van Jacques Cousteau op tv zagen kwam de carrière switch. We wisten het direct: wij worden marienbioloog. We hebben samen de wereld over gereisd en alle pluspunten die bij onze droombanen horen ook samen meegemaakt. Met een luchtballon over de Vallei der Koningen, het van dichtbij zien van archeologische opgravingen bij de Kolossen van Menon, noem het maar op. En zelfs Jacques Cousteau zou onder de indruk zijn van ons duiklogboek. Elke warme zee of oceaan met kleurrijke naaktslakken, pomocantus imperators, dolfijnen en haaien kan niet om ons heen. Dank voor je steun maar ook voor het begrip als ik onze reisjes liet schieten omdat ik te druk was met het onderzoek. Ga ik dubbel en dwars goedmaken!

Pa en ma dank voor jullie onvoorwaardelijke liefde en steun. Fijn dat er altijd twee mensen voor me klaar staan om alle, voor jullie helemaal niet zo interessante, verhalen aan te horen. Pa, je hebt me besmet met de liefde voor creëren, schilderen en fotograferen. Alles wat je bedenkt kan jij ook werkelijk maken. Je hebt me enorm geholpen door het maken van illustraties voor mijn boeken, de website en de trainingsmaterialen. En mam, zoals je begrijpt is de sneer "je bent een echte Van Wingerden" eigenlijk gewoon een heel groot compliment. Dank dat je op mij lette als ik weer eens de zoveelste klus had aangenomen terwijl die er echt niet meer bij kon. Als ik ook maar een fractie van jouw zorgzaamheid mag overnemen dan zit iedereen om me heen gebakken. Het is geweldig om uit zo'n liefdevol nest te komen en vaak samen te mogen genieten van al het moois dat de wereld te bieden heeft. Kanjer, voor jou alle respect dat je me in al mijn ambities en dromen blijft steunen. Je vraagt je vast geregeld af waarom ik niet gewoon blij genoeg kan worden van winkelen en sporten en steeds op zoek ga naar nieuwe uitdagingen. Sequentieel monotasken is een gave, en zoals je weet moet je die benutten. Dank voor je liefde, vriendschap en steun.









Curriculum Vitae and Publications



CURRICULUM VITAE

Jessica van Wingerden is a passionate board member, researcher, developer and author who was born in Ridderkerk, The Netherlands, on October 31st, 1977. After completing secondary education she combined working in sales with a part-time study and received a bachelor degree in Human Resource Management (cum laude) at the Hogeschool Utrecht. In the period 2002 – 2010 she worked as Manager Human Resource Management and Human Resource Development at Strukton Worksphere. In this period she received her Master in Sociology at the Erasmus University Rotterdam and a master degree in Business Administration. Inspired by being part of a family of entrepreneurs she started her own company Anders Ontwikkelen in 2009. From april 2010 till July 2015 Jessica worked as HR Director (CHRO) at the Royal Dutch Auris Group. Being accountable for organization change she conducted a master degree in Management of Culture and Change in 2014. Besides her job as HR Director, she became Member of the Supervisory Board at Rabobank in 2011 and Director at the Council for Organization Advice Agencies (ROA) in 2015.

At the end of 2011 she started her PhD research, which forms the basis of this dissertation. The studies in her PhD project focused on positive organizational interventions aimed at fostering work engagement and improving performance from both a top down and bottom up perspective. The studies in her PhD period were supervised by Professor Arnold B. Bakker and Dr. Daantje Derks. A partnership between Anders Ontwikkelen and Dyade Academy resulted in the development of the masterclasses “Work Engagement in Education” and “Inspiring Leadership” of which Van Wingerden is the developer and course director. Van Wingerden worked together with leading professionals in science (prof. dr. Arnold Bakker, dr. Daantje Derks, prof. dr. Joseph Kessels, prof. dr. Alexander Rinnooy Kan) management (drs. Mr. Jos van Kessel, Twan Paes, Erik van ‘t Zelfde, Joost Rigter) and sports (Marc Lammers & Robin van Galen) to share the value of work engagement for both individuals and organizations. Over 300 principles, directors and members of the board participated in the masterclasses between 2012 and 2016. In 2014 she initiated the congress Work Engagement in Education in co-production with Vervangfonds/Participatiefonds, Arbeidsmarktplatform Primair onderwijs, and Dyade Academy who also financially contributed to the publication: *Bevlogen in het Onderwijs* (Work engagement in Education). In the following year Jessica initiated the congress Inspiring Leadership together with Dyade Academy.

Van Wingerden does research into inspiring and sustaining motivation within organizations. Her integrated approach to organizational issues is informed by her background in sociology, business and the field of organizational change. Studies on

the crossover between people and organizations focus on employee self-development, organizational development, vitality and employability, leadership and performance. She has also published various articles and books on management and management research. Since august 2015 Jessica is Director of Research at Schouten Global.

CURRICULUM VITAE

Jessica van Wingerden is een gepassioneerd bestuurder, directeur, onderzoeker en schrijver geboren te Ridderkerk, op 31 oktober 1977. Na afronding van het middelbaar onderwijs combineerde zij werk met een parttime studie en behaalde zij een bachelor graad in Human Resource Management (cum laude) aan de Hogeschool Utrecht. In de periode 2002 – 2010 was zij werkzaam als Manager Human Resource Management & Human Resource Development bij Strukton Worksphere. In deze periode behaalde zij haar Master Sociologie, richting Arbeid, Organisatie en Management aan de Erasmus Universiteit Rotterdam en haar Master in Business Administration (MBA). Omdat ondernemersbloed kruipt waar het niet gaan kan, startte zij in 2009 haar eigen bedrijf Anders Ontwikkelen. Van april 2010 tot juli 2015 werkte Jessica als HR Directeur (CHRO) bij de Koninklijke Auris Groep. Om zichzelf te versterken in relatie tot haar verantwoordelijkheid voor en rol in organisatie verandertrajecten behaalde zij in 2014 een Master in Management van Cultuur en Verandering. Naast haar baan als HR Directeur, werd zij Lid van de Raad van Commissarissen bij Rabobank in 2011 en Bestuurder bij de Raad voor Organisatie Adviesbureaus (ROA) in 2015.

Aan het einde van 2011 startte Jessica haar PhD onderzoek, wat de basis is van deze dissertatie. De studies binnen de dissertaties zoomen in op positieve organisatie interventies gericht op het vergroten van bevologenheid en het verbeteren van prestaties vanuit zowel een top-down als een bottom-up benadering. De studies binnen de dissertatie werden uitgevoerd onder supervisie van Professor Arnold B. Bakker and Dr. Daantje Derks. Een partnership tussen Anders Ontwikkelen and Dyade Academy resulteerde in deze periode in de ontwikkeling van de Leergang Bevologen in het Onderwijs en de Leergang Inspirerend Leiderschap. Van deze leergangen is Jessica zowel ontwikkelaar als course director. Zij werkt hierin samen met leidende professionals uit wetenschap (prof. dr. Arnold Bakker, dr. Daantje Derks, prof. dr. Joseph Kessels, prof. dr. Alexander Rinnooy Kan), management (drs. Mr. Jos van Kessel, Twan Paes, Erik van 't Zelfde, Joost Rigter) en sport (Marc Lammers & Robin van Galen) om zo de waarde van bevologenheid voor zowel individuen als organisaties te delen. Meer dan 300 schoolleiders, directeuren en bestuurders namen deel aan de leergangen tussen 2012 en 2016. In 2014 initieerde zij het congres Bevologen in het Onderwijs in co-productie met het Vervangfonds/Participatiefonds, Arbeidsmarktplatform Primair onderwijs, en Dyade Academy. Deze partners hebben daarbij zowel financieel als inhoudelijke ook bijgedragen aan de publicatie: Bevologen in het Onderwijs. In het opvolgende jaar initieerde Jessica het congres Verbindend Leiderschap samen met Dyade Academy.

Jessica doet onderzoek naar de effecten van positieve organisatie interventies vanuit zowel een top-down (wat doet de organisatie) als een bottom-up (wat doen professionals) benadering. Haar geïntegreerde aanpak komt voort uit haar achtergrond in sociologie, bedrijfskunde en veranderkunde. Haar onderzoek vanuit de verbinding tussen mens en organisatie focust zich op medewerker- en organisatieontwikkeling, vitaliteit en duurzame inzetbaarheid, leiderschap en prestatie. Daarnaast publiceerde Jessica diverse management- en wetenschappelijke artikelen en schreef zij diverse managementboeken. Sinds augustus 2015 is zij Director of Research bij Schouten & Nelissen

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Bevlogen in het Onderwijs

drs. Jessica van Wingerden MBA MCC
mr. drs. Jos van Kessel
prof. dr. Arnold B. Bakker
dr. Daantje Derks





Vervangingsfonds



PASSIE

ENERGIE

PRESTATIE

De
kracht van
werken met
bevlogenheid

JESSICA VAN WINGERDEN
BERNADETTE VAN DE LAAK

Een baan die aansluit bij je passie, waarin je je eigen talenten kunt inzetten en waar je energie van krijgt, maakt gelukkig. Mensen die op deze manier werken zijn enthousiast over wat ze doen, zijn betrokken bij het werk én bij de organisatie, en gaan hier helemaal in op.

Bevlogen medewerkers werken met passie en energie en leveren betere prestaties. Meer werkplezier en voldoening voor de medewerker, goede prestaties voor de organisatie en kwalitatief hoogwaardige dienstverlening voor de klant leveren een klassieke win-winsituatie op.

Dit boek gaat over presteren vanuit passie en energie. Het geeft inzicht in wat bevlogenheid is en hoe je hiermee aan de slag kunt gaan. De theoretische onderbouwing aan de hand van wetenschappelijke inzichten en managementconcepten en -modellen wordt gekoppeld aan de praktijk. De praktijkcases belichten organisaties die bewust werken aan bevlogenheid.

Dit boek is een *must-read* voor alle managers en medewerkers die bevlogen willen worden, zijn en blijven.



Jessica van Wingerden is directeur HR bij de Koninklijke Auris Groep en als onderzoeker verbonden aan de vakgroep Arbeids- en Organisationspsychologie van de Erasmus Universiteit Rotterdam. Vanuit haar adviesbureau Anders Ontwikkelen ondersteunt zij organisaties bij ontwikkelvraagstukken.



Bernadette van de Laak is HR adviseur bij de Koninklijke Auris Groep en daarnaast directeur/eigenaar van Bernadette van de Laak, HR advies, coaching en ontwikkeling. Zij ondersteunt organisaties bij vraagstukken over organisatie- en medewerkerontwikkeling, interventies en Performance Management.

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Sta jij elke dag stil bij je eigen vitaliteit? Waarschijnlijk is het antwoord op deze vraag 'nee'. Toch onderkennen zowel de overheid, het bedrijfsleven als individuen het belang van vitaliteit. In de sport is het een vanzelfsprekendheid: zonder fysieke en mentale vitaliteit geen prestaties. Maar hoe zien we dat in relatie tot andere beroepen? Voel jij je een topsporter die bewust fit is als je op weg bent naar je werk of je klanten? Met deze publicatie nemen wij je mee in de actuele inzichten rondom vitaliteit. De antwoorden van de ruim 1.750 respondenten die aan ons vitaliteitsonderzoek hebben deelgenomen vormen hiervoor mede een basis. De verhalen uit de praktijk inspireren je om te reflecteren op het belang van vitaliteit voor jezelf, je organisatie en je klanten. Vanuit de verschillende wetenschappelijke perspectieven kun je jouw kennis rondom dit thema versterken, zodat jij vanaf vandaag vanuit vitaliteit het verschil kunt maken!



drs. Jessica van Wingerden MBA MCC is werkzaam als directeur Research bij Schouten & Nelissen en als onderzoeker verbonden aan de Erasmus Universiteit Rotterdam. Vanuit haar achtergrond als socioloog, bedrijfskundige en veranderkundige houdt zij zich bezig met vraagstukken rondom medewerker- en organisatie-ontwikkeling, vitaliteit en duurzame inzetbaarheid en leiderschap.



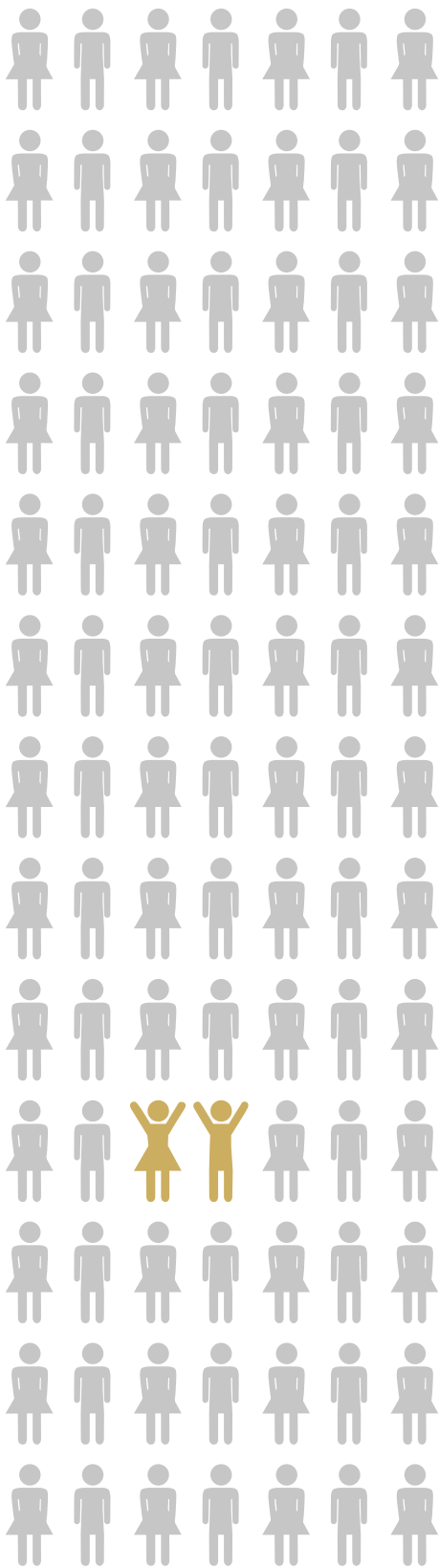
mr. drs. Jos van Kessel is CEO van Schouten Global. Ontwikkelen, leren en onderzoek lopen als een rode draad door zijn carrière. Van Kessel houdt zich actief bezig met het bevorderen van bevoegdheid. In 2014 was hij een van de auteurs van de publicatie 'Bevoegdheid in het onderwijs' met diverse wetenschappers uit de vakgroep Arbeids- en Organisationspsychologie van de Erasmus Universiteit Rotterdam.

Adviesprijs € 14,95

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Jessica van Wingerden
Wim Schuurmans

VERBODEN VOOR KLANTEN WIJ HOUDEN VAN FANS

Over hoe je van klanten fans maakt:

Jos Burgers ♦ Karel van Eerd ♦ Michiel Muller ♦ Henk Teunissen
Addy van den Krommenacker ♦ Colette Cloosterman ♦ Aad Ouborg
Bob Hutten ♦ Joost Rigter ♦ Irma van Diepen ♦ Hennie van der Most
Peer Swinkels ♦ Freek van der Valk ♦ Harry Selier ♦ Dick de Boer
Arko van Brakel ♦ Jan Meurs ♦ Eric Treurniet ♦ Paul Moers
Jacqueline Zuidweg ♦ Ronald van Zetten

Beleving Betekenis Bevlogenheid

VERBODEN VOOR KLANTEN, WIJ HOUDEN VAN FANS

Verboden voor klanten, wij houden van fans is in 2014 genomineerd voor PIM Marketing Literatuurprijs en behoorde tot de 15 best verkochte managementboeken.

We bevinden ons in het tijdperk van de belevenis- en betekenis economie! De organisaties, merken en ondernemers die zich weten te onderscheiden, hebben naast oog voor Beleving ook aandacht voor Betekenis en Bevlogenheid. Waarde creëren voor klanten, maar ook voor medewerkers en voor de maatschappij als geheel, staat daarbij centraal. Met *Verboden voor klanten, wij houden van fans* ontdek je hoe jij die waarde kunt toevoegen. Daar worden klanten fan van!

In dit boek vind je de nieuwste inzichten over Beleving, Betekenis en Bevlogenheid en de toepassing ervan in de praktijk. Aan de hand van interviews met bekende ondernemers en persoonlijkheden, voorbeelden uit de praktijk, modellen en theorieën krijg je waardevolle inzichten aangereikt. Met praktijkcases van bedrijven als Bavaria, HEMA, Rivièra Maison en Jumbo Supermarkten biedt dit boek een schat aan informatie.



Drs. Jessica van Wingerden MBA MCC is onderzoeker, ontwikkelaar en auteur. Zij is werkzaam als directeur HR bij de Koninklijke Auris Groep en als onderzoeker verbonden aan de Erasmus Universiteit Rotterdam. In 2012 verscheen haar boek *Passie, Energie, Prestatie*, over de kracht van werken met bevlogenheid.

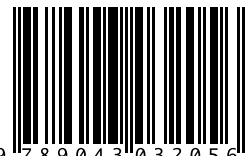


Wim Schuurmans is ondernemer, auteur en gepassioneerd spreker. Hij deelt met aanstekelijke bevlogenheid zijn visie op de huidige belevenis- en betekenis economie tijdens lezingen en congressen. In 2014 heeft *Het Financieele Dagblad* zijn bedrijf *Experientis B.V.* benoemd tot FD Gazelle.

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Prof. dr. Jari Hakkanen
University of Helsinki



Dr. Jessica van Wingerden MBA MCC
Erasmus Universiteit Rotterdam
Schouten Research



Prof. dr. Arnold B. Bakker
Erasmus Universiteit Rotterdam

HET HUYS TEN DONCK
16 JUNI 2016

BUSINESS MEETS SCIENCE SEMINAR

WERKEN AAN BEVLOGENHEID

BUSINESS MEETS SCIENCE SEMINAR

Succesvolle organisaties delen een belangrijk kenmerk: ze onderscheiden zich door de bevlogen mensen die er werken. Onderzoek toont aan dat bevlogen medewerkers gezonder zijn, meer werkplezier ervaren en beter presteren. Vanwege de positieve effecten van bevlogenheid zijn organisaties, ook in turbulente tijden, op zoek hoe zij de bevlogenheid en prestaties van medewerkers kunnen vergroten. Tijdens het Business meets Science seminar: Werken aan bevlogenheid, delen top wetenschappers op dit vakgebied de laatste in de praktijk toepasbare kennis en inzichten. De keynotes worden afgewisseld door interactieve dialoogsessies met de deelnemers aan het seminar.

PROGRAMMA

- KEYNOTE 1** Work Engagement Interventions | prof. dr Jari Hakanen
Dialoogsessie
- KEYNOTE 2** Eigen regie op bevlogenheid | dr. Jessica van Wingerden MBA MCC
Dialoogsessie
- KEYNOTE 3** Alle wegen leiden naar bevlogenheid | prof. dr. Arnold B. Bakker
Afsluiting en netwerkborrel

DATUM

16 juni 2016

TIJD

14:00 - 17:00

LOCATIE

Het Huys ten Donck, Benedenrijweg 461, 2983 LA Ridderkerk



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Leergang

Inspirerend Leiderschap in het Onderwijs

Klant-
waardering
9,1

Erasmus Universiteit
Rotterdam



**INCLUSIEF
SAMSUNG GALAXY
TAB S2 9.7 WIFI OM
INTERACTIEF DEEL
TE NEMEN AAN
HET ONDERWIJS-
PROGRAMMA**



Jessica van Wingerden



Twan Paes



Arnold Bakker



Jos van Kessel



Eric van 't Zelfde



Joseph Kessels

12 april 2016
19 april 2016
26 april 2016





Klant-
waardering
9,2

Leergang Bevlogen in het Onderwijs

Vanuit passie en energie naar prestatie

Data

3 dagen van 09.30 tot 17.00 uur

4 juni, 11 juni, 18 juni 2015

Locatie

Erasmus Universiteit Rotterdam

Doelgroep

- > Bestuurders
- > (Bovenschools) Directeuren
- > Schoolleiders
- > School Business Managers
- > Verantwoordelijken voor Personeelszaken uit Primair, Voortgezet, Speciaal en Middelbaar beroepsonderwijs

Bij deelname ontvangt u de Samsung Galaxy Tab S 10.5 om interactief deel te nemen aan het onderwijsprogramma.



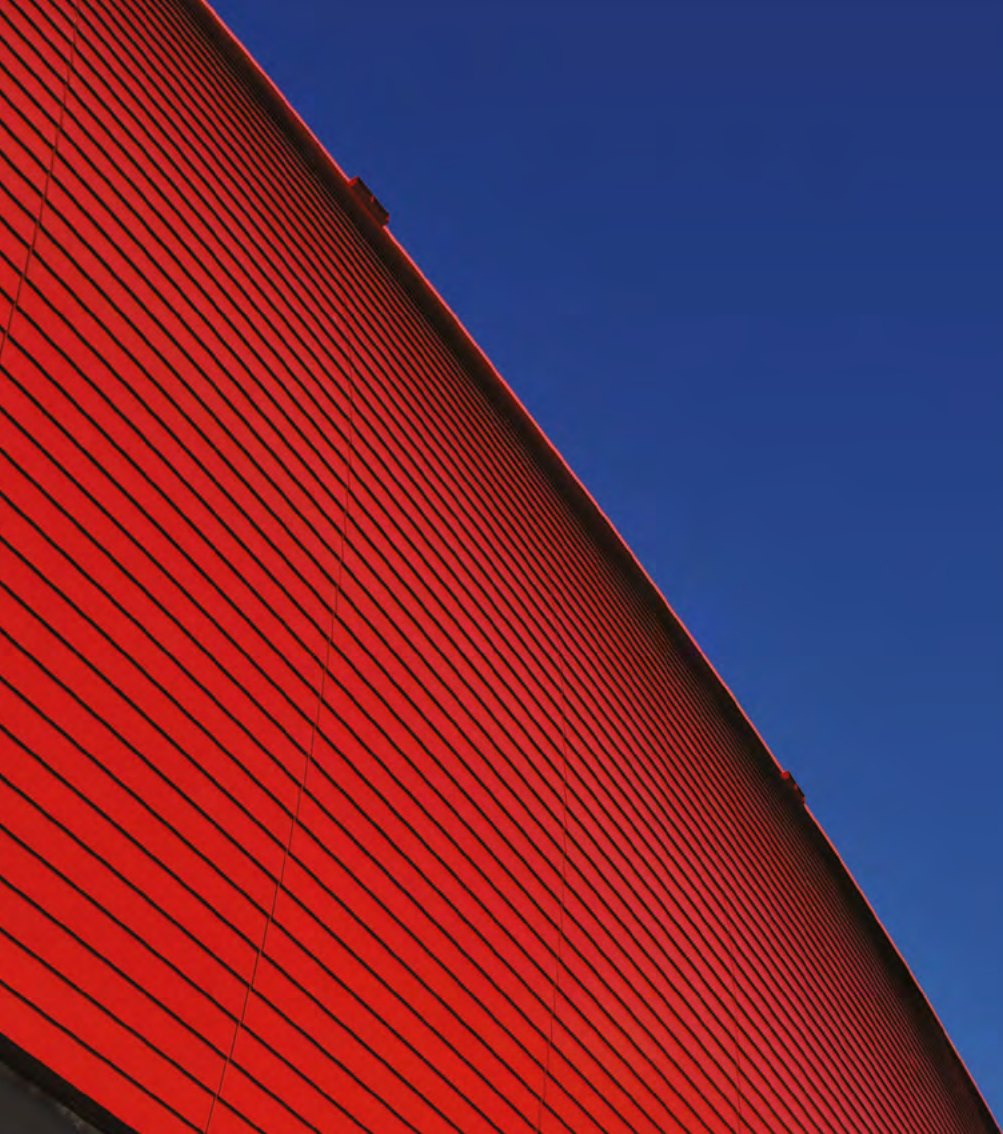
Prestatie en leeropbrengsten worden steeds belangrijker in het onderwijs. Door sturing vanuit passie en energie kan men de kwaliteit van het onderwijs en de leeropbrengsten vergroten.

Wat vraagt dit van uw schoolbestuur? Heeft u als bestuurder, directeur of schoolleider inzicht in hoe u vanuit kracht en talent naar meer prestatie komt? Hoe kunt u sturen vanuit passie en energie zodat medewerkers duurzaam inzetbaar zijn, meer werkplezier beleven en de leeropbrengsten verhogen? Hoe wordt bevoegdheid voor uw schoolbestuur de sleutel tot succes?

In de leergang Bevlogen in het Onderwijs krijgt u van onze ervaren docenten de handvatten om vanuit passie en energie te sturen op prestatie. U leert wat bevoegdheid voor uw organisatie kan betekenen en hoe u dit in de praktijk handen en voeten kunt geven. In de leergang wordt ingegaan op uw organisatie en de sturingsmogelijkheden die u als bestuurder heeft.

In 6 dagdelen leert u door middel van bevoegdheid de leeropbrengsten en prestaties in het onderwijs te bevorderen.

In samenwerking met:



Jessica van Wingerden, MBA, MCC (1977) is a passionate board member, director, researcher, and author. She is Director of Research at Schouten Global and researcher at the Erasmus University Rotterdam. Van Wingerden is also developer and course director of the masterclasses “Work engagement in Education” and “Inspiring Leadership”.

Van Wingerden does research into inspiring and sustaining motivation within organizations. Her integrated approach to organizational issues is informed by her background in sociology, business and the field of organizational change. Studies on the crossover between people and organizations focus on employee self-development, organizational development, vitality, leadership and performance. She has also published various articles and books on management and management research.



www.werkenaanbevlogenheid.nl